

Appendix D: Energy and Greenhouse Gas Calculations

Energy, Climate Change and Greenhouse Gas

1. Assumptions
2. Energy Consumption Summary
3. GHG Calculation Summary
4. Construction CalEEMod Output
 - a. Single Family Residential
 - b. Multi-Family Residential
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5. Construction EMFAC 2017 - (See Air Quality Appendix)

Notes: Operational GHG and Energy information is summarized in these appendices however Calculations and Data gathering was conducted as part of the CAP inventory generation. See CAP appendices for more detailed operational information.

Energy, Climate Change and Greenhouse Gas

1. Assumptions

Diamond Bar Assumptions

CalEEMod Inputs (Non-Default information only)

Project Location	
County	Los Angeles
Air District	SCAQMD
Climate Zone	9
Operational Year Existing	2016
Operational 1st year	2020
Operational Year Project	2040
Utility Provider	Southern California Edison
Source Receptor Area (SCAQMD)	10

	Base (2012) ¹	2016 ²	2040 ³
CO intensity	702	643.734	421.2
% renewable	20%	28.30%	60.00%

¹ Appendix D; Table 1.2, CalEEMod 2017 User Guide

² GHG Calcs.xls from Dyett & Bhatia

³ 2018 SCE Annual Report. Pg 126

Land Use	Building SQFT	Building KFS	Units/ Spaces	Acres
Existing (Operational Modeling)				
SFR			13,252	
MFR			5,661	
Retail	586,659	586.66		
Office	2,406,803	2406.80		
Industrial	1,052,869	1052.87		
Other	1,518,153	1518.15		
Office + Other		3,924.96		
Park				133
golf course	32,000	32.00		168.33
Private Recreation	7,337	7.34		17.65 Club

Diamond Bar Assumptions

2040 (Operational Modeling)

Land Use	Building SQFT	Building KFS	Units/ Spaces	Acres
SFR			13,394	
MFR			9,273	
Retail	1,193,942	1,193.94		
Office	2,926,694	2,926.69		
Industrial	849,868	849.87		
Other	2,211,562	2,211.56		
Office + Other		5,138.26		283.98
Park				134
golf course	32,000	32.00		118
Private Recreation	7,337	7.34		15

New Development - Total (not Modeled)

Land Use	Building SQFT	Building KFS	Units/ Spaces	Acres
SFR			142	
MFR			3,612	
Retail	607,283			0.00
Office	519,892			0.00
Industrial				
Other	693,409			0.00
School				0
Park				1.23
Openspace				361
golf course				0
Private Recreation				0

New Development - Construction Modeling (Annual Growth of 10% worst case)

Land Use	Building SQFT	Building KFS	Units/ Spaces	Acres
SFR			12	
MFR			377	
Retail	60,728	60.73		
Office	51,989	51.99		
Industrial	0			
Other	69,341	69.34		
School				0.00
Park		182,058.40		1.23
Openspace				0.00
golf course				0.00
Private Recreation				0.00

Diamond Bar Assumptions

Demolition (Construction modeling)

Industrial -20,300 -20.30

Paving Acentage

Total Acres by Land use	Existing	Project	New	% total
Residential	5,112	5,147	35	
SFR		1.33	142	4%
MFR		33.83	3,612	96%
NR	6,432	6,405	26	
Paving Acres by Land Use	Acres			
SFR	0.13	non-asphalt		
MFR	3.38	asphalt		
NR	0.88	asphalt		

Construction

Construction Schedule

Source: CalEEMod Defaults

CalEEMod Phase	Start	End	Days
SFR- Site Prep	1/1/2020	1/14/2020	10
SFR - Grading	1/15/2020	2/11/2020	20
SFR - Building Construction	2/12/2020	12/29/2020	230
SFR - Paving	11/30/2020	12/25/2020	20
SFR - Architectural Coating	11/30/2020	12/25/2020	20
MFR - Site Preparation	1/1/2020	1/14/2020	10
MFR - Grading	1/15/2020	2/25/2020	30
MFR - Building Construction	2/26/2020	12/20/2020	213
MFR - Paving	11/19/2020	12/16/2020	20
MFR - Architectural Coating	11/21/2020	12/18/2020	20
Demolition	1/1/2020	1/28/2020	20
NR - Site Preparation	1/29/2020	1/31/2020	3
NR - Grading	2/1/2020	2/10/2020	6
NR - Building Construction	2/11/2020	12/14/2020	220
NR - Paving	11/15/2020	11/27/2020	10
NR - Architectural Coating	11/29/2020	12/11/2020	10

Notes:

1. Phases where construction overlap occurs

* There is no set construction scenario therefore the following assumptions were made. Up to 3 non-residential construction projects, one single family residential, one multifamily residential, demolition of 10% of the industrial to be removed and one park could be built in any year.

Diamond Bar Assumptions

* As a worst case scenario, maximum criteria pollutant emissions for each landuse type (regardless of construction phase) will be combined on the same day.

* For localized emissions the analysis assumes one project would be within 25 meters of any given construction project. But only one construction project would influence any one sensitive receptor.

2. Construction Activities are anticipated to occur 5 days per week

3. Cut and Fill amounts. Assumed balanced onsite

Construction Phases and Equipment Summary

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

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

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

HP = horse power of the equipment.

LF = Load factor for the equipment

Construction By SubPhase

Notes: Source: CalEEMod Defaults

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
SFR- Site Prep	Rubber Tired Dozers	3	8	247	0.4
SFR- Site Prep	Tractors/Loaders/Backhoes	4	8	97	0.37
SFR - Grading	Excavators	1	8	158	0.38
SFR - Grading	Graders	1	8	187	0.41
SFR - Grading	Rubber Tired Dozers	1	8	247	0.4
SFR - Grading	Tractors/Loaders/Backhoes	3	8	97	0.37
SFR - Building Construction	Cranes	1	7	231	0.29
SFR - Building Construction	Forklifts	3	8	89	0.2
SFR - Building Construction	Generator Sets	1	8	84	0.74
SFR - Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
SFR - Building Construction	Welders	1	8	46	0.45
SFR - Paving	Pavers	2	8	130	0.42
SFR - Paving	Paving Equipment	2	8	132	0.36

Diamond Bar Assumptions

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
SFR - Paving	Rollers	2	8	80	0.38
SFR - Architectural Coating	Air Compressors	1	6	78	0.48
MFR - Site Preparation	Rubber Tired Dozers	3	8	247	0.4
MFR - Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
MFR - Grading	Excavators	2	8	158	0.38
MFR - Grading	Graders	1	8	187	0.41
MFR - Grading	Rubber Tired Dozers	1	8	247	0.4
MFR - Grading	Scrapers	2	8	367	0.48
MFR - Grading	Tractors/Loaders/Backhoes	2	8	97	0.37
MFR - Building Construction	Cranes	1	7	231	0.29
MFR - Building Construction	Forklifts	3	8	89	0.2
MFR - Building Construction	Generator Sets	1	8	84	0.74
MFR - Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
MFR - Building Construction	Welders	1	8	46	0.45
MFR - Paving	Pavers	2	8	130	0.42
MFR - Paving	Paving Equipment	2	8	132	0.36
MFR - Paving	Rollers	2	8	80	0.38
MFR - Architectural Coating	Air Compressors	1	6	78	0.48
Demolition	Concrete/Industrial Saws	1	8	81	0.73
Demolition	Rubber Tired Dozers	1	8	247	0.4
NR - Site Preparation	Graders	1	8	187	0.41
NR - Site Preparation	Scrapers	1	8	367	0.48
Demolition	Tractors/Loaders/Backhoes	3	8	97	0.37
NR - Site Preparation	Tractors/Loaders/Backhoes	1	7	97	0.37
NR - Grading	Graders	1	8	187	0.41
NR - Grading	Rubber Tired Dozers	1	8	247	0.4
NR - Grading	Tractors/Loaders/Backhoes	2	7	97	0.37
NR - Building Construction	Cranes	1	8	231	0.29
NR - Building Construction	Forklifts	2	7	89	0.2
NR - Building Construction	Generator Sets	1	8	84	0.74
NR - Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37
NR - Building Construction	Welders	3	8	46	0.45
NR - Paving	Cement and Mortar Mixers	1	8	9	0.56
NR - Paving	Pavers	1	8	130	0.42

