

Appendix B
Air Quality and Climate Change

Air Quality and Climate Change Appendix

Malibu Waste Water Treatment Facility

- Local Monitoring Data
- Local Climate Data
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- CalEEMod Outputs
 - WWTC Phase 1 Annual
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Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at West Los Angeles-VA Hospital

	2010		2011		2012	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Aug 23	0.099	Sep 6	0.098	Sep 30	0.093
Second High:	Sep 26	0.098	Sep 7	0.095	Oct 1	0.093
Third High:	Sep 25	0.092	May 4	0.079	Oct 29	0.086
Fourth High:	Aug 17	0.089	Mar 31	0.075	Sep 23	0.083
California:						
# Days Above the Standard:		2		2		0
California Designation Value:		0.10		0.10		0.09
Expected Peak Day Concentration:		0.104		0.096		0.089
National:						
# Days Above the Standard:		0		0		0
Nat'l Standard Design Value:		0.111		0.108		0.095
Year Coverage:		96		92		96

Notes:

Hourly ozone measurements and related statistics are available at West Los Angeles-VA Hospital between 1984 and 2012. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide



Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at West Los Angeles-VA Hospital

iADAM

	2010		2011		2012	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Dec 3	70.8	Jan 18	81.3	Nov 15	61.3
Second High:	Sep 28	61.7	Dec 29	67.9	Oct 17	59.1
Third High:	Dec 2	61.3	Apr 1	65.8	Mar 5	56.8
Fourth High:	Sep 27	61.0	Jan 25	63.0	Oct 18	56.7
California:						
First High:	Dec 3	70	Jan 18	81	Nov 15	61
Second High:	Sep 27	61	Dec 29	67	Oct 17	59
Third High:	Sep 28	61	Apr 1	65	Mar 5	56
Fourth High:	Dec 2	61	Jan 25	63	Mar 10	56
National:						
1-Hour Standard Design Value:		61		59		56
1-Hour Standard 98th Percentile:		57.4		58.2		53.6
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		16		16		14
California:						
1-Hour Std Designation Value:		80		70		70
Expected Peak Day Concentration:		76		70		68
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		18		17		15
Annual Average:		15		15		*
Year Coverage:		96		96		83

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at West Los Angeles-VA Hospital between 1984 and 2012. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide



Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at West Los Angeles-VA Hospital



	2010		2011		2012	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Sep 26	0.078	Sep 6	0.068	Sep 15	0.073
Second High:	Sep 25	0.072	Sep 28	0.068	Sep 30	0.067
Third High:	Aug 18	0.071	Apr 14	0.062	Sep 22	0.066
Fourth High:	Aug 17	0.069	Oct 24	0.062	Oct 17	0.065
California:						
First High:	Sep 26	0.079	Sep 28	0.069	Sep 15	0.074
Second High:	Sep 25	0.072	Sep 6	0.068	Sep 30	0.068
Third High:	Aug 18	0.071	Apr 14	0.062	Sep 22	0.067
Fourth High:	Aug 17	0.070	Sep 7	0.062	Oct 17	0.066
National:						
# Days Above the Standard:		1		0		0
Nat'l Standard Design Value:		0.072		0.068		0.065
National Year Coverage:		97		90		96
California:						
# Days Above the Standard:		3		0		1
California Designation Value:		0.082		0.076		0.072
Expected Peak Day Concentration:		0.082		0.077		0.072
California Year Coverage:		97		89		90

Notes:

Eight-hour ozone averages and related statistics are available at West Los Angeles-VA Hospital between 1984 and 2012. Some years in this range may not be represented. All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide



Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

at West Los Angeles-VA Hospital



	2010		2011		2012	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Dec 10	1.44	Dec 31	1.57	Jan 6	1.15
Second High:	Dec 4	1.37	Jan 17	1.28	Jan 1	1.15
Third High:	Dec 3	1.35	Dec 30	1.26	Jan 7	1.14
Fourth High:	Nov 1	1.23	Jan 19	1.24	Jan 11	1.12
California:						
First High:	Dec 10	1.44	Dec 31	1.74	Jan 5	1.15
Second High:	Dec 3	1.37	Jan 17	1.28	Jan 7	1.14
Third High:	Nov 1	1.23	Dec 30	1.26	Jan 11	1.12
Fourth High:	Dec 8	1.21	Jan 18	1.24	Jan 3	1.11
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		1.59		1.47		1.50
Year Coverage:		99		95		39

Notes:

Eight-hour carbon monoxide averages and related statistics are available at West Los Angeles-VA Hospital between 1984 and 2012. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide



Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at El Rio-Rio Mesa School #2

iADAM

	2010		2011		2012	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Mar 27	59.9	Aug 1	50.6	Aug 31	56.3
Second High:	Aug 24	45.1	May 3	45.2	Aug 8	43.8
Third High:	May 21	38.8	Feb 2	44.3	May 9	34.0
Fourth High:	Jul 19	38.7	Apr 15	43.8	Jun 8	33.8
California:						
First High:	Mar 27	61.5	Aug 1	51.7	Aug 31	56.9
Second High:	Aug 24	45.4	Feb 2	46.5	Aug 8	44.2
Third High:	May 21	40.1	May 3	46.1	May 9	34.8
Fourth High:	Jul 19	39.4	Apr 15	44.9	Jun 8	34.4
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		0.0
<i>Annual Average:</i>		<i>21.2</i>		<i>21.6</i>		<i>20.4</i>
<i>3-Year Average:</i>		<i>24</i>		<i>23</i>		<i>21</i>
California:						
Estimated # Days > 24-Hour Std:		6.0		5.7		5.7
Measured # Days > 24-Hour Std:		1		1		1
<i>Annual Average:</i>		<i>21.7</i>		<i>22.2</i>		<i>21.0</i>
<i>3-Year Maximum Annual Average:</i>		<i>26</i>		<i>26</i>		<i>22</i>
<i>Year Coverage:</i>		<i>100</i>		<i>100</i>		<i>96</i>

Notes:

Daily PM10 averages and related statistics are available at El Rio-Rio Mesa School #2 between 1988 and 2012. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.

The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.

An exceedance of a standard is not necessarily related to a violation of the standard.

All values listed above represent midnight-to-midnight 24-hour averages and may be related to an [exceptional event](#).

State and national statistics may differ for the following reasons:

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and

national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide



Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at El Rio-Rio Mesa School #2

iADAM

	2010		2011		2012	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Dec 4	21.4	May 6	18.3	Dec 9	30.8
Second High:	Nov 16	17.5	Oct 21	18.0	May 10	21.0
Third High:	Jun 16	16.5	Apr 15	17.4	Dec 8	20.4
Fourth High:	Oct 11	16.3	Jul 2	17.0	Sep 21	17.7
California:						
First High:	Nov 17	27.7	Sep 29	28.7	Jan 1	21.8
Second High:	Dec 4	22.4	Sep 28	26.9	Jan 7	18.3
Third High:	Oct 12	20.8	Nov 1	25.8	Sep 18	15.9
Fourth High:	Dec 5	20.8	Sep 22	25.1	Jun 8	15.7
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
24-Hour Standard Design Value:		18		18		17
24-Hour Standard 98th Percentile:		16.5		17.4		17.0
Annual Standard Design Value:		9.6		9.2		8.7
Annual Average:		8.4		8.8		8.7
California:						
Annual Std Designation Value:		10		11		11
Annual Average:		8.5		11.4		*
Year Coverage:		99		99		100

Notes:

Daily PM2.5 averages and related statistics are available at El Rio-Rio Mesa School #2 between 1999 and 2012. Some years in this range may not be represented. All averages expressed in micrograms per cubic meter.

An exceedance of a standard is not necessarily related to a violation of the standard.

State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide |
Hydrogen Sulfide

Back to:



NOTE: To print data frame (right side), click on right frame before printing.

SANTA MONICA PIER, CALIFORNIA (047953)

Period of Record Monthly Climate Summary

Period of Record : 1/1937 to 3/31/2013

1981 - 2010

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(~23 KB\)](#)
- [Monthly Tabular data \(~1 KB\)](#)
- [NCDC 1981-2010 Normals \(~3 KB\)](#)

1971 - 2000

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(~23 KB\)](#)
- [Monthly Tabular data \(~1 KB\)](#)
- [NCDC 1971-2000 Normals \(~3 KB\)](#)

1961 - 1990

- [Daily Temp. & Precip.](#)
- [Daily Tabular data \(~23 KB\)](#)
- [Monthly Tabular data \(~1 KB\)](#)
- [NCDC 1961-1990 Normals \(~3 KB\)](#)

Period of Record

- [Station Metadata](#)
- [Station Metadata Graphics](#)

General Climate Summary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Max. Temperature (F)	64.1	63.7	63.4	64.5	65.4	68.1	71.0	72.1	72.1	70.4	68.0	64.
Average Min. Temperature (F)	49.2	49.9	50.9	52.9	55.6	58.4	61.2	62.2	61.4	58.2	53.6	49.
Average Total Precipitation (in.)	2.69	3.01	2.03	0.73	0.17	0.03	0.02	0.08	0.15	0.33	1.36	2.0
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 93.1% Min. Temp.: 93.1% Precipitation: 94.3% Snowfall: 94.6% Snow Depth: 94.3%

