

Appendix C

Air Quality and Greenhouse Gas Emissions Technical Data



Air Quality and GHG Appendix

Maximum Daily Emissions, Summer, Unmitigated

**Riverwalk Residential Development
Los Angeles-South Coast County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	10.56	235,800.00	369

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total site acreage is 10.56 acres

Population based on 2.82 persons per unit

Construction Phase - Construction durations based on applicant schedule with modifications to grading cycle to reduce daily NOx emissions

Off-road Equipment -

Off-road Equipment - No crane required.

Off-road Equipment - Demolition limited to several small structures.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading - Total project size is 10.56 acres. Location import fill is unknown.

Woodstoves - Assumes no wood fireplaces

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	300.00	638.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	30.00	65.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	10.00	47.00
tblConstructionPhase	PhaseStartDate	8/11/2018	8/13/2018
tblConstructionPhase	PhaseStartDate	9/26/2015	9/28/2015
tblFireplaces	NumberWood	6.55	0.00
tblGrading	AcresOfGrading	162.50	10.56
tblGrading	MaterialExported	0.00	10.00
tblGrading	MaterialImported	0.00	40,000.00
tblLandUse	LotAcreage	42.53	10.56
tblLandUse	Population	375.00	369.00
tblProjectCharacteristics	OperationalYear	2014	2018

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.4133	103.5778	69.0080	0.1222	18.2679	4.2068	21.3583	9.9842	3.8701	12.8273	0.0000	12,595.07 90	12,595.07 90	1.9985	0.0000	12,637.04 80
2016	7.9234	96.4890	65.8270	0.1221	8.3474	3.9056	12.2530	3.8931	3.5931	7.4863	0.0000	12,450.66 50	12,450.66 50	1.9912	0.0000	12,492.47 98
2017	3.3983	27.7608	22.4195	0.0367	0.6127	1.8030	2.4157	0.1642	1.6931	1.8572	0.0000	3,499.213 8	3,499.213 8	0.6810	0.0000	3,513.513 8
2018	61.8086	24.5040	21.4934	0.0367	0.6127	1.5150	2.1277	0.1642	1.4238	1.5880	0.0000	3,443.989 3	3,443.989 3	0.7076	0.0000	3,458.848 9
Total	81.5436	252.3316	178.7479	0.3177	27.8407	11.4304	38.1547	14.2057	10.5801	23.7588	0.0000	31,988.94 71	31,988.94 71	5.3783	0.0000	32,101.89 04

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276
Energy	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Mobile	4.4359	13.1603	52.7964	0.1464	9.5834	0.2045	9.7880	2.5627	0.1884	2.7512		12,120.2895	12,120.2895	0.4599		12,129.9470
Total	13.8126	14.7961	96.2201	0.2580	9.5834	5.7309	15.3143	2.5627	5.7132	8.2759	773.1146	15,756.0651	16,529.1797	4.1626	0.0663	16,637.1478

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276
Energy	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Mobile	4.4353	13.1557	52.7796	0.1463	9.5796	0.2044	9.7840	2.5617	0.1884	2.7501		12,115.4960	12,115.4960	0.4597		12,125.1499
Total	13.8120	14.7915	96.2033	0.2579	9.5796	5.7308	15.3103	2.5617	5.7131	8.2748	773.1146	15,751.2716	16,524.3862	4.1625	0.0663	16,632.3507

	ROG	NOx	CO	SO2	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	0.03	0.02	0.02	0.04	0.00	0.03	0.04	0.00	0.01	0.00	0.03	0.03	0.00	0.00	0.03

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/6/2015	9/25/2015	5	60	
2	Site Preparation	Site Preparation	9/28/2015	12/1/2015	5	47	
3	Grading	Grading	12/2/2015	3/1/2016	5	65	
4	Building Construction	Building Construction	3/2/2016	8/10/2018	5	638	
5	Paving	Paving	8/13/2018	9/10/2018	5	21	
6	Architectural Coating	Architectural Coating	9/11/2018	10/22/2018	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10.56

Acres of Paving: 0

Residential Indoor: 477,495; Residential Outdoor: 159,165; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	47.00	14.00	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	9.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886
Total	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858		4,127.1934	4,127.1934	1.1188		4,150.6886

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109			190.9418
Total	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109			190.9418

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858	0.0000	4,127.1934	4,127.1934	1.1188			4,150.6886
Total	4.5083	48.3629	36.0738	0.0399		2.4508	2.4508		2.2858	2.2858	0.0000	4,127.1934	4,127.1934	1.1188			4,150.6886

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109			190.9418
Total	0.0740	0.0930	1.1469	2.1800e-003	0.1677	1.6800e-003	0.1693	0.0445	1.5300e-003	0.0460		190.7132	190.7132	0.0109			190.9418

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000				0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275			4,137.5225
Total	5.2609	56.8897	42.6318	0.0391	18.0663	3.0883	21.1546	9.9307	2.8412	12.7719		4,111.7444	4,111.7444	1.2275			4,137.5225

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.3000e-004	6.7500e-003	4.6000e-003	2.0000e-005	3.7000e-004	1.1000e-004	4.8000e-004	1.0000e-004	1.0000e-004	2.0000e-004		1.6193	1.6193	1.0000e-005		1.6196
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	0.0892	0.1183	1.3809	2.6400e-003	0.2016	2.1200e-003	0.2037	0.0535	1.9400e-003	0.0554		230.4752	230.4752	0.0131		230.7498

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0459	0.0000	7.0459	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	5.2609	56.8897	42.6318	0.0391	7.0459	3.0883	10.1341	3.8730	2.8412	6.7142	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.3000e-004	6.7500e-003	4.6000e-003	2.0000e-005	3.7000e-004	1.1000e-004	4.8000e-004	1.0000e-004	1.0000e-004	2.0000e-004		1.6193	1.6193	1.0000e-005		1.6196
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	0.0892	0.1183	1.3809	2.6400e-003	0.2016	2.1200e-003	0.2037	0.0535	1.9400e-003	0.0554		230.4752	230.4752	0.0131		230.7498

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2640	0.0000	6.2640	3.3394	0.0000	3.3394			0.0000			0.0000
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980		6,486.2433	6,486.2433	1.9364		6,526.9080
Total	6.7751	79.0467	50.8400	0.0618	6.2640	3.8022	10.0662	3.3394	3.4980	6.8374		6,486.2433	6,486.2433	1.9364		6,526.9080

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5396	24.4072	16.6388	0.0575	3.3271	0.4024	3.7294	0.8546	0.3701	1.2247		5,854.5514	5,854.5514	0.0476		5,855.5509
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0986	0.1240	1.5292	2.9100e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		254.2843	254.2843	0.0145		254.5891
Total	1.6382	24.5312	18.1680	0.0604	3.5506	0.4046	3.9552	0.9139	0.3721	1.2860		6,108.8357	6,108.8357	0.0621		6,110.1400

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4430	0.0000	2.4430	1.3024	0.0000	1.3024			0.0000			0.0000
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980	0.0000	6,486.2433	6,486.2433	1.9364		6,526.9080
Total	6.7751	79.0467	50.8400	0.0618	2.4430	3.8022	6.2451	1.3024	3.4980	4.8004	0.0000	6,486.2433	6,486.2433	1.9364		6,526.9080

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5396	24.4072	16.6388	0.0575	3.3271	0.4024	3.7294	0.8546	0.3701	1.2247		5,854.5514	5,854.5514	0.0476		5,855.5509
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0986	0.1240	1.5292	2.9100e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		254.2843	254.2843	0.0145		254.5891
Total	1.6382	24.5312	18.1680	0.0604	3.5506	0.4046	3.9552	0.9139	0.3721	1.2860		6,108.8357	6,108.8357	0.0621		6,110.1400

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2640	0.0000	6.2640	3.3394	0.0000	3.3394			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	6.4795	74.8137	49.1374	0.0617	6.2640	3.5842	9.8482	3.3394	3.2975	6.6369		6,414.9807	6,414.9807	1.9350		6,455.6154