Diamond Bar Assumptions

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
NR - Paving	Paving Equipment	1	8	132	0.36
NR - Paving	Rollers	2	8	80	0.38
NR - Paving	Tractors/Loaders/ Backhoes	1	8	97	0.37
NR - Architectural Coating	Air Compressors	1	6	78	0.48

Trips and VMT

CalEEMod Phase

	Worker Trips	Vendor Trips	Haul Trucks
SFR - Site Prep	18	0	0
SFR - Grading	15	0	0
SFR - Building Construction	27	10	0
SFR - Paving	15	0	0
SFR - Architectural Coating	5	0	0
MFR - Site Preparation	18	0	0
MFR - Grading	20	0	0
MFR - Building Construction	333	64	0
MFR - Paving	15	0	0
MFR - Architectural Coating	67	0	0
Demolition	13	0	92
NR - Site Preparation	8	0	0
NR - Grading	10	0	0
NR - Building Construction	38	18	0
NR - Paving	15	0	0
NR - Architectural Coating	8	0	0
Trip Length	14.7	6.9	20

Diamond Bar Operational Assumptions

Mobile source emissions

(Modeled outside of CalEEMod)

Source: GHG Calcs.xls from Dyett & Bhatia

	Diesel	Gasoline		
Existing	31,413,579	477,712,477	annual VMT	
	4,211,239	78,151,429	Trips	
2040 Buildout	50,331,196	490,679,754	annual VMT	
	5,771,465	97,813,959	Trips	
			Trips	
	Weekday	Saturday	Sunday	Total annual
Existing	241,778	207,368	167640.720	82,362,668
2040 Buildout	305,780	259,833	203294.540	103,585,424

Based on EMFAC2017 5.15% of trips are HHD or MHD and 94.89% of trips are LDA, LDT1 and LDT2 in 2016. Number of Trips are based on CalEEMod Defaults.

Based on EMFAC2017 5.57% of trips are HHD or MHD and 94.43% of trips are LDA, LDT1 and LDT2 in 2040. Number of Trips are based on CalEEMod Defaults

Area source emissions

Hearths: No fire palces in the apartments, and defaults for fire places in the single family residents.

Defaults for all non-hearth categories

Energy Use

Source: GHG Calcs.xls from Dyett & Bhatia

Electricity

Existing	KWh	Adjusted	Units/Ksf	kWh/Unit or KSF
Residential	131,937,635	131,937,635	18,913	6,976
Commercial	92,692,412	92,692,412	4,512	20,545
Industrial	972,126	972,126	1,053	923
Total	225,602,173	225,602,173		
Project	KWh	Adjusted	Units/Ksf	kWh/Unit or KSF
Residential	158,125,648	117,452,011	22,667	5,182
Commercial	128,777,959	126,338,467	6,332	19,952
Industrial	784,717	748,493	850	881
Total	287,688,325	244,538,971		

* Electricity is not modeled as it does not result in criteria pollutant emissions. GHG Emissions are modeled as part of the CAP process.

Public Lighting 3,231,978

Diamond Bar Operational Assumptions

Natural Gas (Modeled outside of CalEEMod)

Existing	Therms	Adjusted	MBTU
Residential	6,115,192	6,115,192	611,519
Commercial	1,939,083	1,939,083	193,908
Industrial	2,192	2,192	219
Total	8,056,467	8,056,467	

Project	Therms	Adjusted	MBTU
Residential	7,328,983	4,798,708	479,871
Commercial	2,721,249	2,709,095	270,909
Industrial	1,769	1,769	177
Total	10,052,001	7,509,572	

Note: Adjusted is adjusted electrical usage and Natural Gas Usage based on implementation of 2019 title 24 Standards

100,000 BTU/Therm

Water and Wastewater

Source: GHG Calcs.xls from Dyett & Bhatia

	Acre feet/yr	gallons/year	Waste Water	Outdoor Use
Existing	9,282	3,024,553,001	911,000,000	2,113,553,001
Project	12,153	3,960,072,465	1,402,000,000	2,558,072,465
	Default	% Default	Septic dist.	Revised
<i>Septic</i>	10.33			
<i>Aerobic</i>	87.46	0.98	10.08	97.54
<i>Lagoon</i>	2.21	0.02	0.25	2.46

*water and wastewater are not modeled as it does not generate criteria pollutant emissions. GHG Emissions were modeled as part of the CAP process.

325,851 gallons/acre foot

Diamond Bar Operational Assumptions

Solid Waste

Source: GHG Calcs.xls from Dyett & Bhatia

Existing	tons/year	Project	tons/year
Residential	14,166	Residential	16,328
Commercial/Industrial	7,770	Commercial/Industrial	8,875

*Solidwaste was not modeled as it does not generate criteria pollutant emissions. GHG Emissions were modeled as part of the CAP process.

Operational Off-road equipment/Stationary Sources

(modeled outside of CalEEMod)

Gallons of Fuel/day		Diesel	Gasoline	CNG	
Existing		189,551	9,187	3,934	
Project		262,241	18,684	7,975	
Gallons of Fuel/year		Diesel	Gasoline	CNG	
Existing		69,186,225	3,353,182	1,436,056	
Project		95,717,965	6,819,551	2,910,948	
gallons/mile	2016	0.0009725	0.0005449	0.0260423	From EMFAC 2017
	2040	0.0008552	0.0005571	0.0186498	From EMFAC 2017
VMT per year		Diesel	Gasoline	CNG	
Existing		67,280	1,827	37,398	
Project		81,856	3,799	54,289	
VMT/Trip	2016	12.11	2.82	10.38	From EMFAC 2017
	2040	13.20	5.96	10.45	From EMFAC 2017
Trips/year		Diesel	Gasoline	CNG	
Existing		5,556	648	3,603	
Project		6,201	638	5,194	

**Diamond Bar GPU
Comparison Tables**

Housing and Jobs Projection

	<i>Existing Estimate (current) based on 2016 data</i>	<i>Preferred Plan 2040</i>	<i>No Project 2040</i>
Housing Units	18,913	22,667	19,643
Households	18,308	21,533	18,661
Population	57,853	66,685	57,790
Jobs	14,702	21,744	18,855

Housing and Jobs Projection Rounded

	<i>Existing Estimate (current) based on 2016 data</i>	<i>Preferred Plan 2040</i>	<i>No Project 2040</i>
Housing Units	18,910	22,670	19,640
Households	18,310	21,530	18,660
Population	57,900	66,700	57,800
Jobs	14,700	21,700	18,900

Hus and HHs are rounded to the nearest 10
Pop and Jobs are rounded to the nearest 100

**Diamond Bar GPU
Comparison Tables**

Housing Unit Comparison

	<i>Preferred Plan</i>		
	<i>Single- Family Units</i>	<i>Multi- Family Units</i>	<i>Total Units</i>
Existing	13,252	5,661	18,913
Total at Buildout	13,394	9,273	22,667
Net New Units	142	3,612	3,754

Housing Unit Comparison Rounded

	<i>Preferred Plan</i>		
	<i>Single- Family Units</i>	<i>Multi- Family Units</i>	<i>Total Units</i>
Existing	13,250	5,660	18,910
Total at Buildout	13,390	9,270	22,670
Net New Units	140	3,610	3,750

