Air Quality (CalEEMod Output) / GHG

APPENDIX B

Envicom Corporation
Attn: Ellen Michiel
4165 E Thousand Oaks Blvd. Suite 290
Westlake Village, CA, 91362

Subject: Los Carneros Updated CalEEMod Construction and Operational Emissions

Dear Ms. Michiel:

As per your request we have updated the construction and operational emissions estimates for the Los Carneros project using CalEEMod 2013.2.2. This memorandum estimates daily and annual construction emissions as well as daily and annual operational emissions. The new analysis is based on the updated version of CalEEMod which uses the latest EMFAC2011 emission factors for mobile source emissions that incorporate Pavley standards and Low Carbon Fuel standards. Construction equipment emissions calculations are likewise based on CARB's EMFAC2011 emission factors. The prior CalEEMod release, utilized in the original analysis, was based on the older CARB EMFAC2007 emission factors.

In addition to utilization of the updated CalEEMod2013.2.2 the new analysis assumes construction commences in 2015 with a build out year of 2018. The initial analysis assumed construction would start in 2012 and that project build out would occur in year 2015. Emissions from both construction equipment and passenger vehicles become cleaner in future years as engines become progressively more efficient and older equipment and vehicles are phased out. Therefore both because the updated CalEEMod version is based on newer emissions data and because construction and project build-out occur three years in the future as compared to the initial analysis, project emissions would be expected to be less than originally anticipated.

As in the initial analysis, construction related emissions are calculated to be below applicable significance thresholds. However, the initial study predicted that mobile source operational emissions could exceed the SBCAPCD standard of 25 pounds per day for NOx. The updated analysis shows that mobile source emissions would be slightly less than the 25 pounds per day threshold and there are no other violations of applicable operational thresholds. Our new findings show that both construction emissions and operational emissions will be less-than-significant.

CalEEMod calculates that the Los Carneros project, consisting of a 5 acre park, 144 apartments, 177 low-rise townhomes, 88 high-rise townhomes and 56 single family residences would have a build out time frame of 3.5 years using model defaults. CalEEMod construction schedules were developed utilizing SCAQMD construction surveys.

Table 1 provides a summary of the default CalEEMod construction equipment and activity durations that were modeled.

Table 1
Project Equipment Fleet

Site Preparation 30 days	3 Dozers
	4 Tractor/Loader/Backhoes
Grading 75 days (5,500 CY Import)	1 Grader
	2 Scrapers
	2 Excavators
	1 Dozer
	2 Tractor/Loader/Backhoes
Construction 740 days	3 Forklifts
	3 Tractor/Loader/Backhoes
	1 Crane
	1 Generator Set
	1 Welder
Paving 55 days	2 Paving Equipment
	2 Pavers
	2 Rollers

Utilizing the prototype equipment fleet and earthworks, listed in Table 1, the following maximal daily emissions were calculated by CalEEMod and are shown in **Table 2**. There are no applicable daily construction emissions thresholds.

Table 2
Construction Activity Emissions (pounds/day)

Activity	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2e
2015							
No Mitigation	35.8	83.0	66.4	0.0	21.3	12.8	8610.5
With Mitigation	35.8	83.0	66.4	0.0	10.3	6.8	8610.5
2016							
No Mitigation	35.0	40.3	60.7	0.1	7.2	3.5	8403.5
With Mitigation	35.0	40.3	60.7	0.1	7.2	3.5	8403.5
2017							
No Mitigation	34.3	37.0	55.6	0.1	7.0	3.3	8191.9
With Mitigation	34.3	37.0	55.6	0.1	7.0	3.3	8191.9
2018							
No Mitigation	34.3	37.0	55.6	0.1	6.7	3.3	8191.9
With Mitigation	34.3	37.0	55.6	0.1	6.7	3.3	8191.9
Source: CalEEMod 2013.2.2 Output Attached.							

Threshold guidelines for all emissions from construction equipment are established by the SBCAPCD on a tons per year basis. The total timeframe for the construction period was determined by CalEEMod to be approximately 3.5 years. As shown in **Table 3**, peak annual construction activity emissions would be below SBCAPCD threshold guidelines of 25 tons per year for ROG and NO_x. Because of the area's non-attainment status for PM_{10}, SBCAPCD requires fugitive dust control mitigation measures for any project involving earth-moving activities. The only modeled mitigation measure was the requirement to water exposed surfaces at least three times daily.

Table 3
Construction Activity Emissions (tons/year)

Activity	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2e
2015							
No Mitigation	2.3	6.3	6.4	0.0	1.9	0.7	722.0
With Mitigation	2.3	6.3	6.5	0.0	0.8	0.5	722.0
2016							
No Mitigation	4.6	5.3	8.3	0.0	0.9	0.5	983.5
With Mitigation	4.6	5.3	8.3	0.0	0.9	0.5	983.5
2017							
No Mitigation	4.5	4.9	7.6	0.0	0.9	0.4	955.2
With Mitigation	4.5	4.9	7.6	0.0	0.9	0.4	955.2
2018							
No Mitigation	1.9	2.4	3.5	0.0	0.4	0.2	464.3
With Mitigation	1.9	2.4	3.5	0.0	0.4	0.2	464.3
APCD Guideline	25	25	-	-	-	-	-
Source: CalEEMod 2013.2.2 Output Attached.							

Operational mobile and area source emissions for the Project were likewise updated using CalEEMod2013.2.2 incorporating the trip generation factors specified in the Project's traffic study. Area source emissions from the residential activities combined with vehicular operational emissions for the increase of daily trips to/from the site were examined. The Project is predicted to generate 2,903 new trip-ends per day. Project operational emissions are primarily associated with traffic generated by the Project's 465 residential units.

Table 4 summarizes project operational emissions and provides a comparison with the applicable SBCAPCD operation emissions thresholds indicated below:

- Less than 240 pounds per day or more of ROG and NO_x from all sources;
- Less than 25 pounds per day or more of unmitigated ROG from motor vehicle trips only;
- Less than 25 pounds per day or more of unmitigated NO_x from motor vehicle trips only;
- Less than 80 pounds per day or more of PM_{10}.

Table 4
Project Operations - Mobile and Area Source Emissions

	Emissions (lbs./day)						
Year 2018	**ROG**	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
Area Sources	22.6	0.4	38.6	0.0	0.2	0.2	70.5
Mobile Sources	9.8	24.3	107.3	0.2	17.2	4.8	1,8585.1
Energy Sources	0.2	1.8	0.8	0.0	0.1	0.1	2,286.7
Total	32.6	26.5	146.7	0.2	17.6	5.1	20,942.3
APCD Threshold Mobile Sources	25	25	N/A	N/A	NA	N/A	N/A
APCD Threshold All Operational Sources	240	240	N/A	N/A	80	N/A	N/A
Exceeds Thresholds	No	No	N/A	N/A	No	N/A	N/A
Source: CalEEMod 2013.2.2 Output Attached.							

The Project's emissions would not exceed significance thresholds based on an assumed full build out and occupancy date of 2018. Operational impacts are less than significant.

The new CalEEMod runs also changes GHG emission estimates. Annual GHG emissions are calculated to be as follows:

Annual Operational Emissions

Source	**CO_2e Emissions Metric Tons/yr**
Area	5.8
Energy	965.8
Mobile	2,995.7
Waste	114.1
Water	91.0
Total	**4,172.4**
CalEEMod output attached	

The adopted GHG threshold for this project is 4.6 MT CO_2e/SP/yr. For this project the service population is determined to be 1,348 residents (2.6 persons per unit) and 20 employees that would be onsite to manage and maintain the residential facilities (as estimated by the applicant), resulting in a total service population of 1,368 persons. As such, the project would produce 3.0 MT CO_2e/service population/year (residents + employees), which is less than the threshold of 4.6 MT CO_2e per service population per year threshold.

Please call with any questions.

Sincerely,

Hans D. Giroux

Senior Analyst
Giroux & Associates

Los Carneros Mit

Santa Barbara-South of Santa Ynez Range County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.00	Acre	5.00	217,800.00	0
Apartments Mid Rise	144.00	Dwelling Unit	3.79	144,000.00	392
Condo/Townhouse	177.00	Dwelling Unit	11.06	177,000.00	481
Condo/Townhouse High Rise	88.00	Dwelling Unit	1.38	88,000.00	239
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	152

1.2 Other Project Characteristics

Urbanization Urban | **Wind Speed (m/s)** 2.7 | **Precipitation Freq (Days)** 37

Climate Zone 8 | **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 -

Construction Phase - Prep: 30 days, Grading: 75 days, COnstruction 740 days, Paving 55 days

Off-road Equipment -

Off-road Equipment - Construction: 1 Crane, 3 Forklifts, 1 Gen Set, 3 Loader/Backhoes, 1 Welder

Off-road Equipment - Grading: 2 Excavators, 1 Grader, 1 Dozer, 2 Scrappers, 2 Loader/Backhoes

Off-road Equipment - Paving: 2 Pavers, 2 Paving Equipment, 2 Rollers

Off-road Equipment - Prep: 3 dozers, 4 loaders

Grading - 5500 CY Import

Vehicle Trips - Trip Generation provided in project Traffic Report

Construction Off-road Equipment Mitigation - Tier 3 Mitigation crane, excavator, forklift, grader, dozer, scraper, backhoe

Area Mitigation -

Water Mitigation - Water Conservation: low flow faucets, showers and toilet

Trips and VMT - 30 mile haul trip length

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	PhaseEndDate	4/7/2021	6/6/2018
tblConstructionPhase	PhaseEndDate	8/22/2018	8/23/2018
tblConstructionPhase	PhaseStartDate	6/7/2018	8/6/2015
tblConstructionPhase	PhaseStartDate	6/7/2018	6/8/2018
tblGrading	MaterialImported	0.00	5,500.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	7.16	5.81
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.81
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	6.59	5.81
tblVehicleTrips	WD_TR	6.59	4.18

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	35.7689	82.9735	66.3557	0.0926	18.2346	3.8614	21.3243	9.9753	3.5525	12.8178	0.0000	8,569.4588	8,569.4588	1.9546	0.0000	8,610.5050
2016	35.0204	40.2930	60.7271	0.0925	4.9089	2.2833	7.1923	1.3089	2.1544	3.4633	0.0000	8,383.2983	8,383.2983	0.9589	0.0000	8,403.4342
2017	34.2845	37.0090	55.6038	0.0924	4.9090	2.0585	6.9675	1.3089	1.9418	3.2507	0.0000	8,172.6439	8,172.6439	0.9149	0.0000	8,191.8569
2018	33.4962	32.8868	51.1310	0.0923	4.9089	1.7415	6.6505	1.3088	1.6443	2.9532	0.0000	7,972.6546	7,972.6546	0.8791	0.0000	7,991.1166
Total	**138.5699**	**193.1623**	**233.8176**	**0.3698**	**32.9615**	**9.9448**	**42.1345**	**13.9019**	**9.2930**	**22.4850**	**0.0000**	**33,098.0556**	**33,098.0556**	**4.7075**	**0.0000**	**33,196.9126**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	33.8835	33.7066	65.7401	0.0926	7.2142	1.4918	8.1767	3.9176	1.4795	4.8799	0.0000	8,569.4588	8,569.4588	1.9546	0.0000	8,610.5050
2016	33.2493	27.9034	60.2556	0.0925	4.9089	1.3856	6.2945	1.3089	1.3756	2.6845	0.0000	8,383.2983	8,383.2983	0.9589	0.0000	8,403.4342
2017	32.6869	26.2882	55.4232	0.0924	4.9090	1.2944	6.2034	1.3089	1.2859	2.5948	0.0000	8,172.6439	8,172.6439	0.9149	0.0000	8,191.8569
2018	32.2084	24.9012	51.4669	0.0923	4.9089	1.2117	6.1206	1.3088	1.2040	2.5128	0.0000	7,972.6546	7,972.6546	0.8791	0.0000	7,991.1166
Total	**132.0280**	**112.7993**	**232.8859**	**0.3698**	**21.9410**	**5.3834**	**26.7951**	**7.8442**	**5.3450**	**12.6720**	**0.0000**	**33,098.0555**	**33,098.0555**	**4.7075**	**0.0000**	**33,196.9126**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**4.72**	**41.60**	**0.40**	**0.00**	**33.43**	**45.87**	**36.41**	**43.57**	**42.48**	**43.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.5143	0.4484	38.6349	2.0300e-003		0.2109	0.2109		0.2109	0.2109	0.0000	69.0779	69.0779	0.0685	0.0000	70.5156
Energy	0.2084	1.7804	0.7576	0.0114		0.1440	0.1440		0.1440	0.1440		2,272.8552	2,272.8552	0.0436	0.0417	2,286.6874
Mobile	9.8901	24.2508	107.3085	0.2264	16.9256	0.2994	17.2250	4.5245	0.2758	4.8003		18,568.1143	18,568.1143	0.8102		18,585.1294
Total	**32.6128**	**26.4797**	**146.7010**	**0.2398**	**16.9256**	**0.6542**	**17.5798**	**4.5245**	**0.6306**	**5.1551**	**0.0000**	**20,910.0474**	**20,910.0474**	**0.9223**	**0.0417**	**20,942.3324**

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	22.5143	0.4484	38.6349	2.0300e-003		0.2109	0.2109		0.2109	0.2109	0.0000	69.0779	69.0779	0.0685	0.0000	70.5156
Energy	0.2084	1.7804	0.7576	0.0114		0.1440	0.1440		0.1440	0.1440		2,272.8552	2,272.8552	0.0436	0.0417	2,286.6874
Mobile	9.8901	24.2508	107.3085	0.2264	16.9256	0.2994	17.2250	4.5245	0.2758	4.8003		18,568.1143	18,568.1143	0.8102		18,585.1294
Total	**32.6128**	**26.4797**	**146.7010**	**0.2398**	**16.9256**	**0.6542**	**17.5798**	**4.5245**	**0.6306**	**5.1551**	**0.0000**	**20,910.0474**	**20,910.0474**	**0.9223**	**0.0417**	**20,942.3324**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/12/2015	4/22/2015	5	30	
2	Grading	Grading	4/23/2015	8/5/2015	5	75	
3	Building Construction	Building Construction	8/6/2015	6/6/2018	5	740	
4	Architectural Coating	Architectural Coating	8/6/2015	6/6/2018	5	740	
5	Paving	Paving	6/8/2018	8/23/2018	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 1,032,345; Residential Outdoor: 344,115; Non-Residential Indoor: 326,700; Non-Residential Outdoor: 108,900 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	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
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	544.00	12.30	4.60	30.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	406.00	85.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	81.00	0.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 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		4,111.744 4	4,111.744 4	1.2275		4,137.522 5
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.744 4**	**4,111.744 4**	**1.2275**		**4,137.522 5**

3.2 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	0.0000	0.0000	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	0.0864	0.1332	1.2510	1.8300e-003	0.1684	1.3900e-003	0.1698	0.0447	1.2500e-003	0.0459		157.9671	157.9671	0.0105		158.1876
Total	**0.0864**	**0.1332**	**1.2510**	**1.8300e-003**	**0.1684**	**1.3900e-003**	**0.1698**	**0.0447**	**1.2500e-003**	**0.0459**		**157.9671**	**157.9671**	**0.0105**		**158.1876**

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					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	0.9515	19.4584	23.4003	0.0391		0.9611	0.9611		0.9611	0.9611	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**0.9515**	**19.4584**	**23.4003**	**0.0391**	**7.0458**	**0.9611**	**8.0069**	**3.8730**	**0.9611**	**4.8340**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

3.2 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	0.0000	0.0000	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	0.0864	0.1332	1.2510	1.8300e-003	0.1684	1.3900e-003	0.1698	0.0447	1.2500e-003	0.0459		157.9671	157.9671	0.0105		158.1876
Total	**0.0864**	**0.1332**	**1.2510**	**1.8300e-003**	**0.1684**	**1.3900e-003**	**0.1698**	**0.0447**	**1.2500e-003**	**0.0459**		**157.9671**	**157.9671**	**0.0105**		**158.1876**

3.3 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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			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**	**8.6733**	**3.8022**	**12.4755**	**3.5965**	**3.4980**	**7.0945**		**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

3.3 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	0.2388	3.7788	2.7309	7.9500e-003	0.1881	0.0577	0.2458	0.0514	0.0531	0.1045		807.7206	807.7206	6.5000e-003		807.8572
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	0.0960	0.1480	1.3900	2.0400e-003	0.1871	1.5400e-003	0.1886	0.0496	1.3900e-003	0.0510		175.5190	175.5190	0.0117		175.7640
Total	**0.3348**	**3.9268**	**4.1209**	**9.9900e-003**	**0.3752**	**0.0593**	**0.4345**	**0.1010**	**0.0545**	**0.1555**		**983.2396**	**983.2396**	**0.0182**		**983.6211**

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					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	1.5128	29.7798	37.9432	0.0618		1.3234	1.3234		1.3234	1.3234	0.0000	6,486.2433	6,486.2433	1.9364		6,526.9080
Total	**1.5128**	**29.7798**	**37.9432**	**0.0618**	**3.3826**	**1.3234**	**4.7060**	**1.4026**	**1.3234**	**2.7260**	**0.0000**	**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

3.3 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	0.2388	3.7788	2.7309	7.9500e-003	0.1881	0.0577	0.2458	0.0514	0.0531	0.1045		807.7206	807.7206	6.5000e-003		807.8572
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	0.0960	0.1480	1.3900	2.0400e-003	0.1871	1.5400e-003	0.1886	0.0496	1.3900e-003	0.0510		175.5190	175.5190	0.0117		175.7640
Total	**0.3348**	**3.9268**	**4.1209**	**9.9900e-003**	**0.3752**	**0.0593**	**0.4345**	**0.1010**	**0.0545**	**0.1555**		**983.2396**	**983.2396**	**0.0182**		**983.6211**

3.4 Building Construction - 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	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.4 Building Construction - 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	0.9910	7.0841	11.8629	0.0132	0.3533	0.1072	0.4604	0.1006	0.0985	0.1990		1,324.545 3	1,324.545 3	0.0126		1,324.809 3
Worker	1.9489	3.0039	28.2170	0.0414	3.7979	0.0313	3.8291	1.0073	0.0283	1.0356		3,563.036 2	3,563.036 2	0.2368		3,568.008 2
Total	**2.9398**	**10.0880**	**40.0799**	**0.0546**	**4.1512**	**0.1384**	**4.2896**	**1.1079**	**0.1267**	**1.2346**		**4,887.581 5**	**4,887.581 5**	**0.2493**		**4,892.817 5**

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	1.7736	16.5749	18.1290	0.0268		1.1263	1.1263		1.1263	1.1263	0.0000	2,689.577 1	2,689.577 1	0.6748		2,703.748 3
Total	**1.7736**	**16.5749**	**18.1290**	**0.0268**		**1.1263**	**1.1263**		**1.1263**	**1.1263**	**0.0000**	**2,689.577 1**	**2,689.577 1**	**0.6748**		**2,703.748 3**

3.4 Building Construction - 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	0.9910	7.0841	11.8629	0.0132	0.3533	0.1072	0.4604	0.1006	0.0985	0.1990		1,324.545 3	1,324.545 3	0.0126		1,324.809 3
Worker	1.9489	3.0039	28.2170	0.0414	3.7979	0.0313	3.8291	1.0073	0.0283	1.0356		3,563.036 2	3,563.036 2	0.2368		3,568.008 2
Total	**2.9398**	**10.0880**	**40.0799**	**0.0546**	**4.1512**	**0.1384**	**4.2896**	**1.1079**	**0.1267**	**1.2346**		**4,887.581 5**	**4,887.581 5**	**0.2493**		**4,892.817 5**