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

Western Regional Climate Center, wrc@dr.edu

Aerobic GHG Emissions - Operations

507,000 gallons/day
 185,055,000 gallons/year

Build-out Capacity
 Annual Capacity

Pollutant	EMFAC
CO2	3.90E-07 tons/gallon
CH4	1.34E-09 tons/gallon
N2O	8.48E-10 tons/gallon

from CalEEMod Appendix, Table 9.4

Pollutant	Pollutant Totals	GWP
CO2	72.17 tons/year	1
CH4	0.25 tons/year	21
N2O	0.16 tons/year	310
CO2e	<u>126.04</u> tons/year	(english tons)
CO2e	<u>122.49</u> tons/year	(metric tons)

Facility Emissions - Operations

Energy	<u>903.00</u>	MTCO2e/Year
Mobile-source	<u>42.00</u>	MTCO2e/Year

Construction GHG Emissions (CO2e)

Pipe Installation		
Phase 1	533.20	MT
Phase 2	578.10	MT
Phase 3	583.70	MT
Treatment Center		
Phase 1	115.28	MT
Phase 2	117.71	MT
Total	<u>1,927.99</u>	MT
Amortized		
Total	<u>64.27</u>	MTCO2e/Year

GRAND TOTAL 1,132 MTCO2e/Year Total

Operational Energy Consumption

Electricity	Unit	3050000
	Source	kWh/year RMC

Natural Gas	Unit	221920000	3412	65041.03165
	Source	BTU/year RMC	BTU/kWh	kWh/year

Malibu WWTC Phase 1

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.00	1000sqft	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	8			Operational Year	2016
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 - Construction schedule estimate

Off-road Equipment - Default + 1 excavator, 6 hours/day

Grading - 2/3 of total site disturbed estimate; 5,377 cy net export

Construction Off-road Equipment Mitigation - 50% reduction for clean paved roads

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	8/28/2015	9/4/2015
tblConstructionPhase	PhaseStartDate	8/15/2015	8/24/2015
tblConstructionPhase	PhaseStartDate	1/31/2015	2/2/2015
tblConstructionPhase	PhaseStartDate	8/1/2015	8/3/2015
tblGrading	AcresOfGrading	0.00	2.00

tblGrading	MaterialExported	0.00	5,377.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0191	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Energy	4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	15.1959	15.1959	5.7000e-004	1.9000e-004	15.2654
Mobile	0.0167	0.0592	0.2203	5.3000e-004	0.0353	8.3000e-004	0.0362	9.4600e-003	7.6000e-004	0.0102	0.0000	42.1208	42.1208	1.7800e-003	0.0000	42.1581
Waste						0.0000	0.0000		0.0000	0.0000	1.0068	0.0000	1.0068	0.0595	0.0000	2.2564
Water						0.0000	0.0000		0.0000	0.0000	0.2935	3.4467	3.7402	0.0303	7.4000e-004	4.6073
Total	0.0362	0.0635	0.2239	5.6000e-004	0.0353	1.1500e-003	0.0365	9.4600e-003	1.0800e-003	0.0105	1.3003	60.7635	62.0638	0.0922	9.3000e-004	64.2872

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0191	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Energy	4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	15.1959	15.1959	5.7000e-004	1.9000e-004	15.2654
Mobile	0.0167	0.0592	0.2203	5.3000e-004	0.0353	8.3000e-004	0.0362	9.4600e-003	7.6000e-004	0.0102	0.0000	42.1208	42.1208	1.7800e-003	0.0000	42.1581
Waste						0.0000	0.0000		0.0000	0.0000	1.0068	0.0000	1.0068	0.0595	0.0000	2.2564
Water						0.0000	0.0000		0.0000	0.0000	0.2935	3.4467	3.7402	0.0303	7.4000e-004	4.6068
Total	0.0362	0.0635	0.2239	5.6000e-004	0.0353	1.1500e-003	0.0365	9.4600e-003	1.0800e-003	0.0105	1.3003	60.7635	62.0638	0.0921	9.3000e-004	64.2868

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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	Grading	Grading	1/5/2015	1/30/2015	5	20	
2	Building Construction	Building Construction	2/2/2015	7/31/2015	5	130	
3	Paving	Paving	8/3/2015	8/14/2015	5	10	
4	Architectural Coating	Architectural Coating	8/24/2015	9/4/2015	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 6,000; Non-Residential Outdoor: 2,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Excavators	1	6.00	162	0.38
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Grading	5	13.00	0.00	532.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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

3.2 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					8.5900e-003	0.0000	8.5900e-003	4.2500e-003	0.0000	4.2500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0173	0.1561	0.1141	1.6000e-004		0.0106	0.0106		0.0100	0.0100	0.0000	14.6908	14.6908	3.3600e-003	0.0000	14.7614
Total	0.0173	0.1561	0.1141	1.6000e-004	8.5900e-003	0.0106	0.0192	4.2500e-003	0.0100	0.0143	0.0000	14.6908	14.6908	3.3600e-003	0.0000	14.7614

3.2 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	5.5500e-003	0.0889	0.0642	2.0000e-004	4.5500e-003	1.3900e-003	5.9500e-003	1.2500e-003	1.2800e-003	2.5300e-003	0.0000	18.3479	18.3479	1.5000e-004	0.0000	18.3511
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.2000e-004	9.5600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4381	1.4381	9.0000e-005	0.0000	1.4399
Total	6.1800e-003	0.0899	0.0737	2.2000e-004	5.9700e-003	1.4000e-003	7.3900e-003	1.6300e-003	1.2900e-003	2.9200e-003	0.0000	19.7860	19.7860	2.4000e-004	0.0000	19.7909

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					1.6700e-003	0.0000	1.6700e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8200e-003	7.8900e-003	0.1089	1.6000e-004		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	14.6908	14.6908	3.3600e-003	0.0000	14.7613
Total	1.8200e-003	7.8900e-003	0.1089	1.6000e-004	1.6700e-003	2.4000e-004	1.9100e-003	8.3000e-004	2.4000e-004	1.0700e-003	0.0000	14.6908	14.6908	3.3600e-003	0.0000	14.7613

3.2 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	5.5500e-003	0.0889	0.0642	2.0000e-004	2.8300e-003	1.3900e-003	4.2300e-003	8.3000e-004	1.2800e-003	2.1100e-003	0.0000	18.3479	18.3479	1.5000e-004	0.0000	18.3511
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	9.2000e-004	9.5600e-003	2.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.4381	1.4381	9.0000e-005	0.0000	1.4399
Total	6.1800e-003	0.0899	0.0737	2.2000e-004	3.6400e-003	1.4000e-003	5.0500e-003	1.0600e-003	1.2900e-003	2.3500e-003	0.0000	19.7860	19.7860	2.4000e-004	0.0000	19.7909

3.3 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	0.0945	0.9346	0.5394	7.4000e-004		0.0650	0.0650		0.0598	0.0598	0.0000	70.2711	70.2711	0.0210	0.0000	70.7117
Total	0.0945	0.9346	0.5394	7.4000e-004		0.0650	0.0650		0.0598	0.0598	0.0000	70.2711	70.2711	0.0210	0.0000	70.7117

3.3 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	0.0000
Vendor	6.7000e-004	6.7200e-003	8.3500e-003	1.0000e-005	4.0000e-004	1.1000e-004	5.1000e-004	1.1000e-004	1.0000e-004	2.1000e-004	0.0000	1.3082	1.3082	1.0000e-005	0.0000	1.3084	
Worker	6.3000e-004	9.2000e-004	9.5600e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4381	1.4381	9.0000e-005	0.0000	1.4399	
Total	1.3000e-003	7.6400e-003	0.0179	3.0000e-005	1.8200e-003	1.2000e-004	1.9500e-003	4.9000e-004	1.1000e-004	6.0000e-004	0.0000	2.7462	2.7462	1.0000e-004	0.0000	2.7482	

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	9.0300e-003	0.0391	0.5004	7.4000e-004		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	0.0000	70.2710	70.2710	0.0210	0.0000	70.7116
Total	9.0300e-003	0.0391	0.5004	7.4000e-004		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	0.0000	70.2710	70.2710	0.0210	0.0000	70.7116

3.3 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	6.7000e-004	6.7200e-003	8.3500e-003	1.0000e-005	2.5000e-004	1.1000e-004	3.6000e-004	8.0000e-005	1.0000e-004	1.8000e-004	0.0000	1.3082	1.3082	1.0000e-005	0.0000	1.3084
Worker	6.3000e-004	9.2000e-004	9.5600e-003	2.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.4381	1.4381	9.0000e-005	0.0000	1.4399
Total	1.3000e-003	7.6400e-003	0.0179	3.0000e-005	1.0600e-003	1.2000e-004	1.1800e-003	3.1000e-004	1.1000e-004	4.2000e-004	0.0000	2.7462	2.7462	1.0000e-004	0.0000	2.7482

3.4 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	6.0500e-003	0.0577	0.0368	6.0000e-005		3.6200e-003	3.6200e-003		3.3500e-003	3.3500e-003	0.0000	4.9602	4.9602	1.3500e-003	0.0000	4.9885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.0500e-003	0.0577	0.0368	6.0000e-005		3.6200e-003	3.6200e-003		3.3500e-003	3.3500e-003	0.0000	4.9602	4.9602	1.3500e-003	0.0000	4.9885