HUs are rounded to the nearest 10

**Diamond Bar GPU
Comparison Tables**

Non-Residential Comparison

	<i>Preferred Plan</i>									
	<i>Retail</i>		<i>Office</i>		<i>Industrial</i>		<i>Other Commercial</i>		<i>Total</i>	
	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>
Existing	586,659	1,467	2,406,803	7,334	1,052,869	2,106	1,518,153	3,795	5,564,484	14,702
Total at Buildout	1,193,942	3,079	2,926,694	11,436	849,868	1,700	2,211,562	5,529	7,182,066	21,744
Net New	607,283	1,613	519,892	4,102	(203,001)	(406)	693,409	1,734	1,617,583	7,042

Non-Residential Comparison Rounded

	<i>Preferred Plan</i>									
	<i>Retail</i>		<i>Office</i>		<i>Industrial</i>		<i>Other Commercial</i>		<i>Total</i>	
	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>	<i>SQFT</i>	<i>Jobs</i>
Existing	587,000	1,500	2,407,000	7,300	1,053,000	2,100	1,518,000	3,800	5,564,000	14,700
Total at Buildout	1,194,000	3,100	2,927,000	11,400	850,000	1,700	2,212,000	5,500	7,182,000	21,700
Net New	607,000	1,600	520,000	4,100	(203,000)	(400)	693,000	1,700	1,618,000	7,000

Jobs are rounded to the nearest 100

SQFT is rounded to the nearest 1,000

**Diamond Bar GPU
Land Use Designation Summary**

Code	Land Use Designation	Existing											Other Jobs	
		Acres	Units	SF Units	MF Units	Pop	RetailSaft	OfficeSaft	IndSaft	Other Saft	RetailJob	OfficeJob		IndJob
Residential		5,112	18,270	12,924	5,346	55,886	-	88,004	-	-	-	269	-	-
RR	Rural Residential	1,401	815	815	-	2,493	-	-	-	-	-	-	-	-
RL	Low Density Residential	2,495	9,258	8,947	311	28,319	-	19,777	-	-	-	59	-	-
RLM	Low-Medium Residential	644	3,162	3,162	-	9,672	-	-	-	-	-	-	-	-
RM	Medium Density Residential	274	2,434	-	2,434	7,445	-	7,540	-	-	-	23	-	-
RMH	Medium High Residential	182	2,101	-	2,101	6,427	-	44,371	-	-	-	137	-	-
RH	High Density Residential	34	500	-	500	1,529	-	16,316	-	-	-	50	-	-
PA-1/SP, PA	High Density Residential-30	82	-	-	-	-	-	-	-	-	-	-	-	-
RH-30	High Density Residential-30	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Residential		5,205	154	11	143	471	300,132	2,170,589	1,052,869	1,401,403	750	6,623	2,106	3,504
C	General Commercial	155	-	-	-	-	227,633	207,725	13,137	1,050,639	569	639	26	2,627
CO	Commercial/Office	59	45	1	44	138	53,998	367,713	-	229,492	135	1,131	-	574
OP	Professional/Office	161	-	-	-	-	8,715	1,500,380	-	121,272	22	4,590	-	303
I	Light Industrial	88	-	-	-	-	-	77,648	910,553	-	-	220	1,821	-
S	School	278	109	10	99	333	-	-	-	-	-	-	-	-
GC	Golf Course	168	-	-	-	-	9,786	9,786	129,179	-	24	24	258	-
PK	Park	133	-	-	-	-	-	-	-	-	-	-	-	-
OS	Open Space	632	-	-	-	-	-	-	-	-	-	-	-	-
PR	Private Recreation	18	-	-	-	-	-	7,337	-	-	-	18	-	-
AG/SP	Agriculture	3,513	-	-	-	-	-	-	-	-	-	-	-	-
New Designations		-	-	-	-	-	-	-	-	-	-	-	-	-
MU-TC	Town Center Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-
MU-N	Neighborhood Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-
MU-TOD	Transit Oriented Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-
PF	Public Facility	-	-	-	-	-	-	-	-	-	-	-	-	-
O	Office	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	Community Core Overlay	-	-	-	-	-	-	-	-	-	-	-	-	-
GC/PK	Golf Course/Park	-	-	-	-	-	-	-	-	-	-	-	-	-
Planning Areas		1,226	489	317	172	1,496	286,527	148,210	-	116,750	716	442	-	292
PA-1/SP	Planning Area 1	638	-	-	-	-	-	-	-	-	-	-	-	-
PA-2/SP	Planning Area 2	430	127	127	-	388	-	-	-	-	-	-	-	-
PA-3/SP	Planning Area 3	48	180	70	110	551	286,527	148,210	-	116,750	716	442	-	292
PA-4/SP	Planning Area 4	81	-	-	-	-	-	-	-	-	-	-	-	-
PA-5/SP	Planning Area 5	-	-	-	-	-	-	-	-	-	-	-	-	-
SP	Willow Heights	29	182	120	62	557	-	-	-	-	-	-	-	-
Other		26	-	-	-	-	-	-	-	-	-	-	-	-
ROW		-	-	-	-	-	-	-	-	-	-	-	-	-
F		1	-	-	-	-	-	-	-	-	-	-	-	-
W		17	-	-	-	-	-	-	-	-	-	-	-	-
Blank	Trail Easement	7	-	-	-	-	-	-	-	-	-	-	-	-
Totals		11,569	18,913	13,252	5,661	57,853	586,659	2,406,803	1,052,869	1,518,153	1,467	7,334	2,106	3,795