3.4 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**

3.4 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	0.8622	6.2539	10.8118	0.0132	0.3534	0.0848	0.4382	0.1006	0.0779	0.1785		1,310.3583	1,310.3583	0.0109		1,310.5878
Worker	1.6747	2.6348	24.6141	0.0413	3.7979	0.0288	3.8266	1.0073	0.0262	1.0335		3,436.5821	3,436.5821	0.2107		3,441.0064
Total	**2.5369**	**8.8888**	**35.4259**	**0.0545**	**4.1512**	**0.1136**	**4.2648**	**1.1079**	**0.1041**	**1.2120**		**4,746.9403**	**4,746.9403**	**0.2216**		**4,751.5942**

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	1.6352	16.1167	18.0351	0.0268		1.0696	1.0696		1.0696	1.0696	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**1.6352**	**16.1167**	**18.0351**	**0.0268**		**1.0696**	**1.0696**		**1.0696**	**1.0696**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.4 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	0.8622	6.2539	10.8118	0.0132	0.3534	0.0848	0.4382	0.1006	0.0779	0.1785		1,310.3583	1,310.3583	0.0109		1,310.5878
Worker	1.6747	2.6348	24.6141	0.0413	3.7979	0.0288	3.8266	1.0073	0.0262	1.0335		3,436.5821	3,436.5821	0.2107		3,441.0064
Total	**2.5369**	**8.8888**	**35.4259**	**0.0545**	**4.1512**	**0.1136**	**4.2648**	**1.1079**	**0.1041**	**1.2120**		**4,746.9403**	**4,746.9403**	**0.2216**		**4,751.5942**

3.4 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**

3.4 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	0.7700	5.6498	9.9824	0.0131	0.3534	0.0718	0.4253	0.1006	0.0660	0.1666		1,289.2154	1,289.2154	0.0103		1,289.4307
Worker	1.4215	2.3081	21.3623	0.0413	3.7979	0.0268	3.8247	1.0073	0.0246	1.0319		3,303.1686	3,303.1686	0.1878		3,307.1119
Total	**2.1915**	**7.9579**	**31.3447**	**0.0544**	**4.1513**	**0.0987**	**4.2499**	**1.1079**	**0.0906**	**1.1985**		**4,592.3840**	**4,592.3840**	**0.1980**		**4,596.5425**

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	1.5048	15.6848	17.9486	0.0268		1.0170	1.0170		1.0170	1.0170	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**1.5048**	**15.6848**	**17.9486**	**0.0268**		**1.0170**	**1.0170**		**1.0170**	**1.0170**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.4 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	0.7700	5.6498	9.9824	0.0131	0.3534	0.0718	0.4253	0.1006	0.0660	0.1666		1,289.215 4	1,289.215 4	0.0103		1,289.430 7
Worker	1.4215	2.3081	21.3623	0.0413	3.7979	0.0268	3.8247	1.0073	0.0246	1.0319		3,303.168 6	3,303.168 6	0.1878		3,307.111 9
Total	**2.1915**	**7.9579**	**31.3447**	**0.0544**	**4.1513**	**0.0987**	**4.2499**	**1.1079**	**0.0906**	**1.1985**		**4,592.384 0**	**4,592.384 0**	**0.1980**		**4,596.542 5**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.939 0	2,609.939 0	0.6387		2,623.351 7
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.939 0**	**2,609.939 0**	**0.6387**		**2,623.351 7**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.6816	5.1647	9.1644	0.0131	0.3534	0.0661	0.4195	0.1006	0.0608	0.1614		1,266.995 4	1,266.995 4	0.0101		1,267.206 7
Worker	1.2276	2.0471	18.8242	0.0412	3.7979	0.0255	3.8234	1.0073	0.0235	1.0308		3,179.865 1	3,179.865 1	0.1698		3,183.430 2
Total	**1.9093**	**7.2118**	**27.9886**	**0.0543**	**4.1512**	**0.0916**	**4.2428**	**1.1079**	**0.0843**	**1.1922**		**4,446.860 5**	**4,446.860 5**	**0.1798**		**4,450.636 9**

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	1.3809	15.2752	17.8686	0.0268		0.9644	0.9644		0.9644	0.9644	0.0000	2,609.938 9	2,609.938 9	0.6387		2,623.351 7
Total	**1.3809**	**15.2752**	**17.8686**	**0.0268**		**0.9644**	**0.9644**		**0.9644**	**0.9644**	**0.0000**	**2,609.938 9**	**2,609.938 9**	**0.6387**		**2,623.351 7**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	0.6816	5.1647	9.1644	0.0131	0.3534	0.0661	0.4195	0.1006	0.0608	0.1614		1,266.9954	1,266.9954	0.0101		1,267.2067
Worker	1.2276	2.0471	18.8242	0.0412	3.7979	0.0255	3.8234	1.0073	0.0235	1.0308		3,179.8651	3,179.8651	0.1698		3,183.4302
Total	**1.9093**	**7.2118**	**27.9886**	**0.0543**	**4.1512**	**0.0916**	**4.2428**	**1.1079**	**0.0843**	**1.1922**		**4,446.8605**	**4,446.8605**	**0.1798**		**4,450.6369**

3.5 Architectural Coating - 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					
Archit. Coating	28.3747					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**28.7813**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

3.5 Architectural Coating - 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	0.3888	0.5993	5.6295	8.2500e-003	0.7577	6.2400e-003	0.7639	0.2010	5.6400e-003	0.2066		710.8521	710.8521	0.0472		711.8440
Total	**0.3888**	**0.5993**	**5.6295**	**8.2500e-003**	**0.7577**	**6.2400e-003**	**0.7639**	**0.2010**	**5.6400e-003**	**0.2066**		**710.8521**	**710.8521**	**0.0472**		**711.8440**

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	28.3747					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**28.7813**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

3.5 Architectural Coating - 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	0.3888	0.5993	5.6295	8.2500e-003	0.7577	6.2400e-003	0.7639	0.2010	5.6400e-003	0.2066		710.8521	710.8521	0.0472		711.8440
Total	**0.3888**	**0.5993**	**5.6295**	**8.2500e-003**	**0.7577**	**6.2400e-003**	**0.7639**	**0.2010**	**5.6400e-003**	**0.2066**		**710.8521**	**710.8521**	**0.0472**		**711.8440**

3.5 Architectural Coating - 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					
Archit. Coating	28.3747					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**28.7431**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.5 Architectural Coating - 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	0.0000	0.0000	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	0.3341	0.5257	4.9107	8.2400e-003	0.7577	5.7400e-003	0.7634	0.2010	5.2300e-003	0.2062		685.6235	685.6235	0.0420		686.5062
Total	**0.3341**	**0.5257**	**4.9107**	**8.2400e-003**	**0.7577**	**5.7400e-003**	**0.7634**	**0.2010**	**5.2300e-003**	**0.2062**		**685.6235**	**685.6235**	**0.0420**		**686.5062**

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	28.3747					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**28.7431**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.5 Architectural Coating - 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	0.0000	0.0000	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	0.3341	0.5257	4.9107	8.2400e-003	0.7577	5.7400e-003	0.7634	0.2010	5.2300e-003	0.2062		685.6235	685.6235	0.0420		686.5062
Total	**0.3341**	**0.5257**	**4.9107**	**8.2400e-003**	**0.7577**	**5.7400e-003**	**0.7634**	**0.2010**	**5.2300e-003**	**0.2062**		**685.6235**	**685.6235**	**0.0420**		**686.5062**

3.5 Architectural Coating - 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					
Archit. Coating	28.3747					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**28.7070**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.5 Architectural Coating - 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	0.0000	0.0000	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	0.2836	0.4605	4.2619	8.2300e-003	0.7577	5.3500e-003	0.7631	0.2010	4.9000e-003	0.2059		659.0066	659.0066	0.0375		659.7933
Total	**0.2836**	**0.4605**	**4.2619**	**8.2300e-003**	**0.7577**	**5.3500e-003**	**0.7631**	**0.2010**	**4.9000e-003**	**0.2059**		**659.0066**	**659.0066**	**0.0375**		**659.7933**

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	28.3747					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**28.7070**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.5 Architectural Coating - 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	0.0000	0.0000	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	0.2836	0.4605	4.2619	8.2300e-003	0.7577	5.3500e-003	0.7631	0.2010	4.9000e-003	0.2059		659.0066	659.0066	0.0375		659.7933
Total	**0.2836**	**0.4605**	**4.2619**	**8.2300e-003**	**0.7577**	**5.3500e-003**	**0.7631**	**0.2010**	**4.9000e-003**	**0.2059**		**659.0066**	**659.0066**	**0.0375**		**659.7933**

3.5 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	28.3747					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	**28.6733**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 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	0.2449	0.4084	3.7556	8.2200e-003	0.7577	5.0900e-003	0.7628	0.2010	4.7000e-003	0.2057		634.4066	634.4066	0.0339		635.1179
Total	**0.2449**	**0.4084**	**3.7556**	**8.2200e-003**	**0.7577**	**5.0900e-003**	**0.7628**	**0.2010**	**4.7000e-003**	**0.2057**		**634.4066**	**634.4066**	**0.0339**		**635.1179**

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	28.3747					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	**28.6733**	**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**

3.5 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	0.2449	0.4084	3.7556	8.2200e-003	0.7577	5.0900e-003	0.7628	0.2010	4.7000e-003	0.2057		634.4066	634.4066	0.0339		635.1179
Total	**0.2449**	**0.4084**	**3.7556**	**8.2200e-003**	**0.7577**	**5.0900e-003**	**0.7628**	**0.2010**	**4.7000e-003**	**0.2057**		**634.4066**	**634.4066**	**0.0339**		**635.1179**

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	0.0454	0.0756	0.6955	1.5200e-003	0.1403	9.4000e-004	0.1413	0.0372	8.7000e-004	0.0381		117.4827	117.4827	6.2700e-003		117.6144
Total	**0.0454**	**0.0756**	**0.6955**	**1.5200e-003**	**0.1403**	**9.4000e-004**	**0.1413**	**0.0372**	**8.7000e-004**	**0.0381**		**117.4827**	**117.4827**	**6.2700e-003**		**117.6144**

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	2,245.269 5	2,245.269 5	0.6990		2,259.948 1
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**	**2,245.269 5**	**2,245.269 5**	**0.6990**		**2,259.948 1**

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	0.0454	0.0756	0.6955	1.5200e-003	0.1403	9.4000e-004	0.1413	0.0372	8.7000e-004	0.0381		117.4827	117.4827	6.2700e-003		117.6144
Total	**0.0454**	**0.0756**	**0.6955**	**1.5200e-003**	**0.1403**	**9.4000e-004**	**0.1413**	**0.0372**	**8.7000e-004**	**0.0381**		**117.4827**	**117.4827**	**6.2700e-003**		**117.6144**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.8901	24.2508	107.3085	0.2264	16.9256	0.2994	17.2250	4.5245	0.2758	4.8003		18,568.1143	18,568.1143	0.8102		18,585.1294
Unmitigated	9.8901	24.2508	107.3085	0.2264	16.9256	0.2994	17.2250	4.5245	0.2758	4.8003		18,568.1143	18,568.1143	0.8102		18,585.1294

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	957.60	957.60	874.08	2,609,224	2,609,224
City Park	7.95	7.95	7.95	12,663	12,663
Condo/Townhouse	1,028.37	1,028.37	1028.37	2,837,408	2,837,408
Condo/Townhouse High Rise	367.84	367.84	367.84	1,014,919	1,014,919
Single Family Housing	535.92	535.92	491.12	1,461,015	1,461,015
Total	2,897.68	2,897.68	2,769.36	7,935,229	7,935,229

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3
City Park	8.80	4.60	4.60	33.00	48.00	19.00	66	28	6
Condo/Townhouse	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3
Condo/Townhouse High Rise	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3
Single Family Housing	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488429	0.036082	0.211732	0.154985	0.049882	0.007459	0.020077	0.014399	0.001917	0.002182	0.008131	0.001589	0.003135

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2084	1.7804	0.7576	0.0114		0.1440	0.1440		0.1440	0.1440		2,272.8552	2,272.8552	0.0436	0.0417	2,286.6874
NaturalGas Unmitigated	0.2084	1.7804	0.7576	0.0114		0.1440	0.1440		0.1440	0.1440		2,272.8552	2,272.8552	0.0436	0.0417	2,286.6874

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					
Condo/Townhouse	7674.12	0.0828	0.7072	0.3010	4.5100e-003		0.0572	0.0572		0.0572	0.0572		902.8381	902.8381	0.0173	0.0166	908.3326
Condo/Townhouse High Rise	3815.38	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8686	448.8686	8.6000e-003	8.2300e-003	451.6004
Single Family Housing	4431.44	0.0478	0.4084	0.1738	2.6100e-003		0.0330	0.0330		0.0330	0.0330		521.3460	521.3460	9.9900e-003	9.5600e-003	524.5188
Apartments Mid Rise	3398.32	0.0367	0.3132	0.1333	2.0000e-003		0.0253	0.0253		0.0253	0.0253		399.8025	399.8025	7.6600e-003	7.3300e-003	402.2356
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2084**	**1.7804**	**0.7576**	**0.0114**		**0.1440**	**0.1440**		**0.1440**	**0.1440**		**2,272.8552**	**2,272.8552**	**0.0436**	**0.0417**	**2,286.6874**

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					
Condo/Townhouse	7.67412	0.0828	0.7072	0.3010	4.5100e-003		0.0572	0.0572		0.0572	0.0572		902.8381	902.8381	0.0173	0.0166	908.3326
Condo/Townhouse High Rise	3.81538	0.0412	0.3516	0.1496	2.2400e-003		0.0284	0.0284		0.0284	0.0284		448.8686	448.8686	8.6000e-003	8.2300e-003	451.6004
Single Family Housing	4.43144	0.0478	0.4084	0.1738	2.6100e-003		0.0330	0.0330		0.0330	0.0330		521.3460	521.3460	9.9900e-003	9.5600e-003	524.5188
Apartments Mid Rise	3.39832	0.0367	0.3132	0.1333	2.0000e-003		0.0253	0.0253		0.0253	0.0253		399.8025	399.8025	7.6600e-003	7.3300e-003	402.2356
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2084**	**1.7804**	**0.7576**	**0.0114**		**0.1440**	**0.1440**		**0.1440**	**0.1440**		**2,272.8552**	**2,272.8552**	**0.0436**	**0.0417**	**2,286.6874**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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	22.5143	0.4484	38.6349	2.0300e-003		0.2109	0.2109		0.2109	0.2109	0.0000	69.0779	69.0779	0.0685	0.0000	70.5156
Unmitigated	22.5143	0.4484	38.6349	2.0300e-003		0.2109	0.2109		0.2109	0.2109	0.0000	69.0779	69.0779	0.0685	0.0000	70.5156

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	5.7527					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5706					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1910	0.4484	38.6349	2.0300e-003		0.2109	0.2109		0.2109	0.2109		69.0779	69.0779	0.0685		70.5156
Total	**22.5143**	**0.4484**	**38.6349**	**2.0300e-003**		**0.2109**	**0.2109**		**0.2109**	**0.2109**	**0.0000**	**69.0779**	**69.0779**	**0.0685**	**0.0000**	**70.5156**

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	5.7527					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	15.5706					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1910	0.4484	38.6349	2.0300e-003		0.2109	0.2109		0.2109	0.2109		69.0779	69.0779	0.0685		70.5156
Total	**22.5143**	**0.4484**	**38.6349**	**2.0300e-003**		**0.2109**	**0.2109**		**0.2109**	**0.2109**	**0.0000**	**69.0779**	**69.0779**	**0.0685**	**0.0000**	**70.5156**

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

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

10.0 Vegetation

Los Carneros Mit

Santa Barbara-South of Santa Ynez Range County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	5.00	Acre	5.00	217,800.00	0
Apartments Mid Rise	144.00	Dwelling Unit	3.79	144,000.00	392
Condo/Townhouse	177.00	Dwelling Unit	11.06	177,000.00	481
Condo/Townhouse High Rise	88.00	Dwelling Unit	1.38	88,000.00	239
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	152

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**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 -

Construction Phase - Prep: 30 days, Grading: 75 days, COnstruction 740 days, Paving 55 days

Off-road Equipment -

Off-road Equipment - Construction: 1 Crane, 3 Forklifts, 1 Gen Set, 3 Loader/Backhoes, 1 Welder

Off-road Equipment - Grading: 2 Excavators, 1 Grader, 1 Dozer, 2 Scrappers, 2 Loader/Backhoes

Off-road Equipment - Paving: 2 Pavers, 2 Paving Equipment, 2 Rollers

Off-road Equipment - Prep: 3 dozers, 4 loaders

Grading - 5500 CY Import

Vehicle Trips - Trip Generation provided in project Traffic Report

Construction Off-road Equipment Mitigation - Tier 3 Mitigation crane, excavator, forklift, grader, dozer, scraper, backhoe

Area Mitigation -

Water Mitigation - Water Conservation: low flow faucets, showers and toilet

Trips and VMT - 30 mile haul trip length

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	55.00	740.00
tblConstructionPhase	PhaseEndDate	4/7/2021	6/6/2018
tblConstructionPhase	PhaseEndDate	8/22/2018	8/23/2018
tblConstructionPhase	PhaseStartDate	6/7/2018	8/6/2015
tblConstructionPhase	PhaseStartDate	6/7/2018	6/8/2018
tblGrading	MaterialImported	0.00	5,500.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblVehicleTrips	ST_TR	7.16	6.65
tblVehicleTrips	ST_TR	7.16	5.81
tblVehicleTrips	ST_TR	7.16	4.18
tblVehicleTrips	ST_TR	10.08	9.57
tblVehicleTrips	SU_TR	6.07	5.81
tblVehicleTrips	SU_TR	6.07	4.18
tblVehicleTrips	WD_TR	6.59	6.65
tblVehicleTrips	WD_TR	6.59	5.81
tblVehicleTrips	WD_TR	6.59	4.18

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	2.2547	6.3020	6.4477	8.1500e-003	0.8670	0.3228	1.1898	0.3562	0.3001	0.6563	0.0000	719.2742	719.2742	0.1318	0.0000	722.0424
2016	4.5931	5.3327	8.3609	0.0119	0.6267	0.2981	0.9247	0.1674	0.2812	0.4486	0.0000	981.1064	981.1064	0.1135	0.0000	983.4907
2017	4.4754	4.8766	7.6199	0.0119	0.6243	0.2677	0.8920	0.1667	0.2525	0.4193	0.0000	952.8975	952.8975	0.1079	0.0000	955.1638
2018	1.9444	2.3578	3.4630	5.8100e-003	0.2751	0.1243	0.3994	0.0735	0.1167	0.1902	0.0000	462.9372	462.9372	0.0627	0.0000	464.2532
Total	**13.2676**	**18.8691**	**25.8915**	**0.0378**	**2.3930**	**1.0128**	**3.4058**	**0.7638**	**0.9506**	**1.7143**	**0.0000**	**3,116.2154**	**3,116.2154**	**0.4159**	**0.0000**	**3,124.9501**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	1.8928	3.1799	5.6429	8.1500e-003	0.5033	0.1454	0.6487	0.1830	0.1446	0.3276	0.0000	719.2737	719.2737	0.1318	0.0000	722.0419
2016	4.3620	3.7158	8.2994	0.0119	0.6267	0.1809	0.8076	0.1674	0.1796	0.3470	0.0000	981.1060	981.1060	0.1135	0.0000	983.4903
2017	4.2677	3.4829	7.5964	0.0119	0.6243	0.1683	0.7926	0.1667	0.1672	0.3340	0.0000	952.8971	952.8971	0.1079	0.0000	955.1634
2018	1.8716	1.9066	3.4820	5.8100e-003	0.2751	0.0943	0.3694	0.0735	0.0918	0.1653	0.0000	462.9370	462.9370	0.0627	0.0000	464.2529
Total	**12.3941**	**12.2852**	**25.0207**	**0.0378**	**2.0293**	**0.5890**	**2.6183**	**0.5906**	**0.5832**	**1.1739**	**0.0000**	**3,116.2138**	**3,116.2138**	**0.4159**	**0.0000**	**3,124.9485**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.58**	**34.89**	**3.36**	**0.00**	**15.20**	**41.84**	**23.12**	**22.67**	**38.65**	**31.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.9987	0.0404	3.4771	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6400	5.6400	5.5900e-003	0.0000	5.7574
Energy	0.0380	0.3249	0.1383	2.0700e-003		0.0263	0.0263		0.0263	0.0263	0.0000	961.2222	961.2222	0.0341	0.0125	965.8014
Mobile	1.8435	4.6875	20.6026	0.0402	2.9945	0.0542	3.0487	0.8019	0.0499	0.8519	0.0000	2,992.8668	2,992.8668	0.1328	0.0000	2,995.6557
Waste						0.0000	0.0000		0.0000	0.0000	50.9284	0.0000	50.9284	3.0098	0.0000	114.1338
Water						0.0000	0.0000		0.0000	0.0000	10.7190	72.0099	82.7289	0.0402	0.0240	91.0117
Total	**5.8802**	**5.0527**	**24.2180**	**0.0425**	**2.9945**	**0.0995**	**3.0939**	**0.8019**	**0.0952**	**0.8971**	**61.6474**	**4,031.7389**	**4,093.3863**	**3.2225**	**0.0365**	**4,172.3600**

