

Appendix E

Greenhouse Gas Emissions Data Output

E-1 Project Construction Emissions

E-1.1 Construction Assumptions

**Pacific Square San Gabriel Mixed-Use Development
Assumptions**

CalEEMod Inputs (Non-Default information only)

Project Location				
County	Los Angeles			
Air District	SCAQMD			
Climate Zone	9			
	700	800		
Construction Year start	Dec-20	Jun-21		
Construction Year End	Jun-23	Dec-23		
Operational Year Project	2023	2024		
Utility Provider	Southern California Edison			
Source Receptor Area (SCAQMD)	8	West San Gabriel Valley		
	2020	2021	2022	2023
CO intensity	503.95	483.27	462.58	441.90
% renewable	33.00%	35.75%	38.50%	41.25%
				2024
				421.21
				44.00%

1 Southern California Edison, 2018. ESG/Sustainability Template. Report date: September 27, 2018. Available: <https://www.edison.com/content/dam/eis/documents/sustainability/eis-esg-pilot-quantitative-section-sce.pdf>. Accessed April 5, 2019.

2 SCE 2017 Power Content Label https://www.sce.com/sites/default/files/inline-files/2017PCL_0.pdf

3 SB-100 California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases, https://leginfo.ca.gov/pub/07_01_2018_0001_0100_bill_20170180.html

Land Use	Building SQFT	Building KFS	Units/ Spaces	Acres	CalEEMod Category	Additional Notes
700 Plaza				2.920		Acreage split between 2 sites.
Residential	182,330	182.33	106	1.000	Mid-Rise Apartment	
Live/Work	3,383	3.383		0.100	General Office	
Sit-Down Restaurant	2,086	2.086		0.100	Hit-Turn over sit down	
Fast Food, no Drivethru	5,650	5.65		0.100	Fast Food, no Drivethru	
Fast Food	3,150	3.15			Fast Food, no Drivethru	
Bakery	2,500	2.5			Fast food, no drivethru	
Fitness	25,233	25.233		0.100	Health Club	
Parking	167,200	167.200	418	1.000	Enclosed w/ elevator	
Central Park	17,575	17.575		0.400	City Park	
Plaza, Terrace, Balconies	53,334	53.334		0.120	Other non-asphalt surface	
	456,791			2.920		
800 Plaza				2.930		Acreage split between 2 sites.
Residential	237,168	237.168	145	1.000	Mid-Rise Apartment	
Live/Work	3,383	3.383		0.100	General Office	
Sit-Down Restaurant	2,914	2.914		0.100	Hit-Turn over sit down	
Fast Food, no Drivethru	5,952	5.952		0.100	Fast Food, no Drivethru	
Fast Food	2,415	2.415			Fast Food, no Drivethru	
Café	3,537	3.537			Fast food, no drivethru	
Retail	7,115	7.115		0.100	strip mall	
Market	20,330	20.330		0.100	supermarket	
Parking	226,000	226.000	565	0.900	Enclosed w/ elevator	
Central Park	17,575	17.575		0.400	City Park	
Plaza, Terrace, Balconies	63,127	63.127		0.130	Other non-asphalt surface	
	583,564			2.930		
Total	1,040,355					
Operational Modeling Assumptions - Land Use Combined						
Land Use	Building SQFT	Building KFS	Units/ Spaces	Acres	CalEEMod Category	Additional Notes
				5.85		
Residential	419,498	419	251	2.000	Mid-Rise Apartment	
Live/Work	6,766	6.766		0.200	General Office	
Sit-Down Restaurant	5,000	5.000		0.200	Hit-Turn over sit down	
Fast Food, no Drivethru	11,602	11.602		0.200	Fast Food, no Drivethru	
Fitness	25,233	25.233		0.100	Health Club	
Retail	7,115	7.115		0.100	strip mall	
Market	20,330	20.330		0.100	supermarket	
Parking	393,200	393.200	983	1.900	Enclosed w/ elevator	
Central Park	35,150	35.150		0.800	City Park	
Plaza, Terrace, Balconies	116,461	116.461		0.250	Other non-asphalt surface	5 NG fireplaces altogether, 1 in 700 building, 4 in 800 building
	1,040,355			5.850		
	Population		804	Residents	Based on Population/Housing section.	