3.4 Paving - 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	4.4000e-004	6.4000e-004	6.6200e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9956	0.9956	6.0000e-005	0.0000	0.9968
Total	4.4000e-004	6.4000e-004	6.6200e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9956	0.9956	6.0000e-005	0.0000	0.9968

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	5.5000e-004	2.3800e-003	0.0339	6.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.9602	4.9602	1.3500e-003	0.0000	4.9885
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.5000e-004	2.3800e-003	0.0339	6.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.9602	4.9602	1.3500e-003	0.0000	4.9885

3.4 Paving - 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	4.4000e-004	6.4000e-004	6.6200e-003	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.9956	0.9956	6.0000e-005	0.0000	0.9968
Total	4.4000e-004	6.4000e-004	6.6200e-003	1.0000e-005	5.6000e-004	1.0000e-005	5.7000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.9956	0.9956	6.0000e-005	0.0000	0.9968

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	0.0464					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0129	9.5100e-003	1.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	1.2766	1.2766	1.7000e-004	0.0000	1.2801
Total	0.0484	0.0129	9.5100e-003	1.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	1.2766	1.2766	1.7000e-004	0.0000	1.2801

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0464					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	1.7000e-004	0.0000	1.2801
Total	0.0465	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	1.7000e-004	0.0000	1.2801

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	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

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	0.0167	0.0592	0.2203	5.3000e-004	0.0353	8.3000e-004	0.0362	9.4600e-003	7.6000e-004	0.0102	0.0000	42.1208	42.1208	1.7800e-003	0.0000	42.1581
Unmitigated	0.0167	0.0592	0.2203	5.3000e-004	0.0353	8.3000e-004	0.0362	9.4600e-003	7.6000e-004	0.0102	0.0000	42.1208	42.1208	1.7800e-003	0.0000	42.1581

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	27.88	5.28	2.72	93,247	93,247
Total	27.88	5.28	2.72	93,247	93,247

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.533598	0.058434	0.178244	0.125508	0.038944	0.006283	0.016425	0.031066	0.002453	0.003157	0.003691	0.000543	0.001655

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10.5767	10.5767	4.9000e-004	1.0000e-004	10.6181
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10.5767	10.5767	4.9000e-004	1.0000e-004	10.6181
NaturalGas Mitigated	4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6192	4.6192	9.0000e-005	8.0000e-005	4.6473
NaturalGas Unmitigated	4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6192	4.6192	9.0000e-005	8.0000e-005	4.6473

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					
General Light Industry	86560	4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6192	4.6192	9.0000e-005	8.0000e-005	4.6473
Total		4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6192	4.6192	9.0000e-005	8.0000e-005	4.6473

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					
General Light Industry	86560	4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6192	4.6192	9.0000e-005	8.0000e-005	4.6473
Total		4.7000e-004	4.2400e-003	3.5600e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6192	4.6192	9.0000e-005	8.0000e-005	4.6473

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	36960	10.5767	4.9000e-004	1.0000e-004	10.6181
Total		10.5767	4.9000e-004	1.0000e-004	10.6181

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	36960	10.5767	4.9000e-004	1.0000e-004	10.6181
Total		10.5767	4.9000e-004	1.0000e-004	10.6181

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0191	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Unmitigated	0.0191	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Total	0.0191	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004

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	4.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Total	0.0191	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.7402	0.0303	7.4000e-004	4.6068
Unmitigated	3.7402	0.0303	7.4000e-004	4.6073

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.925 / 0	3.7402	0.0303	7.4000e-004	4.6073
Total		3.7402	0.0303	7.4000e-004	4.6073

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.925 / 0	3.7402	0.0303	7.4000e-004	4.6068
Total		3.7402	0.0303	7.4000e-004	4.6068

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.0068	0.0595	0.0000	2.2564
Unmitigated	1.0068	0.0595	0.0000	2.2564

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	4.96	1.0068	0.0595	0.0000	2.2564
Total		1.0068	0.0595	0.0000	2.2564

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	4.96	1.0068	0.0595	0.0000	2.2564
Total		1.0068	0.0595	0.0000	2.2564

9.0 Operational Offroad

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

Malibu WWTC Phase 1

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.00	1000sqft	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	8			Operational Year	2016
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 - Construction schedule estimate

Off-road Equipment - Default + 1 excavator, 6 hours/day

Grading - 2/3 of total site disturbed estimate; 5,377 cy net export

Construction Off-road Equipment Mitigation - 50% reduction for clean paved roads

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	PhaseEndDate	8/28/2015	9/4/2015
tblConstructionPhase	PhaseStartDate	8/15/2015	8/24/2015
tblConstructionPhase	PhaseStartDate	1/31/2015	2/2/2015
tblConstructionPhase	PhaseStartDate	8/1/2015	8/3/2015
tblGrading	AcresOfGrading	0.00	2.00

tblGrading	MaterialExported	0.00	5,377.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

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	0.1046	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Energy	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699
Mobile	0.1218	0.4000	1.6205	3.9600e-003	0.2621	6.0100e-003	0.2681	0.0701	5.5300e-003	0.0756		349.2954	349.2954	0.0143		349.5951
Total	0.2290	0.4233	1.6405	4.1000e-003	0.2621	7.7800e-003	0.2699	0.0701	7.3000e-003	0.0774		377.1963	377.1963	0.0148	5.1000e-004	377.6659

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	0.1046	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Energy	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699
Mobile	0.1218	0.4000	1.6205	3.9600e-003	0.2621	6.0100e-003	0.2681	0.0701	5.5300e-003	0.0756		349.2954	349.2954	0.0143		349.5951
Total	0.2290	0.4233	1.6405	4.1000e-003	0.2621	7.7800e-003	0.2699	0.0701	7.3000e-003	0.0774		377.1963	377.1963	0.0148	5.1000e-004	377.6659

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/5/2015	1/30/2015	5	20	
2	Building Construction	Building Construction	2/2/2015	7/31/2015	5	130	
3	Paving	Paving	8/3/2015	8/14/2015	5	10	
4	Architectural Coating	Architectural Coating	8/24/2015	9/4/2015	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 6,000; Non-Residential Outdoor: 2,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Excavators	1	6.00	162	0.38
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Grading	5	13.00	0.00	532.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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

3.2 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					0.8588	0.0000	0.8588	0.4252	0.0000	0.4252			0.0000			0.0000
Off-Road	1.7260	15.6078	11.4061	0.0160		1.0558	1.0558		1.0024	1.0024		1,619.388 2	1,619.388 2	0.3701		1,627.161 0
Total	1.7260	15.6078	11.4061	0.0160	0.8588	1.0558	1.9146	0.4252	1.0024	1.4276		1,619.388 2	1,619.388 2	0.3701		1,627.161 0

3.2 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	0.5324	8.4400	5.7537	0.0199	0.4631	0.1391	0.6023	0.1268	0.1280	0.2548		2,024.5039	2,024.5039	0.0165		2,024.8495
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	0.0641	0.0806	0.9940	1.8900e-003	0.1453	1.4500e-003	0.1468	0.0385	1.3300e-003	0.0399		165.2848	165.2848	9.4300e-003		165.4829
Total	0.5965	8.5206	6.7477	0.0218	0.6084	0.1406	0.7490	0.1653	0.1293	0.2946		2,189.7887	2,189.7887	0.0259		2,190.3324

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					0.1675	0.0000	0.1675	0.0829	0.0000	0.0829			0.0000			0.0000
Off-Road	0.1821	0.7893	10.8944	0.0160		0.0243	0.0243		0.0243	0.0243	0.0000	1,619.3882	1,619.3882	0.3701		1,627.1610
Total	0.1821	0.7893	10.8944	0.0160	0.1675	0.0243	0.1918	0.0829	0.0243	0.1072	0.0000	1,619.3882	1,619.3882	0.3701		1,627.1610

3.2 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	0.5324	8.4400	5.7537	0.0199	0.2873	0.1391	0.4264	0.0836	0.1280	0.2116		2,024.5039	2,024.5039	0.0165		2,024.8495
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	0.0641	0.0806	0.9940	1.8900e-003	0.0822	1.4500e-003	0.0836	0.0230	1.3300e-003	0.0244		165.2848	165.2848	9.4300e-003		165.4829
Total	0.5965	8.5206	6.7477	0.0218	0.3694	0.1406	0.5100	0.1067	0.1293	0.2360		2,189.7887	2,189.7887	0.0259		2,190.3324

3.3 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	1.4538	14.3777	8.2983	0.0113		0.9995	0.9995		0.9195	0.9195		1,191.7021	1,191.7021	0.3558		1,199.1733
Total	1.4538	14.3777	8.2983	0.0113		0.9995	0.9995		0.9195	0.9195		1,191.7021	1,191.7021	0.3558		1,199.1733

3.3 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	9.5800e-003	0.0989	0.1110	2.2000e-004	6.2300e-003	1.6600e-003	7.8900e-003	1.7700e-003	1.5200e-003	3.3000e-003		22.2619	22.2619	1.8000e-004			22.2656
Worker	9.8600e-003	0.0124	0.1529	2.9000e-004	0.0224	2.2000e-004	0.0226	5.9300e-003	2.0000e-004	6.1300e-003		25.4284	25.4284	1.4500e-003			25.4589
Total	0.0194	0.1113	0.2640	5.1000e-004	0.0286	1.8800e-003	0.0305	7.7000e-003	1.7200e-003	9.4300e-003		47.6903	47.6903	1.6300e-003			47.7245