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	3.9987	0.0404	3.4771	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6400	5.6400	5.5900e-003	0.0000	5.7574
Energy	0.0380	0.3249	0.1383	2.0700e-003		0.0263	0.0263		0.0263	0.0263	0.0000	961.2222	961.2222	0.0341	0.0125	965.8014
Mobile	1.8435	4.6875	20.6026	0.0402	2.9945	0.0542	3.0487	0.8019	0.0499	0.8519	0.0000	2,992.8668	2,992.8668	0.1328	0.0000	2,995.6557
Waste						0.0000	0.0000		0.0000	0.0000	50.9284	0.0000	50.9284	3.0098	0.0000	114.1338
Water						0.0000	0.0000		0.0000	0.0000	8.5752	62.6274	71.2026	0.0322	0.0192	77.8347
Total	**5.8802**	**5.0527**	**24.2180**	**0.0425**	**2.9945**	**0.0995**	**3.0939**	**0.8019**	**0.0952**	**0.8971**	**59.5036**	**4,022.3564**	**4,081.8599**	**3.2145**	**0.0317**	**4,159.1830**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.48**	**0.23**	**0.28**	**0.25**	**13.14**	**0.32**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/12/2015	4/22/2015	5	30	
2	Grading	Grading	4/23/2015	8/5/2015	5	75	
3	Building Construction	Building Construction	8/6/2015	6/6/2018	5	740	
4	Architectural Coating	Architectural Coating	8/6/2015	6/6/2018	5	740	
5	Paving	Paving	6/8/2018	8/23/2018	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0

Residential Indoor: 1,032,345; Residential Outdoor: 344,115; Non-Residential Indoor: 326,700; Non-Residential Outdoor: 108,900 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	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
Architectural Coating	Air Compressors	1	6.00	78	0.48
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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	544.00	12.30	4.60	30.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	406.00	85.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	81.00	0.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.30	4.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 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					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0789	0.8533	0.6395	5.9000e-004		0.0463	0.0463		0.0426	0.0426	0.0000	55.9517	55.9517	0.0167	0.0000	56.3025
Total	**0.0789**	**0.8533**	**0.6395**	**5.9000e-004**	**0.2710**	**0.0463**	**0.3173**	**0.1490**	**0.0426**	**0.1916**	**0.0000**	**55.9517**	**55.9517**	**0.0167**	**0.0000**	**56.3025**

3.2 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	2.2400e-003	0.0193	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.1030	2.1030	1.4000e-004	0.0000	2.1060
Total	**1.3400e-003**	**2.2400e-003**	**0.0193**	**3.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4900e-003**	**6.6000e-004**	**2.0000e-005**	**6.8000e-004**	**0.0000**	**2.1030**	**2.1030**	**1.4000e-004**	**0.0000**	**2.1060**

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					0.1057	0.0000	0.1057	0.0581	0.0000	0.0581	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.2919	0.3510	5.9000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	55.9516	55.9516	0.0167	0.0000	56.3024
Total	**0.0143**	**0.2919**	**0.3510**	**5.9000e-004**	**0.1057**	**0.0144**	**0.1201**	**0.0581**	**0.0144**	**0.0725**	**0.0000**	**55.9516**	**55.9516**	**0.0167**	**0.0000**	**56.3024**

3.2 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3400e-003	2.2400e-003	0.0193	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.8000e-004	0.0000	2.1030	2.1030	1.4000e-004	0.0000	2.1060
Total	**1.3400e-003**	**2.2400e-003**	**0.0193**	**3.0000e-005**	**2.4700e-003**	**2.0000e-005**	**2.4900e-003**	**6.6000e-004**	**2.0000e-005**	**6.8000e-004**	**0.0000**	**2.1030**	**2.1030**	**1.4000e-004**	**0.0000**	**2.1060**

3.3 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					0.3253	0.0000	0.3253	0.1349	0.0000	0.1349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2541	2.9643	1.9065	2.3200e-003		0.1426	0.1426		0.1312	0.1312	0.0000	220.6583	220.6583	0.0659	0.0000	222.0417
Total	**0.2541**	**2.9643**	**1.9065**	**2.3200e-003**	**0.3253**	**0.1426**	**0.4678**	**0.1349**	**0.1312**	**0.2661**	**0.0000**	**220.6583**	**220.6583**	**0.0659**	**0.0000**	**222.0417**

3.3 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	9.5900e-003	0.1472	0.1154	3.0000e-004	6.9200e-003	2.1700e-003	9.0800e-003	1.8900e-003	1.9900e-003	3.8900e-003	0.0000	27.4598	27.4598	2.2000e-004	0.0000	27.4644
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7200e-003	6.2300e-003	0.0536	7.0000e-005	6.8600e-003	6.0000e-005	6.9200e-003	1.8200e-003	5.0000e-005	1.8800e-003	0.0000	5.8417	5.8417	4.0000e-004	0.0000	5.8500
Total	**0.0133**	**0.1534**	**0.1690**	**3.7000e-004**	**0.0138**	**2.2300e-003**	**0.0160**	**3.7100e-003**	**2.0400e-003**	**5.7700e-003**	**0.0000**	**33.3015**	**33.3015**	**6.2000e-004**	**0.0000**	**33.3145**

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					0.1269	0.0000	0.1269	0.0526	0.0000	0.0526	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0567	1.1167	1.4229	2.3200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	220.6580	220.6580	0.0659	0.0000	222.0414
Total	**0.0567**	**1.1167**	**1.4229**	**2.3200e-003**	**0.1269**	**0.0496**	**0.1765**	**0.0526**	**0.0496**	**0.1022**	**0.0000**	**220.6580**	**220.6580**	**0.0659**	**0.0000**	**222.0414**

3.3 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	9.5900e-003	0.1472	0.1154	3.0000e-004	6.9200e-003	2.1700e-003	9.0800e-003	1.8900e-003	1.9900e-003	3.8900e-003	0.0000	27.4598	27.4598	2.2000e-004	0.0000	27.4644
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7200e-003	6.2300e-003	0.0536	7.0000e-005	6.8600e-003	6.0000e-005	6.9200e-003	1.8200e-003	5.0000e-005	1.8800e-003	0.0000	5.8417	5.8417	4.0000e-004	0.0000	5.8500
Total	**0.0133**	**0.1534**	**0.1690**	**3.7000e-004**	**0.0138**	**2.2300e-003**	**0.0160**	**3.7100e-003**	**2.0400e-003**	**5.7700e-003**	**0.0000**	**33.3015**	**33.3015**	**6.2000e-004**	**0.0000**	**33.3145**

3.4 Building Construction - 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	0.1939	1.5916	0.9935	1.4200e-003		0.1122	0.1122		0.1055	0.1055	0.0000	129.3170	129.3170	0.0325	0.0000	129.9984
Total	**0.1939**	**1.5916**	**0.9935**	**1.4200e-003**		**0.1122**	**0.1122**		**0.1055**	**0.1055**	**0.0000**	**129.3170**	**129.3170**	**0.0325**	**0.0000**	**129.9984**

3.4 Building Construction - 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
Vendor	0.0598	0.3867	0.7736	7.0000e-004	0.0184	5.7300e-003	0.0241	5.2400e-003	5.2700e-003	0.0105	0.0000	63.3705	63.3705	6.1000e-004	0.0000	63.3834
Worker	0.1067	0.1786	1.5386	2.1500e-003	0.1969	1.6600e-003	0.1985	0.0523	1.5000e-003	0.0538	0.0000	167.6022	167.6022	0.0114	0.0000	167.8412
Total	**0.1665**	**0.5653**	**2.3122**	**2.8500e-003**	**0.2152**	**7.3900e-003**	**0.2226**	**0.0575**	**6.7700e-003**	**0.0643**	**0.0000**	**230.9727**	**230.9727**	**0.0120**	**0.0000**	**231.2246**

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	0.0940	0.8785	0.9608	1.4200e-003		0.0597	0.0597		0.0597	0.0597	0.0000	129.3168	129.3168	0.0325	0.0000	129.9982
Total	**0.0940**	**0.8785**	**0.9608**	**1.4200e-003**		**0.0597**	**0.0597**		**0.0597**	**0.0597**	**0.0000**	**129.3168**	**129.3168**	**0.0325**	**0.0000**	**129.9982**

3.4 Building Construction - 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	0.0598	0.3867	0.7736	7.0000e-004	0.0184	5.7300e-003	0.0241	5.2400e-003	5.2700e-003	0.0105	0.0000	63.3705	63.3705	6.1000e-004	0.0000	63.3834
Worker	0.1067	0.1786	1.5386	2.1500e-003	0.1969	1.6600e-003	0.1985	0.0523	1.5000e-003	0.0538	0.0000	167.6022	167.6022	0.0114	0.0000	167.8412
Total	**0.1665**	**0.5653**	**2.3122**	**2.8500e-003**	**0.2152**	**7.3900e-003**	**0.2226**	**0.0575**	**6.7700e-003**	**0.0643**	**0.0000**	**230.9727**	**230.9727**	**0.0120**	**0.0000**	**231.2246**

3.4 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	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0104	316.0104	0.0784	0.0000	317.6563
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0104**	**316.0104**	**0.0784**	**0.0000**	**317.6563**

3.4 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	0.1279	0.8402	1.7552	1.7100e-003	0.0453	0.0112	0.0564	0.0129	0.0103	0.0232	0.0000	154.3596	154.3596	1.3100e-003	0.0000	154.3872
Worker	0.2248	0.3859	3.2886	5.2800e-003	0.4847	3.7600e-003	0.4885	0.1288	3.4200e-003	0.1322	0.0000	398.0104	398.0104	0.0249	0.0000	398.5342
Total	**0.3527**	**1.2260**	**5.0438**	**6.9900e-003**	**0.5300**	**0.0149**	**0.5449**	**0.1417**	**0.0137**	**0.1554**	**0.0000**	**552.3700**	**552.3700**	**0.0263**	**0.0000**	**552.9214**

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	0.2134	2.1032	2.3536	3.5000e-003		0.1396	0.1396		0.1396	0.1396	0.0000	316.0101	316.0101	0.0784	0.0000	317.6560
Total	**0.2134**	**2.1032**	**2.3536**	**3.5000e-003**		**0.1396**	**0.1396**		**0.1396**	**0.1396**	**0.0000**	**316.0101**	**316.0101**	**0.0784**	**0.0000**	**317.6560**

3.4 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	0.1279	0.8402	1.7552	1.7100e-003	0.0453	0.0112	0.0564	0.0129	0.0103	0.0232	0.0000	154.3596	154.3596	1.3100e-003	0.0000	154.3872
Worker	0.2248	0.3859	3.2886	5.2800e-003	0.4847	3.7600e-003	0.4885	0.1288	3.4200e-003	0.1322	0.0000	398.0104	398.0104	0.0249	0.0000	398.5342
Total	**0.3527**	**1.2260**	**5.0438**	**6.9900e-003**	**0.5300**	**0.0149**	**0.5449**	**0.1417**	**0.0137**	**0.1554**	**0.0000**	**552.3700**	**552.3700**	**0.0263**	**0.0000**	**552.9214**

3.4 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	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

3.4 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
Vendor	0.1134	0.7558	1.6313	1.7000e-003	0.0451	9.4100e-003	0.0545	0.0129	8.6500e-003	0.0215	0.0000	151.2848	151.2848	1.2300e-003	0.0000	151.3106
Worker	0.1891	0.3368	2.8253	5.2500e-003	0.4829	3.4900e-003	0.4863	0.1283	3.1900e-003	0.1315	0.0000	381.0711	381.0711	0.0221	0.0000	381.5361
Total	**0.3024**	**1.0926**	**4.4566**	**6.9500e-003**	**0.5279**	**0.0129**	**0.5408**	**0.1412**	**0.0118**	**0.1530**	**0.0000**	**532.3559**	**532.3559**	**0.0234**	**0.0000**	**532.8467**

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	0.1956	2.0390	2.3333	3.4900e-003		0.1322	0.1322		0.1322	0.1322	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.1956**	**2.0390**	**2.3333**	**3.4900e-003**		**0.1322**	**0.1322**		**0.1322**	**0.1322**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

3.4 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	0.1134	0.7558	1.6313	1.7000e-003	0.0451	9.4100e-003	0.0545	0.0129	8.6500e-003	0.0215	0.0000	151.2848	151.2848	1.2300e-003	0.0000	151.3106
Worker	0.1891	0.3368	2.8253	5.2500e-003	0.4829	3.4900e-003	0.4863	0.1283	3.1900e-003	0.1315	0.0000	381.0711	381.0711	0.0221	0.0000	381.5361
Total	**0.3024**	**1.0926**	**4.4566**	**6.9500e-003**	**0.5279**	**0.0129**	**0.5408**	**0.1412**	**0.0118**	**0.1530**	**0.0000**	**532.3559**	**532.3559**	**0.0234**	**0.0000**	**532.8467**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1508	1.3142	0.9906	1.5100e-003		0.0844	0.0844		0.0794	0.0794	0.0000	133.7749	133.7749	0.0327	0.0000	134.4624
Total	**0.1508**	**1.3142**	**0.9906**	**1.5100e-003**		**0.0844**	**0.0844**		**0.0794**	**0.0794**	**0.0000**	**133.7749**	**133.7749**	**0.0327**	**0.0000**	**134.4624**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0433	0.3002	0.6592	7.4000e-004	0.0196	3.7600e-003	0.0234	5.5900e-003	3.4600e-003	9.0500e-003	0.0000	64.6166	64.6166	5.2000e-004	0.0000	64.6276
Worker	0.0706	0.1299	1.0759	2.2800e-003	0.2099	1.4400e-003	0.2113	0.0558	1.3300e-003	0.0571	0.0000	159.4312	159.4312	8.7000e-003	0.0000	159.6139
Total	**0.1139**	**0.4300**	**1.7351**	**3.0200e-003**	**0.2294**	**5.2000e-003**	**0.2347**	**0.0613**	**4.7900e-003**	**0.0661**	**0.0000**	**224.0477**	**224.0477**	**9.2200e-003**	**0.0000**	**224.2415**

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	0.0780	0.8631	1.0096	1.5100e-003		0.0545	0.0545		0.0545	0.0545	0.0000	133.7747	133.7747	0.0327	0.0000	134.4622
Total	**0.0780**	**0.8631**	**1.0096**	**1.5100e-003**		**0.0545**	**0.0545**		**0.0545**	**0.0545**	**0.0000**	**133.7747**	**133.7747**	**0.0327**	**0.0000**	**134.4622**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0433	0.3002	0.6592	7.4000e-004	0.0196	3.7600e-003	0.0234	5.5900e-003	3.4600e-003	9.0500e-003	0.0000	64.6166	64.6166	5.2000e-004	0.0000	64.6276
Worker	0.0706	0.1299	1.0759	2.2800e-003	0.2099	1.4400e-003	0.2113	0.0558	1.3300e-003	0.0571	0.0000	159.4312	159.4312	8.7000e-003	0.0000	159.6139
Total	**0.1139**	**0.4300**	**1.7351**	**3.0200e-003**	**0.2294**	**5.2000e-003**	**0.2347**	**0.0613**	**4.7900e-003**	**0.0661**	**0.0000**	**224.0477**	**224.0477**	**9.2200e-003**	**0.0000**	**224.2415**

3.5 Architectural Coating - 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					
Archit. Coating	1.5039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0216	0.1362	0.1008	1.6000e-004		0.0117	0.0117		0.0117	0.0117	0.0000	13.5322	13.5322	1.7600e-003	0.0000	13.5693
Total	**1.5254**	**0.1362**	**0.1008**	**1.6000e-004**		**0.0117**	**0.0117**		**0.0117**	**0.0117**	**0.0000**	**13.5322**	**13.5322**	**1.7600e-003**	**0.0000**	**13.5693**

3.5 Architectural Coating - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0213	0.0356	0.3070	4.3000e-004	0.0393	3.3000e-004	0.0396	0.0104	3.0000e-004	0.0107	0.0000	33.4379	33.4379	2.2700e-003	0.0000	33.4856
Total	**0.0213**	**0.0356**	**0.3070**	**4.3000e-004**	**0.0393**	**3.3000e-004**	**0.0396**	**0.0104**	**3.0000e-004**	**0.0107**	**0.0000**	**33.4379**	**33.4379**	**2.2700e-003**	**0.0000**	**33.4856**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5039					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0216	0.1362	0.1008	1.6000e-004		0.0117	0.0117		0.0117	0.0117	0.0000	13.5322	13.5322	1.7600e-003	0.0000	13.5692
Total	**1.5254**	**0.1362**	**0.1008**	**1.6000e-004**		**0.0117**	**0.0117**		**0.0117**	**0.0117**	**0.0000**	**13.5322**	**13.5322**	**1.7600e-003**	**0.0000**	**13.5692**

3.5 Architectural Coating - 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	0.0213	0.0356	0.3070	4.3000e-004	0.0393	3.3000e-004	0.0396	0.0104	3.0000e-004	0.0107	0.0000	33.4379	33.4379	2.2700e-003	0.0000	33.4856
Total	**0.0213**	**0.0356**	**0.3070**	**4.3000e-004**	**0.0393**	**3.3000e-004**	**0.0396**	**0.0104**	**3.0000e-004**	**0.0107**	**0.0000**	**33.4379**	**33.4379**	**2.2700e-003**	**0.0000**	**33.4856**

3.5 Architectural Coating - 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					
Archit. Coating	3.7029					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0481	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3200	33.3200	3.9300e-003	0.0000	33.4025
Total	**3.7510**	**0.3096**	**0.2459**	**3.9000e-004**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**33.3200**	**33.3200**	**3.9300e-003**	**0.0000**	**33.4025**

3.5 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	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	0.0449	0.0770	0.6561	1.0500e-003	0.0967	7.5000e-004	0.0975	0.0257	6.8000e-004	0.0264	0.0000	79.4060	79.4060	4.9800e-003	0.0000	79.5105
Total	**0.0449**	**0.0770**	**0.6561**	**1.0500e-003**	**0.0967**	**7.5000e-004**	**0.0975**	**0.0257**	**6.8000e-004**	**0.0264**	**0.0000**	**79.4060**	**79.4060**	**4.9800e-003**	**0.0000**	**79.5105**

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	3.7029					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0481	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3199	33.3199	3.9300e-003	0.0000	33.4024
Total	**3.7510**	**0.3096**	**0.2459**	**3.9000e-004**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**33.3199**	**33.3199**	**3.9300e-003**	**0.0000**	**33.4024**