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3549	21.5631	15.3022	0.0575	1.8599	0.3193	2.1792	0.4945	0.2937	0.7882		5,789.880 1	5,789.880 1	0.0428		5,790.779 1
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0891	0.1121	1.3874	2.9100e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		245.8043	245.8043	0.0134		246.0853
Total	1.4440	21.6752	16.6896	0.0604	2.0834	0.3214	2.4048	0.5538	0.2956	0.8494		6,035.684 3	6,035.684 3	0.0562		6,036.864 4

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4430	0.0000	2.4430	1.3024	0.0000	1.3024			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.980 7	6,414.980 7	1.9350		6,455.615 4
Total	6.4795	74.8137	49.1374	0.0617	2.4430	3.5842	6.0272	1.3024	3.2975	4.5999	0.0000	6,414.980 7	6,414.980 7	1.9350		6,455.615 4

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3549	21.5631	15.3022	0.0575	1.8599	0.3193	2.1792	0.4945	0.2937	0.7882		5,789.880 1	5,789.880 1	0.0428		5,790.779 1
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0891	0.1121	1.3874	2.9100e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		245.8043	245.8043	0.0134		246.0853
Total	1.4440	21.6752	16.6896	0.0604	2.0834	0.3214	2.4048	0.5538	0.2956	0.8494		6,035.684 3	6,035.684 3	0.0562		6,036.864 4

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.286 4	2,669.286 4	0.6620		2,683.189 0
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.286 4	2,669.286 4	0.6620		2,683.189 0

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1180	1.2251	1.4234	3.0800e-003	0.0873	0.0192	0.1065	0.0248	0.0176	0.0425		308.3089	308.3089	2.2600e-003			308.3564
Worker	0.2093	0.2635	3.2604	6.8300e-003	0.5254	4.9700e-003	0.5303	0.1393	4.5700e-003	0.1439		577.6400	577.6400	0.0315			578.3004
Total	0.3273	1.4886	4.6837	9.9100e-003	0.6127	0.0241	0.6368	0.1642	0.0222	0.1863		885.9489	885.9489	0.0337			886.6567

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620			2,683.1890
Total	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620			2,683.1890

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1180	1.2251	1.4234	3.0800e-003	0.0873	0.0192	0.1065	0.0248	0.0176	0.0425		308.3089	308.3089	2.2600e-003			308.3564
Worker	0.2093	0.2635	3.2604	6.8300e-003	0.5254	4.9700e-003	0.5303	0.1393	4.5700e-003	0.1439		577.6400	577.6400	0.0315			578.3004
Total	0.3273	1.4886	4.6837	9.9100e-003	0.6127	0.0241	0.6368	0.1642	0.0222	0.1863		885.9489	885.9489	0.0337			886.6567

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497			2,653.4490
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497			2,653.4490

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1079	1.1169	1.3364	3.0700e-003	0.0874	0.0171	0.1044	0.0249	0.0157	0.0406		303.3855	303.3855	2.1900e-003			303.4315
Worker	0.1881	0.2383	2.9540	6.8300e-003	0.5254	4.7600e-003	0.5301	0.1393	4.3900e-003	0.1437		556.0229	556.0229	0.0291			556.6332
Total	0.2960	1.3551	4.2904	9.9000e-003	0.6127	0.0218	0.6345	0.1642	0.0201	0.1843		859.4084	859.4084	0.0313			860.0647

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497			2,653.4490
Total	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497			2,653.4490

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1079	1.1169	1.3364	3.0700e-003	0.0874	0.0171	0.1044	0.0249	0.0157	0.0406		303.3855	303.3855	2.1900e-003			303.4315
Worker	0.1881	0.2383	2.9540	6.8300e-003	0.5254	4.7600e-003	0.5301	0.1393	4.3900e-003	0.1437		556.0229	556.0229	0.0291			556.6332
Total	0.2960	1.3551	4.2904	9.9000e-003	0.6127	0.0218	0.6345	0.1642	0.0201	0.1843		859.4084	859.4084	0.0313			860.0647

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387			2,623.3517
Total	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387			2,623.3517

3.5 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1016	1.0268	1.2765	3.0700e-003	0.0874	0.0161	0.1034	0.0249	0.0148	0.0396		298.3746	298.3746	2.1800e-003			298.4203
Worker	0.1694	0.2163	2.6842	6.8300e-003	0.5254	4.6100e-003	0.5300	0.1393	4.2600e-003	0.1436		535.6758	535.6758	0.0270			536.2427
Total	0.2710	1.2431	3.9607	9.9000e-003	0.6127	0.0207	0.6334	0.1642	0.0191	0.1832		834.0504	834.0504	0.0292			834.6630

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387			2,623.3517
Total	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387			2,623.3517

3.5 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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1016	1.0268	1.2765	3.0700e-003	0.0874	0.0161	0.1034	0.0249	0.0148	0.0396		298.3746	298.3746	2.1800e-003		298.4203
Worker	0.1694	0.2163	2.6842	6.8300e-003	0.5254	4.6100e-003	0.5300	0.1393	4.2600e-003	0.1436		535.6758	535.6758	0.0270		536.2427
Total	0.2710	1.2431	3.9607	9.9000e-003	0.6127	0.0207	0.6334	0.1642	0.0191	0.1832		834.0504	834.0504	0.0292		834.6630

3.6 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	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413
Total	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990			2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990			2,259.9481

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413
Total	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413

3.7 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	lb/day										lb/day						
Archit. Coating	61.4775					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102
Total	61.7761	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102

3.7 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848
Total	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	61.4775					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102
Total	61.7761	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102

3.7 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848
Total	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4353	13.1557	52.7796	0.1463	9.5796	0.2044	9.7840	2.5617	0.1884	2.7501		12,115.4960	12,115.4960	0.4597		12,125.1499
Unmitigated	4.4359	13.1603	52.7964	0.1464	9.5834	0.2045	9.7880	2.5627	0.1884	2.7512		12,120.2895	12,120.2895	0.4599		12,129.9470

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,253.67	1,320.48	1148.87	4,265,435	4,263,707
Total	1,253.67	1,320.48	1,148.87	4,265,435	4,263,707

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
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.531767	0.058060	0.178534	0.124864	0.038964	0.006284	0.016861	0.033134	0.002486	0.003151	0.003685	0.000540	0.001671

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	lb/day										lb/day					
NaturalGas Mitigated	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
NaturalGas Unmitigated	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	10695.7	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Total		0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	10.6957	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Total		0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732

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	lb/day										lb/day					
Mitigated	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276
Unmitigated	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276

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	lb/day										lb/day					
Architectural Coating	0.5053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.7517	0.5238	32.1201	0.1048		5.3872	5.3872		5.3857	5.3857	773.1146	2,358.0000	3,131.1146	3.6594	0.0432	3,221.3623
Landscaping	0.3355	0.1263	10.8841	5.7000e-004		0.0594	0.0594		0.0594	0.0594		19.4604	19.4604	0.0193		19.8654
Total	9.2614	0.6501	43.0042	0.1053		5.4466	5.4466		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276

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	lb/day										lb/day					
Architectural Coating	0.5053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.7517	0.5238	32.1201	0.1048		5.3872	5.3872		5.3857	5.3857	773.1146	2,358.0000	3,131.1146	3.6594	0.0432	3,221.3623
Landscaping	0.3355	0.1263	10.8841	5.7000e-004		0.0594	0.0594		0.0594	0.0594		19.4604	19.4604	0.0193		19.8654
Total	9.2614	0.6501	43.0042	0.1053		5.4466	5.4466		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Air Quality and GHG Appendix

Maximum Daily Emissions, Summer, Mitigated

**Riverwalk Residential Development
Los Angeles-South Coast County, Summer**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	10.56	235,800.00	369

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total site acreage is 10.56 acres

Population based on 2.82 persons per unit

Construction Phase - Construction durations based on applicant schedule with modifications to grading cycle to reduce daily NOx emissions

Off-road Equipment -

Off-road Equipment - No crane required.

Off-road Equipment - Demolition limited to several small structures.

Off-road Equipment - Excavators and scrapers assumed to operate 7 hours per day to minimize NOx emissions

Off-road Equipment -

Off-road Equipment -

Grading - Total project size is 10.56 acres. Location import fill is unknown.