Construction Schedule

Phase Name	CalEEMod Phase Name	Start Date	End Date	Days/week	Workdays	Total Vendor Trips
700 Plaza	Overall	5/1/2021	9/30/2023	6.00	757	
Site Preparation	Site Prep	5/1/2021	5/20/2021		17	
Grading/Excavation	Grading	5/21/2021	3/5/2022		248	
Foundation	Building Construction	2/5/2022	4/15/2022		60	
Building Construction	Building Construction	4/16/2022	8/18/2023		420	23,520
Drainage/Utilities/Trenching	Trenching	5/21/2021	8/2/2021		63	
Paving	Paving	4/16/2022	8/2/2022		93	
Architectural Coating	Architectural Coating	6/15/2023	9/30/2023		93	
800 Plaza	Overall	8/1/2021	12/31/2023	6.00	756	
Grading/Excavation	Grading	8/1/2021	5/23/2022		253	
Foundation	Building Construction	4/23/2022	7/1/2022		60	
Building Construction	Building Construction	7/2/2022	11/15/2023		430	31,390
Drainage/Utilities/Trenching	Trenching	8/1/2021	10/16/2021		66	
Paving	Paving	7/2/2022	10/20/2022		95	
Architectural Coating	Architectural Coating	9/12/2023	12/31/2023		95	

Demolition No Demolition Phase

Materials Import/Export

	700 Plaza	800 Plaza	
	96,700	96,000	Cubic yards export
	1,000	1,000	Daily Export
	6,907	6,857	Trucks
	72	72	Daily Trucks
	14	14	cubic yards per truck
	0	0	cubic yards import
	0	0	Daily Export
	0	0	Trucks
	0	0	Daily Trucks

Construction Equipment by Phase CalEEMod Defaults with Adjustments

Adjustments

1	No Generators because of onsite electrical availability
2	Equipment for Foundation Phase
1	Cranes
1	Dumpers/Tenders
1	Forklifts
1	Pumps
3	Equipment for Drainage/Utilities/Trenching Phase
1	Tractors/Loaders/Backhoes
1	Dumper/Tender
1	Rough Terrain Forklifts

Trips & VMT

Phase Name	Workers	Worker Trips	Vendor Trips	Daily Haul Trucks	Total Haul Trips
700 Plaza					
Site Preparation	10	20	100	50	33,613
Grading/Excavation	10	20	13,714	72	
Foundation	20	40	2,671	23	
Building Construction	50	100	56		
Drainage/Utilities/Trenching	10	20			
Paving	10	20			
Architectural Coating	20	40			
800 Plaza					
Grading/Excavation	10	20	13,714	72	
Foundation	20	40	3,413	29	
Building Construction	50	100	73		
Drainage/Utilities/Trenching	10	20			
Paving	10	20			
Architectural Coating	20	40			
Distance (miles):		14.7	6.9	20	

Overlapping Phases (Within and Between Sites) - Trips

Year	Phase	Building	Worker Trips	Vendor Trips	Daily Haul Trucks and Concrete Trips	Daily Haul Trucks and Concrete Trucks	Notes
2020	Site Prep	700	20	0	100	50	
		Total	20	0	100	50	
2020	Drainage/Utilities/Trenching Grading/Excavation	700	20	0	0	0	
		700	20	0	144	72	
		Total	40	0	144	72	
2021	Grading/Excavation Drainage/Utilities/Trenching Grading/Excavation	700	20	0	144	72	Max grading/excavation hauling export of 72 trucks daily, trucks may be distributed between building 700 and 800
		800	20	0	0	0	
		800	20	0	0	0	
		Total	60	0	144	72	
2021	Foundation Grading	700	40	0	46	23	
		800	20	0	144	72	
		Total	60	0	190	95	
2021	Building Construction Paving Grading	700	100	56	0	0	
		700	20	0	0	0	
		800	20	0	144	72	
		Total	140	56	144	72	
2022	Building Construction Paving Grading	700	100	56	0	0	
		700	20	0	0	0	
		800	20	0	144	72	
		Total	140	56	144	72	
2022	Building Construction Paving Foundation	700	100	56	0	0	
		700	20	0	0	0	
		800	40	0	58	29	
		Total	160	56	58	29	
2022	Building Construction Building Construction Paving	700	100	56	0	0	
		800	100	73	0	0	
		800	20	0	0	0	
		Total	220	129	0	0	
2023	Building Construction Architectural Coating Building Construction	700	100	56	0	0	
		700	40	0	0	0	
		800	100	73	0	0	
		Total	240	129	0	0	
2023	Building Construction Architectural Coating	800	100	73	0	0	
		800	20	0	0	0	
		Total	120	73	0	0	