3.5 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	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	0.0449	0.0770	0.6561	1.0500e-003	0.0967	7.5000e-004	0.0975	0.0257	6.8000e-004	0.0264	0.0000	79.4060	79.4060	4.9800e-003	0.0000	79.5105
Total	**0.0449**	**0.0770**	**0.6561**	**1.0500e-003**	**0.0967**	**7.5000e-004**	**0.0975**	**0.0257**	**6.8000e-004**	**0.0264**	**0.0000**	**79.4060**	**79.4060**	**4.9800e-003**	**0.0000**	**79.5105**

3.5 Architectural Coating - 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					
Archit. Coating	3.6887					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0432	0.2841	0.2429	3.9000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total	**3.7319**	**0.2841**	**0.2429**	**3.9000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

3.5 Architectural Coating - 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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0672	0.5637	1.0500e-003	0.0963	7.0000e-004	0.0970	0.0256	6.4000e-004	0.0262	0.0000	76.0265	76.0265	4.4200e-003	0.0000	76.1193
Total	**0.0377**	**0.0672**	**0.5637**	**1.0500e-003**	**0.0963**	**7.0000e-004**	**0.0970**	**0.0256**	**6.4000e-004**	**0.0262**	**0.0000**	**76.0265**	**76.0265**	**4.4200e-003**	**0.0000**	**76.1193**

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	3.6887					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0432	0.2841	0.2429	3.9000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total	**3.7319**	**0.2841**	**0.2429**	**3.9000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

3.5 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	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	0.0377	0.0672	0.5637	1.0500e-003	0.0963	7.0000e-004	0.0970	0.0256	6.4000e-004	0.0262	0.0000	76.0265	76.0265	4.4200e-003	0.0000	76.1193
Total	**0.0377**	**0.0672**	**0.5637**	**1.0500e-003**	**0.0963**	**7.0000e-004**	**0.0970**	**0.0256**	**6.4000e-004**	**0.0262**	**0.0000**	**76.0265**	**76.0265**	**4.4200e-003**	**0.0000**	**76.1193**

3.5 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	1.6032					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1133	0.1048	1.7000e-004		8.5100e-003	8.5100e-003		8.5100e-003	8.5100e-003	0.0000	14.4259	14.4259	1.3700e-003	0.0000	14.4547
Total	**1.6200**	**0.1133**	**0.1048**	**1.7000e-004**		**8.5100e-003**	**8.5100e-003**		**8.5100e-003**	**8.5100e-003**	**0.0000**	**14.4259**	**14.4259**	**1.3700e-003**	**0.0000**	**14.4547**

3.5 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	0.0141	0.0259	0.2146	4.5000e-004	0.0419	2.9000e-004	0.0422	0.0111	2.7000e-004	0.0114	0.0000	31.8077	31.8077	1.7400e-003	0.0000	31.8442
Total	**0.0141**	**0.0259**	**0.2146**	**4.5000e-004**	**0.0419**	**2.9000e-004**	**0.0422**	**0.0111**	**2.7000e-004**	**0.0114**	**0.0000**	**31.8077**	**31.8077**	**1.7400e-003**	**0.0000**	**31.8442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6032					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1133	0.1048	1.7000e-004		8.5100e-003	8.5100e-003		8.5100e-003	8.5100e-003	0.0000	14.4259	14.4259	1.3700e-003	0.0000	14.4547
Total	**1.6200**	**0.1133**	**0.1048**	**1.7000e-004**		**8.5100e-003**	**8.5100e-003**		**8.5100e-003**	**8.5100e-003**	**0.0000**	**14.4259**	**14.4259**	**1.3700e-003**	**0.0000**	**14.4547**

3.5 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0141	0.0259	0.2146	4.5000e-004	0.0419	2.9000e-004	0.0422	0.0111	2.7000e-004	0.0114	0.0000	31.8077	31.8077	1.7400e-003	0.0000	31.8442
Total	**0.0141**	**0.0259**	**0.2146**	**4.5000e-004**	**0.0419**	**2.9000e-004**	**0.0422**	**0.0111**	**2.7000e-004**	**0.0114**	**0.0000**	**31.8077**	**31.8077**	**1.7400e-003**	**0.0000**	**31.8442**

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	0.0443	0.4720	0.3986	6.1000e-004		0.0258	0.0258		0.0238	0.0238	0.0000	56.0140	56.0140	0.0174	0.0000	56.3802
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0443**	**0.4720**	**0.3986**	**6.1000e-004**		**0.0258**	**0.0258**		**0.0238**	**0.0238**	**0.0000**	**56.0140**	**56.0140**	**0.0174**	**0.0000**	**56.3802**

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	1.2700e-003	2.3400e-003	0.0194	4.0000e-005	3.7700e-003	3.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	2.8670	2.8670	1.6000e-004	0.0000	2.8703
Total	**1.2700e-003**	**2.3400e-003**	**0.0194**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.8000e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.8670**	**2.8670**	**1.6000e-004**	**0.0000**	**2.8703**

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	0.0443	0.4720	0.3986	6.1000e-004		0.0258	0.0258		0.0238	0.0238	0.0000	56.0140	56.0140	0.0174	0.0000	56.3802
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0443**	**0.4720**	**0.3986**	**6.1000e-004**		**0.0258**	**0.0258**		**0.0238**	**0.0238**	**0.0000**	**56.0140**	**56.0140**	**0.0174**	**0.0000**	**56.3802**

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	1.2700e-003	2.3400e-003	0.0194	4.0000e-005	3.7700e-003	3.0000e-005	3.8000e-003	1.0000e-003	2.0000e-005	1.0300e-003	0.0000	2.8670	2.8670	1.6000e-004	0.0000	2.8703
Total	**1.2700e-003**	**2.3400e-003**	**0.0194**	**4.0000e-005**	**3.7700e-003**	**3.0000e-005**	**3.8000e-003**	**1.0000e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.8670**	**2.8670**	**1.6000e-004**	**0.0000**	**2.8703**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8435	4.6875	20.6026	0.0402	2.9945	0.0542	3.0487	0.8019	0.0499	0.8519	0.0000	2,992.8668	2,992.8668	0.1328	0.0000	2,995.6557
Unmitigated	1.8435	4.6875	20.6026	0.0402	2.9945	0.0542	3.0487	0.8019	0.0499	0.8519	0.0000	2,992.8668	2,992.8668	0.1328	0.0000	2,995.6557

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	957.60	957.60	874.08	2,609,224	2,609,224
City Park	7.95	7.95	7.95	12,663	12,663
Condo/Townhouse	1,028.37	1,028.37	1028.37	2,837,408	2,837,408
Condo/Townhouse High Rise	367.84	367.84	367.84	1,014,919	1,014,919
Single Family Housing	535.92	535.92	491.12	1,461,015	1,461,015
Total	2,897.68	2,897.68	2,769.36	7,935,229	7,935,229

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3
City Park	8.80	4.60	4.60	33.00	48.00	19.00	66	28	6
Condo/Townhouse	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3
Condo/Townhouse High Rise	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3
Single Family Housing	12.30	5.90	6.40	37.50	15.00	47.50	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.488429	0.036082	0.211732	0.154985	0.049882	0.007459	0.020077	0.014399	0.001917	0.002182	0.008131	0.001589	0.003135

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	584.9255	584.9255	0.0269	5.5600e-003	587.2147
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	584.9255	584.9255	0.0269	5.5600e-003	587.2147
NaturalGas Mitigated	0.0380	0.3249	0.1383	2.0700e-003		0.0263	0.0263		0.0263	0.0263	0.0000	376.2967	376.2967	7.2100e-003	6.9000e-003	378.5868
NaturalGas Unmitigated	0.0380	0.3249	0.1383	2.0700e-003		0.0263	0.0263		0.0263	0.0263	0.0000	376.2967	376.2967	7.2100e-003	6.9000e-003	378.5868

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.80106e+006	0.0151	0.1291	0.0549	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	149.4750	149.4750	2.8600e-003	2.7400e-003	150.3847
Condo/Townhouse High Rise	1.39261e+006	7.5100e-003	0.0642	0.0273	4.1000e-004		5.1900e-003	5.1900e-003		5.1900e-003	5.1900e-003	0.0000	74.3152	74.3152	1.4200e-003	1.3600e-003	74.7675
Single Family Housing	1.61748e+006	8.7200e-003	0.0745	0.0317	4.8000e-004		6.0300e-003	6.0300e-003		6.0300e-003	6.0300e-003	0.0000	86.3147	86.3147	1.6500e-003	1.5800e-003	86.8400
Apartments Mid Rise	1.24039e+006	6.6900e-003	0.0572	0.0243	3.6000e-004		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	66.1918	66.1918	1.2700e-003	1.2100e-003	66.5946
Total		**0.0380**	**0.3249**	**0.1383**	**2.0700e-003**		**0.0263**	**0.0263**		**0.0263**	**0.0263**	**0.0000**	**376.2967**	**376.2967**	**7.2000e-003**	**6.8900e-003**	**378.5868**

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					
Condo/Townhouse	2.80106e+006	0.0151	0.1291	0.0549	8.2000e-004		0.0104	0.0104		0.0104	0.0104	0.0000	149.4750	149.4750	2.8600e-003	2.7400e-003	150.3847
Condo/Townhouse High Rise	1.39261e+006	7.5100e-003	0.0642	0.0273	4.1000e-004		5.1900e-003	5.1900e-003		5.1900e-003	5.1900e-003	0.0000	74.3152	74.3152	1.4200e-003	1.3600e-003	74.7675
Single Family Housing	1.61748e+006	8.7200e-003	0.0745	0.0317	4.8000e-004		6.0300e-003	6.0300e-003		6.0300e-003	6.0300e-003	0.0000	86.3147	86.3147	1.6500e-003	1.5800e-003	86.8400
Apartments Mid Rise	1.24039e+006	6.6900e-003	0.0572	0.0243	3.6000e-004		4.6200e-003	4.6200e-003		4.6200e-003	4.6200e-003	0.0000	66.1918	66.1918	1.2700e-003	1.2100e-003	66.5946
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0380**	**0.3249**	**0.1383**	**2.0700e-003**		**0.0263**	**0.0263**		**0.0263**	**0.0263**	**0.0000**	**376.2967**	**376.2967**	**7.2000e-003**	**6.8900e-003**	**378.5868**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	500953	143.3562	6.5900e-003	1.3600e-003	143.9172
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	765460	219.0492	0.0101	2.0800e-003	219.9064
Condo/Townhouse High Rise	380567	108.9058	5.0100e-003	1.0400e-003	109.3320
Single Family Housing	397022	113.6144	5.2200e-003	1.0800e-003	114.0591
Total		**584.9255**	**0.0269**	**5.5600e-003**	**587.2147**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	500953	143.3562	6.5900e-003	1.3600e-003	143.9172
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	765460	219.0492	0.0101	2.0800e-003	219.9064
Condo/Townhouse High Rise	380567	108.9058	5.0100e-003	1.0400e-003	109.3320
Single Family Housing	397022	113.6144	5.2200e-003	1.0800e-003	114.0591
Total		**584.9255**	**0.0269**	**5.5600e-003**	**587.2147**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.9987	0.0404	3.4771	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6400	5.6400	5.5900e-003	0.0000	5.7574
Unmitigated	3.9987	0.0404	3.4771	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6400	5.6400	5.5900e-003	0.0000	5.7574

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	1.0499					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8416					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1072	0.0404	3.4771	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6400	5.6400	5.5900e-003	0.0000	5.7574
Total	**3.9987**	**0.0404**	**3.4771**	**1.8000e-004**		**0.0190**	**0.0190**		**0.0190**	**0.0190**	**0.0000**	**5.6400**	**5.6400**	**5.5900e-003**	**0.0000**	**5.7574**

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	1.0499					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8416					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1072	0.0404	3.4771	1.8000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	5.6400	5.6400	5.5900e-003	0.0000	5.7574
Total	**3.9987**	**0.0404**	**3.4771**	**1.8000e-004**		**0.0190**	**0.0190**		**0.0190**	**0.0190**	**0.0000**	**5.6400**	**5.6400**	**5.5900e-003**	**0.0000**	**5.7574**

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	71.2026	0.0322	0.0192	77.8347
Unmitigated	82.7289	0.0402	0.0240	91.0117

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	9.38218 / 5.91485	23.7715	0.0124	7.4100e-003	26.3292
City Park	0 / 5.95741	5.9668	2.7000e-004	6.0000e-005	5.9902
Condo/Townhouse	11.5323 / 7.27034	29.2191	0.0152	9.1100e-003	32.3630
Condo/Townhouse High Rise	5.73355 / 3.61463	14.5270	7.5600e-003	4.5300e-003	16.0901
Single Family Housing	3.64863 / 2.30022	9.2445	4.8100e-003	2.8800e-003	10.2392
Total		**82.7289**	**0.0402**	**0.0240**	**91.0117**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	7.50574 / 5.91485	20.2020	9.9000e-003	5.9300e-003	22.2486
City Park	0 / 5.95741	5.9668	2.7000e-004	6.0000e-005	5.9902
Condo/Townhouse	9.22581 / 7.27034	24.8317	0.0122	7.2900e-003	27.3473
Condo/Townhouse High Rise	4.58684 / 3.61463	12.3457	6.0500e-003	3.6200e-003	13.5964
Single Family Housing	2.9189 / 2.30022	7.8563	3.8500e-003	2.3100e-003	8.6523
Total		**71.2026**	**0.0322**	**0.0192**	**77.8348**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	50.9284	3.0098	0.0000	114.1338
Unmitigated	50.9284	3.0098	0.0000	114.1338

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	66.24	13.4461	0.7946	0.0000	30.1336
City Park	0.43	0.0873	5.1600e-003	0.0000	0.1956
Condo/Townhouse	81.42	16.5275	0.9768	0.0000	37.0393
Condo/Townhouse High Rise	40.48	8.2171	0.4856	0.0000	18.4150
Single Family Housing	62.32	12.6504	0.7476	0.0000	28.3504
Total		**50.9284**	**3.0098**	**0.0000**	**114.1338**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	66.24	13.4461	0.7946	0.0000	30.1336
City Park	0.43	0.0873	5.1600e-003	0.0000	0.1956
Condo/Townhouse	81.42	16.5275	0.9768	0.0000	37.0393
Condo/Townhouse High Rise	40.48	8.2171	0.4856	0.0000	18.4150
Single Family Housing	62.32	12.6504	0.7476	0.0000	28.3504
Total		**50.9284**	**3.0098**	**0.0000**	**114.1338**

9.0 Operational Offroad

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

10.0 Vegetation

Los Carneros

Santa Barbara-South of Santa Ynez Range County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
City Park	5	Acre
Apartments Low Rise	144	Dwelling Unit
Condo/Townhouse	177	Dwelling Unit
Condo/Townhouse High Rise	88	Dwelling Unit
Single Family Housing	56	Dwelling Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	37		

1.3 User Entered Comments

Project Characteristics -

Land Use -

Construction Phase -

Trips and VMT - Estiamted round trip distance (30 miles) greater than default of 20 miles

Grading -

Vehicle Trips - Trip Generation Factors provided by traffic consultant for project

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Energy Mitigation -

Area Mitigation -

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					
2012	1.42	9.22	8.30	0.01	2.10	0.48	2.59	0.30	0.48	0.79	0.00	1,096.38	1,096.38	0.11	0.00	1,098.73
2013	1.12	5.61	7.84	0.01	0.57	0.33	0.90	0.03	0.33	0.36	0.00	926.10	926.10	0.09	0.00	927.95
2014	1.03	5.18	7.37	0.01	0.57	0.30	0.87	0.03	0.30	0.32	0.00	919.61	919.61	0.08	0.00	921.30
2015	8.35	2.04	2.44	0.00	0.16	0.14	0.30	0.01	0.14	0.15	0.00	314.62	314.62	0.03	0.00	315.27
Total	**11.92**	**22.05**	**25.95**	**0.03**	**3.40**	**1.25**	**4.66**	**0.37**	**1.25**	**1.62**	**0.00**	**3,256.71**	**3,256.71**	**0.31**	**0.00**	**3,263.25**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	1.06	5.46	8.38	0.01	1.74	0.36	2.10	0.13	0.36	0.49	0.00	1,096.38	1,096.38	0.11	0.00	1,098.73
2013	0.98	4.15	8.10	0.01	0.57	0.29	0.86	0.03	0.29	0.31	0.00	926.10	926.10	0.09	0.00	927.95
2014	0.92	4.00	7.65	0.01	0.57	0.28	0.85	0.03	0.28	0.30	0.00	919.61	919.61	0.08	0.00	921.30
2015	8.34	1.83	2.51	0.00	0.16	0.14	0.31	0.01	0.14	0.15	0.00	314.62	314.62	0.03	0.00	315.27
Total	**11.30**	**15.44**	**26.64**	**0.03**	**3.04**	**1.07**	**4.12**	**0.20**	**1.07**	**1.25**	**0.00**	**3,256.71**	**3,256.71**	**0.31**	**0.00**	**3,263.25**

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	2.90	0.04	3.58	0.00		0.00	0.02		0.00	0.02	0.00	5.70	5.70	0.01	0.00	5.83
Energy	0.06	0.55	0.23	0.00		0.00	0.04		0.00	0.04	0.00	1,213.07	1,213.07	0.04	0.02	1,220.56
Mobile	3.30	6.04	33.49	0.04	4.25	0.19	4.43	0.16	0.19	0.35	0.00	3,243.31	3,243.31	0.18	0.00	3,247.13
Waste						0.00	0.00		0.00	0.00	50.93	0.00	50.93	3.01	0.00	114.13
Water						0.00	0.00		0.00	0.00	0.00	83.91	83.91	0.04	0.02	92.26
Total	**6.26**	**6.63**	**37.30**	**0.04**	**4.25**	**0.19**	**4.49**	**0.16**	**0.19**	**0.41**	**50.93**	**4,545.99**	**4,596.92**	**3.28**	**0.04**	**4,679.91**

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	2.90	0.04	3.58	0.00		0.00	0.02		0.00	0.02	0.00	5.70	5.70	0.01	0.00	5.83
Energy	0.06	0.48	0.20	0.00		0.00	0.04		0.00	0.04	0.00	1,125.03	1,125.03	0.04	0.02	1,131.98
Mobile	3.30	6.04	33.49	0.04	4.25	0.19	4.43	0.16	0.19	0.35	0.00	3,243.31	3,243.31	0.18	0.00	3,247.13
Waste						0.00	0.00		0.00	0.00	50.93	0.00	50.93	3.01	0.00	114.13
Water						0.00	0.00		0.00	0.00	0.00	83.91	83.91	0.04	0.02	92.26
Total	**6.26**	**6.56**	**37.27**	**0.04**	**4.25**	**0.19**	**4.49**	**0.16**	**0.19**	**0.41**	**50.93**	**4,457.95**	**4,508.88**	**3.28**	**0.04**	**4,591.33**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2012

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					0.27	0.00	0.27	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.16	1.27	0.72	0.00		0.06	0.06		0.06	0.06	0.00	108.80	108.80	0.01	0.00	109.07
Total	**0.16**	**1.27**	**0.72**	**0.00**	**0.27**	**0.06**	**0.33**	**0.15**	**0.06**	**0.21**	**0.00**	**108.80**	**108.80**	**0.01**	**0.00**	**109.07**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.36
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.36**	**2.36**	**0.00**	**0.00**	**2.36**

3.2 Site Preparation - 2012

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					0.11	0.00	0.11	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.09	0.57	0.60	0.00		0.04	0.04		0.04	0.04	0.00	108.80	108.80	0.01	0.00	109.07
Total	**0.09**	**0.57**	**0.60**	**0.00**	**0.11**	**0.04**	**0.15**	**0.06**	**0.04**	**0.10**	**0.00**	**108.80**	**108.80**	**0.01**	**0.00**	**109.07**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	2.36	0.00	0.00	2.36
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.36**	**2.36**	**0.00**	**0.00**	**2.36**