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	0.1389	0.6019	7.6980	0.0113		0.0185	0.0185		0.0185	0.0185	0.0000	1,191.7021	1,191.7021	0.3558			1,199.1733
Total	0.1389	0.6019	7.6980	0.0113		0.0185	0.0185		0.0185	0.0185	0.0000	1,191.7021	1,191.7021	0.3558			1,199.1733

3.3 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	9.5800e-003	0.0989	0.1110	2.2000e-004	3.9500e-003	1.6600e-003	5.6100e-003	1.2100e-003	1.5200e-003	2.7400e-003		22.2619	22.2619	1.8000e-004		22.2656
Worker	9.8600e-003	0.0124	0.1529	2.9000e-004	0.0126	2.2000e-004	0.0129	3.5400e-003	2.0000e-004	3.7500e-003		25.4284	25.4284	1.4500e-003		25.4589
Total	0.0194	0.1113	0.2640	5.1000e-004	0.0166	1.8800e-003	0.0185	4.7500e-003	1.7200e-003	6.4900e-003		47.6903	47.6903	1.6300e-003		47.7245

3.4 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	lb/day										lb/day					
Off-Road	1.2092	11.5427	7.3586	0.0111		0.7247	0.7247		0.6703	0.6703		1,093.5433	1,093.5433	0.2970		1,099.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.2092	11.5427	7.3586	0.0111		0.7247	0.7247		0.6703	0.6703		1,093.5433	1,093.5433	0.2970		1,099.7794

3.4 Paving - 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	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131			229.1301
Total	0.0888	0.1116	1.3763	2.6200e-003	0.2012	2.0100e-003	0.2032	0.0534	1.8400e-003	0.0552		228.8559	228.8559	0.0131			229.1301

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	0.1100	0.4766	6.7829	0.0111		0.0147	0.0147		0.0147	0.0147	0.0000	1,093.5433	1,093.5433	0.2970			1,099.7794
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Total	0.1100	0.4766	6.7829	0.0111		0.0147	0.0147		0.0147	0.0147	0.0000	1,093.5433	1,093.5433	0.2970			1,099.7794

3.4 Paving - 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	0.0888	0.1116	1.3763	2.6200e-003	0.1137	2.0100e-003	0.1158	0.0319	1.8400e-003	0.0337		228.8559	228.8559	0.0131		229.1301
Total	0.0888	0.1116	1.3763	2.6200e-003	0.1137	2.0100e-003	0.1158	0.0319	1.8400e-003	0.0337		228.8559	228.8559	0.0131		229.1301

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	9.2700					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	9.6766	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000							

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	9.2700					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0367			282.2177
Total	9.2997	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000							

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	0.1218	0.4000	1.6205	3.9600e-003	0.2621	6.0100e-003	0.2681	0.0701	5.5300e-003	0.0756		349.2954	349.2954	0.0143			349.5951
Unmitigated	0.1218	0.4000	1.6205	3.9600e-003	0.2621	6.0100e-003	0.2681	0.0701	5.5300e-003	0.0756		349.2954	349.2954	0.0143			349.5951

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	27.88	5.28	2.72	93,247	93,247
Total	27.88	5.28	2.72	93,247	93,247

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.533598	0.058434	0.178244	0.125508	0.038944	0.006283	0.016425	0.031066	0.002453	0.003157	0.003691	0.000543	0.001655

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699
NaturalGas Unmitigated	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699

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					
General Light Industry	237.151	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699
Total		2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699

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					
General Light Industry	0.237151	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699
Total		2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003		27.9001	27.9001	5.3000e-004	5.1000e-004	28.0699

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1046	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Unmitigated	0.1046	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0792					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Total	0.1046	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0254					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0792					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004
Total	0.1046	0.0000	4.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		8.8000e-004	8.8000e-004	0.0000		9.3000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Malibu WWTC Phase 2
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	8			Operational Year	2017
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 - Phase 2 construction schedule estimate

Off-road Equipment - Default + 1 excavator, 6 hours/day

Grading - 7,439 cy net export; assumes 2/3 site disturbance

Construction Off-road Equipment Mitigation - clean paved roads, 50% reduction

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	PhaseStartDate	1/30/2016	2/1/2016
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	MaterialExported	0.00	7,439.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	3.7990	3.7990	1.4000e-004	5.0000e-005	3.8164
Mobile	3.8300e-003	0.0139	0.0506	1.3000e-004	8.8400e-003	2.0000e-004	9.0300e-003	2.3700e-003	1.8000e-004	2.5500e-003	0.0000	10.2405	10.2405	4.1000e-004	0.0000	10.2492
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.5641
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.8617	0.9350	7.5700e-003	1.9000e-004	1.1518
Total	8.7200e-003	0.0149	0.0515	1.4000e-004	8.8400e-003	2.8000e-004	9.1100e-003	2.3700e-003	2.6000e-004	2.6300e-003	0.3251	14.9012	15.2263	0.0230	2.4000e-004	15.7815

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	3.7990	3.7990	1.4000e-004	5.0000e-005	3.8164
Mobile	3.8300e-003	0.0139	0.0506	1.3000e-004	8.8400e-003	2.0000e-004	9.0300e-003	2.3700e-003	1.8000e-004	2.5500e-003	0.0000	10.2405	10.2405	4.1000e-004	0.0000	10.2492
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.5641
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.8617	0.9350	7.5700e-003	1.9000e-004	1.1517
Total	8.7200e-003	0.0149	0.0515	1.4000e-004	8.8400e-003	2.8000e-004	9.1100e-003	2.3700e-003	2.6000e-004	2.6300e-003	0.3251	14.9012	15.2263	0.0230	2.4000e-004	15.7814

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/4/2016	1/29/2016	5	20	
2	Building Construction	Building Construction	2/1/2016	7/29/2016	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	6.00	162	0.38
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37

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
Grading	5	13.00	0.00	930.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.0100e-003	0.0000	9.0100e-003	4.3200e-003	0.0000	4.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0161	0.1458	0.1129	1.6000e-004		9.6800e-003	9.6800e-003		9.1900e-003	9.1900e-003	0.0000	14.5885	14.5885	3.3000e-003	0.0000	14.6578
Total	0.0161	0.1458	0.1129	1.6000e-004	9.0100e-003	9.6800e-003	0.0187	4.3200e-003	9.1900e-003	0.0135	0.0000	14.5885	14.5885	3.3000e-003	0.0000	14.6578

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	8.5200e-003	0.1373	0.1041	3.5000e-004	7.9600e-003	1.9300e-003	9.8900e-003	2.1800e-003	1.7800e-003	3.9600e-003	0.0000	31.7200	31.7200	2.4000e-004	0.0000	31.7250
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.3000e-004	8.6500e-003	2.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3901	1.3901	8.0000e-005	0.0000	1.3917
Total	9.0900e-003	0.1382	0.1127	3.7000e-004	9.3800e-003	1.9400e-003	0.0113	2.5600e-003	1.7900e-003	4.3500e-003	0.0000	33.1101	33.1101	3.2000e-004	0.0000	33.1167

3.2 Grading - 2016

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					1.7600e-003	0.0000	1.7600e-003	8.4000e-004	0.0000	8.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8200e-003	7.8900e-003	0.1089	1.6000e-004		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	14.5885	14.5885	3.3000e-003	0.0000	14.6578
Total	1.8200e-003	7.8900e-003	0.1089	1.6000e-004	1.7600e-003	2.4000e-004	2.0000e-003	8.4000e-004	2.4000e-004	1.0800e-003	0.0000	14.5885	14.5885	3.3000e-003	0.0000	14.6578

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	8.5200e-003	0.1373	0.1041	3.5000e-004	4.9500e-003	1.9300e-003	6.8900e-003	1.4500e-003	1.7800e-003	3.2200e-003	0.0000	31.7200	31.7200	2.4000e-004	0.0000	31.7250
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	8.3000e-004	8.6500e-003	2.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.3901	1.3901	8.0000e-005	0.0000	1.3917
Total	9.0900e-003	0.1382	0.1127	3.7000e-004	5.7600e-003	1.9400e-003	7.7100e-003	1.6800e-003	1.7900e-003	3.4600e-003	0.0000	33.1101	33.1101	3.2000e-004	0.0000	33.1167

3.3 Building Construction - 2016

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	9.0300e-003	0.0391	0.5004	7.4000e-004		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	0.0000	69.4958	69.4958	0.0210	0.0000	69.9360
Total	9.0300e-003	0.0391	0.5004	7.4000e-004		1.2000e-003	1.2000e-003		1.2000e-003	1.2000e-003	0.0000	69.4958	69.4958	0.0210	0.0000	69.9360

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

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	3.8300e-003	0.0139	0.0506	1.3000e-004	8.8400e-003	2.0000e-004	9.0300e-003	2.3700e-003	1.8000e-004	2.5500e-003	0.0000	10.2405	10.2405	4.1000e-004	0.0000	10.2492
Unmitigated	3.8300e-003	0.0139	0.0506	1.3000e-004	8.8400e-003	2.0000e-004	9.0300e-003	2.3700e-003	1.8000e-004	2.5500e-003	0.0000	10.2405	10.2405	4.1000e-004	0.0000	10.2492