Woodstoves - Assumes no wood fireplaces

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	300.00	638.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	30.00	65.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	10.00	47.00
tblConstructionPhase	PhaseStartDate	8/11/2018	8/13/2018
tblConstructionPhase	PhaseStartDate	9/26/2015	9/28/2015
tblFireplaces	NumberWood	6.55	0.00
tblGrading	AcresOfGrading	146.25	10.56
tblGrading	MaterialExported	0.00	10.00
tblGrading	MaterialImported	0.00	40,000.00
tblLandUse	LotAcreage	42.53	10.56
tblLandUse	Population	375.00	369.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2018

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	7.9484	97.7119	65.2540	0.1171	18.2679	3.9589	21.3583	9.9842	3.6421	12.8273	0.0000	12,065.04 52	12,065.04 52	1.8403	0.0000	12,103.69 12
2016	7.4808	90.9823	62.2145	0.1170	8.3474	3.6738	12.0212	3.8931	3.3799	7.2730	0.0000	11,926.31 66	11,926.31 66	1.8330	0.0000	11,964.81 00
2017	2.8314	21.0294	20.0077	0.0318	0.6127	1.5029	2.1156	0.1642	1.4170	1.5811	0.0000	2,994.130 5	2,994.130 5	0.5262	0.0000	3,005.180 6
2018	61.8086	18.6650	19.3345	0.0318	0.6127	1.2622	1.8749	0.1642	1.1913	1.3555	0.0000	2,946.962 3	2,946.962 3	0.7076	0.0000	2,961.821 9
Total	80.0691	228.3886	166.8108	0.2977	27.8407	10.3979	37.3701	14.2057	9.6303	23.0370	0.0000	29,932.45 46	29,932.45 46	4.9071	0.0000	30,035.50 37

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276
Energy	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Mobile	4.4359	13.1603	52.7964	0.1464	9.5834	0.2045	9.7880	2.5627	0.1884	2.7512		12,120.2895	12,120.2895	0.4599		12,129.9470
Total	13.8126	14.7961	96.2201	0.2580	9.5834	5.7309	15.3143	2.5627	5.7132	8.2759	773.1146	15,756.0651	16,529.1797	4.1626	0.0663	16,637.1478

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276
Energy	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Mobile	4.4353	13.1557	52.7796	0.1463	9.5796	0.2044	9.7840	2.5617	0.1884	2.7501		12,115.4960	12,115.4960	0.4597		12,125.1499
Total	13.8120	14.7915	96.2033	0.2579	9.5796	5.7308	15.3103	2.5617	5.7131	8.2748	773.1146	15,751.2716	16,524.3862	4.1625	0.0663	16,632.3507

	ROG	NOx	CO	SO2	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	0.03	0.02	0.02	0.04	0.00	0.03	0.04	0.00	0.01	0.00	0.03	0.03	0.00	0.00	0.03

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/6/2015	9/25/2015	5	60	
2	Site Preparation	Site Preparation	9/28/2015	12/1/2015	5	47	
3	Grading	Grading	12/2/2015	3/1/2016	5	65	
4	Building Construction	Building Construction	3/2/2016	8/10/2018	5	638	
5	Paving	Paving	8/13/2018	9/10/2018	5	21	
6	Architectural Coating	Architectural Coating	9/11/2018	10/22/2018	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10.56

Acres of Paving: 0

Residential Indoor: 477,495; Residential Outdoor: 159,165; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	7.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	7.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	47.00	14.00	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	9.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Soil Stabilizer
- Water Exposed Area
- Clean Paved Roads

3.2 Demolition - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6751	38.6332	29.1954	0.0293		1.9706	1.9706		1.8440	1.8440		3,016.0833	3,016.0833	0.7871		3,032.6125
Total	3.6751	38.6332	29.1954	0.0293		1.9706	1.9706		1.8440	1.8440		3,016.0833	3,016.0833	0.7871		3,032.6125

3.2 Demolition - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0493	0.0620	0.7646	1.4500e-003	0.1118	1.1200e-003	0.1129	0.0296	1.0200e-003	0.0307		127.1422	127.1422	7.2600e-003			127.2945
Total	0.0493	0.0620	0.7646	1.4500e-003	0.1118	1.1200e-003	0.1129	0.0296	1.0200e-003	0.0307		127.1422	127.1422	7.2600e-003			127.2945

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	3.6751	38.6332	29.1954	0.0293		1.9706	1.9706		1.8440	1.8440	0.0000	3,016.0833	3,016.0833	0.7871			3,032.6125
Total	3.6751	38.6332	29.1954	0.0293		1.9706	1.9706		1.8440	1.8440	0.0000	3,016.0833	3,016.0833	0.7871			3,032.6125

3.2 Demolition - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0493	0.0620	0.7646	1.4500e-003	0.1118	1.1200e-003	0.1129	0.0296	1.0200e-003	0.0307		127.1422	127.1422	7.2600e-003			127.2945
Total	0.0493	0.0620	0.7646	1.4500e-003	0.1118	1.1200e-003	0.1129	0.0296	1.0200e-003	0.0307		127.1422	127.1422	7.2600e-003			127.2945

3.3 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	5.2609	56.8897	42.6318	0.0391	18.0663	3.0883	21.1546	9.9307	2.8412	12.7719		4,111.7444	4,111.7444	1.2275		4,137.5225

3.3 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.3000e-004	6.7500e-003	4.6000e-003	2.0000e-005	3.7000e-004	1.1000e-004	4.8000e-004	1.0000e-004	1.0000e-004	2.0000e-004		1.6193	1.6193	1.0000e-005		1.6196
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	0.0892	0.1183	1.3809	2.6400e-003	0.2016	2.1200e-003	0.2037	0.0535	1.9400e-003	0.0554		230.4752	230.4752	0.0131		230.7498

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0459	0.0000	7.0459	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	5.2609	56.8897	42.6318	0.0391	7.0459	3.0883	10.1341	3.8730	2.8412	6.7142	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224

3.3 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.3000e-004	6.7500e-003	4.6000e-003	2.0000e-005	3.7000e-004	1.1000e-004	4.8000e-004	1.0000e-004	1.0000e-004	2.0000e-004		1.6193	1.6193	1.0000e-005		1.6196
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131		229.1301
Total	0.0892	0.1183	1.3809	2.6400e-003	0.2016	2.1200e-003	0.2037	0.0535	1.9400e-003	0.0554		230.4752	230.4752	0.0131		230.7498

3.4 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2640	0.0000	6.2640	3.3394	0.0000	3.3394			0.0000			0.0000
Off-Road	6.3102	73.1807	47.0860	0.0567		3.5544	3.5544		3.2700	3.2700		5,956.2095	5,956.2095	1.7782		5,993.5512
Total	6.3102	73.1807	47.0860	0.0567	6.2640	3.5544	9.8183	3.3394	3.2700	6.6094		5,956.2095	5,956.2095	1.7782		5,993.5512

3.4 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5396	24.4072	16.6388	0.0575	3.3271	0.4024	3.7294	0.8546	0.3701	1.2247		5,854.5514	5,854.5514	0.0476		5,855.5509
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0986	0.1240	1.5292	2.9100e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		254.2843	254.2843	0.0145		254.5891
Total	1.6382	24.5312	18.1680	0.0604	3.5506	0.4046	3.9552	0.9139	0.3721	1.2860		6,108.8357	6,108.8357	0.0621		6,110.1400

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4430	0.0000	2.4430	1.3024	0.0000	1.3024			0.0000			0.0000
Off-Road	6.3102	73.1807	47.0860	0.0567		3.5544	3.5544		3.2700	3.2700	0.0000	5,956.2095	5,956.2095	1.7782		5,993.5512
Total	6.3102	73.1807	47.0860	0.0567	2.4430	3.5544	5.9973	1.3024	3.2700	4.5724	0.0000	5,956.2095	5,956.2095	1.7782		5,993.5512

3.4 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5396	24.4072	16.6388	0.0575	3.3271	0.4024	3.7294	0.8546	0.3701	1.2247		5,854.5514	5,854.5514	0.0476		5,855.5509
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0986	0.1240	1.5292	2.9100e-003	0.2236	2.2300e-003	0.2258	0.0593	2.0500e-003	0.0613		254.2843	254.2843	0.0145		254.5891
Total	1.6382	24.5312	18.1680	0.0604	3.5506	0.4046	3.9552	0.9139	0.3721	1.2860		6,108.8357	6,108.8357	0.0621		6,110.1400