3.3 Grading - 2012

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					0.33	0.00	0.33	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.47	3.90	2.07	0.00		0.19	0.19		0.19	0.19	0.00	369.24	369.24	0.04	0.00	370.04
Total	**0.47**	**3.90**	**2.07**	**0.00**	**0.33**	**0.19**	**0.52**	**0.13**	**0.19**	**0.32**	**0.00**	**369.24**	**369.24**	**0.04**	**0.00**	**370.04**

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	0.05	0.42	0.41	0.00	1.15	0.01	1.16	0.00	0.01	0.02	0.00	52.01	52.01	0.00	0.00	52.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.54	6.54	0.00	0.00	6.55
Total	**0.06**	**0.43**	**0.49**	**0.00**	**1.16**	**0.01**	**1.17**	**0.00**	**0.01**	**0.02**	**0.00**	**58.55**	**58.55**	**0.00**	**0.00**	**58.61**

3.3 Grading - 2012

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					0.13	0.00	0.13	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.29	1.88	2.12	0.00		0.13	0.13		0.13	0.13	0.00	369.24	369.24	0.04	0.00	370.04
Total	**0.29**	**1.88**	**2.12**	**0.00**	**0.13**	**0.13**	**0.26**	**0.05**	**0.13**	**0.18**	**0.00**	**369.24**	**369.24**	**0.04**	**0.00**	**370.04**

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	0.05	0.42	0.41	0.00	1.15	0.01	1.16	0.00	0.01	0.02	0.00	52.01	52.01	0.00	0.00	52.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.54	6.54	0.00	0.00	6.55
Total	**0.06**	**0.43**	**0.49**	**0.00**	**1.16**	**0.01**	**1.17**	**0.00**	**0.01**	**0.02**	**0.00**	**58.55**	**58.55**	**0.00**	**0.00**	**58.61**

3.4 Building Construction - 2012

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	0.44	2.91	1.85	0.00		0.20	0.20		0.20	0.20	0.00	285.84	285.84	0.04	0.00	286.59
Total	**0.44**	**2.91**	**1.85**	**0.00**		**0.20**	**0.20**		**0.20**	**0.20**	**0.00**	**285.84**	**285.84**	**0.04**	**0.00**	**286.59**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.42	0.58	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.00	57.29	57.29	0.00	0.00	57.35
Worker	0.23	0.30	2.56	0.00	0.32	0.01	0.33	0.01	0.01	0.02	0.00	214.31	214.31	0.02	0.00	214.71
Total	**0.29**	**0.72**	**3.14**	**0.00**	**0.34**	**0.02**	**0.36**	**0.01**	**0.02**	**0.03**	**0.00**	**271.60**	**271.60**	**0.02**	**0.00**	**272.06**

3.4 Building Construction - 2012

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	0.33	1.87	2.00	0.00		0.16	0.16		0.16	0.16	0.00	285.84	285.84	0.04	0.00	286.59
Total	**0.33**	**1.87**	**2.00**	**0.00**		**0.16**	**0.16**		**0.16**	**0.16**	**0.00**	**285.84**	**285.84**	**0.04**	**0.00**	**286.59**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.06	0.42	0.58	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.00	57.29	57.29	0.00	0.00	57.35
Worker	0.23	0.30	2.56	0.00	0.32	0.01	0.33	0.01	0.01	0.02	0.00	214.31	214.31	0.02	0.00	214.71
Total	**0.29**	**0.72**	**3.14**	**0.00**	**0.34**	**0.02**	**0.36**	**0.01**	**0.02**	**0.03**	**0.00**	**271.60**	**271.60**	**0.02**	**0.00**	**272.06**

3.4 Building Construction - 2013

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	0.67	4.52	3.06	0.01		0.30	0.30		0.30	0.30	0.00	478.23	478.23	0.05	0.00	479.38
Total	**0.67**	**4.52**	**3.06**	**0.01**		**0.30**	**0.30**		**0.30**	**0.30**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.38**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.09	0.64	0.88	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	96.65	96.65	0.00	0.00	96.74
Worker	0.36	0.45	3.90	0.00	0.54	0.02	0.55	0.02	0.02	0.04	0.00	351.22	351.22	0.03	0.00	351.83
Total	**0.45**	**1.09**	**4.78**	**0.00**	**0.57**	**0.04**	**0.60**	**0.02**	**0.04**	**0.06**	**0.00**	**447.87**	**447.87**	**0.03**	**0.00**	**448.57**

3.4 Building Construction - 2013

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	0.53	3.06	3.32	0.01		0.25	0.25		0.25	0.25	0.00	478.23	478.23	0.05	0.00	479.38
Total	**0.53**	**3.06**	**3.32**	**0.01**		**0.25**	**0.25**		**0.25**	**0.25**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.38**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.09	0.64	0.88	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	96.65	96.65	0.00	0.00	96.74
Worker	0.36	0.45	3.90	0.00	0.54	0.02	0.55	0.02	0.02	0.04	0.00	351.22	351.22	0.03	0.00	351.83
Total	**0.45**	**1.09**	**4.78**	**0.00**	**0.57**	**0.04**	**0.60**	**0.02**	**0.04**	**0.06**	**0.00**	**447.87**	**447.87**	**0.03**	**0.00**	**448.57**

3.4 Building Construction - 2014

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	0.62	4.18	3.03	0.01		0.26	0.26		0.26	0.26	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.62**	**4.18**	**3.03**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.08	0.59	0.81	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	97.39	97.39	0.00	0.00	97.47
Worker	0.33	0.41	3.53	0.00	0.54	0.02	0.55	0.02	0.02	0.04	0.00	343.99	343.99	0.03	0.00	344.55
Total	**0.41**	**1.00**	**4.34**	**0.00**	**0.57**	**0.04**	**0.60**	**0.02**	**0.04**	**0.06**	**0.00**	**441.38**	**441.38**	**0.03**	**0.00**	**442.02**

3.4 Building Construction - 2014

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	0.51	3.00	3.31	0.01		0.25	0.25		0.25	0.25	0.00	478.23	478.23	0.05	0.00	479.28
Total	**0.51**	**3.00**	**3.31**	**0.01**		**0.25**	**0.25**		**0.25**	**0.25**	**0.00**	**478.23**	**478.23**	**0.05**	**0.00**	**479.28**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.08	0.59	0.81	0.00	0.03	0.02	0.05	0.00	0.02	0.02	0.00	97.39	97.39	0.00	0.00	97.47
Worker	0.33	0.41	3.53	0.00	0.54	0.02	0.55	0.02	0.02	0.04	0.00	343.99	343.99	0.03	0.00	344.55
Total	**0.41**	**1.00**	**4.34**	**0.00**	**0.57**	**0.04**	**0.60**	**0.02**	**0.04**	**0.06**	**0.00**	**441.38**	**441.38**	**0.03**	**0.00**	**442.02**

3.4 Building Construction - 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	0.13	0.90	0.71	0.00		0.06	0.06		0.06	0.06	0.00	113.60	113.60	0.01	0.00	113.83
Total	**0.13**	**0.90**	**0.71**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**113.60**	**113.60**	**0.01**	**0.00**	**113.83**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.13	0.18	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	23.29	23.29	0.00	0.00	23.30
Worker	0.07	0.09	0.77	0.00	0.13	0.00	0.13	0.01	0.00	0.01	0.00	80.31	80.31	0.01	0.00	80.43
Total	**0.09**	**0.22**	**0.95**	**0.00**	**0.14**	**0.00**	**0.14**	**0.01**	**0.00**	**0.01**	**0.00**	**103.60**	**103.60**	**0.01**	**0.00**	**103.73**

3.4 Building Construction - 2015

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	0.12	0.70	0.78	0.00		0.06	0.06		0.06	0.06	0.00	113.60	113.60	0.01	0.00	113.83
Total	**0.12**	**0.70**	**0.78**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**113.60**	**113.60**	**0.01**	**0.00**	**113.83**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.02	0.13	0.18	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	23.29	23.29	0.00	0.00	23.30
Worker	0.07	0.09	0.77	0.00	0.13	0.00	0.13	0.01	0.00	0.01	0.00	80.31	80.31	0.01	0.00	80.43
Total	**0.09**	**0.22**	**0.95**	**0.00**	**0.14**	**0.00**	**0.14**	**0.01**	**0.00**	**0.01**	**0.00**	**103.60**	**103.60**	**0.01**	**0.00**	**103.73**

3.5 Paving - 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	0.13	0.83	0.56	0.00		0.07	0.07		0.07	0.07	0.00	72.77	72.77	0.01	0.00	73.00
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.13**	**0.83**	**0.56**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**72.77**	**72.77**	**0.01**	**0.00**	**73.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.39	3.39	0.00	0.00	3.40
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.39**	**3.39**	**0.00**	**0.00**	**3.40**

3.5 Paving - 2015

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	0.13	0.83	0.56	0.00		0.07	0.07		0.07	0.07	0.00	72.77	72.77	0.01	0.00	73.00
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.13**	**0.83**	**0.56**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**72.77**	**72.77**	**0.01**	**0.00**	**73.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.39	3.39	0.00	0.00	3.40
Total	**0.00**	**0.00**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.39**	**3.39**	**0.00**	**0.00**	**3.40**

3.6 Architectural Coating - 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					
Archit. Coating	7.97					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.05	0.00		0.01	0.01		0.01	0.01	0.00	7.01	7.01	0.00	0.00	7.03
Total	**7.98**	**0.07**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**7.01**	**7.01**	**0.00**	**0.00**	**7.03**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.02	0.14	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	14.25	14.25	0.00	0.00	14.27
Total	**0.01**	**0.02**	**0.14**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**14.25**	**14.25**	**0.00**	**0.00**	**14.27**

3.6 Architectural Coating - 2015

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	7.97					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.07	0.05	0.00		0.01	0.01		0.01	0.01	0.00	7.01	7.01	0.00	0.00	7.03
Total	**7.98**	**0.07**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**7.01**	**7.01**	**0.00**	**0.00**	**7.03**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.02	0.14	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	14.25	14.25	0.00	0.00	14.27
Total	**0.01**	**0.02**	**0.14**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**14.25**	**14.25**	**0.00**	**0.00**	**14.27**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.30	6.04	33.49	0.04	4.25	0.19	4.43	0.16	0.19	0.35	0.00	3,243.31	3,243.31	0.18	0.00	3,247.13
Unmitigated	3.30	6.04	33.49	0.04	4.25	0.19	4.43	0.16	0.19	0.35	0.00	3,243.31	3,243.31	0.18	0.00	3,247.13
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	957.60	957.60	957.60	2,642,144	2,642,144
City Park	12.00	12.00	12.00	19,113	19,113
Condo/Townhouse	1,028.37	1,028.37	1028.37	2,837,408	2,837,408
Condo/Townhouse High Rise	367.84	367.84	367.84	1,014,919	1,014,919
Single Family Housing	535.92	535.92	535.92	1,478,674	1,478,674
Total	2,901.73	2,901.73	2,901.73	7,992,258	7,992,258

4.3 Trip Type Information

	Miles			Trip %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments Low Rise	12.30	5.90	6.40	37.50	15.00	47.50
City Park	8.80	4.60	4.60	33.00	48.00	19.00
Condo/Townhouse	12.30	5.90	6.40	37.50	15.00	47.50
Condo/Townhouse High Rise	12.30	5.90	6.40	37.50	15.00	47.50
Single Family Housing	12.30	5.90	6.40	37.50	15.00	47.50

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive 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						0.00	0.00		0.00	0.00	0.00	573.66	573.66	0.03	0.01	577.25
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	579.71	579.71	0.03	0.01	583.34
NaturalGas Mitigated	0.06	0.48	0.20	0.00		0.00	0.04		0.00	0.04	0.00	551.37	551.37	0.01	0.01	554.73
NaturalGas Unmitigated	0.06	0.55	0.23	0.00		0.00	0.04		0.00	0.04	0.00	633.36	633.36	0.01	0.01	637.21
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
Apartments Low Rise	2.71103e+006	0.01	0.12	0.05	0.00		0.00	0.01		0.00	0.01	0.00	144.67	144.67	0.00	0.00	145.55
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	4.53497e+006	0.02	0.21	0.09	0.00		0.00	0.02		0.00	0.02	0.00	242.00	242.00	0.00	0.00	243.48
Condo/Townhouse High Rise	2.25467e+006	0.01	0.10	0.04	0.00		0.00	0.01		0.00	0.01	0.00	120.32	120.32	0.00	0.00	121.05
Single Family Housing	2.36798e+006	0.01	0.11	0.05	0.00		0.00	0.01		0.00	0.01	0.00	126.36	126.36	0.00	0.00	127.13
Total		**0.05**	**0.54**	**0.23**	**0.00**		**0.00**	**0.05**		**0.00**	**0.05**	**0.00**	**633.35**	**633.35**	**0.00**	**0.00**	**637.21**

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	tons/yr										MT/yr					
Apartments Low Rise	2.36397e+006	0.01	0.11	0.05	0.00		0.00	0.01		0.00	0.01	0.00	126.15	126.15	0.00	0.00	126.92
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Condo/Townhouse	3.94456e+006	0.02	0.18	0.08	0.00		0.00	0.01		0.00	0.01	0.00	210.50	210.50	0.00	0.00	211.78
Condo/Townhouse High Rise	1.96114e+006	0.01	0.09	0.04	0.00		0.00	0.01		0.00	0.01	0.00	104.65	104.65	0.00	0.00	105.29
Single Family Housing	2.06261e+006	0.01	0.10	0.04	0.00		0.00	0.01		0.00	0.01	0.00	110.07	110.07	0.00	0.00	110.74
Total		**0.05**	**0.48**	**0.21**	**0.00**		**0.00**	**0.04**		**0.00**	**0.04**	**0.00**	**551.37**	**551.37**	**0.00**	**0.00**	**554.73**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Low Rise	509700					148.26	0.01	0.00	149.19
City Park	0					0.00	0.00	0.00	0.00
Condo/Townhouse	749367					217.97	0.01	0.00	219.33
Condo/Townhouse High Rise	372566					108.37	0.00	0.00	109.05
Single Family Housing	361389					105.12	0.00	0.00	105.78
Total						**579.72**	**0.02**	**0.00**	**583.35**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Low Rise	503994					146.60	0.01	0.00	147.52
City Park	0					0.00	0.00	0.00	0.00
Condo/Townhouse	742078					215.85	0.01	0.00	217.20
Condo/Townhouse High Rise	368943					107.31	0.00	0.00	107.99
Single Family Housing	357200					103.90	0.00	0.00	104.55
Total						**573.66**	**0.02**	**0.00**	**577.26**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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	2.90	0.04	3.58	0.00		0.00	0.02		0.00	0.02	0.00	5.70	5.70	0.01	0.00	5.83
Unmitigated	2.90	0.04	3.58	0.00		0.00	0.02		0.00	0.02	0.00	5.70	5.70	0.01	0.00	5.83
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	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	0.80					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.12	0.04	3.58	0.00		0.00	0.02		0.00	0.02	0.00	5.70	5.70	0.01	0.00	5.83
Total	**2.91**	**0.04**	**3.58**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**	**0.00**	**5.70**	**5.70**	**0.01**	**0.00**	**5.83**

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	0.80					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.99					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.12	0.04	3.58	0.00		0.00	0.02		0.00	0.02	0.00	5.70	5.70	0.01	0.00	5.83
Total	**2.91**	**0.04**	**3.58**	**0.00**		**0.00**	**0.02**		**0.00**	**0.02**	**0.00**	**5.70**	**5.70**	**0.01**	**0.00**	**5.83**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					83.91	0.04	0.02	92.26
Unmitigated					83.91	0.04	0.02	92.26
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Low Rise	9.38218 / 5.91485					24.11	0.01	0.01	26.68
City Park	0 / 5.95741					6.06	0.00	0.00	6.10
Condo/Townhouse	11.5323 / 7.27034					29.63	0.02	0.01	32.79
Condo/Townhouse High Rise	5.73355 / 3.61463					14.73	0.01	0.00	16.30
Single Family Housing	3.64863 / 2.30022					9.38	0.00	0.00	10.38
Total						**83.91**	**0.04**	**0.02**	**92.25**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Low Rise	9.38218 / 5.91485					24.11	0.01	0.01	26.68
City Park	0 / 5.95741					6.06	0.00	0.00	6.10
Condo/Townhouse	11.5323 / 7.27034					29.63	0.02	0.01	32.79
Condo/Townhouse High Rise	5.73355 / 3.61463					14.73	0.01	0.00	16.30
Single Family Housing	3.64863 / 2.30022					9.38	0.00	0.00	10.38
Total						**83.91**	**0.04**	**0.02**	**92.25**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					50.93	3.01	0.00	114.13
Unmitigated					50.93	3.01	0.00	114.13
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Low Rise	66.24					13.45	0.79	0.00	30.13
City Park	0.43					0.09	0.01	0.00	0.20
Condo/Townhouse	81.42					16.53	0.98	0.00	37.04
Condo/Townhouse High Rise	40.48					8.22	0.49	0.00	18.41
Single Family Housing	62.32					12.65	0.75	0.00	28.35
Total						**50.94**	**3.02**	**0.00**	**114.13**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Low Rise	66.24					13.45	0.79	0.00	30.13
City Park	0.43					0.09	0.01	0.00	0.20
Condo/Townhouse	81.42					16.53	0.98	0.00	37.04
Condo/Townhouse High Rise	40.48					8.22	0.49	0.00	18.41
Single Family Housing	62.32					12.65	0.75	0.00	28.35
Total						**50.94**	**3.02**	**0.00**	**114.13**

9.0 Vegetation

Scope and Content of Air Quality Sections in Environmental Documents

Prepared by the Technology and Environmental Assessment Division

Updated December 2011

Santa Barbara County
Air Pollution Control District

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SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT

SCOPE AND CONTENT OF AIR QUALITY SECTIONS IN ENVIRONMENTAL DOCUMENTS

TABLE OF CONTENTS

1. INTRODUCTION

The Santa Barbara County Air Pollution Control District (APCD) performs a number of functions which include: preparing and updating the clean air plans; implementing state and federal air pollution control laws; adopting, administering, and enforcing air pollution control rules and regulations; overseeing a network of air quality monitoring stations; demonstrating innovative clean air technology; and, educating the public about their role in reducing air pollution. In addition, the APCD acts as lead agency, responsible agency or a concerned agency with jurisdiction by law over the air resources of the County under the California Environmental Quality Act (CEQA). In this capacity, the APCD reviews environmental documents for the air quality impacts of land use projects.

The APCD Board consists of the five County Supervisors plus one representative from each of the eight incorporated cities. On October 19, 1995 the APCD Board adopted APCD *Environmental Review Guidelines* pursuant to CEQA. A revision to this document incorporating changes to the State CEQA Guidelines was adopted on November 16, 2000. Criteria for evaluating the significance of adverse air quality impacts from projects subject to CEQA were adopted in the APCD *Environmental Review Guidelines* and are described in Section 4 of this document. The document is available for download at www.sbcapcd.org/apcd/landuse.htm#Guidelines.

The APCD thresholds of significance apply to all sources of air pollutants, including equipment and businesses not regulated by the APCD and motor vehicles. Examples of businesses that APCD regulates include gasoline stations, auto body shops, dry cleaners, oil and gas facilities, large wineries, and water and wastewater treatment plants. The APCD regulates these and other businesses by issuing permits and adopting rules, as required by state and federal air pollution control laws. These thresholds of significance <u>cannot</u> be used to determine whether a project will need an APCD permit. For information on whether a project will require an APCD permit, please contact the Permitting Section Supervisor of the APCD or visit the APCD web site at www.sbcapcd.org.

Air quality impacts for land use projects should be evaluated using the thresholds of significance adopted or used by the jurisdiction in which the project is located. Santa Barbara County's interim thresholds of significance may be found on their website (www.sbcountyplanning.org/pdf/ManualsReports/Manuals/Environmental%20Thresholds%20October%202008%20corrected%206-1-2009.pdf).