**Diamond Bar GPU
Land Use Designation Summary**

		Proposed Plan Buildout												
Code	Land Use Designation	Acres	Units	SF Units	MF Units	Pop	RetailSaft	OfficeSaft	IndSaft	Other Saft	RetailJob	OfficeJob	IndJob	Other Job
Residential		5,147	19,194	13,181	6,013	56,468	-	188,771	-	-	-	579	-	-
RR	Rural Residential	1,409	978	930	48	2,876	-	-	-	-	-	-	-	-
RL	Low Density Residential	2,414	8,610	8,498	113	25,330	-	19,777	-	-	-	59	-	-
RLM	Low-Medium Residential	779	3,760	3,753	7	11,063	-	47,593	-	-	-	146	-	-
RM	Medium Density Residential	281	2,478	-	2,478	7,290	-	60,714	-	-	-	187	-	-
RMH	Medium High Residential	199	2,369	-	2,369	6,970	-	44,371	-	-	-	137	-	-
RH	High Density Residential	34	509	-	509	1,497	-	16,316	-	-	-	50	-	-
PA-1/SP, PA	High Density Residential-30	-	-	-	-	-	-	-	-	-	-	-	-	-
RH-30	High Density Residential-30	32	490	-	490	1,442	-	-	-	-	-	-	-	-
Non-Residential		5,100	-	-	-	-	239,436	164,413	651,028	1,076,943	599	495	1,302	2,692
C	General Commercial	123	-	-	-	-	239,436	100,418	-	1,076,943	599	309	-	2,692
CO	Commercial/Office	-	-	-	-	-	-	-	-	-	-	-	-	-
OP	Professional/Office	-	-	-	-	-	-	-	-	-	-	-	-	-
I	Light Industrial	38	-	-	-	-	-	26,848	651,028	-	-	83	1,302	-
S	School	284	-	-	-	-	-	29,811	-	-	-	85	-	-
GC	Golf Course	-	-	-	-	-	-	-	-	-	-	-	-	-
PK	Park	134	-	-	-	-	-	-	-	-	-	-	-	-
OS	Open Space	993	-	-	-	-	-	-	-	-	-	-	-	-
PR	Private Recreation	15	-	-	-	-	-	7,337	-	-	-	18	-	-
AG/SP	Agriculture	3,513	-	-	-	-	-	-	-	-	-	-	-	-
New Designations		521	3,012	24	2,988	8,861	695,450	2,425,300	198,840	1,134,619	1,833	9,920	398	2,837
MU-TC	Town Center Mixed Use	45	900	-	900	2,647	353,921	53,224	-	246,400	885	245	-	616
MU-N	Neighborhood Mixed Use	38	643	24	619	1,891	34,877	85,077	-	150,416	87	338	-	376
MU-TOD	Transit Oriented Mixed Use	33	509	-	509	1,498	26,030	178,348	69,661	44,962	65	906	139	112
PF	Public Facility	63	-	-	-	-	-	-	-	-	-	-	-	-
O	Office	174	-	-	-	-	6,230	1,887,181	-	110,710	16	7,292	-	277
CC	Community Core Overlay	50	960	-	960	2,824	264,605	211,684	-	582,132	756	1,114	-	1,455
GC/PK	Golf Course/Park	118	-	-	-	-	9,786	9,786	129,179	-	24	24	258	-
Planning Areas		784	461	190	271	1,356	259,056	148,210	-	-	648	442	-	-
PA-1/SP	Planning Area 1	688	-	-	-	-	-	-	-	-	-	-	-	-
PA-2/SP	Planning Area 2	-	-	-	-	-	-	-	-	-	-	-	-	-
PA-3/SP	Planning Area 3	17	-	-	-	-	-	83,446	-	-	-	257	-	-
PA-4/SP	Planning Area 4	1	-	-	-	-	-	-	-	-	-	-	-	-
PA-5/SP	Planning Area 5	-	-	-	-	-	-	-	-	-	-	-	-	-
SP	Willow Heights	77	461	190	271	1,356	259,056	64,764	-	-	648	185	-	-
Other		17	-	-	-	-	-	-	-	-	-	-	-	-
ROW		-	-	-	-	-	-	-	-	-	-	-	-	-
F		-	-	-	-	-	-	-	-	-	-	-	-	-
W		17	-	-	-	-	-	-	-	-	-	-	-	-
Blank	Trail Easement	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals		11,569	22,667	13,394	9,273	66,685	1,193,942	2,926,694	849,868	2,211,562	3,079	11,436	1,700	5,529

**Diamond Bar GPU
Land Use Designation Summary**

		No Project Buildout												
Code	Land Use Designation	Acres	Units	SF Units	MF Units	Pop	RetailSaft	OfficeSaft	IndSaft	Other Saft	RetailJob	OfficeJob	IndJob	Other Job
Residential		5,112	19,000	12,986	6,015	55,898	-	88,004	-	-	-	269	-	-
RR	Rural Residential	1,401	960	869	91	2,824	-	-	-	-	-	-	-	-
RL	Low Density Residential	2,495	9,342	8,953	389	27,484	-	19,777	-	-	-	59	-	-
RLM	Low-Medium Residential	644	3,164	3,164	-	9,309	-	-	-	-	-	-	-	-
RM	Medium Density Residential	274	2,434	-	2,434	7,161	-	7,540	-	-	-	23	-	-
RMH	Medium High Residential	182	2,101	-	2,101	6,181	-	44,371	-	-	-	137	-	-
RH	High Density Residential	34	509	-	509	1,497	-	16,316	-	-	-	50	-	-
PA-1/SP, PA	High Density Residential-30	82	490	-	490	1,442	-	-	-	-	-	-	-	-
RH-30	High Density Residential-30	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-Residential		5,205	154	11	143	453	332,741	2,706,625	1,058,032	1,539,991	832	10,338	2,116	3,850
C	General Commercial	155	-	-	-	-	289,718	163,566	3,284	1,314,500	724	503	7	3,286
CO	Commercial/Office	59	45	1	44	132	25,136	643,266	-	106,826	63	2,739	-	267
OP	Professional/Office	161	-	-	-	-	8,102	1,775,211	-	118,666	20	6,748	-	297
I	Light Industrial	88	-	-	-	-	-	77,648	925,569	-	-	220	1,851	-
S	School	278	109	10	99	321	-	29,811	-	-	-	85	-	-
GC	Golf Course	168	-	-	-	-	9,786	9,786	129,179	-	24	24	258	-
PK	Park	133	-	-	-	-	-	-	-	-	-	-	-	-
OS	Open Space	632	-	-	-	-	-	-	-	-	-	-	-	-
PR	Private Recreation	18	-	-	-	-	-	7,337	-	-	-	18	-	-
AG/SP	Agriculture	3,513	-	-	-	-	-	-	-	-	-	-	-	-
New Designations		-	-	-	-	-	-	-	-	-	-	-	-	-
MU-TC	Town Center Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-
MU-N	Neighborhood Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-
MU-TOD	Transit Oriented Mixed Use	-	-	-	-	-	-	-	-	-	-	-	-	-
PF	Public Facility	-	-	-	-	-	-	-	-	-	-	-	-	-
O	Office	-	-	-	-	-	-	-	-	-	-	-	-	-
CC	Community Core Overlay	-	-	-	-	-	-	-	-	-	-	-	-	-
GC/PK	Golf Course/Park	-	-	-	-	-	-	-	-	-	-	-	-	-
Planning Areas		1,226	489	317	172	1,439	286,527	148,210	-	116,750	716	442	-	292
PA-1/SP	Planning Area 1	638	-	-	-	-	-	-	-	-	-	-	-	-
PA-2/SP	Planning Area 2	430	127	127	-	374	-	-	-	-	-	-	-	-
PA-3/SP	Planning Area 3	48	180	70	110	530	286,527	148,210	-	116,750	716	442	-	292
PA-4/SP	Planning Area 4	81	-	-	-	-	-	-	-	-	-	-	-	-
PA-5/SP	Planning Area 5	-	-	-	-	-	-	-	-	-	-	-	-	-
SP	Willow Heights	29	182	120	62	535	-	-	-	-	-	-	-	-
Other		26	-	-	-	-	-	-	-	-	-	-	-	-
ROW		-	-	-	-	-	-	-	-	-	-	-	-	-
F		1	-	-	-	-	-	-	-	-	-	-	-	-
W		17	-	-	-	-	-	-	-	-	-	-	-	-
Blank	Trail Easement	7	-	-	-	-	-	-	-	-	-	-	-	-
Totals		11,569	19,643	13,314	6,330	57,790	619,268	2,942,839	1,058,032	1,656,741	1,548	11,049	2,116	4,142

Energy, Climate Change and Greenhouse Gas
2. Energy Consumption Summary

Diamond Bar GPU

Energy Summary

Construction Fuel Consumption Summary

	gallons		
Year	Diesel	Gas	# Years
Total Compressed	1,700,397	600,613	10
Annual Average	170,040	60,061	

*Note: Mitigated and unmitigated construction emissions of CO₂ are identical

*Note: 10 years is used rather than 20 (buildout time) because the worst case scenario assumes 10% construction per year)

County Usage¹	590,196,078	3,659,000,000
Project % County	0.0288%	0.0016%

	Total Gallons	Annual Comp	
Onsite Equipment	1,438,182	143,818	diesel
Onsite Equipment	0	0	gasoline
Haul Trucks	8,918	892	diesel
Vendor Trucks	253,297	25,330	diesel
Worker Trips	600,613	60,061	gasoline