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2640	0.0000	6.2640	3.3394	0.0000	3.3394			0.0000			0.0000
Off-Road	6.0368	69.3071	45.5249	0.0567		3.3524	3.3524		3.0842	3.0842		5,890.6323	5,890.6323	1.7768		5,927.9456
Total	6.0368	69.3071	45.5249	0.0567	6.2640	3.3524	9.6164	3.3394	3.0842	6.4236		5,890.6323	5,890.6323	1.7768		5,927.9456

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3549	21.5631	15.3022	0.0575	1.8599	0.3193	2.1792	0.4945	0.2937	0.7882		5,789.880 1	5,789.880 1	0.0428		5,790.779 1
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0891	0.1121	1.3874	2.9100e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		245.8043	245.8043	0.0134		246.0853
Total	1.4440	21.6752	16.6896	0.0604	2.0834	0.3214	2.4048	0.5538	0.2956	0.8494		6,035.684 3	6,035.684 3	0.0562		6,036.864 4

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.4430	0.0000	2.4430	1.3024	0.0000	1.3024			0.0000			0.0000
Off-Road	6.0368	69.3071	45.5249	0.0567		3.3524	3.3524		3.0842	3.0842	0.0000	5,890.632 3	5,890.632 3	1.7768		5,927.945 6
Total	6.0368	69.3071	45.5249	0.0567	2.4430	3.3524	5.7954	1.3024	3.0842	4.3866	0.0000	5,890.632 3	5,890.632 3	1.7768		5,927.945 6

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.3549	21.5631	15.3022	0.0575	1.8599	0.3193	2.1792	0.4945	0.2937	0.7882		5,789.880 1	5,789.880 1	0.0428		5,790.779 1
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0891	0.1121	1.3874	2.9100e-003	0.2236	2.1100e-003	0.2257	0.0593	1.9400e-003	0.0612		245.8043	245.8043	0.0134		246.0853
Total	1.4440	21.6752	16.6896	0.0604	2.0834	0.3214	2.4048	0.5538	0.2956	0.8494		6,035.684 3	6,035.684 3	0.0562		6,036.864 4

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7762	21.0412	15.8949	0.0219		1.6287	1.6287		1.5368	1.5368		2,156.331 0	2,156.331 0	0.5073		2,166.984 4
Total	2.7762	21.0412	15.8949	0.0219		1.6287	1.6287		1.5368	1.5368		2,156.331 0	2,156.331 0	0.5073		2,166.984 4

3.5 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1180	1.2251	1.4234	3.0800e-003	0.0873	0.0192	0.1065	0.0248	0.0176	0.0425		308.3089	308.3089	2.2600e-003			308.3564
Worker	0.2093	0.2635	3.2604	6.8300e-003	0.5254	4.9700e-003	0.5303	0.1393	4.5700e-003	0.1439		577.6400	577.6400	0.0315			578.3004
Total	0.3273	1.4886	4.6837	9.9100e-003	0.6127	0.0241	0.6368	0.1642	0.0222	0.1863		885.9489	885.9489	0.0337			886.6567

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.7762	21.0412	15.8949	0.0219		1.6287	1.6287		1.5368	1.5368	0.0000	2,156.3310	2,156.3310	0.5073			2,166.9844
Total	2.7762	21.0412	15.8949	0.0219		1.6287	1.6287		1.5368	1.5368	0.0000	2,156.3310	2,156.3310	0.5073			2,166.9844

3.5 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1180	1.2251	1.4234	3.0800e-003	0.0873	0.0192	0.1065	0.0248	0.0176	0.0425		308.3089	308.3089	2.2600e-003			308.3564
Worker	0.2093	0.2635	3.2604	6.8300e-003	0.5254	4.9700e-003	0.5303	0.1393	4.5700e-003	0.1439		577.6400	577.6400	0.0315			578.3004
Total	0.3273	1.4886	4.6837	9.9100e-003	0.6127	0.0241	0.6368	0.1642	0.0222	0.1863		885.9489	885.9489	0.0337			886.6567

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.5354	19.6743	15.7173	0.0219		1.4811	1.4811		1.3969	1.3969		2,134.7221	2,134.7221	0.4949			2,145.1159
Total	2.5354	19.6743	15.7173	0.0219		1.4811	1.4811		1.3969	1.3969		2,134.7221	2,134.7221	0.4949			2,145.1159

3.5 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1079	1.1169	1.3364	3.0700e-003	0.0874	0.0171	0.1044	0.0249	0.0157	0.0406		303.3855	303.3855	2.1900e-003			303.4315
Worker	0.1881	0.2383	2.9540	6.8300e-003	0.5254	4.7600e-003	0.5301	0.1393	4.3900e-003	0.1437		556.0229	556.0229	0.0291			556.6332
Total	0.2960	1.3551	4.2904	9.9000e-003	0.6127	0.0218	0.6345	0.1642	0.0201	0.1843		859.4084	859.4084	0.0313			860.0647

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.5354	19.6743	15.7173	0.0219		1.4811	1.4811		1.3969	1.3969	0.0000	2,134.7221	2,134.7221	0.4949			2,145.1159
Total	2.5354	19.6743	15.7173	0.0219		1.4811	1.4811		1.3969	1.3969	0.0000	2,134.7221	2,134.7221	0.4949			2,145.1159

3.5 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1079	1.1169	1.3364	3.0700e-003	0.0874	0.0171	0.1044	0.0249	0.0157	0.0406		303.3855	303.3855	2.1900e-003			303.4315
Worker	0.1881	0.2383	2.9540	6.8300e-003	0.5254	4.7600e-003	0.5301	0.1393	4.3900e-003	0.1437		556.0229	556.0229	0.0291			556.6332
Total	0.2960	1.3551	4.2904	9.9000e-003	0.6127	0.0218	0.6345	0.1642	0.0201	0.1843		859.4084	859.4084	0.0313			860.0647

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.1801	17.4218	15.3738	0.0219		1.2416	1.2416		1.1723	1.1723		2,112.9119	2,112.9119	0.4840			2,123.0753
Total	2.1801	17.4218	15.3738	0.0219		1.2416	1.2416		1.1723	1.1723		2,112.9119	2,112.9119	0.4840			2,123.0753

3.5 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1016	1.0268	1.2765	3.0700e-003	0.0874	0.0161	0.1034	0.0249	0.0148	0.0396		298.3746	298.3746	2.1800e-003			298.4203
Worker	0.1694	0.2163	2.6842	6.8300e-003	0.5254	4.6100e-003	0.5300	0.1393	4.2600e-003	0.1436		535.6758	535.6758	0.0270			536.2427
Total	0.2710	1.2431	3.9607	9.9000e-003	0.6127	0.0207	0.6334	0.1642	0.0191	0.1832		834.0504	834.0504	0.0292			834.6630

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	2.1801	17.4218	15.3738	0.0219		1.2416	1.2416		1.1723	1.1723	0.0000	2,112.9119	2,112.9119	0.4840			2,123.0753
Total	2.1801	17.4218	15.3738	0.0219		1.2416	1.2416		1.1723	1.1723	0.0000	2,112.9119	2,112.9119	0.4840			2,123.0753

3.5 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.1016	1.0268	1.2765	3.0700e-003	0.0874	0.0161	0.1034	0.0249	0.0148	0.0396		298.3746	298.3746	2.1800e-003			298.4203
Worker	0.1694	0.2163	2.6842	6.8300e-003	0.5254	4.6100e-003	0.5300	0.1393	4.2600e-003	0.1436		535.6758	535.6758	0.0270			536.2427
Total	0.2710	1.2431	3.9607	9.9000e-003	0.6127	0.0207	0.6334	0.1642	0.0191	0.1832		834.0504	834.0504	0.0292			834.6630

3.6 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	lb/day										lb/day						
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990			2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990			2,259.9481

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413
Total	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990			2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990			2,259.9481

3.6 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413
Total	0.0541	0.0690	0.8567	2.1800e-003	0.1677	1.4700e-003	0.1691	0.0445	1.3600e-003	0.0458		170.9604	170.9604	8.6200e-003			171.1413

3.7 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	lb/day										lb/day						
Archit. Coating	61.4775					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000	
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102
Total	61.7761	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267			282.0102