This document provides guidance for assessing and mitigating air quality impacts of development projects. It is updated frequently as new information and methodologies become available**. For the most recent version of this document please check the APCD web site at www.sbcapcd.org periodically**. For assistance in applying the thresholds in this manual please contact the Community Programs staff at (805) 961-8800.

2. GLOSSARY OF TERMS and ACRONYMS

Air Pollution Control District (APCD) - A local/regional agency with jurisdiction over stationary sources of air pollution. The Santa Barbara County APCD jurisdictional area is the same as the geographical boundaries of Santa Barbara County.

Air Resources Board (ARB or CARB) - The California Air Resources Board, the agency that regulates mobile and consumer products sources of air pollution in the State of California. The ARB is also tasked with implementing climate change legislation in the state.

Airborne Toxics Control Measure (ATCM) - A regulation developed by the ARB to limit emissions of toxic air contaminants such as diesel particulate, perchloroethylene, etc.

Authority to Construct (ATC) Permit - A permit issued by the APCD prior to commencement of project construction.

CAAQS - California Ambient Air Quality Standard(s).

CEQA Guidelines - Title 14 California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act, Sections 15000 et. seq.

CEQA Statute - California Environmental Quality Act, California Public Resources Code, Division 13, Environmental Quality, Sections 21000 et. seq.

Clean Air Plan (CAP) - Santa Barbara County APCD's plans to meet and/or maintain state and federal air quality standards, as applicable.

Environmental Impact Report (EIR) - A Document prepared pursuant to CEQA for projects with significant impacts.

Greenhouse Gases (GHGs) – Pollutants that are known to increase the greenhouse effect in the earth's atmosphere, thereby adding to global climate change impacts. A number of pollutants have been identified as GHGs, including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The State of California defines GHGs in the Health & Safety Code, §38505(g).

Health Risk Assessment (HRA) – An assessment of the acute (immediate) and chronic (cumulative) effects that a project will have on human health.

Initial Study (IS) - Initial evaluation of a project, prepared pursuant to CEQA, to determine whether significant environmental impacts exist. Depending on the outcome of the IS, the lead agency may proceed with a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report.

Lead Agency – The agency that has discretionary authority over a permit action or decision that is subject to CEQA.

NAAQS - National Ambient Air Quality Standard(s).

Negative Declaration (ND) or Mitigated Negative Declaration (MND) – A declaration, prepared in compliance with CEQA, that states that a project will not have a significant impact on the environment (ND) or that a project will not have significant impacts if documented mitigation measures are adopted and enforced (MND).

Notice of Preparation (NOP) of an EIR – An official public notice, issued by the CEQA lead agency, that an Environmental Impact Report will be prepared pursuant to CEQA.

Oxides of Nitrogen (NO_X) – An air pollutant (includes nitrogen oxide, or NO, and nitrogen dioxide, or NO_2). NO_X is typically a product of combustion. Emissions of NO_X lead to human health impacts and also to the formation of ozone.

Ozone (O_3) – A pollutant of regional concern, formed by in the lower atmosphere by a combination of ozone precursors (ROC, NO_X) in the presence of heat and sunlight.

Particulate Matter ($PM_{2.5}$, PM_{10}, diesel PM) – Fine particulate matter that remains suspended in the atmosphere and can be inhaled into human lungs. PM_{10} is particulate matter that measures 10 micrometers or less in diameter (similar for $PM_{2.5}$). Diesel PM is particulate matter that is emitted from diesel-fueled combustion devices.

Permit to Operate (PTO) - A permit issued by the APCD prior to operation of a project.

Reactive Organic Compounds (ROC) – Pollutants that react in the atmosphere to form ozone. Refer to APCD Rule 201 for a regulatory definition of this term.

Toxic Air Contaminant (TAC) – An air pollutant that is considered to have toxic attributes, be them acute (immediate), chronic (cumulative), or both. Refer to California Health & Safety Code Section 39655 for a regulatory definition of this term.

3. CONTENTS OF EIRS

In general, as required by the California Environmental Quality Act (CEQA), the air quality analysis in environmental impact reports (EIRs) should include the following elements:

- **existing environmental setting** of the area affected by the project, in terms of climate and current air quality; see section 4 of this document;

- a discussion of all direct and indirect, long-term and short-term, **air quality impacts of the proposed project and the classification of the significance of long-term impacts using established criteria**; see section 5 of this document;

- significant **cumulative air quality impacts** of the project including contribution of greenhouse gases to global climate change; see section 5.4;

- **consistency** and conformity of the project with local and regional plans, including the most recent Clean Air Plan and other plans; see section 5.4.2;

- **mitigation measures** to avoid or reduce potentially significant air quality impacts, including effectiveness of mitigation measures and discussion of **residual impacts**; see section 6 of this document;

- evaluation of all feasible **alternatives** to the project which would reduce air quality impacts; including the air quality impacts of the "No Project" alternative and the environmentally superior alternative;

- evaluation of the **growth inducing effects** of the project on air quality;

- listing all required air quality mitigation measures in the **Mitigation Monitoring and/or Reporting Plan** (MMRP). This should include details on the implementation of each identified mitigation measure to ensure that they are carried out as specified.

- appendices containing all **calculations and assumptions** used in assessing air quality impacts.

3.1 Contents of Negative Declarations

The air quality impact analysis in an Initial Study/Negative Declaration (or Mitigated Negative Declaration) should include a brief description of the air quality setting, project-specific and cumulative impacts and applicable significance thresholds, consistency with the most recent clean air plan, and any applicable mitigation measures. All calculations and assumptions used in assessing air quality impacts should be included. All air quality mitigation measures should be included as project conditions of approval in the lead agency discretionary permit.

4. ENVIRONMENTAL SETTING

It is necessary to know the environmental setting of a proposed project as a baseline against which to measure the project's impact. The environmental setting should be described both from a local and a regional perspective. CEQA Guidelines Section 15125 (a) states, "*The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives*." The following aspects of the environmental setting may be included in the environmental document:

- the climatological, meteorological and topographical features that may influence the project's effects on local and regional air quality;

- the applicable federal, state and APCD rules and regulations, including emission standards and ambient air quality standards;

- current air pollution problems within the county, and the effects of pollutants such as ozone precursors (NO_x and ROC), PM_{10}, $PM_{2.5}$ and PM_{10} precursors such as NO_x and SO_x. Please check the APCD website for the most current information.

Santa Barbara County was designated unclassifiable/attainment for the 2008 federal 8-hour ozone standard on April 30, 2012. (The 1-hour federal ozone standard was revoked for Santa Barbara County). The County is also considered in attainment for the state 1-hour standard for ozone as of June, 2007. The California 8-hour ozone standard was implemented in May, 2006. The County violates the state 8-hour ozone standard and the state standard for PM_{10}. The County is unclassifiable/attainment for the federal PM2.5 standard and unclassified for the state PM2.5 standard (based on monitored data from 2007 – 2009).

The major onshore sources of ozone precursor emissions in Santa Barbara County are motor vehicles, the petroleum industry and solvent usage (paints, consumer products and certain industrial processes). Sources of PM_{10} include mineral quarries, grading, demolition, agricultural tilling, road dust, and vehicle exhaust ($PM_{2.5}$). Additional information on ozone and other pollutants of concern is provided in the latest Clean Air Plan (CAP).

The environmental setting section should include a description of surrounding land uses and whether the project and the surrounding uses are compatible or have the potential to cause localized air quality and health risk impacts.

It may be appropriate to incorporate by reference relevant portions of previously certified environmental documents or the most recent air quality plan in describing the **local or regional** environmental setting. If this is done, a summary or description of the incorporated material and its relationship to the document should be included. The 2001 CAP, which was prepared in response to the requirements of the California Clean Air Act, as well as the Federal Clean Air Act, has been adopted as part of the State Implementation Plan. The 2010 CAP is the current APCD Board-adopted Clean Air Plan for the County, and addresses local plans to attain the California 8-

hour ozone standard. It includes the most current air quality report and historical summary and is available on the APCD website, www.sbcapcd.org.

5. AIR QUALITY IMPACTS OF PROJECT

Thresholds of significance are intended to supplement provisions in the State CEQA Guidelines, including Sections 15064, 15065, and 15382, for determining significant effects. Thresholds of significance provide general guidance for determining significant impacts, but are not ironclad definitions of significant impacts. Each project must be judged individually for its potential for significant impacts based on specific circumstances and evidence.

The APCD's air quality significance criteria are applied during the CEQA review of projects for which the APCD is lead agency. Air quality impacts for land use projects should be evaluated using the thresholds of significance adopted or used by the jurisdiction in which the project is located. In the absence of locally-adopted thresholds, the District's thresholds are recommended for CEQA review of all other projects in the county for which the APCD is a responsible agency or a concerned agency.

Santa Barbara County's interim thresholds of significance, which apply to projects in the unincorporated areas of Santa Barbara County, may be found on their website at www.sbcountyplanning.org/pdf/ManualsReports/Manuals/Environmental%20Thresholds%20October%202008%20corrected%206-1-2009.pdf).

The APCD Board adopted the following thresholds of significance in October 1995:

A proposed project will not have a significant impact on air quality, either individually or cumulatively, if:

Operation of the project will:

- emit (from all project sources, both stationary and mobile) less than the daily trigger for offsets or Air Quality Impact Analysis set in the APCD New Source Review Rule[1], for any pollutant *(i.e., 240 pounds/day for ROC or NO_x; and 80 lbs/day for PM_{10}. There is no daily operational threshold for CO ; it is an attainment pollutant*[2]) ; and
- emit less than 25 pounds per day of NO_x or ROC from motor vehicle trips only; and
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and

[1] *The APCD New Source Review Rule as it existed at the time the APCD Environmental Review Guidelines were adopted (in October, 1995).*

[2] *Due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with congested intersections are not expected to exceed the CO health-related air quality standards. Therefore, CO "Hotspot" analyses are not required anymore.*

- not exceed the APCD health risk public notification thresholds adopted by the APCD Board (*10 excess cancer cases in a million for cancer risk and a Hazard Index of more than one (1.0) for non-cancer risk* ; and
- be consistent with the latest adopted federal and state air quality plans for Santa Barbara County.

Cumulative impacts and consistency with the policies and measures in the project jurisdiction's general plan, and the current air quality plans, should be discussed for all projects (e.g., whether the project exceeds the growth assumptions in the air quality plan). The District does not currently have quantitative thresholds of significance in place for short-term or construction emissions; however, the APCD uses 25 tons per year for ROC or NO_X as a guideline for determining the significance of construction impacts.

5.1 IMPACT CLASSIFICATION

Classification of all air quality impacts using the most recent version of the APCD's *Environmental Review Guidelines* or the adopted environmental review standards for the applicable CEQA lead agency should be included. In order to determine if a project exceeds adopted CEQA thresholds, the expected emissions of these pollutants from the project must be calculated.

CEQA requires that all EIRs contain a Summary Impact Table to assist decision makers. The APCD recommends that the tables be organized as follows:

a. Class I Impacts -Significant unavoidable adverse impacts for which the decision maker must adopt a Statement of Overriding Consideration.

b. Class II Impacts -Significant environmental impacts that can be feasibly mitigated or avoided for which the decision maker must adopt findings and recommended mitigation measures.

c. Class III Impacts - Adverse impacts found not to be significant for which the decision maker does not have to adopt findings under CEQA[3].

d. Class IV Impacts - Beneficial impacts.

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[3] *Under the County's Local Coastal Plan, for projects requiring approval of CUPs or DPs, additional findings are required stating that all adverse impacts have been mitigated to the maximum extent feasible.*

5.2 Short-term and Construction Emissions

Although quantitative thresholds of significance are not currently in place for short-term emissions, CEQA requires that short-term impacts, such as exhaust emissions from construction equipment and fugitive dust generation during grading, be discussed in the environmental document. In the interest of public disclosure, the APCD recommends that construction-related NO_x, ROC, PM_{10} and $PM_{2.5}$ emissions, from diesel and gasoline powered equipment, paving, and other activities, be quantified. The CalEEMod computer program, available at www.caleemod.com , may be used for estimating unmitigated and mitigated short-term impacts. Default values provided by the program may be used where detailed project information is not available. Appropriate mitigation measures (in addition to the CalEEMod measures) to reduce or avoid emissions to the maximum extent feasible must be applied for projects subject to the County's Local Coastal Plan. Section 5 provides some example measures.

Under APCD Rule 202 D.16, if the combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct permit have the potential to exceed 25 tons of any pollutant, except carbon monoxide, in a 12-month period, the owner of the stationary source shall provide offsets under the provisions of Rule 804 and shall demonstrate that no ambient air quality standard will be violated.

Standard dust control measures (see Section 6.1) must be implemented for any discretionary project involving earth-moving activities. Some projects have the potential for construction-related dust to cause a nuisance. Since Santa Barbara County violates the state standard for PM_{10}, dust mitigation measures are required for all discretionary construction activities regardless of the significance of the fugitive dust impacts based on the policies in the 1979 Air Quality Attainment Plan.

5.3 Long-term/Operational Emissions

Long-term project emissions primarily stem from motor vehicles associated with the project and from stationary sources that may require permits from the APCD. Examples of stationary emission sources include gas stations, auto body shops, diesel generators, boilers and large water heaters, dry cleaners, oil and gas production and processing facilities, and water treatment facilities. Other stationary sources such as residential heating and cooling equipment, wood burning stoves and fireplaces, or other individual appliances do not require permits from the APCD and are known as "area sources." Emissions from “area sources” may be significant for some housing developments or for commercial projects. The CalEEMod computer program may be used for estimating unmitigated and mitigated "area source" impacts (see Section 5.3.1). Wine fermentation and storage emissions should be calculated separately (see Section 5.3.3). These emissions should be included in the operational phase emission evaluation. Note that an APCD permit or a written permit exemption is required for ALL wineries, breweries, distilleries and similar facilities.

The APCD should be contacted for assistance with estimating direct emissions from stationary sources associated with the land use development, such as any diesel-fueled internal combustion engines (e.g., emergency standby engines, prime power diesel generators and compressors) or if the engine is registered with the California Air Resources Board under their portable engine registration permit (PERP) program. Stationary source and area source emissions must be added to transportation source emissions prior to applying the project-specific thresholds of significance.

5.3.1 Estimating Air Pollutant Emissions from Land Use Projects

Emission Modeling Software

To calculate long-term emissions from motor vehicles associated with land use projects, the computer program CalEEMod, which is available at www.caleemod.com, should be used. The CalEEMod User's Guide is also available online at the CalEEMod website. The website also contains several useful documents related to CalEEMod, including User Tips, a Technical Paper, and training resources.

CalEEMod is the latest statewide land use emissions computer model. The program was released in February 2011 and contains up-to-date, accurate information and local default values for Santa Barbara County. The model includes mitigation measure options (recently developed and adopted by the California Air Pollution Control Officers Association (CAPCOA)) that reduce emissions of both criteria pollutants and greenhouse gases, and calculates the emissions benefits achieved from such measures.

Some useful features of the CalEEMod program include:

- Calculation of indirect GHG emissions from processes both “upstream” and “downstream” of the project under evaluation, such as GHG emissions from energy production, solid waste handling, water conveyance, and wastewater conveyance and treatment;

- Quantification of gain or loss of carbon sequestration in vegetation resulting from changes in land use, as well as quantification of carbon sequestration benefits associated with tree planting;

- Calculation of the emission reduction benefits from implementing GHG mitigation measures identified in the CAPCOA document titled “Quantifying Greenhouse Gas Mitigation Measures”;

- Quantification of two additional common GHG pollutants: methane (CH_4) and nitrous oxide (N_2O), in addition to quantifying CO_2 emissions;

- Incorporation of Pavley standards and Low Carbon Fuel standards into the mobile source emission factors;

APCD recommends the use of CalEEMod for project-level review, as it uses current emission factors and updated default values, and has the ability to quantify indirect GHG emissions and GHG mitigation.

The URBEMIS program is another tool that can be used to estimate air pollutant emissions from land use projects; however, it does not calculate indirect GHG emissions and supplemental calculations are needed when using this program (see section 5.4.1 for guidance). If the URBEMIS program is used, care should be taken to ensure that the most up-to-date values are applied to the project to estimate air quality impacts.

Evaluation of Significance Using CalEEMod

To determine whether the project being evaluated is likely to exceed the APCD significance threshold for motor vehicle-related emissions of 25 pounds per day of ROC or NO_x, the CalEEMod program should be run using as much project-specific information as possible. An initial estimate of project-related emissions can be done assuming that no mitigation will be employed. For a description of the land use types included in the program, please consult the CalEEMod User's Manual or the Institute of Transportation Engineers (ITE) *Trip Generation Manual*.

To correctly estimate project-specific vehicle emissions and other emission calculations using the CalEEMod program:

a) the operational year must be changed to reflect the year the project will be built (the on-road fleet-mix in subsequent years is assumed to have lower tail-pipe emissions and the fleet mix varies with the build out year selected), and
b) the average daily trip generation rates (ADT), which are determined by land use type and project square footage (for non-residential projects) or land use type and dwelling unit count (for residential projects), must be the same as those used in the project-specific traffic analysis estimates. For residential projects, the total area of the residential lot in acres must be provided. Summer daily emissions must be used to compare to the daily air quality thresholds because summer is the season when high ozone concentrations typically occur.

When calculating emissions from vehicle trips, the Average Daily Trips for a peak day must be used. The trip generation rates estimated by the Institute of Transportation Engineers (ITE) *Trip Generation Manual* include employee trips and delivery trucks, but not trips for special events. A reasonable worst case scenario must include all trips that could reasonably occur on the peak day. Averaging the total weekly trips over seven days, or the total annual trips over 365 days, does not estimate the reasonable worst case daily emissions from traffic for comparison with the daily significance threshold (25 lbs/day for ROC or NO_X).

The use of the CalEEMod model may not be appropriate for estimating emissions from the build-out of a community plan. Generally, this requires input from a travel demand model.

However, CalEEMod is an easily available, user-friendly tool that may be used to illustrate the relative difference between build-out scenarios or alternatives for community plans.
When using CalEEMod to evaluate a large mixed-use type of project, one must supplement any of the default data, such as number of trips, trip lengths, etc., with project specific data from a traffic study.

The main technical problem with using CalEEMod for land use areas larger than 40 acres is that it counts all the average daily trips associated with housing, employment sites, and commercial areas, whereas a travel demand model generates trips from residences and then distributes those trips to and from various destinations. Therefore, CalEEMod can result in a significantly larger number of trips than a travel demand model, even if the mixed-use, double-counting, and pass-by trips options are used.

Although using CalEEMod defaults over-estimates daily emissions from this type of project, the results using project-specific traffic study data also show that emissions will be many times above the significance thresholds. Thus, the impact is characterized as significant regardless of which method is used.

The use of the CalEEMod model for an alternatives analysis is also acceptable because the alternatives analysis compares emission estimates for different land use development scenarios, and the bias in the estimates should be consistent throughout each alternative's analysis.

Consistency with the most recent Clean Air Plan (growth comparisons with SBCAG's Regional Growth Forecast) must also be included to show whether the changes in land use will interfere with progress towards the attainment and maintenance of State and Federal ambient air quality standards.

A Screening Table is provided as Attachment A to this document. The screening table lists only the most common types of land uses and estimates the size of a specific project type that is expected to be less that the threshold of significance for ROC and NO_X emissions from vehicles. If a project type is not included in the screening table, if a project includes multiple land use types, or if a project is larger than those listed in the screening table, a project-specific analysis using the CalEEMod program must be performed.

5.3.2 Drive-through Facilities

Historically, the air quality concern associated with drive-through facilities was the potential occurrence of CO hotspots where a large number of vehicles idle. Due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with drive-through project traffic alone are not expected to exceed the CO health-related air quality standards. Therefore, CO "Hotspot" analyses are not required anymore.