E-1.2 Construction Emissions Summary

Pacific Square

Construction GHG Emissions Summary

Project Construction Off-Road Emissions (MTCO₂e)	
2021	353
2022	672
2023	381
Total	1,407
Project Construction On-Road Emissions (MTCO₂e)	
Total	2,170
Project Total (MTCO₂e)	
	3,577
30 Year-Amortization	119

MTCO₂e=Metric Tons Carbon Dioxide equivalents

E-1.3 Construction Mobile Emissions

Pacific Square
Total On-Road Emissions

Pacific Square
Total On-Road Emissions

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)	Regional Emissions (MT/yr)	
						Total	CO2e
<u>Site Prep-Phase 1</u>	2021						
Total Haul Trips	100						
Hauling	100	1	8	20	15		3.26
Vendor	0	17	8	6.9	15		0.00
Worker	20	17	8	14.7	0		1.56
					Total		4.82
<u>Grading-Phase 1</u>	2021						
Total Haul Trips	13714						
Hauling	144	96	8	20	15		450.32
Vendor	0	248	8	6.9	15		0.00
Worker	20	248	8	14.7	0		22.77
					Total		473.09
<u>Trenching Phase-1</u>	2021						
Total Haul Trips	0						
Hauling	0	63	8	20	15		0.00
Vendor	0	63	8	6.9	15		0.00
Worker	20	63	8	14.7	0		5.78
					Total		5.78
<u>Foundation-Phase 1</u>	2021						
Total Haul Trips	2671						
Hauling	46	60	8	20	15		89.91
Vendor	0	60	8	6.9	15		0.00
Worker	40	60	8	14.7	0		11.02
					Total		100.93
<u>Building Construction-Phase 1</u>	2021						
Total Haul Trips	0						
Hauling	0	420	8	20	15		0.00
Vendor	56	420	8	6.9	15		231.05
Worker	100	420	8	14.7	0		192.83
					Total		423.88
<u>Paving-Phase 1</u>	2021						
Total Haul Trips	0						
Hauling	0	93	8	20	15		0.00
Vendor	0	93	8	6.9	15		0.00
Worker	20	93	8	14.7	0		8.54
					Total		8.54
<u>Architectural Coating-Phase 1</u>	2021						
Total Haul Trips	0						
Hauling	0	93	8	20	15		0.00
Vendor	0	93	8	6.9	15		0.00
Worker	40	93	8	14.7	0		17.08
					Total		17.08

Pacific Square
Total On-Road Emissions

Pacific Square
Total On-Road Emissions

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)	Regional Emissions (MT/yr)	
						Total	CO2e
<u>Grading-Phase 2</u>	2021						
Total Haul Trips	13714						
Hauling	144	96	8	20	15	450.32	
Vendor	0	253	8	6.9	15	0.00	
Worker	20	253	8	14.7	0	23.23	
					Total		473.55
<u>Trenching Phase-2</u>	2021						
Total Haul Trips	0						
Hauling	0	66	8	20	15	0.00	
Vendor	0	66	8	6.9	15	0.00	
Worker	20	66	8	14.7	0	6.06	
					Total		6.06
<u>Foundation-Phase 2</u>	2021						
Total Haul Trips	3413						
Hauling	58	60	8	20	15	113.36	
Vendor	0	60	8	6.9	15	0.00	
Worker	40	60	8	14.7	0	11.02	
					Total		124.38
<u>Building Construction-Phase 2</u>	2021						
Total Haul Trips	0						
Hauling	0	430	8	20	15	0.00	
Vendor	73	430	8	6.9	15	308.37	
Worker	100	430	8	14.7	0	197.42	
					Total		505.78
<u>Paving-Phase 2</u>	2021						
Total Haul Trips	0						
Hauling	0	95	8	20	15	0.00	
Vendor	0	95	8	6.9	15	0.00	
Worker	20	95	8	14.7	0	8.72	
					Total		8.72
<u>Architectural Coating-Phase 2</u>	2021						
Total Haul Trips	0						
Hauling	0	95	8	20	15	0.00	
Vendor	0	95	8	6.9	15	0.00	
Worker	40	95	8	14.7	0	17.45	
					Total		17.45