3.7 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848
Total	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Archit. Coating	61.4775					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102
Total	61.7761	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267			282.0102

3.7 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	lb/day										lb/day						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848
Total	0.0324	0.0414	0.5140	1.3100e-003	0.1006	8.8000e-004	0.1015	0.0267	8.2000e-004	0.0275		102.5762	102.5762	5.1700e-003			102.6848

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4353	13.1557	52.7796	0.1463	9.5796	0.2044	9.7840	2.5617	0.1884	2.7501		12,115.4960	12,115.4960	0.4597		12,125.1499
Unmitigated	4.4359	13.1603	52.7964	0.1464	9.5834	0.2045	9.7880	2.5627	0.1884	2.7512		12,120.2895	12,120.2895	0.4599		12,129.9470

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,253.67	1,320.48	1148.87	4,265,435	4,263,707
Total	1,253.67	1,320.48	1,148.87	4,265,435	4,263,707

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
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.531767	0.058060	0.178534	0.124864	0.038964	0.006284	0.016861	0.033134	0.002486	0.003151	0.003685	0.000540	0.001671

5.0 Energy Detail

5.1 Fleet Mix

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	lb/day										lb/day					
NaturalGas Mitigated	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
NaturalGas Unmitigated	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	10695.7	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Total		0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	10.6957	0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732
Total		0.1154	0.9857	0.4194	6.2900e-003		0.0797	0.0797		0.0797	0.0797		1,258.3153	1,258.3153	0.0241	0.0231	1,265.9732

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	lb/day										lb/day					
Mitigated	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276
Unmitigated	9.2614	0.6501	43.0042	0.1053		5.4467	5.4467		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276

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	lb/day										lb/day					
Architectural Coating	0.5053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.7517	0.5238	32.1201	0.1048		5.3872	5.3872		5.3857	5.3857	773.1146	2,358.0000	3,131.1146	3.6594	0.0432	3,221.3623
Landscaping	0.3355	0.1263	10.8841	5.7000e-004		0.0594	0.0594		0.0594	0.0594		19.4604	19.4604	0.0193		19.8654
Total	9.2614	0.6501	43.0042	0.1053		5.4466	5.4466		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276

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	lb/day										lb/day					
Architectural Coating	0.5053					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.6688					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.7517	0.5238	32.1201	0.1048		5.3872	5.3872		5.3857	5.3857	773.1146	2,358.0000	3,131.1146	3.6594	0.0432	3,221.3623
Landscaping	0.3355	0.1263	10.8841	5.7000e-004		0.0594	0.0594		0.0594	0.0594		19.4604	19.4604	0.0193		19.8654
Total	9.2614	0.6501	43.0042	0.1053		5.4466	5.4466		5.4451	5.4451	773.1146	2,377.4604	3,150.5750	3.6786	0.0432	3,241.2276

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Air Quality and GHG Appendix

Annual Emissions

Riverwalk Residential Development Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	10.56	235,800.00	369

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total site acreage is 10.56 acres

Population based on 2.82 persons per unit

Construction Phase - Construction durations based on applicant schedule with modifications to grading cycle to reduce daily NOx emissions

Off-road Equipment -

Off-road Equipment - No crane required.

Off-road Equipment - Demolition limited to several small structures.

Off-road Equipment - Excavators and scrapers assumed to operate 7 hours per day to minimize NOx emissions

Off-road Equipment -

Off-road Equipment -

Grading - Total project size is 10.56 acres. Location import fill is unknown.

Woodstoves - Assumes no wood fireplaces

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	300.00	638.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	30.00	65.00
tblConstructionPhase	NumDays	20.00	21.00
tblConstructionPhase	NumDays	10.00	47.00
tblConstructionPhase	PhaseStartDate	8/11/2018	8/13/2018
tblConstructionPhase	PhaseStartDate	9/26/2015	9/28/2015
tblFireplaces	NumberWood	6.55	0.00
tblGrading	AcresOfGrading	146.25	10.56
tblGrading	MaterialExported	0.00	10.00
tblGrading	MaterialImported	0.00	40,000.00
tblLandUse	LotAcreage	42.53	10.56
tblLandUse	Population	375.00	369.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2018

2.0 Emissions Summary

2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.3255	3.5906	2.6692	3.1900e-003	0.6743	0.1753	0.8497	0.3539	0.1622	0.5161	0.0000	298.0105	298.0105	0.0664	0.0000	299.4056
2016	0.5007	4.4471	3.6322	5.9500e-003	0.3130	0.2592	0.5722	0.1378	0.2426	0.3804	0.0000	530.6930	530.6930	0.0893	0.0000	532.5673
2017	0.3684	2.7446	2.6150	4.0900e-003	0.0781	0.1954	0.2735	0.0210	0.1842	0.2052	0.0000	350.2954	350.2954	0.0621	0.0000	351.5986
2018	1.1408	1.7111	1.7513	2.8400e-003	0.0513	0.1131	0.1644	0.0138	0.1067	0.1204	0.0000	240.3199	240.3199	0.0444	0.0000	241.2527
Total	2.3354	12.4934	10.6677	0.0161	1.1168	0.7430	1.8598	0.5264	0.6957	1.2221	0.0000	1,419.3188	1,419.3188	0.2622	0.0000	1,424.8243

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0331	0.0223	1.7620	1.3800e-003		0.0748	0.0748		0.0748	0.0748	8.7670	28.9460	37.7130	0.0437	4.9000e-004	38.7823
Energy	0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	481.7928	481.7928	0.0166	6.4200e-003	484.1309
Mobile	0.7585	2.4312	9.1047	0.0243	1.6169	0.0352	1.6521	0.4331	0.0324	0.4655	0.0000	1,830.3948	1,830.3948	0.0717	0.0000	1,831.9009
Waste						0.0000	0.0000		0.0000	0.0000	30.7105	0.0000	30.7105	1.8149	0.0000	68.8242
Water						0.0000	0.0000		0.0000	0.0000	2.7078	48.9111	51.6189	0.2804	7.0300e-003	59.6866
Total	1.8127	2.6334	10.9432	0.0269	1.6169	0.1245	1.7414	0.4331	0.1217	0.5548	42.1853	2,390.0447	2,432.2300	2.2273	0.0139	2,483.3249

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0331	0.0223	1.7620	1.3800e-003		0.0748	0.0748		0.0748	0.0748	8.7670	28.9460	37.7130	0.0437	4.9000e-004	38.7823
Energy	0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	481.7928	481.7928	0.0166	6.4200e-003	484.1309
Mobile	0.7584	2.4304	9.1020	0.0243	1.6163	0.0352	1.6514	0.4329	0.0324	0.4653	0.0000	1,829.6712	1,829.6712	0.0717	0.0000	1,831.1767
Waste						0.0000	0.0000		0.0000	0.0000	30.7105	0.0000	30.7105	1.8149	0.0000	68.8242
Water						0.0000	0.0000		0.0000	0.0000	2.1663	41.5068	43.6731	0.2244	5.6400e-003	50.1331
Total	1.8126	2.6326	10.9405	0.0269	1.6163	0.1245	1.7407	0.4329	0.1217	0.5546	41.6437	2,381.9168	2,423.5605	2.1712	0.0126	2,473.0471

	ROG	NOx	CO	SO2	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	0.01	0.03	0.02	0.04	0.04	0.01	0.04	0.04	0.02	0.03	1.28	0.34	0.36	2.52	9.97	0.41

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/6/2015	9/25/2015	5	60	
2	Site Preparation	Site Preparation	9/28/2015	12/1/2015	5	47	
3	Grading	Grading	12/2/2015	3/1/2016	5	65	
4	Building Construction	Building Construction	3/2/2016	8/10/2018	5	638	
5	Paving	Paving	8/13/2018	9/10/2018	5	21	
6	Architectural Coating	Architectural Coating	9/11/2018	10/22/2018	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10.56

Acres of Paving: 0

Residential Indoor: 477,495; Residential Outdoor: 159,165; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	7.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	7.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	47.00	14.00	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	9.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2015