Santa Barbara County Land Use and Development Code Section 35.42.130.B and similar ordinances for some cities in Santa Barbara County prohibit approval of new drive-through facilities if the air quality impacts of the project are greater with the drive-through than without. The current methodology available to perform a technical analysis of drive-through emissions is based on an extremely small sample size of observations. The calculation of drive-through emissions is highly sensitive to the assumptions used and in most cases is speculative. In general, emissions of ozone precursors (ROC and NO_X) may be slightly lower for a project with a drive-through facility. Conversely, emissions of greenhouse gas pollutants may be higher for a project with a drive-through facility, based on the assumption that a greater amount of fuel is being burned while vehicles wait in a queue. However, the emissions scenario changes if vehicle operators turn off their vehicles while waiting in the queue. Unless reliable information is available regarding the number of vehicles, queuing times, engine operation while vehicles are in queue (including number of vehicle starts), and non-drive-through service time, an accurate comparison of drive-through vs. non-drive-through emissions cannot be made. The CalEEMod program does not include default assumptions for this type of data. Therefore, the APCD does not recommend the use of the CalEEMod program to compare the emissions from a drive-through project to emissions from that same project without drive-through service.

5.3.3 Wineries

Air pollutant emissions associated with a proposed winery will involve emissions from motor vehicles as well as ROC emissions (primarily ethanol) and greenhouse gases from winery processes such as fermentation, bulk storage and aging of wine in oak barrels. All wineries (existing and proposed) must apply for a written permit exemption or an Authority to Construct permit from the APCD. Details on the requirements for wineries are available at www.sbcapcd.org/eng/winery/winery.htm.

APCD permits are also required for diesel-fueled engines (e.g., firewater pumps) that are rated at 50 brake-horsepower (BHP) or greater. Permits are required for any individual (or grouping) of boilers or large water heaters with a rated heat input greater than 2.0 million Btu’s per hour (MMBtu/hr).

An Excel emission calculation spreadsheet for winery daily and annual emissions is available on the APCD website. The spreadsheet is broken into three parts: winery emissions, boiler emissions and diesel engine emissions. Emissions from emergency/standby generator engines (diesel, gasoline or natural gas powered), if present, should be added to the total project emissions. The *Wine Data Input* sheet has all the inputs required to calculate the emissions from winemaking processes and storage. It has two sections, one for annual emissions and the second for daily emissions. When calculating potential emissions, the reasonable worst-case emissions scenario should address the maximum red wine production and aging capacities, since red wine production has higher emissions (check with the APCD to obtain the most current version of the spreadsheet).

The spreadsheet should be used first as a screening tool by assuming only red wine production and that all wine is aged in oak barrels (with no changes to the default settings). If the project does not pass this screening (i.e., the total emissions exceed the CEQA significance threshold) then additional information should be provided by the applicant for site-specific APCD review. This includes:

- Plant/facility process diagram showing the process equipment layout.

- Equipment design data for each device (size, capacity, ratings).

- Supporting documentation and/or calculations that support the data input values, including the total number of oak barrels.

- If applicable, explain what happens to the red wine that is not aged in oak.

During fermentation red wine emits 6.2 lbs ethanol per 1000 gallons; white wine emits 2.5 lbs ethanol per 1000 gallons (California Air Resources Board, 2005a). During aging in wood cooperage, 3.0% of the ethanol evaporates. There are negligible emissions from aging in stainless steel tanks. The greenhouse gas, CO_2, is emitted during fermentation and the emission factor is 882 lb CO_2/1000 gallons for red wine and 819 lb CO_2/1000 gallons for white wine (Santa Barbara County APCD, 2009).

5.3.4 Odor Issues

Certain projects have the potential to cause significant odor impacts because of the nature of their operation and their location. Examples include fast food restaurants, bakeries, and coffee roasting facilities. Other projects may be new developments (e.g., residential areas or sensitive receptors) that are located downwind of existing sources of odor. It is essential that odor issues be discussed early in the application process so that mitigation measures may be identified. An Odor Abatement Plan (OAP) may be submitted as part of the permit application for such a project. APCD inspectors are required to respond to public nuisance complaints under APCD Rule 303, and may review the OAP for adequacy in mitigating potential nuisance odor impacts from a project. OAP's should include the following elements:

a) Name and telephone number of contact person(s) at the facility responsible for logging in and responding to odor complaints.
b) Policy and procedure describing the actions to be taken when an odor complaint is received, including the training provided to the staff on how to respond.
c) Description of potential odor sources at the facility.
d) Description of potential methods for reducing odors, including minimizing idling of delivery and service trucks and buses, process changes, facility modifications and/or feasible add-on air pollution control equipment.
e) Contingency measures to curtail emissions in the event of a public nuisance complaint.

Wood-burning fireplaces are the cause of many public nuisance complaints that the APCD receives during the winter months. We recommend that only gas fireplaces be allowed in new residences. A gas fireplace is defined as a fireplace or any other listed gas appliance as defined in the Uniform Mechanical Code designed to burn natural gas in a manner that simulates the appearance of a wood burning fireplace and does not burn anything other than natural gas.

5.3.5 Toxic Air Emissions

Toxic air contaminants (TAC's) are air pollutants that may cause acute (immediate) or chronic (cumulative) adverse health effects, such as cancer or reproductive harm. Many companies have reduced their toxic emissions, either voluntarily or as a result of the implementation of the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB2588), air toxics control measures (ATCM's) developed and implemented by the California Air Resources Board, and amendments and emission control rules passed by the APCD. For more information see www.sbcapcd.org/airtoxics/toxics.htm.

Some classifications of projects are more likely than others to emit toxic pollutants. Such projects involve commercial or industrial activities such as oil and gas processing, gasoline dispensing, dry cleaning, electronic and parts manufacturing, medical equipment sterilization, freeways, rail yards, etc. The rail corridor, and other nearby sources of air pollution, including gas stations or dry cleaners, may increase the exposure to air pollution and associated cumulative risk and should be considered.

The impacts are often localized near the source of emissions and locating a sensitive use some distance away from the toxic source may be adequate to avoid the impact. If a project may emit toxic air contaminants, or if toxic contaminants may already be present at the project site, the impacts and potential risk should be discussed in the environmental document. If there are sensitive receptors nearby, a screening health risk assessment (HRA) using worst-case scenario assumptions may be warranted. Some projects may require a formal (refined) HRA, and also may require assessment of baseline health risk as compared to the health risk associated with the proposed project. For additional information on HRA requirements refer to APCD's guidance document entitled "SBCAPCD Modeling Guidelines for Health Risk Assessments" (form APCD-15i), available at the APCD website at www.sbcapcd.org/eng/dl/dl01.htm. A health risk assessment is not required for short-term or construction projects at this time.

The significance threshold for long-term public health risk is set at **10 excess cancer cases in a million for cancer risk**. For non-cancer risk, the significance level is set at a **Hazard Index of more than one (1.0)**. A Hazard Index of more than one means that predicted levels of a toxic pollutant are greater than the exposure level (the exposure level being a level that is generally considered acceptable). These significance thresholds are also the health risk public notification thresholds adopted by the APCD Board. If a formal health risk assessment shows that a significant impact will occur, the lead agency may impose mitigations to reduce the predicted health risk to a level that is less than significant.

It should be noted that diesel-powered emergency standby generator engines with a rated brake-horsepower rating of 50 or greater are required to obtain APCD permits, and a screening health risk assessment will be required as part of the permit process.

5.3.6 Public Health and High Traffic Roadways

In Santa Barbara County, the proximity of residential projects to the U.S. 101 freeway is of particular concern. CARB recommends against siting residential land uses within 500 feet of the outer edge of a freeway (California Air Resources Board, 2005b). The CARB recommendation does not include mitigation measures to reduce these health risks, and the proximity studies referenced in the handbook are not based on exposure to specific pollutants or specific concentrations. Therefore, the recommendation is solely to provide for a 500 foot buffer. The APCD strongly recommends policies which require re-designing a residential project so that sensitive receptors are moved 500 feet away from the freeway to reduce potential health impacts.

This recommendation is based on a number of proximity studies that were conducted in areas throughout the state. The studies link traffic-related air pollutant emissions to a number of health effects in children, such as reduced lung function, increased asthma and bronchitis, and increased medical visits. These epidemiological studies differ from site-specific health risk assessments because they do not attempt to quantify the traffic-related air pollutant emissions and calculate exposure values to determine cancer risk. Also, the studies do not discriminate between exposure to particulate matter and gaseous air pollutants. They do, however, provide a strong correlation between exposure to traffic-related air pollution and human airway (bronchial and lung) health in sensitive population groups such as children. Other non-sensitive land uses such as commercial uses may be sited in this area. Additional information is available on the APCD website, see www.sbcapcd.org/apcd/landuse.htm#AirQualityandLandUse.

5.3.7 Asbestos

If a residential building with more than four units or a commercial building is to be demolished or renovated, or the structure is considered a "regulated structure" (e.g., bridges, caissons, etc.), the project proponent must complete an APCD *Asbestos Demolition and Renovation Compliance Checklist* (available on the APCD website, www.sbcapcd.org) and the APCD must be notified even if the building does not contain any asbestos. However, if the project is only a renovation, no notification is required unless the renovation involves disturbing a threshold amount of regulated asbestos materials. The project proponent should consult the APCD website regarding asbestos requirements as definitions and requirements often change. For more information, see www.sbcapcd.org/biz/asbestos.htm.

5.4 Cumulative Impacts

Cumulative air quality impacts are the effect of long-term emissions of the proposed project, plus any existing emissions at the same location, plus reasonably foreseeable similar projects on the projected regional air quality or localized air pollution problems in the County.

As discussed in the APCD CEQA Guidelines, the cumulative contribution of project emissions to regional levels should be compared with existing programs and plans, including the most recent Clean Air Plan (CAP). Due to the county's nonattainment status for ozone and the regional nature of ozone as a pollutant, if a project's air pollutant emissions of either of the ozone precursors (NOx or ROC) exceed the long-term thresholds, then the project's cumulative impacts will be considered significant. For projects that do not have significant ozone precursor emissions or localized pollutant impacts, if emissions have been taken into account in the most recent CAP growth projections, regional cumulative impacts may be considered to be insignificant. When a project's emissions exceed the thresholds and are clearly not accounted for in the most recent CAP growth projections, then the project is considered to have significant cumulative impacts that must be mitigated to a level of insignificance.

5.4.1 Global Climate Change/Greenhouse Gas Impacts

Global climate change is a growing concern that must be addressed in CEQA documents. Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases.

The California Office of Planning & Research (OPR) developed amendments to the CEQA Guidelines, which were adopted by the California Natural Resources Agency on December 30, 2009 and became effective March 18, 2010. These amendments establish a framework for addressing global climate change impacts in the CEQA process, and include revisions to the Environmental Checklist Form (Appendix G) as well as to the Energy Conservation appendix (Appendix F). A new section (§15064.4) has been added that provides an approach to assessing impacts from GHGs. For additional information on the SB 97 CEQA Guidelines amendments, visit the Resources Agency's website at www.ceres.ca.gov/ceqa/guidelines/.

The March 2010 revisions to the CEQA Guidelines require that new projects be evaluated for their potential impacts to climate change. A number of state and regional agencies within California are working to develop procedures to evaluate climate change impacts in CEQA documents and to determine whether those impacts are significant. APCD staff is monitoring these efforts, and has also held workshops and met with local stakeholders to identify options for GHG significance thresholds for Santa Barbara County. As of this publishing, no formal proposal has been made.

We recommend that all projects subject to CEQA review be considered in the context of GHG emissions and climate change impacts. CEQA documents should include a quantification of GHG emissions from all project sources, direct and indirect, as applicable. In addition, we recommend that climate change impacts be mitigated to the extent reasonably possible, whether or not they are determined to be significant. The discussion of climate change impacts can be included under cumulative air quality impacts or in its own section.

Estimating GHG Emissions for Land Use Projects

GHG emissions from mobile sources (autos and trucks), area sources (water heating and space heating equipment) and construction equipment can be estimated using the CalEEMod program (see section 5.3.1 of this document).

Indirect emissions from electricity usage and other activities (such as solid waste disposal, water conveyance, and wastewater conveyance and treatment) can also be estimated using the CalEEMod program. It is recommended that CalEEMod be used to estimate indirect emissions, as it is the most complete and up-to-date tool for these purposes.

If there are specific reasons that the CalEEMod program cannot be used to estimate project emissions, and another program such as the URBEMIS program is used, indirect GHG emissions from electricity usage can be estimated utilizing the following procedure and assumptions:

1. *Determine electricity usage rates for the proposed project.*

    a. Residential land uses: If project-specific electricity usage estimates are not available, electricity usage per household can be estimated using data from the 2010 Census (number of households in Santa Barbara County) and Santa Barbara County electricity usage reported by the California Energy Commission (CEC). As of this printing, the most current available electricity usage data is for calendar year 2010. The 2010 Census Data reports that the average number of households in Santa Barbara County for 2010 was 142,104 (U.S. Census Fact Finder, 2011). The CEC reports that residential electricity usage in Santa Barbara County for year 2010 was 796.898663 Million kilowatt-hrs (kWh) (California Energy Commission ECDMS, 2011). Therefore, average electricity usage in Santa Barbara County for calendar year 2010 was 5,607.86 kWh/yr/household. Until more current information is made available, this value may be used to estimate per-household electricity usage for CEQA purposes.

    b. Commercial land uses: If project-specific electricity usage estimates are not available, a generic electricity usage rate can be used. The California Commercial End-Use Survey, a study commissioned by the California Energy Commission and published in 2006, provides an annual electricity usage rate estimate of 13.63 kilowatt-hours per square foot (kWh/ft^2) of commercial space (Itron, Inc., 2006). This figure can be used in lieu of project-specific electricity usage amounts.

    c. Industrial land uses: If the project is an industrial facility that has industry-specific electricity requirements, electricity usage estimates should be developed for the specific project in consultation with lead agency staff.

2. *Determine the appropriate emission factor to estimate GHG emissions for the location of the subject project.* Santa Barbara County projects are generally served by either Pacific Gas & Electric (PG&E) in North County or Southern California Edison (SCE) in South County. Emission factors for carbon dioxide (CO_2) have been developed for these specific utilities and are available at the California Climate Action Registry's CARROT program website at www.climateregistry.org/CARROT/Public/Reports.aspx. For example, the user may enter the specific utility (e.g., Southern California Edison) and

reporting year (most current available is 2007), generate a report for that year, and scroll to the bottom of the annual emissions report to where "Reference Documents" are provided. The user may then click on the link to the "SCE PUP for 2007", and at the bottom of this report under "Emissions Efficiency Metrics", an emission factor of 630.89 lb CO2 per megawatt-hour (MWh) is provided. As of this printing, the most current CO2 emission factors for electricity usage are:

a. Southern California Edison users: 630.89 lb CO_2/MWh (0.6309 lb/kWh) for reporting year 2007.

b. Pacific Gas & Electric users: 641.35 lb CO_2/MWh (0.6414 lb/kWh) for reporting year 2008.

3. *Calculate GHG Emissions from electricity usage* by multiplying the project characteristics by the electricity usage rate and the emission factor. For example:

   a. 100 households x 5,607.86 kWh/household x 0.6309 lb CO2/kWh = 368,354.75 lb CO2/yr, which converts to 184 short tons/yr (167 metric tonnes/yr)

   b. 100,000 square feet (commercial) x 13.63 kWh/sf x 0.6309 lb CO2/kWh = 859,916.7 lb CO2/yr, which converts to 430 short tons/yr (390 metric tonnes/yr)

GHG/Climate Change Mitigation Measures

GHG emissions can be reduced in a wide variety of ways. The following list provides a broad range of options that project proponents and lead agencies should consider when developing mitigation measures:

- Energy use (energy efficiency, low carbon fuels, renewable energy)
- Transportation (reduce vehicle miles traveled, compact and transit-oriented development, pedestrian- and bicycle-friendly communities)
- Water conservation (improved practices and equipment, landscaping)
- Waste reduction (material re-use/recycling, composting, waste diversion, waste minimization)
- Architectural features (green building practices, cool roofs)

Most of the mitigation measures that are included in Section 6 of this document (with the exception of PM_{10}/fugitive dust mitigation measures) will result in decreased greenhouse gas emissions and are acceptable mitigation for climate change/GHG impacts. Please refer to the APCD website for additional reference materials related to CEQA and Climate Change.

For specific guidance on the appropriate application of GHG mitigation measures, refer to the CAPCOA document titled *Quantifying Greenhouse Gas Mitigation Measures*. This document includes an extensive sector-by-sector compendium of project-specific mitigation measures, including quantification methods to calculate GHG reductions and is available online at http://www.capcoa.org.

5.4.2 Consistency with the Clean Air Plan

Consistency with land use and population forecasts in local and regional plans, including the Clean Air Plan, is required under CEQA for all projects. Proposed projects subject to the most recent CAP consistency determinations include a wide range of activities such as commercial, industrial, residential, and transportation projects. By definition, consistency with the CAP for the projects subject to these guidelines means that direct and indirect emissions associated with the project are accounted for in the CAP's emissions growth assumptions and the project is consistent with policies adopted in the CAP. The CAP relies primarily on the land use and population projections provided by the Santa Barbara County Association of Governments (SBCAG) and ARB on-road emissions forecast as a basis for vehicle emission forecasting. The 2010 Clean Air Plan utilized SBCAG's Regional Growth Forecast 2005-2040, adopted August 2007, to project population growth and associated air pollutant emissions for all of the Santa Barbara County incorporated and unincorporated areas.

Residential Projects that involve population growth in an individual jurisdiction or subregion of the unincorporated county above the amount forecasted for that jurisdiction or subregion will be considered inconsistent with the Clean Air Plan and may have a significant impact on air quality.

The standard **dust mitigation measures** in Section 6.1 of this document are based on policies adopted in the 1979 Air Quality Attainment Plan (AQAP). To be consistent with these policies, all projects involving earthmoving activities must implement the standard dust control measures.

Any **general plan amendment** that would provide for increased population growth above that forecasted in the most recently adopted CAP is inconsistent with the CAP and may have a significant impact on air quality.

For **areas regulated by growth management** ordinances, where the allowable growth does not exceed the projections contained in the CAP, proposed residential projects are considered consistent with the CAP if they are consistent with the limitations of the ordinance.

For **areas not regulated by residential growth management** ordinances, or where growth regulated by such ordinances allows growth in excess of the CAP projections, proposed residential projects are considered consistent with the CAP if the annual incremental increase in dwelling units is below the incremental projections contained in the CAP.

Commercial and industrial projects (square footage and gross acreage) must also be tracked pursuant to the Congestion Management Plan. Commercial or industrial projects will be judged consistent with the CAP if they are consistent with APCD rules and regulations. Large industrial stationary source projects may be found inconsistent if their direct emissions are not considered in the CAP stationary source emission inventory.

Consistency with the *Air Quality Supplement of the County's Land Use Element* must also be analyzed for projects in the unincorporated areas of the County. Projects in incorporated areas must be consistent with the air quality policies in applicable plans. The air quality policies, in general, encourage mixed-use development and alternative transportation modes. Specifically, project alternatives for proposed housing projects should consider land development design policies aimed at reducing air pollutant emissions.

6. MITIGATION MEASURES AND RESIDUAL IMPACTS

The environmental document must describe all feasible mitigation measures that may be used to reduce or avoid potentially significant air quality impacts. Evaluation of **mitigation measures** to reduce or avoid potentially significant air quality impacts should include effectiveness of mitigation measures (quantified, if possible) and discussion of **residual impacts**.

Mitigation measures are required to reduce potentially significant air quality impacts caused by a proposed project. The State CEQA Guidelines state that a project shall not be approved with significant environmental impacts if there are feasible mitigation measures to reduce or eliminate the impact. As required by the CEQA Statute Section 21081.6, lead or responsible agencies must establish a **Mitigation Monitoring or Reporting Plan** to ensure that mitigation measures imposed as conditions of project approval are implemented as specified.