Annual Operational Fuel Consumption

	gallons		MMBTU/yr	GWh/yr	
	Diesel	Gas	Natural Gas	Electric	
<u>Existing</u>					
Unmitigated	4,156,399.00	22,963,590.00	805,647.00	231.58	231,577
% of County (2016)	0.70%	0.63%	0.2799%	0.337%	
% of County (2018)			0.2758%	0.341%	
% SCE/SoCalGas (2016)			0.157%	0.274%	
% SCE/SoCalGas (2018)			0.081%	0.266%	
<u>2040</u>					
Unmitigated	5,682,918.00	14,412,283.00	750,957.00	250.35	250,351
% of County	0.963%	0.394%	0.2570%	0.369%	
%SCE/SoCal (2018)			0.075947%	0.287%	
%SCE/SoCal (2030)				0.228%	
<u>Net</u>					
Unmitigated	1,526,519.00	-8,551,307.00	-54,690.00	18.77	
% of County	0.26%	-0.23%	-0.0187%	0.0277%	
%SCE/SoCal (2018)			-0.0055%	0.0215%	

Diamond Bar GPU Energy Summary

	MMBTU	kWh	GWh
Existing ²	805,647.00	231,577,249	231.58
New Building ²	750,957.00	250,351,019	250.35
LA County (2016) ^{3,4}	287,839,418		68,779.25
LA County (2018) ^{3,4}	292,144,664		67,856
SCE (2016) ⁵			84,440
SCE (2017) ⁵			87,143
SCE (2030) ⁶			110,000
SoCalGas (2016) ⁶	512,414,000		
SoCalGas (2017) ⁶	988,785,000		

Assumptions

Gasoline	8.78 Kg of CO ₂ per gallon of Gasoline
Diesel	10.21 Kg of CO ₂ per gallon of Gasoline

Construction	diesel	Used for trucks (haul and vendor) and off-road equipment
	gasoline	worker vehicles
Operation	diesel	Majority of trucks and buses
	gasoline	remaining vehicle mix

LCFS & Pavley assumed for on-road vehicles after year 2011

100,000 BTU/therm

2878394181 LA County (2016) Therms

2921446642 LA County (2018) Therms

5124140000 SoCalGas (2016) Therms

Sources: 5156070000 SoCalGas (2018) Therms

1 Emfac2017.

2 GHG Calc.xls by Dyett and Bhatia

3 <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>

4 <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>

5 <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>

6 <http://www.ecdms.energy.ca.gov/gasbyutil.aspx>

Diamond Bar GPU

Unmitigated Fuel Conversion - Construction

	Total CO ₂ MT/yr	Fuel Type	Factor KGCO ₂ /gal	Gallons	Total Diesel (gal)	Total
Offroad						
Demolition	21.20	diesel	10.21	2,077	2,077	
SFR - Site Prep	16.85	diesel	10.21	1,650		
SFR - Grading	26.27	diesel	10.21	2,573		
SFR - Building Construction	267.98	diesel	10.21	26,246		
SFR - Paving	20.19	diesel	10.21	1,977		
SFR - Architectural Coating	2.56	diesel	10.21	251	32,698	
MFR - Site Preparation	16.85	diesel	10.21	1,650		
MFR - Grading	83.39	diesel	10.21	8,167		
MFR - Building Construction	248.17	diesel	10.21	24,306		
MFR - Paving	20.19	diesel	10.21	1,977		
MFR - Architectural Coating	2.56	diesel	10.21	251	36,352	
NR - Site Preparation	3.26	diesel	10.21	319		
NR - Grading	5.48	diesel	10.21	536		
NR - Building Construction	229.57	diesel	10.21	22,485		
NR - Paving	7.81	diesel	10.21	765		
NR - Architectural Coating	1.28	diesel	10.21	125	24,231	

Onroad

source: 2020 EMFAC2017 Caleemod and Const.xls

	Hauling	Vendor	Worker
Demolition	891.81	0.00	146.94
SFR	0.00	2,061.37	4,007.06
MFR	0.00	12,217.64	41,454.74
NR	0.00	3,683.58	4,817.52

Estimated Fuel Savings from Anti-Idling Regulation (64% based on CARB emissions reductions)

	Gallons	% Idling	Gallons Idle	
Annual Haul	891.81	1.03	9	
Annual Vendor	25,329.74	8.80	2,229	
Total			2,238	
Savings			806	Annual

Source: California Air Resources Board (CARB), 2004. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, Appendix F, July 2004, <https://www.arb.ca.gov/regact/idling/idling.htm>, accessed November 2016.

Diamond Bar GPU

Unmitigated Fuel Conversion - Construction

Construction Water Energy Estimates

Source	Acres	Daily Use (Mgal)	days of Project	Total Use (Mgal)	Total Electricity Demand (kWh)	Annual Electricity Demand (kWh)
Project	20.9	0.0627	244	15.299	199,206	199,206

CalEEMod Water Electricity Factors

Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
9727	111	1272	1,911

	kWh
Annual Project	199,206
SCE	87,143,000,000
%SCE	0.000229%

Sources:

Electricity Intensity Factors - California Emissions Estimator Model (CalEEMod).

Estimated construction water use assumed to be generally equivalent to landscape irrigation, based on a factor of 20.94 gallons per year per square foot of

landscaped area within the Los Angeles area (Mediterranean climate), which assumes high water demand landscaping materials and an irrigation system efficiency of 85%.

Factor is therefore $(20.94 \text{ GAL/SF/year}) \times (43,560 \text{ SF/acre}) / (365 \text{ days/year}) / (0.85) = 2,940 \text{ gallons/acre/day}$, rounded up to 3,000 gallons/acre/day.

(U.S. Department of Energy, Energy Efficiency & Renewable Energy, Federal Energy Management Program. "Guidelines for Estimating Unmetered Landscaping Water Use." July 2010. Page 12, Table 4 - Annual Irrigation Factor – Landscaped Areas with High Water Requirements).

Energy, Climate Change and Greenhouse Gas
3. GHG Calculation Summary

Diamond Bar GPU Unmitigated GHG Summary

CalEEMod 2016.3.2

Title: Diamond Bar GPU - Construction Only - 10% - SFR & Park

7/17/2019

Diamond Bar GPU - Construction Only - 10% - MFR

7/17/2019

Diamond Bar GPU - Construction Only - Demo and Non Residential

7/17/2019

Mobile Construction Emissions Spreadsheet

7/17/2019

Unmitigated Construction Emissions - Max Annual

		lbs/day CO ₂ e				MT CO ₂ e by	
		Onsite	Hauling	Vendor	Worker	MT CO ₂ e	Landuse
Demolition	Annual	21.20	9.31	0.00	1.23	32	
	Project Total					635	635
SFR- Site Prep	Annual	16.85	0.00	0.00	0.85	18	
	Project Total					354	
SFR - Grading	Annual	26.27	0.00	0.00	1.42	28	
	Project Total					554	
SFR - Building Construction	Annual	267.98	0.00	23.06	29.39	320	
	Project Total					6,408	
SFR - Paving	Annual	20.19	0.00	0.00	1.42	22	
	Project Total					432	
SFR - Architectural Coating	Annual	2.56	0.00	0.00	0.47	3	
	Project Total					61	7,809
MFR - Site Preparation	Annual	16.85	0.00	0.00	0.85	18	
	Project Total					354	
MFR - Grading	Annual	83.39	0.00	0.00	2.84	86	
	Project Total					1,725	
MFR - Building Construction	Annual	248.17	0.00	136.68	335.64	720	
	Project Total					14,410	
MFR - Paving	Annual	20.19	0.00	0.00	1.42	22	
	Project Total					432	
MFR - Architectural Coating	Annual	2.56	0.00	0.00	6.34	9	
	Project Total					178	17,099
NR - Site Preparation	Annual	3.26	0.00	0.00	0.11	3	
	Project Total					67	
NR - Grading	Annual	5.48	0.00	0.00	0.28	6	
	Project Total					115	
NR - Building Construction	Annual	229.57	0.00	0.00	39.71	269	
	Project Total					5,385	
NR - Paving	Annual	7.81	0.00	1.50	0.00	9	
	Project Total					186	
NR - Architectural Coating	Annual	1.28	0.00	0.00	0.38	2	
	Project Total					33	5,788
Max Project Total						42,905	42,905
Amortized						1,430	1,430

*Conservatively assumes 20 years of the same annual emissions.