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.6442	2.6442	1.2000e-004	3.0000e-005	2.6545
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.6442	2.6442	1.2000e-004	3.0000e-005	2.6545
NaturalGas Mitigated	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1548	1.1548	2.0000e-005	2.0000e-005	1.1618
NaturalGas Unmitigated	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1548	1.1548	2.0000e-005	2.0000e-005	1.1618

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					
General Light Industry	21640	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1548	1.1548	2.0000e-005	2.0000e-005	1.1618
Total		1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1548	1.1548	2.0000e-005	2.0000e-005	1.1618

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					
General Light Industry	21640	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1548	1.1548	2.0000e-005	2.0000e-005	1.1618
Total		1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1548	1.1548	2.0000e-005	2.0000e-005	1.1618

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	9240	2.6442	1.2000e-004	3.0000e-005	2.6545
Total		2.6442	1.2000e-004	3.0000e-005	2.6545

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	9240	2.6442	1.2000e-004	3.0000e-005	2.6545
Total		2.6442	1.2000e-004	3.0000e-005	2.6545

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.9350	7.5700e-003	1.9000e-004	1.1517
Unmitigated	0.9350	7.5700e-003	1.9000e-004	1.1518

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.9350	7.5700e-003	1.9000e-004	1.1518
Total		0.9350	7.5700e-003	1.9000e-004	1.1518

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.9350	7.5700e-003	1.9000e-004	1.1517
Total		0.9350	7.5700e-003	1.9000e-004	1.1517

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.5641
Unmitigated	0.2517	0.0149	0.0000	0.5641

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.5641
Total		0.2517	0.0149	0.0000	0.5641

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.5641
Total		0.2517	0.0149	0.0000	0.5641

9.0 Operational Offroad

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

Malibu WWTC Phase 2
Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	8			Operational Year	2017
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 - Phase 2 construction schedule estimate

Off-road Equipment - Default + 1 excavator, 6 hours/day

Grading - 7,439 cy net export; assumes 2/3 site disturbance

Construction Off-road Equipment Mitigation - clean paved roads, 50% reduction

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	100.00	130.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	PhaseStartDate	1/30/2016	2/1/2016
tblGrading	AcresOfGrading	0.00	2.00
tblGrading	MaterialExported	0.00	7,439.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

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	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175
Mobile	0.0280	0.0936	0.3723	9.9000e-004	0.0655	1.4200e-003	0.0670	0.0175	1.3100e-003	0.0188		84.8955	84.8955	3.3100e-003		84.9651
Total	0.0548	0.0994	0.3773	1.0200e-003	0.0655	1.8600e-003	0.0674	0.0175	1.7500e-003	0.0193		91.8707	91.8707	3.4400e-003	1.3000e-004	91.9828

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	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175
Mobile	0.0280	0.0936	0.3723	9.9000e-004	0.0655	1.4200e-003	0.0670	0.0175	1.3100e-003	0.0188		84.8955	84.8955	3.3100e-003		84.9651
Total	0.0548	0.0994	0.3773	1.0200e-003	0.0655	1.8600e-003	0.0674	0.0175	1.7500e-003	0.0193		91.8707	91.8707	3.4400e-003	1.3000e-004	91.9828

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/4/2016	1/29/2016	5	20	
2	Building Construction	Building Construction	2/1/2016	7/29/2016	5	130	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	6.00	162	0.38
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37

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
Grading	5	13.00	0.00	930.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9009	0.0000	0.9009	0.4316	0.0000	0.4316			0.0000			0.0000
Off-Road	1.6048	14.5782	11.2889	0.0160		0.9682	0.9682		0.9185	0.9185		1,608.111 4	1,608.111 4	0.3637		1,615.748 1
Total	1.6048	14.5782	11.2889	0.0160	0.9009	0.9682	1.8691	0.4316	0.9185	1.3501		1,608.111 4	1,608.111 4	0.3637		1,615.748 1

3.2 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8190	13.0349	9.2502	0.0347	0.8098	0.1930	1.0028	0.2217	0.1775	0.3992		3,499.9825	3,499.9825	0.0259		3,500.5260
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	0.0579	0.0729	0.9018	1.8900e-003	0.1453	1.3700e-003	0.1467	0.0385	1.2600e-003	0.0398		159.7728	159.7728	8.7000e-003		159.9554
Total	0.8769	13.1078	10.1520	0.0366	0.9551	0.1944	1.1494	0.2603	0.1788	0.4390		3,659.7553	3,659.7553	0.0346		3,660.4814

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					0.1757	0.0000	0.1757	0.0842	0.0000	0.0842			0.0000			0.0000
Off-Road	0.1821	0.7893	10.8944	0.0160		0.0243	0.0243		0.0243	0.0243	0.0000	1,608.1114	1,608.1114	0.3637		1,615.7481
Total	0.1821	0.7893	10.8944	0.0160	0.1757	0.0243	0.2000	0.0842	0.0243	0.1084	0.0000	1,608.1114	1,608.1114	0.3637		1,615.7481

3.2 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8190	13.0349	9.2502	0.0347	0.5024	0.1930	0.6954	0.1463	0.1775	0.3238		3,499.9825	3,499.9825	0.0259		3,500.5260
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	0.0579	0.0729	0.9018	1.8900e-003	0.0822	1.3700e-003	0.0835	0.0230	1.2600e-003	0.0243		159.7728	159.7728	8.7000e-003		159.9554
Total	0.8769	13.1078	10.1520	0.0366	0.5845	0.1944	0.7789	0.1693	0.1788	0.3481		3,659.7553	3,659.7553	0.0346		3,660.4814

3.3 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	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202

3.3 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000			0.0000							

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	0.1389	0.6019	7.6980	0.0113		0.0185	0.0185		0.0185	0.0185	0.0000	1,178.5549	1,178.5549	0.3555			1,186.0202
Total	0.1389	0.6019	7.6980	0.0113		0.0185	0.0185		0.0185	0.0185	0.0000	1,178.5549	1,178.5549	0.3555			1,186.0202

3.3 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000							

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	0.0280	0.0936	0.3723	9.9000e-004	0.0655	1.4200e-003	0.0670	0.0175	1.3100e-003	0.0188		84.8955	84.8955	3.3100e-003		84.9651
Unmitigated	0.0280	0.0936	0.3723	9.9000e-004	0.0655	1.4200e-003	0.0670	0.0175	1.3100e-003	0.0188		84.8955	84.8955	3.3100e-003		84.9651

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.532559	0.058242	0.178229	0.125155	0.038934	0.006273	0.016761	0.032323	0.002478	0.003154	0.003685	0.000544	0.001663

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day											lb/day					
NaturalGas Mitigated	6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175
NaturalGas Unmitigated	6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175

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					
General Light Industry	59.2877	6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175
Total		6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175

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					
General Light Industry	0.0592877	6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175
Total		6.4000e-004	5.8100e-003	4.8800e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9750	6.9750	1.3000e-004	1.3000e-004	7.0175

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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					
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Malibu WWTC Energy Only

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	8			Operational Year	2016
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 - No construction... energy calcs only.

Energy Use - from RMC

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblEnergyUse	T24E	1.99	3,050.00
tblEnergyUse	T24NG	14.78	221.92
tblProjectCharacteristics	OperationalYear	2014	2016

2.0 Emissions Summary

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

2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	887.0923	887.0923	0.0405	8.5400e-003	890.5905
Mobile	4.1700e-003	0.0148	0.0551	1.3000e-004	8.8300e-003	2.1000e-004	9.0400e-003	2.3700e-003	1.9000e-004	2.5600e-003	0.0000	10.5302	10.5302	4.4000e-004	0.0000	10.5395
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.5641
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.8617	0.9350	7.5700e-003	1.9000e-004	1.1518
Total	0.0102	0.0260	0.0645	2.0000e-004	8.8300e-003	1.0600e-003	9.8900e-003	2.3700e-003	1.0400e-003	3.4100e-003	0.3251	898.4842	898.8093	0.0633	8.7300e-003	902.8459

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	887.0923	887.0923	0.0405	8.5400e-003	890.5905
Mobile	4.1700e-003	0.0148	0.0551	1.3000e-004	8.8300e-003	2.1000e-004	9.0400e-003	2.3700e-003	1.9000e-004	2.5600e-003	0.0000	10.5302	10.5302	4.4000e-004	0.0000	10.5395
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.5641
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.8617	0.9350	7.5700e-003	1.9000e-004	1.1517
Total	0.0102	0.0260	0.0645	2.0000e-004	8.8300e-003	1.0600e-003	9.8900e-003	2.3700e-003	1.0400e-003	3.4100e-003	0.3251	898.4842	898.8093	0.0633	8.7300e-003	902.8458

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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	4.1700e-003	0.0148	0.0551	1.3000e-004	8.8300e-003	2.1000e-004	9.0400e-003	2.3700e-003	1.9000e-004	2.5600e-003	0.0000	10.5302	10.5302	4.4000e-004	0.0000	10.5395
Unmitigated	4.1700e-003	0.0148	0.0551	1.3000e-004	8.8300e-003	2.1000e-004	9.0400e-003	2.3700e-003	1.9000e-004	2.5600e-003	0.0000	10.5302	10.5302	4.4000e-004	0.0000	10.5395