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	0.1103	1.1590	0.8759	8.8000e-004		0.0591	0.0591		0.0553	0.0553	0.0000	82.0843	82.0843	0.0214	0.0000	82.5342
Total	0.1103	1.1590	0.8759	8.8000e-004		0.0591	0.0591		0.0553	0.0553	0.0000	82.0843	82.0843	0.0214	0.0000	82.5342

3.2 Demolition - 2015

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4500e-003	2.1200e-003	0.0221	4.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.3186	3.3186	2.0000e-004	0.0000	3.3228	
Total	1.4500e-003	2.1200e-003	0.0221	4.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.3186	3.3186	2.0000e-004	0.0000	3.3228	

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	0.1103	1.1590	0.8759	8.8000e-004		0.0591	0.0591		0.0553	0.0553	0.0000	82.0842	82.0842	0.0214	0.0000	82.5341
Total	0.1103	1.1590	0.8759	8.8000e-004		0.0591	0.0591		0.0553	0.0553	0.0000	82.0842	82.0842	0.0214	0.0000	82.5341

3.2 Demolition - 2015

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	1.4500e-003	2.1200e-003	0.0221	4.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.3186	3.3186	2.0000e-004	0.0000	3.3228
Total	1.4500e-003	2.1200e-003	0.0221	4.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.3186	3.3186	2.0000e-004	0.0000	3.3228

3.3 Site Preparation - 2015

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					0.4246	0.0000	0.4246	0.2334	0.0000	0.2334	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1236	1.3369	1.0019	9.2000e-004		0.0726	0.0726		0.0668	0.0668	0.0000	87.6576	87.6576	0.0262	0.0000	88.2072
Total	0.1236	1.3369	1.0019	9.2000e-004	0.4246	0.0726	0.4971	0.2334	0.0668	0.3001	0.0000	87.6576	87.6576	0.0262	0.0000	88.2072

3.3 Site Preparation - 2015

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	1.0000e-005	1.7000e-004	1.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0345	0.0345	0.0000	0.0000	0.0345
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0500e-003	2.9800e-003	0.0311	6.0000e-005	4.6400e-003	5.0000e-005	4.6800e-003	1.2300e-003	4.0000e-005	1.2700e-003	0.0000	4.6793	4.6793	2.8000e-004	0.0000	4.6851
Total	2.0600e-003	3.1500e-003	0.0312	6.0000e-005	4.6500e-003	5.0000e-005	4.6900e-003	1.2300e-003	4.0000e-005	1.2700e-003	0.0000	4.7137	4.7137	2.8000e-004	0.0000	4.7196

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					0.1656	0.0000	0.1656	0.0910	0.0000	0.0910	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1236	1.3369	1.0019	9.2000e-004		0.0726	0.0726		0.0668	0.0668	0.0000	87.6575	87.6575	0.0262	0.0000	88.2071
Total	0.1236	1.3369	1.0019	9.2000e-004	0.1656	0.0726	0.2382	0.0910	0.0668	0.1578	0.0000	87.6575	87.6575	0.0262	0.0000	88.2071

3.3 Site Preparation - 2015**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	1.0000e-005	1.7000e-004	1.2000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0345	0.0345	0.0000	0.0000	0.0345
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0500e-003	2.9800e-003	0.0311	6.0000e-005	4.6400e-003	5.0000e-005	4.6800e-003	1.2300e-003	4.0000e-005	1.2700e-003	0.0000	4.6793	4.6793	2.8000e-004	0.0000	4.6851
Total	2.0600e-003	3.1500e-003	0.0312	6.0000e-005	4.6500e-003	5.0000e-005	4.6900e-003	1.2300e-003	4.0000e-005	1.2700e-003	0.0000	4.7137	4.7137	2.8000e-004	0.0000	4.7196

3.4 Grading - 2015**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					0.2036	0.0000	0.2036	0.1085	0.0000	0.1085	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0694	0.8050	0.5180	6.2000e-004		0.0391	0.0391		0.0360	0.0360	0.0000	59.4372	59.4372	0.0177	0.0000	59.8098
Total	0.0694	0.8050	0.5180	6.2000e-004	0.2036	0.0391	0.2427	0.1085	0.0360	0.1445	0.0000	59.4372	59.4372	0.0177	0.0000	59.8098

3.4 Grading - 2015

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	0.0177	0.2829	0.2041	6.3000e-004	0.0359	4.4300e-003	0.0403	9.2200e-003	4.0800e-003	0.0133	0.0000	58.3653	58.3653	4.8000e-004	0.0000	0.0000	58.3753
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	1.5500e-003	0.0162	3.0000e-005	2.4100e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.4337	2.4337	1.4000e-004	0.0000	0.0000	2.4367
Total	0.0187	0.2844	0.2202	6.6000e-004	0.0383	4.4500e-003	0.0427	9.8600e-003	4.1000e-003	0.0140	0.0000	60.7990	60.7990	6.2000e-004	0.0000	0.0000	60.8120

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					0.0794	0.0000	0.0794	0.0423	0.0000	0.0423	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0694	0.8050	0.5180	6.2000e-004		0.0391	0.0391		0.0360	0.0360	0.0000	59.4371	59.4371	0.0177	0.0000	59.8098
Total	0.0694	0.8050	0.5180	6.2000e-004	0.0794	0.0391	0.1185	0.0423	0.0360	0.0783	0.0000	59.4371	59.4371	0.0177	0.0000	59.8098

3.4 Grading - 2015

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	0.0177	0.2829	0.2041	6.3000e-004	0.0359	4.4300e-003	0.0403	9.2200e-003	4.0800e-003	0.0133	0.0000	58.3653	58.3653	4.8000e-004	0.0000	58.3753
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	1.0700e-003	1.5500e-003	0.0162	3.0000e-005	2.4100e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.4337	2.4337	1.4000e-004	0.0000	2.4367
Total	0.0187	0.2844	0.2202	6.6000e-004	0.0383	4.4500e-003	0.0427	9.8600e-003	4.1000e-003	0.0140	0.0000	60.7990	60.7990	6.2000e-004	0.0000	60.8120

3.4 Grading - 2016

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					0.2036	0.0000	0.2036	0.1085	0.0000	0.1085	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1298	1.4901	0.9788	1.2200e-003		0.0721	0.0721		0.0663	0.0663	0.0000	114.8937	114.8937	0.0347	0.0000	115.6215
Total	0.1298	1.4901	0.9788	1.2200e-003	0.2036	0.0721	0.2757	0.1085	0.0663	0.1748	0.0000	114.8937	114.8937	0.0347	0.0000	115.6215

3.4 Grading - 2016

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	0.0303	0.4885	0.3702	1.2300e-003	0.0392	6.8700e-003	0.0461	0.0105	6.3200e-003	0.0168	0.0000	112.8172	112.8172	8.4000e-004	0.0000	0.0000	112.8348
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8800e-003	2.7400e-003	0.0286	6.0000e-005	4.7100e-003	5.0000e-005	4.7600e-003	1.2500e-003	4.0000e-005	1.2900e-003	0.0000	4.5979	4.5979	2.6000e-004	0.0000	0.0000	4.6034
Total	0.0322	0.4912	0.3988	1.2900e-003	0.0440	6.9200e-003	0.0509	0.0117	6.3600e-003	0.0181	0.0000	117.4151	117.4151	1.1000e-003	0.0000	0.0000	117.4382

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					0.0794	0.0000	0.0794	0.0423	0.0000	0.0423	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1298	1.4901	0.9788	1.2200e-003		0.0721	0.0721		0.0663	0.0663	0.0000	114.8935	114.8935	0.0347	0.0000	115.6213
Total	0.1298	1.4901	0.9788	1.2200e-003	0.0794	0.0721	0.1515	0.0423	0.0663	0.1086	0.0000	114.8935	114.8935	0.0347	0.0000	115.6213

3.4 Grading - 2016

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	0.0303	0.4885	0.3702	1.2300e-003	0.0392	6.8700e-003	0.0461	0.0105	6.3200e-003	0.0168	0.0000	112.8172	112.8172	8.4000e-004	0.0000	112.8348
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	1.8800e-003	2.7400e-003	0.0286	6.0000e-005	4.7100e-003	5.0000e-005	4.7600e-003	1.2500e-003	4.0000e-005	1.2900e-003	0.0000	4.5979	4.5979	2.6000e-004	0.0000	4.6034
Total	0.0322	0.4912	0.3988	1.2900e-003	0.0440	6.9200e-003	0.0509	0.0117	6.3600e-003	0.0181	0.0000	117.4151	117.4151	1.1000e-003	0.0000	117.4382