Diamond Bar GPU Unmitigated GHG Summary

Operational Emissions By Sector

Source: GHG Calc.xls by Dyett and Bhatia

<i>Sector</i>	<i>2016</i>	<i>2030</i>	<i>2040</i>
Residential	64,175	49,289	44,439
Commercial	31,755	29,853	34,209
Industrial	245	145	130
Transportation	242,007	171,489	168,154
Solid Waste	6,180	6,714	7,124
Water Transport, Distribution, and Treatment	1,016	929	1,025
Wastewater	650	695	768
Off-Road Equipment	1,985	2,441	2,811
Public Lighting	776	566	600
Total Operational	348,790	275,885	259,261
Amortized Const		1,430	1,430
Total		277,315	260,691
Population	57,853	62,852	66,685
Per Capita Emissions	6.03	4.41	3.91
Threshold		6	4
Exceed Threshold		No	No

Note: 2030 and 2040 forecasts assume implementation of State actions, General Plan land use and circulation system, and additional General Plan policies. Reduction applies to transportation GHG emissions.

Energy, Climate Change and Greenhouse Gas
4. Construction CalEEMod Output

Energy, Climate Change and Greenhouse Gas

4. Construction CalEEMod Output

a. Single Family Residential

Diamond Bar GPU - Construction Only - 10% - SFR and Park - Los Angeles-South Coast County, Annual

**Diamond Bar GPU - Construction Only - 10% - SFR and Park
Los Angeles-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.23	Acre	1.23	53,578.80	0
Single Family Housing	12.00	Dwelling Unit	3.90	21,600.00	34

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	538.2	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Construction Off-road Equipment Mitigation - See Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
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
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblProjectCharacteristics	CO2IntensityFactor	702.44	538.2

2.0 Emissions Summary

Summary not used

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	SFR- Site Prep	Site Preparation	1/1/2020	1/14/2020	5	10	

2	SFR - Grading	Grading	1/15/2020	2/11/2020	5	20
3	SFR - Building Construction	Building Construction	2/12/2020	12/29/2020	5	230
4	SFR - Paving	Paving	11/30/2020	12/25/2020	5	20
5	SFR - Architectural Coating	Architectural Coating	11/30/2020	12/25/2020	5	20

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 43,740; Residential Outdoor: 14,580; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
SFR - Site Prep	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
SFR - Grading	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
SFR - Building Construction	9	27.00	10.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
SFR - Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
SFR - Architectural Coating	1	5.00	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

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 SFR- Site Prep - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199

3.3 SFR - Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0243	0.2639	0.1605	3.0000e-004		0.0127	0.0127		0.0117	0.0117	0.0000	26.0588	26.0588	8.4300e-003	0.0000	26.2694
Total	0.0243	0.2639	0.1605	3.0000e-004	0.0655	0.0127	0.0783	0.0337	0.0117	0.0454	0.0000	26.0588	26.0588	8.4300e-003	0.0000	26.2694

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0243	0.0000	0.0243	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6300e-003	0.0157	0.1775	3.0000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	26.0587	26.0587	8.4300e-003	0.0000	26.2694
Total	3.6300e-003	0.0157	0.1775	3.0000e-004	0.0243	4.8000e-004	0.0248	0.0125	4.8000e-004	0.0130	0.0000	26.0587	26.0587	8.4300e-003	0.0000	26.2694

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332

3.4 SFR - Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Off-Road	0.2438	2.2064	1.9376	3.1000e-003		0.1285	0.1285		0.1208	0.1208	0.0000	266.3515	266.3515	0.0650	0.0000	267.9760
Total	0.2438	2.2064	1.9376	3.1000e-003		0.1285	0.1285		0.1208	0.1208	0.0000	266.3515	266.3515	0.0650	0.0000	267.9760

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	4.1700e-003	0.1246	0.0337	2.9000e-004	7.2400e-003	5.8000e-004	7.8200e-003	2.0900e-003	5.5000e-004	2.6500e-003	0.0000	28.5690	28.5690	1.8200e-003	0.0000	28.6144
Worker	0.0143	0.0116	0.1278	3.5000e-004	0.0340	2.9000e-004	0.0343	9.0400e-003	2.7000e-004	9.3000e-003	0.0000	31.7129	31.7129	1.0000e-003	0.0000	31.7379
Total	0.0185	0.1362	0.1615	6.4000e-004	0.0413	8.7000e-004	0.0421	0.0111	8.2000e-004	0.0120	0.0000	60.2819	60.2819	2.8200e-003	0.0000	60.3523

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0720	0.3222	2.0390	3.1000e-003		0.0144	0.0144		0.0144	0.0144	0.0000	266.3512	266.3512	0.0650	0.0000	267.9757
Total	0.0720	0.3222	2.0390	3.1000e-003		0.0144	0.0144		0.0144	0.0144	0.0000	266.3512	266.3512	0.0650	0.0000	267.9757

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	4.1700e-003	0.1246	0.0337	2.9000e-004	7.2400e-003	5.8000e-004	7.8200e-003	2.0900e-003	5.5000e-004	2.6500e-003	0.0000	28.5690	28.5690	1.8200e-003	0.0000	28.6144
Worker	0.0143	0.0116	0.1278	3.5000e-004	0.0340	2.9000e-004	0.0343	9.0400e-003	2.7000e-004	9.3000e-003	0.0000	31.7129	31.7129	1.0000e-003	0.0000	31.7379
Total	0.0185	0.1362	0.1615	6.4000e-004	0.0413	8.7000e-004	0.0421	0.0111	8.2000e-004	0.0120	0.0000	60.2819	60.2819	2.8200e-003	0.0000	60.3523

3.5 SFR - Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332

3.6 SFR - Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0676					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.0700	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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	2.3000e-004	1.9000e-004	2.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5107	0.5107	2.0000e-005	0.0000	0.5111
Total	2.3000e-004	1.9000e-004	2.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5107	0.5107	2.0000e-005	0.0000	0.5111

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	0.0676					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.0679	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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	2.3000e-004	1.9000e-004	2.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5107	0.5107	2.0000e-005	0.0000	0.5111
Total	2.3000e-004	1.9000e-004	2.0600e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5107	0.5107	2.0000e-005	0.0000	0.5111

4.0 Operational Detail - Mobile

Operational Emissions modeled separately

Energy, Climate Change and Greenhouse Gas

4. Construction CalEEMod Output

b. Multi-Family Residential

Diamond Bar GPU - Construction 10% - MFR - Los Angeles-South Coast County, Annual

Diamond Bar GPU - Construction 10% - MFR
Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	3.38	Acre	3.38	147,232.80	0
Apartments Mid Rise	377.00	Dwelling Unit	9.92	377,000.00	1078

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	538.2	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Vehicle Trips - No Operational

Construction Off-road Equipment Mitigation - See Assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
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
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	213.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	538.2

2.0 Emissions Summary

Summary not used

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	MFR - Site Preparation	Site Preparation	1/1/2020	1/14/2020	5	10	
2	MFR - Grading	Grading	1/15/2020	2/25/2020	5	30	
3	MFR - Building Construction	Building Construction	2/26/2020	12/20/2020	5	213	
4	MFR - Architectural Coating	Architectural Coating	11/19/2020	12/16/2020	5	20	
5	MFR - Paving	Paving	11/21/2020	12/18/2020	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 3.38