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.533598	0.058434	0.178244	0.125508	0.038944	0.006283	0.016425	0.031066	0.002453	0.003157	0.003691	0.000543	0.001655

5.0 Energy Detail

2.4 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	tons/yr										MT/yr					
NaturalGas Mitigated	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2086	12.2086	2.3000e-004	2.2000e-004	12.2829
NaturalGas Unmitigated	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2086	12.2086	2.3000e-004	2.2000e-004	12.2829
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	874.8837	874.8837	0.0402	8.3200e-003	878.3076
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	874.8837	874.8837	0.0402	8.3200e-003	878.3076

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					
General Light Industry	228780	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2086	12.2086	2.3000e-004	2.2000e-004	12.2829
Total		1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2086	12.2086	2.3000e-004	2.2000e-004	12.2829

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					
General Light Industry	228780	1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2086	12.2086	2.3000e-004	2.2000e-004	12.2829
Total		1.2300e-003	0.0112	9.4200e-003	7.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	12.2086	12.2086	2.3000e-004	2.2000e-004	12.2829

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	3.05725e+006	874.8837	0.0402	8.3200e-003	878.3076
Total		874.8837	0.0402	8.3200e-003	878.3076

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	3.05725e+006	874.8837	0.0402	8.3200e-003	878.3076
Total		874.8837	0.0402	8.3200e-003	878.3076

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

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	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	4.7700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	0.9350	7.5700e-003	1.9000e-004	1.1518
Mitigated	0.9350	7.5700e-003	1.9000e-004	1.1517

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.9350	7.5700e-003	1.9000e-004	1.1518
Total		0.9350	7.5700e-003	1.9000e-004	1.1518

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	0.9350	7.5700e-003	1.9000e-004	1.1517
Total		0.9350	7.5700e-003	1.9000e-004	1.1517

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.5641
Unmitigated	0.2517	0.0149	0.0000	0.5641

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.5641
Total		0.2517	0.0149	0.0000	0.5641

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.5641
Total		0.2517	0.0149	0.0000	0.5641

9.0 Operational Offroad

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

Malibu WWTC Energy Only

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	8			Operational Year	2016
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 - No construction... energy calcs only.

Energy Use - from RMC

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblEnergyUse	T24E	1.99	3,050.00
tblEnergyUse	T24NG	14.78	221.92
tblProjectCharacteristics	OperationalYear	2014	2016

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	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893
Mobile	0.0304	0.1000	0.4051	9.9000e-004	0.0655	1.5000e-003	0.0670	0.0175	1.3800e-003	0.0189		87.3238	87.3238	3.5700e-003		87.3988
Total	0.0634	0.1615	0.4569	1.3600e-003	0.0655	6.1700e-003	0.0717	0.0175	6.0500e-003	0.0236		161.0646	161.0646	4.9800e-003	1.3500e-003	161.5883

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	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893
Mobile	0.0304	0.1000	0.4051	9.9000e-004	0.0655	1.5000e-003	0.0670	0.0175	1.3800e-003	0.0189		87.3238	87.3238	3.5700e-003		87.3988
Total	0.0634	0.1615	0.4569	1.3600e-003	0.0655	6.1700e-003	0.0717	0.0175	6.0500e-003	0.0236		161.0646	161.0646	4.9800e-003	1.3500e-003	161.5883

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2015	12/31/2014	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					
Unmitigated	0.0304	0.1000	0.4051	9.9000e-004	0.0655	1.5000e-003	0.0670	0.0175	1.3800e-003	0.0189		87.3238	87.3238	3.5700e-003		87.3988
Mitigated	0.0304	0.1000	0.4051	9.9000e-004	0.0655	1.5000e-003	0.0670	0.0175	1.3800e-003	0.0189		87.3238	87.3238	3.5700e-003		87.3988

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.533598	0.058434	0.178244	0.125508	0.038944	0.006283	0.016425	0.031066	0.002453	0.003157	0.003691	0.000543	0.001655

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	6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893
NaturalGas Unmitigated	6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893

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					
General Light Industry	626.795	6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893
Total		6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893

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					
General Light Industry	0.626795	6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893
Total		6.7600e-003	0.0615	0.0516	3.7000e-004		4.6700e-003	4.6700e-003		4.6700e-003	4.6700e-003		73.7405	73.7405	1.4100e-003	1.3500e-003	74.1893

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Unmitigated	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Mitigated	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	6.3500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0262	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

Road Construction Emissions Model, Version 7.1.4

Emission Estimates for -> Phase 1 - WWTC				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	5.0	27.2	40.8	2.4	2.2	0.2	2.0	1.9	0.0	5,260.8
Drainage/Utilities/Sub-Grade	1.9	12.6	12.0	1.1	0.9	0.2	0.8	0.8	0.0	2,090.2
Paving	1.1	9.0	9.5	0.5	0.5	-	0.4	0.4	-	1,556.4
Maximum (pounds/day)	5.0	27.2	40.8	2.4	2.2	0.2	2.0	1.9	0.0	5,260.8
Total (tons/construction project)	0.5	3.2	4.1	0.3	0.2	0.0	0.2	0.2	0.0	587.9

Notes: Project Start Year -> 2014
 Project Length (months) -> 18
 Total Project Area (acres) -> 3
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 124

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Phase 1 - WWTC				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	2.3	12.4	18.5	1.1	1.0	0.1	0.9	0.9	0.0	2,391.3
Drainage/Utilities/Sub-Grade	0.8	5.7	5.4	0.5	0.4	0.1	0.4	0.4	0.0	950.1
Paving	0.5	4.1	4.3	0.2	0.2	-	0.2	0.2	-	707.4
Maximum (kilograms/day)	2.3	12.4	18.5	1.1	1.0	0.1	0.9	0.9	0.0	2,391.3
Total (megagrams/construction project)	0.5	2.9	3.7	0.2	0.2	0.0	0.2	0.2	0.0	533.2

Notes: Project Start Year -> 2014
 Project Length (months) -> 18
 Total Project Area (hectares) -> 1
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 95

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

**Road Construction Emissions Model
Data Entry Worksheet**

Version 7.1.4



Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

Input Type

Project Name	Phase 1 - WWTC	
Construction Start Year	2014	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	18.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	2.75	miles
Total Project Area	2.7	acres
Maximum Area Disturbed/Day	0.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	65.2	yd ³ /day
Soil Exported	59.3	yd ³ /day
Average Truck Capacity	20.0	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of		2005		2006		2007	
	Construction Months	Program Calculated Months		%		%		%
Grubbing/Land Clearing	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	6.00	7.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	6.00	6.30	0.00	0.00	0.00	0.00	0.00	0.00
Paving	6.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00
Totals	18.00	18.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions		User Override of				
User Input	Soil Hauling Defaults	Default Values				
Miles/round trip		30				
Round trips/day		6				
Vehicle miles traveled/day (calculated)		186.6666667				
Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.28	10.43	1.26	0.25	0.18	1713.35
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.1	4.3	0.5	0.1	0.1	704.5
Tons per construction period	0.01	0.28	0.03	0.01	0.00	46.49

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions		User Override of Worker				
	Commute Default Values	Default Values				
Miles/ one-way trip		20				
One-way trips/day		2				
No. of employees: Grubbing/Land Clearing		10				
No. of employees: Grading/Excavation		23				
No. of employees: Drainage/Utilities/Sub-Grade		20				
No. of employees: Paving		16				
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Paving (grams/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Paving (grams/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.483	0.574	5.405	0.094	0.040	897.855
Tons per const. Period - Grading/Excavation	0.032	0.038	0.357	0.006	0.003	59.258
Pounds per day - Drainage/Utilities/Sub-Grade	0.429	0.510	4.804	0.084	0.036	798.094
Tons per const. Period - Drain/Util/Sub-Grade	0.028	0.034	0.317	0.006	0.002	52.674
Pounds per day - Paving	0.314	0.366	3.469	0.068	0.029	648.670
Tons per const. Period - Paving	0.021	0.024	0.229	0.004	0.002	42.812
tons per construction period	0.081	0.096	0.903	0.016	0.007	154.745

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day			
Grubbing/Land Clearing - Exhaust		1	0.50	40			
Grading/Excavation - Exhaust		1	0.50	40			
Drainage/Utilities/Subgrade		1	0.50	40			
	ROG		NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00		0.00	0.00	0.00	0.00	0.00
Emission rate - Grading/Excavation (grams/mile)	0.28		10.43	1.26	0.25	0.18	1713.35
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.28		10.43	1.26	0.25	0.18	1713.35
Pounds per day - Grubbing/Land Clearing	0.00		0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grub/Land Clear	0.00		0.00	0.00	0.00	0.00	0.00
Pound per day - Grading/Excavation	0.00		0.01	0.00	0.00	0.00	1.89
Tons per const. Period - Grading/Excavation	0.00		0.00	0.00	0.00	0.00	0.12
Pound per day - Drainage/Utilities/Subgrade	0.00		0.01	0.00	0.00	0.00	1.89
Tons per const. Period - Drainage/Utilities/Subgrade	0.00		0.00	0.00	0.00	0.00	0.12