**Pacific Square
Running Emissions**

	Running Emissions Factor (grams/mile)		
	CO2	CH4	N2O
	2020Hauling Hauling	1551.87916	0.08112809
2020Vendor Vendor	1340.46338	0.04529837	0.19169371
2020Worker Worker	319.458691	0.00617495	0.00790785
2021Hauling Hauling	1520.07529	0.08121693	0.2410944
2021Vendor Vendor	1311.85371	0.04440854	0.18764154
2021Worker Worker	310.119284	0.00538825	0.00712331
2022Hauling Hauling	1477.43548	0.08019506	0.23446951
2022Vendor Vendor	1273.54109	0.04239589	0.18204996
2022Worker Worker	300.448479	0.00471177	0.00646256
2023Hauling Hauling	1394.21089	0.07850131	0.22145577
2023Vendor Vendor	1211.83967	0.04029686	0.17274956
2023Worker Worker	290.781675	0.00413135	0.00590029
GWP	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (MT/year)			
					CO2	CH4	N2O	CO2e
<u>Site Prep-Phase 1</u> <u>2021</u>								
Total Haul Trips	100							
Hauling	100	1	8	20	3.04	0.00	0.14	3.18
Vendor	0	17	8	6.9	0.00	0.00	0.00	0.00
Worker	20	17	8	14.7	1.55	0.00	0.01	1.56
<u>Grading-Phase 1</u> <u>2021</u>								
Total Haul Trips	13714							
Hauling	144	96	8	20	420.27	0.56	19.33	440.16
Vendor	0	248	8	6.9	0.00	0.00	0.00	0.00
Worker	20	248	8	14.7	22.61	0.01	0.15	22.77
<u>Trenching Phase-1</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	63	8	20	0.00	0.00	0.00	0.00
Vendor	0	63	8	6.9	0.00	0.00	0.00	0.00
Worker	20	63	8	14.7	5.74	0.00	0.04	5.78
<u>Foundation-Phase 1</u> <u>2021</u>								
Total Haul Trips	2671							
Hauling	46	60	8	20	83.91	0.11	3.86	87.88
Vendor	0	60	8	6.9	0.00	0.00	0.00	0.00
Worker	40	60	8	14.7	10.94	0.00	0.07	11.02
<u>Building Construction-Phase 1</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	420	8	20	0.00	0.00	0.00	0.00
Vendor	56	420	8	6.9	212.90	0.18	8.83	221.91
Worker	100	420	8	14.7	191.47	0.08	1.28	192.83
<u>Paving-Phase 1</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	93	8	20	0.00	0.00	0.00	0.00
Vendor	0	93	8	6.9	0.00	0.00	0.00	0.00
Worker	20	93	8	14.7	8.48	0.00	0.06	8.54
<u>Architectural Coating-Phase 1</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	93	8	20	0.00	0.00	0.00	0.00
Vendor	0	93	8	6.9	0.00	0.00	0.00	0.00
Worker	40	93	8	14.7	16.96	0.01	0.11	17.08

**Pacific Square
Running Emissions**

	Running Emissions Factor (grams/mile)		
	CO2	CH4	N2O
	2020Hauling Hauling	1551.87916	0.08112809
2020Vendor Vendor	1340.46338	0.04529837	0.19169371
2020Worker Worker	319.458691	0.00617495	0.00790785
2021Hauling Hauling	1520.07529	0.08121693	0.2410944
2021Vendor Vendor	1311.85371	0.04440854	0.18764154
2021Worker Worker	310.119284	0.00538825	0.00712331
2022Hauling Hauling	1477.43548	0.08019506	0.23446951
2022Vendor Vendor	1273.54109	0.04239589	0.18204996
2022Worker Worker	300.448479	0.00471177	0.00646256
2023Hauling Hauling	1394.21089	0.07850131	0.22145577
2023Vendor Vendor	1211.83967	0.04029686	0.17274956
2023Worker Worker	290.781675	0.00413135	0.00590029
GWP	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Regional Emissions (MT/year)			
					CO2	CH4	N2O	CO2e
<u>Grading-Phase 2</u> <u>2021</u>								
Total Haul Trips	13714							
Hauling	144	96	8	20	420.27	0.56	19.33	440.16
Vendor	0	253	8	6.9	0.00	0.00	0.00	0.00
Worker	20	253	8	14.7	23.07	0.01	0.15	23.23
<u>Trenching Phase-2</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	66	8	20	0.00	0.00	0.00	0.00
Vendor	0	66	8	6.9	0.00	0.00	0.00	0.00
Worker	20	66	8	14.7	6.02	0.00	0.04	6.06
<u>Foundation-Phase 2</u> <u>2021</u>								
Total Haul Trips	3413							
Hauling	58	60	8	20	105.80	0.14	4.87	110.80
Vendor	0	60	8	6.9	0.00	0.00	0.00	0.00
Worker	40	60	8	14.7	10.94	0.00	0.07	11.02
<u>Building Construction-Phase 2</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	430	8	20	0.00	0.00	0.00	0.00
Vendor	73	430	8	6.9	284.14	0.24	11.79	296.16
Worker	100	430	8	14.7	196.03	0.09	1.31	197.42
<u>Paving-Phase 2</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	95	8	20	0.00	0.00	0.00	0.00
Vendor	0	95	8	6.9	0.00	0.00	0.00	0.00
Worker	20	95	8	14.7	8.66	0.00	0.06	8.72
<u>Architectural Coating-Phase 2</u> <u>2021</u>								
Total Haul Trips	0							
Hauling	0	95	8	20	0.00	0.00	0.00	0.00
Vendor	0	95	8	6.9	0.00	0.00	0.00	0.00
Worker	40	95	8	14.7	17.32	0.01	0.12	17.45