Residential Indoor: 763,425; Residential Outdoor: 254,475; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

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

MFR - Architectural Coating	Air Compressors	1	6.00	78	0.48
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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
MFR - Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
MFR - Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
MFR - Building Construction	9	333.00	64.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
MFR - Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
MFR - Architectural Coating	1	67.00	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

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 MFR - Site Preparation - 2020

Unmitigated Construction On-Site

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

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	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0335	0.0000	0.0335	0.0184	0.0000	0.0184	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	2.3300e-003	0.0101	0.1043	1.9000e-004	0.0335	3.1000e-004	0.0338	0.0184	3.1000e-004	0.0187	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505

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
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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	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199

3.3 MFR - Grading - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	1.1200e-003	0.0124	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.0641	3.0641	1.0000e-004	0.0000	3.0665

Total	1.3800e-003	1.1200e-003	0.0124	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.0641	3.0641	1.0000e-004	0.0000	3.0665
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0482	0.0000	0.0482	0.0200	0.0000	0.0200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.0495	0.4950	9.3000e-004		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871
Total	0.0114	0.0495	0.4950	9.3000e-004	0.0482	1.5200e-003	0.0497	0.0200	1.5200e-003	0.0215	0.0000	81.7263	81.7263	0.0264	0.0000	82.3871

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3800e-003	1.1200e-003	0.0124	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.0641	3.0641	1.0000e-004	0.0000	3.0665
Total	1.3800e-003	1.1200e-003	0.0124	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	3.0000e-005	9.0000e-004	0.0000	3.0641	3.0641	1.0000e-004	0.0000	3.0665

3.4 MFR - Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691
Total	0.2258	2.0433	1.7944	2.8700e-003		0.1190	0.1190		0.1119	0.1119	0.0000	246.6646	246.6646	0.0602	0.0000	248.1691

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	0.0247	0.7386	0.1999	1.7500e-003	0.0429	3.4400e-003	0.0464	0.0124	3.2900e-003	0.0157	0.0000	169.3273	169.3273	0.0108	0.0000	169.5963
Worker	0.1637	0.1320	1.4598	4.0100e-003	0.3886	3.3100e-003	0.3919	0.1032	3.0500e-003	0.1063	0.0000	362.2169	362.2169	0.0114	0.0000	362.5022
Total	0.1884	0.8706	1.6598	5.7600e-003	0.4316	6.7500e-003	0.4383	0.1156	6.3400e-003	0.1220	0.0000	531.5442	531.5442	0.0222	0.0000	532.0985

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.0667	0.2984	1.8883	2.8700e-003		0.0133	0.0133		0.0133	0.0133	0.0000	246.6643	246.6643	0.0602	0.0000	248.1688
Total	0.0667	0.2984	1.8883	2.8700e-003		0.0133	0.0133		0.0133	0.0133	0.0000	246.6643	246.6643	0.0602	0.0000	248.1688

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	0.0247	0.7386	0.1999	1.7500e-003	0.0429	3.4400e-003	0.0464	0.0124	3.2900e-003	0.0157	0.0000	169.3273	169.3273	0.0108	0.0000	169.5963
Worker	0.1637	0.1320	1.4598	4.0100e-003	0.3886	3.3100e-003	0.3919	0.1032	3.0500e-003	0.1063	0.0000	362.2169	362.2169	0.0114	0.0000	362.5022
Total	0.1884	0.8706	1.6598	5.7600e-003	0.4316	6.7500e-003	0.4383	0.1156	6.3400e-003	0.1220	0.0000	531.5442	531.5442	0.0222	0.0000	532.0985

3.5 MFR - Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	1.2024	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0900e-003	2.4900e-003	0.0276	8.0000e-005	7.3400e-003	6.0000e-005	7.4000e-003	1.9500e-003	6.0000e-005	2.0100e-003	0.0000	6.8431	6.8431	2.2000e-004	0.0000	6.8484
Total	3.0900e-003	2.4900e-003	0.0276	8.0000e-005	7.3400e-003	6.0000e-005	7.4000e-003	1.9500e-003	6.0000e-005	2.0100e-003	0.0000	6.8431	6.8431	2.2000e-004	0.0000	6.8484

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.2000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	1.2003	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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
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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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0900e-003	2.4900e-003	0.0276	8.0000e-005	7.3400e-003	6.0000e-005	7.4000e-003	1.9500e-003	6.0000e-005	2.0100e-003	0.0000	6.8431	6.8431	2.2000e-004	0.0000	6.8484
Total	3.0900e-003	2.4900e-003	0.0276	8.0000e-005	7.3400e-003	6.0000e-005	7.4000e-003	1.9500e-003	6.0000e-005	2.0100e-003	0.0000	6.8431	6.8431	2.2000e-004	0.0000	6.8484

3.6 MFR - Paving - 2020

Unmitigated Construction On-Site

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
	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	4.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0180	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902

Unmitigated Construction Off-Site

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
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332

Total	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
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Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	4.4300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.2300e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332

4.0 Operational Detail - Mobile

Operational Emissions Modeled Separately

Energy, Climate Change and Greenhouse Gas

4. Construction CalEEMod Output

c. Non Residential

Diamond Bar GPU - Construction Only - Demo & Non Residential - Los Angeles-South Coast County, Annual

**Diamond Bar GPU - Construction Only - Demo & Non Residential
Los Angeles-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Pharmacy/Drugstore w/o Drive Thru	69.34	1000sqft	1.59	69,340.00	0
Parking Lot	0.88	Acre	0.88	38,332.80	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	538.2	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition -

Construction Off-road Equipment Mitigation - See Assumptions

Vehicle Trips - no operational

Consumer Products - no operational

Area Coating - no operational

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/28/2020	11/27/2020
tblConstructionPhase	PhaseEndDate	1/11/2021	12/11/2020
tblConstructionPhase	PhaseStartDate	12/15/2020	11/15/2020
tblConstructionPhase	PhaseStartDate	12/29/2020	11/29/2020
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	4.01	0.00
tblEnergyUse	T24NG	1.15	0.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	538.2
tblSolidWaste	SolidWasteGenerationRate	208.50	0.00
tblVehicleTrips	ST_TR	90.06	0.00
tblVehicleTrips	SU_TR	90.06	0.00
tblVehicleTrips	WD_TR	90.06	0.00
tblWater	IndoorWaterUseRate	4,884,831.26	0.00
tblWater	OutdoorWaterUseRate	2,993,928.83	0.00

2.0 Emissions Summary

Summary not used

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	1/1/2020	1/28/2020	5	20	
2	NR - Site Preparation	Site Preparation	1/29/2020	1/31/2020	5	3	

3	NR - Grading	Grading	2/1/2020	2/10/2020	5	6
4	NR - Building Construction	Building Construction	2/11/2020	12/14/2020	5	220
5	NR - Paving	Paving	11/15/2020	11/27/2020	5	10
6	NR - Architectural Coating	Architectural Coating	11/29/2020	12/11/2020	5	10

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.88

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 104,010; Non-Residential Outdoor: 34,670; Striped Parking Area:

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	8.00	247	0.40
NR - Site Preparation	Graders	1	8.00	187	0.41
NR - Site Preparation	Scrapers	1	8.00	367	0.48
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
NR - Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
NR - Grading	Graders	1	8.00	187	0.41
NR - Grading	Rubber Tired Dozers	1	8.00	247	0.40
NR - Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
NR - Building Construction	Cranes	1	8.00	231	0.29
NR - Building Construction	Forklifts	2	7.00	89	0.20
NR - Building Construction	Generator Sets	1	8.00	84	0.74
NR - Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
NR - Building Construction	Welders	3	8.00	46	0.45
NR - Paving	Cement and Mortar Mixers	1	8.00	9	0.56
NR - Paving	Pavers	1	8.00	130	0.42
NR - Paving	Paving Equipment	1	8.00	132	0.36
NR - Paving	Rollers	2	8.00	80	0.38