3.5 Building Construction - 2016

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	0.3026	2.2935	1.7325	2.3900e-003		0.1775	0.1775		0.1675	0.1675	0.0000	213.2248	213.2248	0.0502	0.0000	214.2782
Total	0.3026	2.2935	1.7325	2.3900e-003		0.1775	0.1775		0.1675	0.1675	0.0000	213.2248	213.2248	0.0502	0.0000	214.2782

3.5 Building Construction - 2016

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	0.0137	0.1396	0.1814	3.3000e-004	9.3600e-003	2.1000e-003	0.0115	2.6700e-003	1.9300e-003	4.6000e-003	0.0000	30.3802	30.3802	2.3000e-004	0.0000	30.3850
Worker	0.0224	0.0327	0.3408	7.1000e-004	0.0561	5.4000e-004	0.0567	0.0149	5.0000e-004	0.0154	0.0000	54.7792	54.7792	3.1100e-003	0.0000	54.8445
Total	0.0361	0.1723	0.5221	1.0400e-003	0.0655	2.6400e-003	0.0681	0.0176	2.4300e-003	0.0200	0.0000	85.1594	85.1594	3.3400e-003	0.0000	85.2295

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	0.3026	2.2935	1.7325	2.3900e-003		0.1775	0.1775		0.1675	0.1675	0.0000	213.2245	213.2245	0.0502	0.0000	214.2780
Total	0.3026	2.2935	1.7325	2.3900e-003		0.1775	0.1775		0.1675	0.1675	0.0000	213.2245	213.2245	0.0502	0.0000	214.2780

3.5 Building Construction - 2016

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	0.0137	0.1396	0.1814	3.3000e-004	9.3600e-003	2.1000e-003	0.0115	2.6700e-003	1.9300e-003	4.6000e-003	0.0000	30.3802	30.3802	2.3000e-004	0.0000	30.3850
Worker	0.0224	0.0327	0.3408	7.1000e-004	0.0561	5.4000e-004	0.0567	0.0149	5.0000e-004	0.0154	0.0000	54.7792	54.7792	3.1100e-003	0.0000	54.8445
Total	0.0361	0.1723	0.5221	1.0400e-003	0.0655	2.6400e-003	0.0681	0.0176	2.4300e-003	0.0200	0.0000	85.1594	85.1594	3.3400e-003	0.0000	85.2295

3.5 Building Construction - 2017

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	0.3296	2.5577	2.0433	2.8400e-003		0.1926	0.1926		0.1816	0.1816	0.0000	251.7564	251.7564	0.0584	0.0000	252.9821
Total	0.3296	2.5577	2.0433	2.8400e-003		0.1926	0.1926		0.1816	0.1816	0.0000	251.7564	251.7564	0.0584	0.0000	252.9821

3.5 Building Construction - 2017

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	0.0000
Vendor	0.0149	0.1517	0.2047	4.0000e-004	0.0112	2.2300e-003	0.0134	3.1900e-003	2.0500e-003	5.2300e-003	0.0000	35.6544	35.6544	2.6000e-004	0.0000	35.6599	
Worker	0.0239	0.0353	0.3671	8.5000e-004	0.0670	6.2000e-004	0.0676	0.0178	5.7000e-004	0.0184	0.0000	62.8846	62.8846	3.4300e-003	0.0000	62.9566	
Total	0.0388	0.1870	0.5717	1.2500e-003	0.0781	2.8500e-003	0.0810	0.0210	2.6200e-003	0.0236	0.0000	98.5390	98.5390	3.6900e-003	0.0000	98.6165	

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	0.3296	2.5577	2.0433	2.8400e-003		0.1926	0.1926		0.1816	0.1816	0.0000	251.7561	251.7561	0.0584	0.0000	252.9818
Total	0.3296	2.5577	2.0433	2.8400e-003		0.1926	0.1926		0.1816	0.1816	0.0000	251.7561	251.7561	0.0584	0.0000	252.9818

3.5 Building Construction - 2017

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	0.0149	0.1517	0.2047	4.0000e-004	0.0112	2.2300e-003	0.0134	3.1900e-003	2.0500e-003	5.2300e-003	0.0000	35.6544	35.6544	2.6000e-004	0.0000	35.6599
Worker	0.0239	0.0353	0.3671	8.5000e-004	0.0670	6.2000e-004	0.0676	0.0178	5.7000e-004	0.0184	0.0000	62.8846	62.8846	3.4300e-003	0.0000	62.9566
Total	0.0388	0.1870	0.5717	1.2500e-003	0.0781	2.8500e-003	0.0810	0.0210	2.6200e-003	0.0236	0.0000	98.5390	98.5390	3.6900e-003	0.0000	98.6165

3.5 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	0.1744	1.3938	1.2299	1.7500e-003		0.0993	0.0993		0.0938	0.0938	0.0000	153.3441	153.3441	0.0351	0.0000	154.0817
Total	0.1744	1.3938	1.2299	1.7500e-003		0.0993	0.0993		0.0938	0.0938	0.0000	153.3441	153.3441	0.0351	0.0000	154.0817

3.5 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	8.6200e-003	0.0858	0.1209	2.5000e-004	6.8700e-003	1.2900e-003	8.1600e-003	1.9600e-003	1.1900e-003	3.1500e-003	0.0000	21.5786	21.5786	1.6000e-004	0.0000	21.5820
Worker	0.0132	0.0197	0.2046	5.2000e-004	0.0412	3.7000e-004	0.0416	0.0109	3.4000e-004	0.0113	0.0000	37.2800	37.2800	1.9600e-003	0.0000	37.3211
Total	0.0218	0.1055	0.3255	7.7000e-004	0.0481	1.6600e-003	0.0497	0.0129	1.5300e-003	0.0144	0.0000	58.8586	58.8586	2.1200e-003	0.0000	58.9031

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	0.1744	1.3938	1.2299	1.7500e-003		0.0993	0.0993		0.0938	0.0938	0.0000	153.3439	153.3439	0.0351	0.0000	154.0815
Total	0.1744	1.3938	1.2299	1.7500e-003		0.0993	0.0993		0.0938	0.0938	0.0000	153.3439	153.3439	0.0351	0.0000	154.0815

3.5 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	8.6200e-003	0.0858	0.1209	2.5000e-004	6.8700e-003	1.2900e-003	8.1600e-003	1.9600e-003	1.1900e-003	3.1500e-003	0.0000	21.5786	21.5786	1.6000e-004	0.0000	21.5820
Worker	0.0132	0.0197	0.2046	5.2000e-004	0.0412	3.7000e-004	0.0416	0.0109	3.4000e-004	0.0113	0.0000	37.2800	37.2800	1.9600e-003	0.0000	37.3211
Total	0.0218	0.1055	0.3255	7.7000e-004	0.0481	1.6600e-003	0.0497	0.0129	1.5300e-003	0.0144	0.0000	58.8586	58.8586	2.1200e-003	0.0000	58.9031

3.6 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	0.0169	0.1802	0.1522	2.3000e-004		9.8600e-003	9.8600e-003		9.0700e-003	9.0700e-003	0.0000	21.3872	21.3872	6.6600e-003	0.0000	21.5270
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0169	0.1802	0.1522	2.3000e-004		9.8600e-003	9.8600e-003		9.0700e-003	9.0700e-003	0.0000	21.3872	21.3872	6.6600e-003	0.0000	21.5270

3.6 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	5.5000e-004	8.3000e-004	8.5700e-003	2.0000e-005	1.7300e-003	2.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5616	1.5616	8.0000e-005	0.0000	1.5633
Total	5.5000e-004	8.3000e-004	8.5700e-003	2.0000e-005	1.7300e-003	2.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5616	1.5616	8.0000e-005	0.0000	1.5633

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	0.0169	0.1802	0.1522	2.3000e-004		9.8600e-003	9.8600e-003		9.0700e-003	9.0700e-003	0.0000	21.3872	21.3872	6.6600e-003	0.0000	21.5270
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0169	0.1802	0.1522	2.3000e-004		9.8600e-003	9.8600e-003		9.0700e-003	9.0700e-003	0.0000	21.3872	21.3872	6.6600e-003	0.0000	21.5270