**Pacific Square
Idling Emissions**

	Idling Emissions Factor (grams/minute)		
	CO2	CH4	N2O
	2020Hauling Hauling	46.4004861	0.00108436
2020Vendor Vendor	24.6020747	0.00063132	0.0038577
2020Worker Worker	0	0	0
2021Hauling Hauling	46.8010322	0.00108471	0.00738898
2021Vendor Vendor	24.7786148	0.00063074	0.00388666
2021Worker Worker	0	0	0
2022Hauling Hauling	47.4685097	0.00108165	0.00749494
2022Vendor Vendor	25.0816526	0.00062854	0.00393519
2022Worker Worker	0	0	0
2023Hauling Hauling	45.5898581	0.00108911	0.00720078
2023Vendor Vendor	24.0888937	0.0006324	0.00377979
2023Worker Worker	0	0	0
GWP	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	Idling minutes per Day (miles)	Regional Emissions (MT/year)			
					CO2	CH4	N2O	CO2e
<u>Site Prep-Phase 1</u> 2021								
Total Haul Trips	100							
Hauling	100	1	8	15	0.07	0.00	0.00	0.07
Vendor	0	17	8	15	0.00	0.00	0.00	0.00
Worker	20	17	8	0	0.00	0.00	0.00	0.00
<u>Grading-Phase 1</u> 2021								
Total Haul Trips	13714							
Hauling	144	96	8	15	9.70	0.01	0.44	10.15
Vendor	0	248	8	15	0.00	0.00	0.00	0.00
Worker	20	248	8	0	0.00	0.00	0.00	0.00
<u>Trenching Phase-1</u> 2021								
Total Haul Trips	0							
Hauling	0	63	8	15	0.00	0.00	0.00	0.00
Vendor	0	63	8	15	0.00	0.00	0.00	0.00
Worker	20	63	8	0	0.00	0.00	0.00	0.00
<u>Foundation-Phase 1</u> 2021								
Total Haul Trips	2671							
Hauling	46	60	8	15	1.94	0.00	0.09	2.03
Vendor	0	60	8	15	0.00	0.00	0.00	0.00
Worker	40	60	8	0	0.00	0.00	0.00	0.00
<u>Building Construction-Phase 1</u> 2021								
Total Haul Trips	0							
Hauling	0	420	8	15	0.00	0.00	0.00	0.00
Vendor	56	420	8	15	8.74	0.01	0.40	9.15
Worker	100	420	8	0	0.00	0.00	0.00	0.00
<u>Paving-Phase 1</u> 2021								
Total Haul Trips	0							
Hauling	0	93	8	15	0.00	0.00	0.00	0.00
Vendor	0	93	8	15	0.00	0.00	0.00	0.00
Worker	20	93	8	0	0.00	0.00	0.00	0.00
<u>Architectural Coating-Phase 1</u> 2021								
Total Haul Trips	0							
Hauling	0	93	8	15	0.00	0.00	0.00	0.00
Vendor	0	93	8	15	0.00	0.00	0.00	0.00
Worker	40	93	8	0	0.00	0.00	0.00	0.00