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation		0.018365473	0.2	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.018365473	0.2	0.0	0.0	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing		Default Number of Vehicles	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	6	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Grading/Excavation		Default	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Number of Vehicles	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Air Compressors	0.80	3.47	5.00	0.44	0.41	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.75	4.47	9.82	0.38	0.35	825.16
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3	Excavators	0.45	2.79	5.10	0.25	0.23	572.77
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Rollers	0.39	1.51	3.40	0.25	0.23	279.56
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.54	3.12	7.00	0.24	0.22	662.78
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
3.00	6	Signal Boards	1.35	4.35	4.27	0.35	0.32	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Tractors/Loaders/Backhoes	0.14	1.57	1.34	0.05	0.05	336.13
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	4.4	21.3	35.9	2.0	1.8	3656.6
	Grading	tons per phase	0.3	1.4	2.4	0.1	0.1	241.3

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles <i>Program-estimate</i>		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.62	3.03	4.40	0.33	0.30	487.07
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.52	2.50	3.63	0.28	0.26	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.26	2.03	3.18	0.19	0.17	372.52
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	6	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	1.4	7.8	11.5	0.8	0.7	1290.2
	Drainage	tons per phase	0.1	0.5	0.8	0.1	0.0	85.2

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2	
	Override of Default Number of Vehicles	Number of Vehicles <i>Program-estimate</i>	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
			Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
			Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
			Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
			Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
			Cranes	0.00	0.00	0.00	0.00	0.00	0.00
			Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
			Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Excavators	0.00	0.00	0.00	0.00	0.00	0.00
			Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
			Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
			Graders	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
			Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		1	Pavers	0.47	2.84	5.10	0.26	0.23	481.54
		1	Paving Equipment	0.35	2.69	4.06	0.20	0.18	426.17
			Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
			Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
			Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00		3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
			Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
			Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		6	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
			Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
			Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
			Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
			Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Paving	pounds per day	0.8	5.5	9.2	0.5	0.4	907.7
		Paving	tons per phase	0.1	0.4	0.6	0.0	0.0	59.9
Total Emissions all Phases (tons per construction period) =>				0.4	2.3	3.7	0.2	0.2	386.4

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment	Default Values Horsepower	Default Values Hours/day
Aerial Lifts	63	8
Air Compressors	106	8
Bore/Drill Rigs	206	8
Cement and Mortar Mixers	10	8
Concrete/Industrial Saws	64	8
Cranes	226	8
Crawler Tractors	208	8
Crushing/Proc. Equipment	142	8
Excavators	163	8
Forklifts	89	8
Generator Sets	66	8
Graders	175	8
Off-Highway Tractors	123	8
Off-Highway Trucks	400	8
Other Construction Equipment	172	8
Other General Industrial Equipment	88	8
Other Material Handling Equipment	167	8
Pavers	126	8
Paving Equipment	131	8
Plate Compactors	8	8
Pressure Washers	26	8
Pumps	53	8
Rollers	81	8
Rough Terrain Forklifts	100	8
Rubber Tired Dozers	255	8
Rubber Tired Loaders	200	8
Scrapers	362	8
Signal Boards	20	8
Skid Steer Loaders	65	8
Surfacing Equipment	254	8
Sweepers/Scrubbers	64	8
Tractors/Loaders/Backhoes	98	8
Trenchers	81	8
Welders	45	8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.4

Emission Estimates for -> Phase 2 - WWTC				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	4.4	25.3	36.8	2.1	1.9	0.2	1.7	1.7	0.0	5,363.2
Drainage/Utilities/Sub-Grade	1.7	12.8	11.3	1.0	0.8	0.2	0.7	0.7	0.0	2,486.6
Paving	1.0	9.4	7.6	0.4	0.4	-	0.4	0.4	-	1,807.1
Maximum (pounds/day)	4.4	25.3	36.8	2.1	1.9	0.2	1.7	1.7	0.0	5,363.2
Total (tons/construction project)	0.5	3.1	3.7	0.2	0.2	0.0	0.2	0.2	0.0	637.4

Notes: Project Start Year -> 2016
 Project Length (months) -> 18
 Total Project Area (acres) -> 5
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 124

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Phase 2 - WWTC				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	2.0	11.5	16.7	1.0	0.9	0.1	0.8	0.8	0.0	2,437.8
Drainage/Utilities/Sub-Grade	0.8	5.8	5.1	0.4	0.4	0.1	0.3	0.3	0.0	1,130.3
Paving	0.5	4.3	3.4	0.2	0.2	-	0.2	0.2	-	821.4
Maximum (kilograms/day)	2.0	11.5	16.7	1.0	0.9	0.1	0.8	0.8	0.0	2,437.8
Total (megagrams/construction project)	0.4	2.8	3.3	0.2	0.2	0.0	0.2	0.2	0.0	578.1

Notes: Project Start Year -> 2016
 Project Length (months) -> 18
 Total Project Area (hectares) -> 2
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 95

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.4

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Phase 2 - WWTC	
Construction Start Year	2016	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	18.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	5.3	miles
Total Project Area	5.1	acres
Maximum Area Disturbed/Day	0.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	65.2	yd ³ /day
Soil Exported	59.3	yd ³ /day
Average Truck Capacity	20.0	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of		2005		2006		2007	
	Construction Months	Program Calculated Months		%		%		%
Grubbing/Land Clearing	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	6.00	7.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	6.00	6.30	0.00	0.00	0.00	0.00	0.00	0.00
Paving	6.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00
Totals	18.00	18.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions		User Override of				
User Input	Soil Hauling Defaults	Default Values				
Miles/round trip		30				
Round trips/day		6				
Vehicle miles traveled/day (calculated)				186.6666667		
Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.1	3.4	0.3	0.1	0.0	690.7
Tons per construction period	0.00	0.22	0.02	0.00	0.00	45.59

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions		User Override of Worker				
	Commute Default Values	Default Values				
Miles/ one-way trip		20				
One-way trips/day		2				
No. of employees: Grubbing/Land Clearing		16				
No. of employees: Grading/Excavation		29				
No. of employees: Drainage/Utilities/Sub-Grade		26				
No. of employees: Paving		23				
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.133	0.172	1.555	0.047	0.020	443.765
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.457	0.287	3.779	0.004	0.003	95.644
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.502	0.574	5.481	0.120	0.051	1147.997
Tons per const. Period - Grading/Excavation	0.033	0.038	0.362	0.008	0.003	75.768
Pounds per day - Drainage/Utilities/Sub-Grade	0.458	0.524	5.005	0.109	0.046	1048.171
Tons per const. Period - Drain/Util/Sub-Grade	0.030	0.035	0.330	0.007	0.003	69.179
Pounds per day - Paving	0.353	0.399	3.832	0.094	0.040	898.671
Tons per const. Period - Paving	0.023	0.026	0.253	0.006	0.003	59.312
tons per construction period	0.087	0.099	0.945	0.021	0.009	204.259

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values			
	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Day	Miles Traveled/Day			
Grubbing/Land Clearing - Exhaust		1		40			
Grading/Excavation - Exhaust		1		40			
Drainage/Utilities/Subgrade		1		40			
	ROG		NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Grading/Excavation (grams/mile)	0.16	8.25	0.70	0.17	0.10	1679.86	
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Grading/Excavation	0.01	0.73	0.06	0.01	0.01	148.00	
Tons per const. Period - Grading/Excavation	0.00	0.05	0.00	0.00	0.00	9.77	
Pound per day - Drainage/Utilities/Subgrade	0.01	0.73	0.06	0.01	0.01	148.00	
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.05	0.00	0.00	0.00	9.77	

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation		0.018365473	0.2	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.018365473	0.2	0.0	0.0	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing		Default Number of Vehicles	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	11	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Grading/Excavation		Default	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Number of Vehicles	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	<i>Program-estimate</i>							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Air Compressors	0.68	3.42	4.38	0.37	0.34	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.74	4.47	9.52	0.37	0.34	824.89
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3	Excavators	0.41	2.79	4.47	0.22	0.20	572.86
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1	Rubber Tired Loaders	0.52	3.12	6.51	0.22	0.20	662.62
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
3.00	11	Signal Boards	1.09	4.09	3.96	0.29	0.26	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Tractors/Loaders/Backhoes	0.36	1.57	3.27	0.25	0.23	335.92
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	3.8	19.5	32.1	1.7	1.6	3376.5
	Grading	tons per phase	0.3	1.3	2.1	0.1	0.1	222.9

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles <i>Program-estimate</i>		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.51	2.98	3.86	0.27	0.25	487.07
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.44	2.47	3.19	0.23	0.22	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.22	2.03	2.73	0.15	0.14	372.74
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	11	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	1.2	7.7	10.0	0.7	0.6	1290.4
	Drainage	tons per phase	0.1	0.5	0.7	0.0	0.0	85.2

Paving	Default		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
	Number of Vehicles	Type						
Override of Default Number of Vehicles	Program-estimate							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.37	2.84	4.01	0.20	0.18	481.97
	1	Paving Equipment	0.29	2.69	3.18	0.16	0.15	426.45
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	11	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.7	5.5	7.2	0.4	0.3	908.4
	Paving	tons per phase	0.0	0.4	0.5	0.0	0.0	60.0
Total Emissions all Phases (tons per construction period) =>			0.4	2.2	3.3	0.2	0.2	368.0