NR - Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
NR - Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	92.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
NR - Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
NR - Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
NR - Building Construction	8	38.00	18.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
NR - Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
NR - Architectural Coating	1	8.00	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

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.9900e-003	0.0000	9.9900e-003	1.5100e-003	0.0000	1.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031

Total	0.0213	0.2095	0.1466	2.4000e-004	9.9900e-003	0.0115	0.0215	1.5100e-003	0.0108	0.0123	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
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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	4.1000e-004	0.0137	3.0100e-003	4.0000e-005	7.9000e-004	4.0000e-005	8.3000e-004	2.2000e-004	4.0000e-005	2.6000e-004	0.0000	3.5456	3.5456	2.5000e-004	0.0000	3.5518
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	6.0000e-004	4.8000e-004	5.3500e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3278	1.3278	4.0000e-005	0.0000	1.3288
Total	1.0100e-003	0.0141	8.3600e-003	5.0000e-005	2.2100e-003	5.0000e-005	2.2700e-003	6.0000e-004	5.0000e-005	6.5000e-004	0.0000	4.8734	4.8734	2.9000e-004	0.0000	4.8806

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					3.7000e-003	0.0000	3.7000e-003	5.6000e-004	0.0000	5.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	2.8100e-003	0.0122	0.1472	2.4000e-004	3.7000e-003	3.7000e-004	4.0700e-003	5.6000e-004	3.7000e-004	9.3000e-004	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030

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	4.1000e-004	0.0137	3.0100e-003	4.0000e-005	7.9000e-004	4.0000e-005	8.3000e-004	2.2000e-004	4.0000e-005	2.6000e-004	0.0000	3.5456	3.5456	2.5000e-004	0.0000	3.5518
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	6.0000e-004	4.8000e-004	5.3500e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3278	1.3278	4.0000e-005	0.0000	1.3288
Total	1.0100e-003	0.0141	8.3600e-003	5.0000e-005	2.2100e-003	5.0000e-005	2.2700e-003	6.0000e-004	5.0000e-005	6.5000e-004	0.0000	4.8734	4.8734	2.9000e-004	0.0000	4.8806

3.3 NR - Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4800e-003	0.0299	0.0169	4.0000e-005		1.1700e-003	1.1700e-003		1.0700e-003	1.0700e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	2.4800e-003	0.0299	0.0169	4.0000e-005	2.3900e-003	1.1700e-003	3.5600e-003	2.6000e-004	1.0700e-003	1.3300e-003	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1226	0.1226	0.0000	0.0000	0.1227
Total	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1226	0.1226	0.0000	0.0000	0.1227

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					8.8000e-004	0.0000	8.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	1.9600e-003	0.0178	4.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551
Total	4.5000e-004	1.9600e-003	0.0178	4.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	1.0000e-004	6.0000e-005	1.6000e-004	0.0000	3.2290	3.2290	1.0400e-003	0.0000	3.2551

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1226	0.1226	0.0000	0.0000	0.1227
Total	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.1226	0.1226	0.0000	0.0000	0.1227

3.4 NR - Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0197	0.0000	0.0197	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0640	0.0298	6.0000e-005		2.9700e-003	2.9700e-003		2.7300e-003	2.7300e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	5.7700e-003	0.0640	0.0298	6.0000e-005	0.0197	2.9700e-003	0.0226	0.0101	2.7300e-003	0.0128	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.2300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3064	0.3064	1.0000e-005	0.0000	0.3067
Total	1.4000e-004	1.1000e-004	1.2300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3064	0.3064	1.0000e-005	0.0000	0.3067

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					7.2800e-003	0.0000	7.2800e-003	3.7400e-003	0.0000	3.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6000e-004	3.2800e-003	0.0327	6.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773
Total	7.6000e-004	3.2800e-003	0.0327	6.0000e-005	7.2800e-003	1.0000e-004	7.3800e-003	3.7400e-003	1.0000e-004	3.8400e-003	0.0000	5.4333	5.4333	1.7600e-003	0.0000	5.4773

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.2300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3064	0.3064	1.0000e-005	0.0000	0.3067
Total	1.4000e-004	1.1000e-004	1.2300e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.3064	0.3064	1.0000e-005	0.0000	0.3067

3.5 NR - Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2517	1.9177	1.6387	2.7500e-003		0.1043	0.1043		0.1000	0.1000	0.0000	228.4088	228.4088	0.0464	0.0000	229.5678

Total	0.2517	1.9177	1.6387	2.7500e-003		0.1043	0.1043		0.1000	0.1000	0.0000	228.4088	228.4088	0.0464	0.0000	229.5678
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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	7.1800e-003	0.2146	0.0581	5.1000e-004	0.0125	1.0000e-003	0.0135	3.6000e-003	9.5000e-004	4.5500e-003	0.0000	49.1884	49.1884	3.1300e-003	0.0000	49.2665
Worker	0.0193	0.0156	0.1721	4.7000e-004	0.0458	3.9000e-004	0.0462	0.0122	3.6000e-004	0.0125	0.0000	42.6925	42.6925	1.3500e-003	0.0000	42.7261
Total	0.0265	0.2301	0.2301	9.8000e-004	0.0583	1.3900e-003	0.0597	0.0158	1.3100e-003	0.0171	0.0000	91.8808	91.8808	4.4800e-003	0.0000	91.9926

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1347	0.6130	1.7321	2.7500e-003		0.0316	0.0316		0.0316	0.0316	0.0000	228.4086	228.4086	0.0464	0.0000	229.5675
Total	0.1347	0.6130	1.7321	2.7500e-003		0.0316	0.0316		0.0316	0.0316	0.0000	228.4086	228.4086	0.0464	0.0000	229.5675

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	7.1800e-003	0.2146	0.0581	5.1000e-004	0.0125	1.0000e-003	0.0135	3.6000e-003	9.5000e-004	4.5500e-003	0.0000	49.1884	49.1884	3.1300e-003	0.0000	49.2665
Worker	0.0193	0.0156	0.1721	4.7000e-004	0.0458	3.9000e-004	0.0462	0.0122	3.6000e-004	0.0125	0.0000	42.6925	42.6925	1.3500e-003	0.0000	42.7261
Total	0.0265	0.2301	0.2301	9.8000e-004	0.0583	1.3900e-003	0.0597	0.0158	1.3100e-003	0.0171	0.0000	91.8808	91.8808	4.4800e-003	0.0000	91.9926

3.6 NR - Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.1500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.9200e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666
Total	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666

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	1.0500e-003	4.5600e-003	0.0649	9.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.1500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2000e-003	4.5600e-003	0.0649	9.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666
Total	3.5000e-004	2.8000e-004	3.0900e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7660	0.7660	2.0000e-005	0.0000	0.7666

3.7 NR - Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3267					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	0.3279	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4085	0.4085	1.0000e-005	0.0000	0.4089
Total	1.8000e-004	1.5000e-004	1.6500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4085	0.4085	1.0000e-005	0.0000	0.4089

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	0.3267					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	1.0000e-004	0.0000	1.2791
Total	0.3269	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	1.0000e-004	0.0000	1.2791

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.6500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4085	0.4085	1.0000e-005	0.0000	0.4089
Total	1.8000e-004	1.5000e-004	1.6500e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4085	0.4085	1.0000e-005	0.0000	0.4089

4.0 Operational Detail - Mobile

Operational Emissions Modeled Separately

Energy, Climate Change and Greenhouse Gas
5. Construction EMFAC 2017 - (See Air Quality Appendix)