**Pacific Square
Idling Emissions**

	Idling Emissions Factor (grams/minute)		
	CO2	CH4	N2O
	2020Hauling Hauling	46.4004861	0.00108436
2020Vendor Vendor	24.6020747	0.00063132	0.0038577
2020Worker Worker	0	0	0
2021Hauling Hauling	46.8010322	0.00108471	0.00738898
2021Vendor Vendor	24.7786148	0.00063074	0.00388666
2021Worker Worker	0	0	0
2022Hauling Hauling	47.4685097	0.00108165	0.00749494
2022Vendor Vendor	25.0816526	0.00062854	0.00393519
2022Worker Worker	0	0	0
2023Hauling Hauling	45.5898581	0.00108911	0.00720078
2023Vendor Vendor	24.0888937	0.0006324	0.00377979
2023Worker Worker	0	0	0
GWP	1	25	290

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	Idling minutes per Day (miles)	Regional Emissions (MT/year)			
					CO2	CH4	N2O	CO2e
<u>Grading-Phase 2</u>								
Total Haul Trips	2021 13714							
Hauling	144	96	8	15	9.70	0.01	0.44	10.15
Vendor	0	253	8	15	0.00	0.00	0.00	0.00
Worker	20	253	8	0	0.00	0.00	0.00	0.00
<u>Trenching Phase-2</u>								
Total Haul Trips	2021 0							
Hauling	0	66	8	15	0.00	0.00	0.00	0.00
Vendor	0	66	8	15	0.00	0.00	0.00	0.00
Worker	20	66	8	0	0.00	0.00	0.00	0.00
<u>Foundation-Phase 2</u>								
Total Haul Trips	2021 3413							
Hauling	58	60	8	15	2.44	0.00	0.11	2.56
Vendor	0	60	8	15	0.00	0.00	0.00	0.00
Worker	40	60	8	0	0.00	0.00	0.00	0.00
<u>Building Construction-Phase 2</u>								
Total Haul Trips	2021 0							
Hauling	0	430	8	15	0.00	0.00	0.00	0.00
Vendor	73	430	8	15	11.67	0.01	0.53	12.21
Worker	100	430	8	0	0.00	0.00	0.00	0.00
<u>Paving-Phase 2</u>								
Total Haul Trips	2021 0							
Hauling	0	95	8	15	0.00	0.00	0.00	0.00
Vendor	0	95	8	15	0.00	0.00	0.00	0.00
Worker	20	95	8	0	0.00	0.00	0.00	0.00
<u>Architectural Coating-Phase 2</u>								
Total Haul Trips	2021 0							
Hauling	0	95	8	15	0.00	0.00	0.00	0.00
Vendor	0	95	8	15	0.00	0.00	0.00	0.00
Worker	40	95	8	0	0.00	0.00	0.00	0.00

E-1.4 CalEEMod Output

Pacific Square Construction Phase 1 - Los Angeles-South Coast County, Annual

**Pacific Square Construction 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 Office Building	3.38	1000sqft	0.10	3,383.00	0
Enclosed Parking with Elevator	418.00	Space	1.00	167,200.00	0
Other Non-Asphalt Surfaces	53.33	1000sqft	0.12	53,334.00	0
City Park	0.40	Acre	0.40	17,575.00	0
Fast Food Restaurant w/o Drive Thru	5.65	1000sqft	0.10	5,650.00	0
Health Club	25.23	1000sqft	0.10	25,233.00	0
High Turnover (Sit Down Restaurant)	2.09	1000sqft	0.10	2,086.00	0
Apartments Mid Rise	106.00	Dwelling Unit	1.00	182,330.00	303

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - see construction assumptions

Construction Phase - see construction assumptions

Off-road Equipment -

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment -

Trips and VMT - construction on-road emissions calculated outside of CalEEMod.

Grading - see construction assumptions

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	93.00
tblConstructionPhase	NumDays	220.00	60.00
tblConstructionPhase	NumDays	220.00	420.00
tblConstructionPhase	NumDays	6.00	248.00
tblConstructionPhase	NumDays	10.00	93.00
tblConstructionPhase	NumDays	3.00	17.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	124.00	2.92
tblGrading	AcresOfGrading	25.50	2.92
tblGrading	MaterialExported	0.00	96,000.00
tblGrading	MaterialExported	0.00	700.00
tblLandUse	LandUseSquareFeet	3,380.00	3,383.00
tblLandUse	LandUseSquareFeet	53,330.00	53,334.00