This section lists mitigation measures for typical land use projects. Such measures would normally be **recommended** to reduce adverse air quality impacts and are **required** whenever project air quality impacts exceed the significance thresholds.

The following list of mitigation measures **is not all-inclusive**. It should also be noted that more than one mitigation measure per pollutant might be required to reduce project impacts to below the significance threshold. The APCD recommends that the effectiveness of mitigation measures in reducing air quality impact levels be discussed and quantified whenever possible. The effectiveness depends on proper implementation and may vary by location. The Community Programs Section of the APCD should be contacted for information on the best available mitigation measures for different sources.

6.1 CONSTRUCTION IMPACT MITIGATION: PM_{10} MITIGATION MEASURES

These measures are required for all projects involving earthmoving activities regardless of the project size or duration. The measures are based on policies adopted in the 1979 AQAP for Santa Barbara County. Proper implementation of these measures is assumed to fully mitigate fugitive dust emissions.

- During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.

- Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.

- If importation, exportation and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.

- Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.

- After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.

- The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading of the structure.

- Prior to land use clearance, the applicant shall include, as a note on a separate informational sheet to be recorded with map, these dust control requirements. All requirements shall be shown on grading and building plans.

6.2 Construction Impact Mitigation – Equipment Exhaust

Particulate emissions from diesel exhaust are classified as carcinogenic by the state of California. The following is a list of regulatory requirements and control strategies that should be implemented to the maximum extent feasible. Measures shall be shown on grading and building plans, and shall be adhered to throughout grading, hauling and construction activities.

The following measures are required by state law:

- All portable diesel-powered construction equipment shall be registered with the state's portable equipment registration program OR shall obtain an APCD permit.

- Fleet owners of mobile construction equipment are subject to the California Air Resource Board (CARB) Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, § 2449), the purpose of which is to reduce diesel particulate matter (PM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles. For more information, please refer to the CARB website at www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.

- All commercial diesel vehicles are subject to Title 13, § 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

The following measures are recommended:

- Diesel construction equipment meeting the California Air Resources Board (CARB) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.

- Diesel powered equipment should be replaced by electric equipment whenever feasible.

- If feasible, diesel construction equipment shall be equipped with selective catalytic reduction systems, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California.

- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

- All construction equipment shall be maintained in tune per the manufacturer's specifications.

- The engine size of construction equipment shall be the minimum practical size.

- The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.

- Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

6.3 Operational Impact Mitigation - Ozone Precursor (NO_X and ROC) Mitigation Measures

The determination of an effective mitigation measure for operational impacts of ozone precursors depends on the nature of the emission source. If the emissions are from a direct source, the APCD should be contacted for direct (i.e., stationary) source mitigation measures.

The APCD has a special interest in residential and commercial land use projects that use sustainable development and pollution prevention principles. Such projects benefit air quality by reducing the use of the single occupant vehicle and by using energy more efficiently. Sustainable development includes principles that strengthen existing communities by directing development towards infill locations, promote mixed land uses, take advantage of compact and green building designs and preserve open space, agricultural land, natural beauty and environmentally sensitive areas. The principles also provide a variety of housing opportunities and choices; create walkable communities with a variety of transportation choices. Pollution prevention principles include "green" buildings whose location, design, construction and energy systems reduce the use of non-renewable energy resources.

Idling Restrictions: In order to reduce diesel emissions and the associated health risk from heavy duty diesel vehicles, California's more recent anti-idling regulations (with some exemptions) require that drivers of diesel-fueled commercial vehicles weighing more than 10,000 pounds:

- shall not idle the vehicle's primary diesel engine for greater than 5 minutes at any location,
- shall not use diesel-fueled auxiliary power units for more than 5 minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle equipped with a sleeper berth, at any location.

Lead agencies may place additional requirements on heavy duty diesel delivery and haul trucks less than 10,000 pounds, and create "no idle" zones at locations where there is a potential for significant health risk. It may not be possible to quantify the emission reductions associated with the creation of a no idling zone. However, this feasible mitigation measure may eliminate idling emissions and may avoid potentially significant health risk impacts.

6.3.1 Transportation Control Measures

On a project-specific level, land use and design measures that promote the use of alternative modes of transportation should be considered. These mitigation measures focus on reducing vehicle miles traveled, vehicle trips and peak hour travel. The implementation of these measures will control emissions of ozone precursors (NO_x and ROC), the primary air pollution concern on a regional scale for most land use projects. This list is not all-inclusive; development of additional measures is encouraged.

<u>Onsite Measures</u>

- Include multiple-use development to reduce the need for vehicle trips.
  Example:

  Combine residential, employment, and retail uses.

- Include design features to encourage alternate transportation modes.
  Examples:

  For pedestrians: *sidewalks; safe street and parking lot crossings; shade trees; off street breezeways, alleys, and over crossings; placement of parking lots and building entrances to favor pedestrians rather than cars; shower and locker facilities.*

  For transit riders: *all of the above plus safe, sheltered transit stops with convenient access to building entrances.*

  For bicyclists: *theft proof and well-lighted bicycle storage facilities with convenient access to building entrance; on-site bikeways between buildings or uses; shower and locker facilities.*

__For carpools and vanpools:__ preferential parking.

- Provide onsite services to reduce the need for offsite travel.
  Examples:
  > *__For residential developments:__ include childcare, telecommute center, neighborhood retail stores, postal machines, automatic teller machines.*
  >
  > *__For commercial/office developments:__ include childcare, food services, postal machines, banking services.*
  >
  > *__For commercial/retail developments:__ include delivery services, sales by phone.*

- Provide onsite services to encourage alternative transportation modes.
  Examples:
  > *rideshare matching, transit subsidies, vanpool subsidies, shuttle services, parking management, guaranteed ride home, education.*

- Schedule operations to reduce trips during highly congested periods.
  Examples:
  > *adjust business hours, allow alternative work schedules, schedule deliveries for off-peak hours.*

<u>Off-Site Measures</u>

- Transit service enhancements to serve the project.
  Examples:
  > *provide express bus service, bike racks on buses, shuttle buses.*

- Bikeway improvements related to the project.
  Examples:
  > *extend bikeway network to provide better access.*

- Pedestrian improvements serving the project.
  Examples:
  > *add sidewalks to improve access, pedestrian crossings and overhead or underground walkways.*

- Telecommuting services for project-related employees.
  Examples:
  > *provide rental computers, telecommuting centers.*

- Public education for residents or employees of the project.
  Examples:

explain the benefits of alternative transportation through multi-media campaigns, such as pamphlets, public service announcements, newsletters or community bulletin boards.

The above measures may be tailored to the impacts of the proposed project. The following mitigation measure is provided as an example of recommended conditions of approval for a new regional shopping center:

Prior to approval of the Land Use Permits, the lead agency shall review and approve the Transportation Demand Management (TDM) Program. The TDM Program shall be a part of the project lease agreement terms and include:

- *a) A program to educate employees and shopper/users about the benefits of alternate transportation modes.*
- *b) A Bulletin Board for employee carpool matching.*
- *c) Shower and locker facilities for employee bicyclists.*
- *d) Preferential parking for employee carpoolers.*
- *e) Childcare facilities, if feasible.*
- *f) Employee transit and carpool subsidies.*
- *g) Telephone and computer shopping options.*

6.3.2 Offsite Mitigation

The APCD can provide guidance on mitigating emissions associated with stationary sources of air pollution or a land use development project. The effectiveness of the measures will vary with project location, project type, and the availability of other programs and services. The APCD is available to assist the County and the cities in tailoring a feasible program to meet the emission reduction requirements for projects whose emissions exceed the threshold of significance. Lead agencies will be responsible for implementation and monitoring of air quality offsite mitigation programs.

6.3.3 Energy Conservation

Energy conservation measures are recommended for all projects to reduce the need for natural gas and electricity and thereby reduce greenhouse gases that contribute to global climate change. Although Santa Barbara County does not have power plants, a portion of our electricity comes from burning fossil fuels, which contributes to regional air pollution. The County of Santa Barbara's **Innovative Building Review Program** (IBRP) is a free service to developers, architects, planners and homeowners on how to design projects to use energy more efficiently. Information on this program can be found at www.sbcountyplanning.org/projects/ibrp/index.cfm

The following are examples of innovative measures, some that go beyond Title 24 compliance requirements, that should be incorporated into project building plans:

- Photovoltaic and wind generators

- Passive cooling strategies: passive cooling planned for or designed into structure (e.g. strategically sized overhands or trellis on south side, operable skylights, fan, thermal chimney, a cupola or roof opening for hot air venting, radiant barrier, or underground cooling tubes)
- Residential lighting: whole-home, low voltage, lighting control system with conditional logic
- Non-residential lighting: for daylit spaces, use of automatic, non-dimmed lighting control, or automatic, continuous dimming of light sources, or integrated dimming daylight control
- Outdoor lighting designed for high efficiency, solar-powered or controlled by motion detectors
- Natural lighting in buildings
- Building siting and orientation to reduce energy use and maximize opportunities for solar systems
- Summer shading and wind protection measures to increase energy efficiency (e.g. moveable exterior awnings or trees)
- Protection of building from heat loss (e.g. planting windbreak, earthen berm, or fin walls to create an air envelope around the building)
- Use of landscaping to shade buildings and parking lots
- Installation of energy efficient appliances and lighting.

6.3.4 Green Materials and Practices

Proposed building plans should include green building materials and pollution prevention practices, such as:

- At least 75% of exterior of local masonry; plaster or cementitious siding; recycled content, salvaged or recommended option - certified sustainably harvested wood; recycled content roofing material or combination cement-fiber roofing; 30-year rated life on minimum 50% of roof
- At least 50% interior floor of tile, stone, finished concrete; cork or natural linoleum, carpet and pad (tacked) of recycled content or natural content
- All insulation to be 100% recycled content, wet-blown, and/or cellulose with UL fire retardant
- The use of vegetated roof or light-colored roofing materials
- At least 80% of interior and exterior paints and finishes to be zero VOC, of recycled content, water based urethane or lacquer finishes for woodwork and use of only low toxicity, solvent-free adhesives
- Implement a construction waste management plan to re-use and minimize material waste
- Use of concrete or other non-polluting materials for parking lots instead of asphalt
- Installation of mechanical air conditioners and refrigeration units that use non-ozone depleting chemicals.

7. GENERAL CONFORMITY REGULATIONS

Section 176(c) of the Federal Clean Air Act prohibits Federal entities from taking actions in nonattainment or maintenance areas which do not conform to the State implementation Plan (SIP) for the attainment and maintenance of the national ambient air quality standards (NAAQS). Therefore, the purpose of conformity is to (1) ensure Federal activities do not interfere with the budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS. **Currently, SBCAPCD is in attainment of national ambient air quality standards, therefore general conformity analysis is not required for Federal or Federally-funded projects**.

Santa Barbara County currently has a preliminary designation of nonattainment, with a classification of "marginal," for the federal 8-hour ozone standard. However, the U.S. EPA plans to finalize this designation by mid-2012, and Santa Barbara County's designation may change. (The 1-hour federal ozone standard was revoked for Santa Barbara County). If the final designation for Santa Barbara County for the federal 8-hour ozone standard is nonattainment, this would eventually trigger the requirement for General Conformity Analysis for federal actions.

8. REFERENCES

California Air Resources Board, 2005a. Index of Area-Wide Source Methodologies, Section 5.1, Food & Agriculture, Wine Fermentation, www.arb.ca.gov/ei/areasrc/fullpdf/full5-1.pdf.

California Energy Commission ECDMS, 2010: CEC's *Energy Consumption Data Management System* website at www.ecdms.energy.ca.gov/elecbycounty.aspx.

California Air Resources Board, 2005b, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005.

CEQA Guidelines: Title 14 California Code of Regulations, Chapter 3, Guidelines for Implementation of the California Environmental Quality Act, Sections 15000 et. seq.

CEQA Statute: California Environmental Quality Act, California Public Resources Code, Division 13, Environmental Quality, Sections 21000 et. seq.

Itron, Inc., 2006: *California Commercial End-Use Survey*, Consultant Report, prepared for California Energy Commission, March 2006 (CEC-400-2006-0005), www.energy.ca.gov/2006publications/CEC-400-2006-005/CEC-400-2006-005.PDF

Santa Barbara County APCD, 2009, *CO2 Emissions Calculations* document dated 6/24/09, available at www.sbcapcd.org/eng/winery/winery.htm.

U.S. Census Fact Finder, 2010: Santa Barbara County, California; Select Housing Characteristics 2005-2007; Data Set: 2005-2007 American Community Survey 3-Year Estimates, www.factfinder.census.gov

ATTACHMENT A: Screening Table

The Lead Agency may consult the Screening Table below for an indication as to whether the threshold for vehicle-related emissions from project operations might be exceeded. The Screening Table lists only the most common types of land uses and estimates the size of a specific project type that is expected to be less than the threshold of significance for ROC and NO_X emissions from vehicles. The values provided in the Screening Table were generated using the CalEEMod model (described in Section 5.3.1). Assumptions for modeling inputs include: a 2012 build-out year, a project in Climate Zone 8, a default trip length, and a trip type of 100% primary trips. The values should be used only for project screening, and should not be considered absolute thresholds of project significance. Projects exceeding the levels indicated in the Screening Table, or project types not included in the Screening Table, should undergo a more detailed analysis, as described in Section 5.

Other air quality issues, such as high odors, toxics, greenhouse gases, cumulative impacts, and consistency with the Clean Air Plan must be considered when evaluating a project's potential for causing adverse air quality impacts. Depending on the nature of the project and local conditions, a project below the values in the screening table below could still cause an adverse air quality impact.

SCREENING TABLE: Projects with Potentially Significant Emissions

Land Use Category	Project Description*	Size of Projects Likely to Generate Approximately 22.5 lb/day** of ROG or NOx
Housing		
Single Family House	Detached Housing, 3 houses per acre, individual lots	140 houses
Apartments	One or two levels,16 apartments per acre	200 apartments
Condominiums/Town-houses	16 condos per acre	200 condos
Mobile Home Park	7.9 manufactured homes per acre	300 mobile homes
Schools		
Elementary School	K-6 grade	110,000 square feet
High School	Grades 9-12	125,000 square feet
Day Care Center	Pre-school age, classrooms, offices, eating areas, playgrounds	25,000 square feet
Community		
Place of Worship	Church, synagogue	65,000 square feet
Retail		
Sit-down Restaurant	Full service, one hour or more turnover rate	23,000 square feet
High-turnover Restaurant	Full service, less than one hour turnover rate	15,000 square feet

Land Use Category	Project Description*	Size of Projects Likely to Generate Approximately 22.5 lb/day** of ROG or NOx
Hotel	Full service, restaurant, meeting rooms	270 rooms
Motel	Restaurant, parking	370 rooms
Discount Club	Free standing store, parking	42,000 square feet
Electronic Superstore	Electronics, Audio, Video, Software, Computers	50,000 square feet
Home Improvement Superstore	Home Improvement Merchandise	37,000 square feet
Strip Mall	Small strip shopping center that contains a variety of retail shops	50,000 square feet
Supermarket	Food items, also with banking, bakeries floral and photo centers	13,500 square feet
24-hour Convenience Market	Convenience foods, no gasoline	2,700 square feet
Office Park	General office buildings with banks, restaurants and other support services	175,000 square feet
Medical Office Building	Medical, dental office	55,000 square feet
General Office Building	Multiple tenants	180,000 square feet

* *Assumptions for modeling inputs using the CalEEMod model include: a 2012 build-out year, a project in Climate Zone 8, a default trip length, and a trip type of 100% primary trips.*

***Approximately ten percent less than the SBCAPCD's significance threshold of 25 lbs/day for ROC or NO_X from traffic using the default trip lengths for the year 2012.*

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Santa Barbara County Air Quality Attainment Designation

Air quality standards define clean air. They tell us how much of a substance can be in the air without causing harm, based on proven scientific and medical research. Both the federal and state governments set air quality standards. In most cases, California's standards are more protective of health. The **Attainment Designation** tells us whether our air meets these health standards.

Federal standards have been established for seven pollutants:

1. carbon monoxide
2. lead
3. nitrogen dioxide
4. ozone
5. respirable particulate matter less than 10 microns in diameter (PM10)
6. fine particulate matter less than 2.5 microns in diameter (PM2.5), and
7. sulfur dioxide.

California state standards exist for all of these, plus four more:

1. sulfates
2. hydrogen sulfide
3. vinyl chloride (chloroethene), and
4. visibility reducing particles.

These are the only pollutants - out of hundreds in our air - for which standards have been set. There is not enough known about the health effects of other pollutants to set air quality standards. View the State and Federal Ambient Air Quality Standards.

Santa Barbara County was designated unclassifiable/attainment for the 2008 federal 8-hour ozone standard on April 30, 2012. (The 1-hour federal ozone standard was revoked for Santa Barbara County). The California 8-hour ozone standard was implemented in May, 2006. The County violates the state 8-hour ozone standard and the state standard for PM10. The County is unclassifiable/attainment for the federal PM2.5 standard and unclassified for the state PM2.5 standard (based on monitored data from 2007 – 2009).

To view historical statistics on ozone and particle pollution levels in Santa Barbara County and other areas see this page on the California Air Resources Board site.

Santa Barbara County
Attainment/Nonattainment Classification Summary 2012

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 hour	0.070 ppm	**N**	0.075 ppm	U/A*
	1 hour	0.09 ppm (180 µg/m3)	–	–	–
Carbon Monoxide	8 hour	9.0 ppm (10 mg/m3)	A	9.0 ppm (10 m/m3)	A
	1 hour	20.0 ppm (23 mg/m3)	A	35.0 ppm (40 µg/m3)	A
Nitrogen Dioxide* **	annual average	0.030 ppm (56 µg/m3)	A	53 ppb	U/A
	1 hour	0.18 ppm (338 µg/m3)	A	100 ppb	U/A
Sulfur Dioxide	annual average	–	–	Revoked	–
	24 hour	0.04 ppm (105 µg/m3)	A	Revoked	–
	1 hour	0.25 ppm (655 µg/m3)	A	75 ppb	****
Particulate Matter (PM10)	annual arithmetic mean	20 µg/m3	**N**	revoked	A
	24 hour	50 µg/m3	**N**	150 µg/m3	A
Particulate Matter - Fine (PM2.5)	annual arithmetic mean	12µg/m3	U	15 µg/m3	U/A
	24 hour	–	–	35 µg/m3**	U/A
Sulfates	24 hour	25 µg/m3	A		
Lead	calendar quarter	–	–	1.5 µg/m3	A
	30 day average	1.5 µg/m3	A	–	–
	Rolling 3-month Average	–	–	0.15 µg/m3	U
Hydrogen Sulfide	1 hour	0.03 ppm (42 µg/m3)	A	–	–
Vinyl Chloride (chloroethene)	24 hour	0.010 ppm (26 µg/m3)		–	–
Visibility Reducing Particles	8 hour (1000 to 1800 PST)		A	–	–

A=Attainment
N=Nonattainment
U=Unclassified
U/A=Unclassifiable/Attainment

mg/m^3=milligrams per cubic meter
ppm=parts per million
µg/m^3=micrograms per cubic meter

NOTES:

* EPA strengthened the 8 hour ozone standard from the 1997 level of .08 ppm to .075 ppm on May 27, 2008, but delayed implementation of the standard. Designations for the 2008 standard were finalized on April 30, 2012. For more information, see EPA's website.

** EPA strengthened the 24-hour fine particle standard from the 1997 level of 65 ug/m3 to 35 ug/m3 on September 21, 2006.

*** The state Nitrogen Dioxide ambient air quality standard was amended on February 22, 2007, to lower the 1-hour standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. On January 22, 2010, EPA set a new 1-hour NO2 standard of 100 ppb. They also retained the annual NO2 standard of 53 ppb.

**** CARB is recommending attainment designation for the Federal SO2 1-hour standard as of 6/15/2011.