3.6 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	5.5000e-004	8.3000e-004	8.5700e-003	2.0000e-005	1.7300e-003	2.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5616	1.5616	8.0000e-005	0.0000	1.5633
Total	5.5000e-004	8.3000e-004	8.5700e-003	2.0000e-005	1.7300e-003	2.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.5616	1.5616	8.0000e-005	0.0000	1.5633

3.7 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	0.9222					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4800e-003	0.0301	0.0278	4.0000e-005		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	3.8299	3.8299	3.6000e-004	0.0000	3.8375
Total	0.9266	0.0301	0.0278	4.0000e-005		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	3.8299	3.8299	3.6000e-004	0.0000	3.8375

3.7 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	4.7000e-004	7.1000e-004	7.3500e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.1000e-004	0.0000	1.3385	1.3385	7.0000e-005	0.0000	1.3400
Total	4.7000e-004	7.1000e-004	7.3500e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.1000e-004	0.0000	1.3385	1.3385	7.0000e-005	0.0000	1.3400

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	0.9222					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4800e-003	0.0301	0.0278	4.0000e-005		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	3.8299	3.8299	3.6000e-004	0.0000	3.8375
Total	0.9266	0.0301	0.0278	4.0000e-005		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	3.8299	3.8299	3.6000e-004	0.0000	3.8375

3.7 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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.7000e-004	7.1000e-004	7.3500e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.1000e-004	0.0000	1.3385	1.3385	7.0000e-005	0.0000	1.3400	
Total	4.7000e-004	7.1000e-004	7.3500e-003	2.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.1000e-004	0.0000	1.3385	1.3385	7.0000e-005	0.0000	1.3400	

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

	ROG	NOx	CO	SO2	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	0.7584	2.4304	9.1020	0.0243	1.6163	0.0352	1.6514	0.4329	0.0324	0.4653	0.0000	1,829.6712	1,829.6712	0.0717	0.0000	1,831.1767
Unmitigated	0.7585	2.4312	9.1047	0.0243	1.6169	0.0352	1.6521	0.4331	0.0324	0.4655	0.0000	1,830.3948	1,830.3948	0.0717	0.0000	1,831.9009

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,253.67	1,320.48	1148.87	4,265,435	4,263,707
Total	1,253.67	1,320.48	1,148.87	4,265,435	4,263,707

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
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.531767	0.058060	0.178534	0.124864	0.038964	0.006284	0.016861	0.033134	0.002486	0.003151	0.003685	0.000540	0.001671

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	273.4646	273.4646	0.0126	2.6000e-003	274.5348
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	273.4646	273.4646	0.0126	2.6000e-003	274.5348
NaturalGas Mitigated	0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	208.3282	208.3282	3.9900e-003	3.8200e-003	209.5961
NaturalGas Unmitigated	0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	208.3282	208.3282	3.9900e-003	3.8200e-003	209.5961

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					
Single Family Housing	3.90392e+006	0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	208.3282	208.3282	3.9900e-003	3.8200e-003	209.5961
Total		0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	208.3282	208.3282	3.9900e-003	3.8200e-003	209.5961

5.2 Energy by Land Use - NaturalGas

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					
Single Family Housing	3.90392e+006	0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	208.3282	208.3282	3.9900e-003	3.8200e-003	209.5961
Total		0.0211	0.1799	0.0766	1.1500e-003		0.0145	0.0145		0.0145	0.0145	0.0000	208.3282	208.3282	3.9900e-003	3.8200e-003	209.5961

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	955612	273.4646	0.0126	2.6000e-003	274.5348
Total		273.4646	0.0126	2.6000e-003	274.5348

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	955612	273.4646	0.0126	2.6000e-003	274.5348
Total		273.4646	0.0126	2.6000e-003	274.5348

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0331	0.0223	1.7620	1.3800e-003		0.0748	0.0748		0.0748	0.0748	8.7670	28.9460	37.7130	0.0437	4.9000e-004	38.7823
Unmitigated	1.0331	0.0223	1.7620	1.3800e-003		0.0748	0.0748		0.0748	0.0748	8.7670	28.9460	37.7130	0.0437	4.9000e-004	38.7823

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	0.0922					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0469	6.5500e-003	0.4015	1.3100e-003		0.0673	0.0673		0.0673	0.0673	8.7670	26.7393	35.5062	0.0415	4.9000e-004	36.5296
Landscaping	0.0419	0.0158	1.3605	7.0000e-005		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003	0.0000	2.2068	2.2068	2.1900e-003	0.0000	2.2527
Total	1.0331	0.0223	1.7620	1.3800e-003		0.0748	0.0748		0.0748	0.0748	8.7670	28.9460	37.7130	0.0437	4.9000e-004	38.7823

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	0.0922					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.8521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0469	6.5500e-003	0.4015	1.3100e-003		0.0673	0.0673		0.0673	0.0673	8.7670	26.7393	35.5062	0.0415	4.9000e-004	36.5296
Landscaping	0.0419	0.0158	1.3605	7.0000e-005		7.4300e-003	7.4300e-003		7.4300e-003	7.4300e-003	0.0000	2.2068	2.2068	2.1900e-003	0.0000	2.2527
Total	1.0331	0.0223	1.7620	1.3800e-003		0.0748	0.0748		0.0748	0.0748	8.7670	28.9460	37.7130	0.0437	4.9000e-004	38.7823

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	43.6731	0.2244	5.6400e-003	50.1331
Unmitigated	51.6189	0.2804	7.0300e-003	59.6866

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	8.53518 / 5.38087	51.6189	0.2804	7.0300e-003	59.6866
Total		51.6189	0.2804	7.0300e-003	59.6866

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	6.82814 / 5.05264	43.6731	0.2244	5.6400e- 003	50.1331
Total		43.6731	0.2244	5.6400e- 003	50.1331

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	30.7105	1.8149	0.0000	68.8242
Unmitigated	30.7105	1.8149	0.0000	68.8242

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	151.29	30.7105	1.8149	0.0000	68.8242
Total		30.7105	1.8149	0.0000	68.8242

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	151.29	30.7105	1.8149	0.0000	68.8242
Total		30.7105	1.8149	0.0000	68.8242

9.0 Operational Offroad

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

Air Quality and GHG Appendix

Operational GHG Supplemental N₂O Mobile Calculations

Greenhouse Gas Emission Worksheet
N2O Mobile Emissions

Long Beach Riverwalk Residential Development

From URBEMIS 2007 Vehicle Fleet Mix Output:

Annual VMT: 4,263,707

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	46.0%	0.04	0.0184	0.04	0.0184
Light Truck < 3750 lbs	10.3%	0.05	0.00515	0.06	0.00618
Light Truck 3751-5750 lbs	23.2%	0.05	0.0116	0.06	0.01392
Med Truck 5751-8500 lbs	12.2%	0.12	0.01464	0.2	0.0244
Lite-Heavy Truck 8501-10,000 lbs	2.1%	0.12	0.00252	0.2	0.0042
Lite-Heavy Truck 10,001-14,000 lbs	0.5%	0.09	0.00045	0.125	0.000625
Med-Heavy Truck 14,001-33,000 lbs	1.0%	0.06	0.0006	0.05	0.0005
Heavy-Heavy Truck 33,001-60,000 lbs	2.9%	0.06	0.00174	0.05	0.00145
Other Bus	0.1%	0.06	0.00006	0.05	0.00005
Urban Bus	0.1%	0.06	0.00006	0.05	0.00005
Motorcycle	1.1%	0.09	0.00099	0.01	0.00011
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	0.4%	0.09	0.00036	0.125	0.0005
Total	100.0%		0.05663		0.070435

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4 21 GWP
 N2O 310 GWP
 1 ton (short, US) = 0.90718474 metric ton

Annual Mobile Emissions:

	Total Emissions	Total CO2e units
N2O Emissions:	0.3003 metric tons N2O	93.10 metric tons CO2e
	Project Total: 93.10 metric tons CO2e	

References

- * from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile). in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009. Assume Model year 2000-present, gasoline fueled.
- ** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
- *** From URBEMIS 2007 results for mobile sources