tblLandUse	LandUseSquareFeet	17,424.00	17,575.00
tblLandUse	LandUseSquareFeet	25,230.00	25,233.00
tblLandUse	LandUseSquareFeet	2,090.00	2,086.00
tblLandUse	LandUseSquareFeet	106,000.00	182,330.00
tblLandUse	LotAcreage	0.08	0.10
tblLandUse	LotAcreage	3.76	1.00
tblLandUse	LotAcreage	1.22	0.12
tblLandUse	LotAcreage	0.13	0.10
tblLandUse	LotAcreage	0.58	0.10
tblLandUse	LotAcreage	0.05	0.10
tblLandUse	LotAcreage	2.79	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblTripsAndVMT	HaulingTripNumber	88.00	0.00
tblTripsAndVMT	HaulingTripNumber	12,000.00	0.00
tblTripsAndVMT	VendorTripNumber	56.00	0.00
tblTripsAndVMT	VendorTripNumber	56.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	191.00	0.00
tblTripsAndVMT	WorkerTripNumber	191.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	38.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	3-1-2021	5-31-2021	0.2932	0.2932
3	6-1-2021	8-31-2021	0.9796	0.9796
4	9-1-2021	11-30-2021	0.8596	0.8596
5	12-1-2021	2-28-2022	0.8583	0.8583
6	3-1-2022	5-31-2022	0.6886	0.6886
7	6-1-2022	8-31-2022	0.7979	0.7979
8	9-1-2022	11-30-2022	0.5148	0.5148
9	12-1-2022	2-28-2023	0.4868	0.4868
10	3-1-2023	5-31-2023	0.4856	0.4856
11	6-1-2023	8-31-2023	1.0202	1.0202
12	9-1-2023	9-30-2023	0.2320	0.2320
		Highest	1.0202	1.0202

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2021	5/20/2021	6	17	
2	Grading	Grading	5/21/2021	3/5/2022	6	248	
3	Drainage/Utilities/Trenching	Trenching	5/21/2021	8/2/2021	6	63	
4	Foundation	Building Construction	2/5/2022	4/15/2022	6	60	
5	Building Construction	Building Construction	4/16/2022	8/18/2023	6	420	
6	Paving	Paving	4/16/2022	8/2/2022	6	93	
7	Architectural Coating	Architectural Coating	6/15/2023	9/30/2023	6	93	

Acres of Grading (Site Preparation Phase): 2.92

Acres of Grading (Grading Phase): 2.92

Acres of Paving: 1.12

Residential Indoor: 369,218; Residential Outdoor: 123,073; Non-Residential Indoor: 54,528; Non-Residential Outdoor: 18,176; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Drainage/Utilities/Trenching	Dumpers/Tenders	1	8.00	16	0.38
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Foundation	Cranes	1	8.00	231	0.29
Foundation	Dumpers/Tenders	1	8.00	16	0.38
Foundation	Forklifts	1	7.00	89	0.20
Foundation	Generator Sets	0	8.00	84	0.74
Foundation	Pumps	1	8.00	84	0.74
Foundation	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Foundation	Welders	0	8.00	46	0.45
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Site Preparation	3	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	3	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	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 Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Pacific Square Construction Phase 2 - Los Angeles-South Coast County, Annual

Pacific Square Construction 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 Office Building	3.38	1000sqft	0.10	3,383.00	0
Enclosed Parking with Elevator	565.00	Space	0.90	226,000.00	0
Other Non-Asphalt Surfaces	63.13	1000sqft	0.13	63,127.00	0
City Park	0.40	Acre	0.40	17,575.00	0
Fast Food Restaurant w/o Drive Thru	5.95	1000sqft	0.10	5,952.00	0
High Turnover (Sit Down Restaurant)	2.91	1000sqft	0.10	2,914.00	0
Apartments Mid Rise	145.00	Dwelling Unit	1.00	237,168.00	415
Strip Mall	7.12	1000sqft	0.10	7,115.00	0
Supermarket	20.33	1000sqft	0.10	20,330.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - see construction assumptions

Construction Phase - see construction assumptions

Off-road Equipment -

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment - see construction assumptions

Off-road Equipment -

Trips and VMT - Construction on-road emission calculated outside of CalEEMod.