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment	Default Values Horsepower	Default Values Hours/day
Aerial Lifts	63	8
Air Compressors	106	8
Bore/Drill Rigs	206	8
Cement and Mortar Mixers	10	8
Concrete/Industrial Saws	64	8
Cranes	226	8
Crawler Tractors	208	8
Crushing/Proc. Equipment	142	8
Excavators	163	8
Forklifts	89	8
Generator Sets	66	8
Graders	175	8
Off-Highway Tractors	123	8
Off-Highway Trucks	400	8
Other Construction Equipment	172	8
Other General Industrial Equipment	88	8
Other Material Handling Equipment	167	8
Pavers	126	8
Paving Equipment	131	8
Plate Compactors	8	8
Pressure Washers	26	8
Pumps	53	8
Rollers	81	8
Rough Terrain Forklifts	100	8
Rubber Tired Dozers	255	8
Rubber Tired Loaders	200	8
Scrapers	362	8
Signal Boards	20	8
Skid Steer Loaders	65	8
Surfacing Equipment	254	8
Sweepers/Scrubbers	64	8
Tractors/Loaders/Backhoes	98	8
Trenchers	81	8
Welders	45	8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.4

Emission Estimates for -> Phase 3 - WWTC				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (lbs/day)
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	3.9	25.3	33.2	1.9	1.7	0.2	1.5	1.5	0.0	5,564.7
Drainage/Utilities/Sub-Grade	1.4	11.5	9.5	0.8	0.6	0.2	0.6	0.5	0.0	2,432.3
Paving	0.8	8.5	5.5	0.3	0.3	-	0.3	0.3	-	1,753.4
Maximum (pounds/day)	3.9	25.3	33.2	1.9	1.7	0.2	1.5	1.5	0.0	5,564.7
Total (tons/construction project)	0.4	3.0	3.2	0.2	0.2	0.0	0.2	0.2	0.0	643.5

Notes: Project Start Year -> 2018
 Project Length (months) -> 18
 Total Project Area (acres) -> 4
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 124

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Phase 3 - WWTC				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	CO2 (kgs/day)
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM10 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	PM2.5 (kgs/day)	
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	1.8	11.5	15.1	0.9	0.8	0.1	0.7	0.7	0.0	2,529.4
Drainage/Utilities/Sub-Grade	0.6	5.2	4.3	0.4	0.3	0.1	0.3	0.2	0.0	1,105.6
Paving	0.4	3.9	2.5	0.2	0.2	-	0.1	0.1	-	797.0
Maximum (kilograms/day)	1.8	11.5	15.1	0.9	0.8	0.1	0.7	0.7	0.0	2,529.4
Total (megagrams/construction project)	0.4	2.7	2.9	0.2	0.2	0.0	0.1	0.1	0.0	583.7

Notes: Project Start Year -> 2018
 Project Length (months) -> 18
 Total Project Area (hectares) -> 2
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 95

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.4

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Phase 3 - WWTC	
Construction Start Year	2018	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	18.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	4.55	miles
Total Project Area	4.4	acres
Maximum Area Disturbed/Day	0.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	65.2	yd ³ /day
Soil Exported	59.3	yd ³ /day
Average Truck Capacity	20.0	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of		2005		2006		2007	
	Construction Months	Program Calculated Months		%		%		%
Grubbing/Land Clearing	0.00	1.80	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	6.00	7.20	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	6.00	6.30	0.00	0.00	0.00	0.00	0.00	0.00
Paving	6.00	2.70	0.00	0.00	0.00	0.00	0.00	0.00
Totals	18.00	18.00						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions		User Override of	
User Input	Soil Hauling Defaults	Default Values	
Miles/round trip		30	
Round trips/day		6	
Vehicle miles traveled/day (calculated)			186.6666667

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.15	6.66	0.67	0.16	0.09	1624.61
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.1	2.7	0.3	0.1	0.0	668.0
Tons per construction period	0.00	0.18	0.02	0.00	0.00	44.09

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions		User Override of Worker	
	Commute Default Values	Default Values	
Miles/ one-way trip		20	
One-way trips/day		2	
No. of employees: Grubbing/Land Clearing		15	
No. of employees: Grading/Excavation		28	
No. of employees: Drainage/Utilities/Sub-Grade		25	
No. of employees: Paving		21	

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.120	0.154	1.399	0.047	0.020	443.880
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.120	0.154	1.399	0.047	0.020	443.880
Emission rate - Paving (grams/mile)	0.112	0.140	1.291	0.047	0.020	441.739
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.415	0.255	3.410	0.004	0.003	95.711
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.415	0.255	3.410	0.004	0.003	95.711
Emission rate - Paving (grams/trip)	0.382	0.228	3.101	0.004	0.003	95.822
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.392	0.436	4.215	0.114	0.048	1098.670
Tons per const. Period - Grading/Excavation	0.026	0.029	0.278	0.008	0.003	72.512
Pounds per day - Drainage/Utilities/Sub-Grade	0.356	0.396	3.832	0.104	0.044	998.791
Tons per const. Period - Drain/Util/Sub-Grade	0.024	0.026	0.253	0.007	0.003	65.920
Pounds per day - Paving	0.281	0.305	2.998	0.088	0.037	844.985
Tons per const. Period - Paving	0.019	0.020	0.198	0.006	0.002	55.769
tons per construction period	0.068	0.075	0.729	0.020	0.009	194.201

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values			
	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Day	Miles Traveled/Day			
Grubbing/Land Clearing - Exhaust		1		40			
Grading/Excavation - Exhaust		1		40			
Drainage/Utilities/Subgrade		1		40			
	ROG		NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate - Grading/Excavation (grams/mile)	0.15	6.66	0.67	0.16	0.09	1624.61	
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.15	6.66	0.67	0.16	0.09	1624.61	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pound per day - Grading/Excavation	0.01	0.59	0.06	0.01	0.01	143.14	
Tons per const. Period - Grading/Excavation	0.00	0.04	0.00	0.00	0.00	9.45	
Pound per day - Drainage/Utilities/Subgrade	0.01	0.59	0.06	0.01	0.01	143.14	
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.04	0.00	0.00	0.00	9.45	

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation		0.018365473	0.2	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.018365473	0.2	0.0	0.0	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing		Default Number of Vehicles	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	10	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Grading/Excavation		Default	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Number of Vehicles	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	<i>Program-estimate</i>							
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Air Compressors	0.58	3.40	3.86	0.30	0.27	507.95
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.66	4.47	8.32	0.31	0.29	824.93
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3	Excavators	0.31	2.79	3.20	0.16	0.14	572.78
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Rollers	0.27	1.51	2.48	0.17	0.16	279.43
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.44	3.11	5.26	0.18	0.16	662.49
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
3.00	10	Signal Boards	0.85	3.87	3.68	0.22	0.21	472.30
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2	Tractors/Loaders/Backhoes	0.28	1.57	2.64	0.19	0.17	335.03
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	3.4	20.7	29.4	1.5	1.4	3654.9
	Grading	tons per phase	0.2	1.4	1.9	0.1	0.1	241.2

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Number of Vehicles <i>Program-estimate</i>		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Generator Sets	0.43	2.96	3.42	0.23	0.21	487.07
0.00	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pumps	0.36	2.44	2.83	0.19	0.18	396.14
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rough Terrain Forklifts	0.17	2.03	2.02	0.10	0.09	372.67
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	1.0	7.6	8.5	0.5	0.5	1290.3
	Drainage	tons per phase	0.1	0.5	0.6	0.0	0.0	85.2

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2	
	Override of Default Number of Vehicles	Number of Vehicles <i>Program-estimate</i>	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
			Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
			Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
			Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
			Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
			Cranes	0.00	0.00	0.00	0.00	0.00	0.00
			Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
			Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Excavators	0.00	0.00	0.00	0.00	0.00	0.00
			Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
			Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
			Graders	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
			Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		1	Pavers	0.29	2.84	2.99	0.15	0.13	482.15
		1	Paving Equipment	0.22	2.69	2.20	0.11	0.10	426.26
			Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
			Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
			Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00		3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
			Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
			Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		10	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
			Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
			Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
			Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00		2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
			Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
			Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Paving	pounds per day	0.5	5.5	5.2	0.3	0.2	908.4
		Paving	tons per phase	0.0	0.4	0.3	0.0	0.0	60.0
Total Emissions all Phases (tons per construction period) =>				0.3	2.2	2.8	0.2	0.1	386.3

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment	Default Values Horsepower	Default Values Hours/day
Aerial Lifts	63	8
Air Compressors	106	8
Bore/Drill Rigs	206	8
Cement and Mortar Mixers	10	8
Concrete/Industrial Saws	64	8
Cranes	226	8
Crawler Tractors	208	8
Crushing/Proc. Equipment	142	8
Excavators	163	8
Forklifts	89	8
Generator Sets	66	8
Graders	175	8
Off-Highway Tractors	123	8
Off-Highway Trucks	400	8
Other Construction Equipment	172	8
Other General Industrial Equipment	88	8
Other Material Handling Equipment	167	8
Pavers	126	8
Paving Equipment	131	8
Plate Compactors	8	8
Pressure Washers	26	8
Pumps	53	8
Rollers	81	8
Rough Terrain Forklifts	100	8
Rubber Tired Dozers	255	8
Rubber Tired Loaders	200	8
Scrapers	362	8
Signal Boards	20	8
Skid Steer Loaders	65	8
Surfacing Equipment	254	8
Sweepers/Scrubbers	64	8
Tractors/Loaders/Backhoes	98	8
Trenchers	81	8
Welders	45	8

0

END OF DATA ENTRY SHEET