Grading - see construction assumptions

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	95.00
tblConstructionPhase	NumDays	220.00	60.00
tblConstructionPhase	NumDays	220.00	430.00
tblConstructionPhase	NumDays	6.00	253.00
tblConstructionPhase	NumDays	10.00	95.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblGrading	AcresOfGrading	126.50	2.93
tblGrading	MaterialExported	0.00	96,000.00
tblLandUse	LandUseSquareFeet	3,380.00	3,383.00
tblLandUse	LandUseSquareFeet	63,130.00	63,127.00
tblLandUse	LandUseSquareFeet	17,424.00	17,575.00
tblLandUse	LandUseSquareFeet	5,950.00	5,952.00
tblLandUse	LandUseSquareFeet	2,910.00	2,914.00

tblLandUse	LandUseSquareFeet	145,000.00	237,168.00
tblLandUse	LandUseSquareFeet	7,120.00	7,115.00
tblLandUse	LotAcreage	0.08	0.10
tblLandUse	LotAcreage	5.08	0.90
tblLandUse	LotAcreage	1.45	0.13
tblLandUse	LotAcreage	0.14	0.10
tblLandUse	LotAcreage	0.07	0.10
tblLandUse	LotAcreage	3.82	1.00
tblLandUse	LotAcreage	0.16	0.10
tblLandUse	LotAcreage	0.47	0.10
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblTripsAndVMT	HaulingTripNumber	12,000.00	0.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	VendorTripNumber	72.00	0.00
tblTripsAndVMT	WorkerTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	247.00	0.00
tblTripsAndVMT	WorkerTripNumber	247.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	49.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2021	8-31-2021	0.3472	0.3472
2	9-1-2021	11-30-2021	0.9403	0.9403
3	12-1-2021	2-28-2022	0.7612	0.7612
4	3-1-2022	5-31-2022	0.8246	0.8246
5	6-1-2022	8-31-2022	0.7391	0.7391
6	9-1-2022	11-30-2022	0.7350	0.7350
7	12-1-2022	2-28-2023	0.4868	0.4868
8	3-1-2023	5-31-2023	0.4856	0.4856
9	6-1-2023	8-31-2023	0.4856	0.4856
10	9-1-2023	9-30-2023	0.3362	0.3362
		Highest	0.9403	0.9403

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	8/1/2021	5/23/2022	6	253	
2	Drainage/Utilities/Trenching	Trenching	8/1/2021	10/16/2021	6	66	
3	Foundation	Building Construction	4/23/2022	7/1/2022	6	60	
4	Building Construction	Building Construction	7/2/2022	11/15/2023	6	430	
5	Paving	Paving	7/2/2022	10/20/2022	6	95	
6	Architectural Coating	Architectural Coating	9/12/2023	12/30/2023	6	95	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2.93

Acres of Paving: 1.03

Residential Indoor: 480,265; Residential Outdoor: 160,088; Non-Residential Indoor: 59,541; Non-Residential Outdoor: 19,847; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Drainage/Utilities/Trenching	Dumpers/Tenders	1	8.00	16	0.38
Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8.00	100	0.40
Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Foundation	Cranes	1	8.00	231	0.29
Foundation	Dumpers/Tenders	1	8.00	16	0.38
Foundation	Forklifts	1	7.00	89	0.20
Foundation	Generator Sets	0	8.00	84	0.74
Foundation	Pumps	1	8.00	84	0.74
Foundation	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Foundation	Welders	0	8.00	46	0.45
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Grading	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Drainage/Utilities/Trenching	3	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Foundation	4	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	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 Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

E-1.5 Construction Energy Calculations

**Pacific Square
Construction Energy Analysis**

Fuel Consumption Summary

Category	Value
Diesel fuel for heavy-duty construction equipment	152,482
Diesel fuel for Haul Trucks	106,135
Diesel fuel for Vendor Trucks	48,197
Gasoline fuel for workers	62,721
Total Diesel Consumption	306,815
Total Gasoline Consumption	62,721
Construction Phase Duration (years)	2.7
Annual Average Gallons Diesel	114,977
Annual Average Gallons Gasoline	23,504

Source	Diesel	Gas		
Off-Road Equipment	152,482	-		
Haul/Vendor	154,332	-		
Worker	-	62,721		
Total Project Fuel Consumption	306,815	62,721		
Annual Average Gallons Diesel	114,977			
Annual Average Gallons Gasoline		23,504		
	Los Angeles County Fuel Consumption		State Fuel Consumption	
	Diesel	Gas	Diesel	Gas
	475,000,000	3,169,000,000	3,337,500,000	13,475,000,000
Annual Project % of Consumption	0.024%	0.0007%	0.0034%	0.0002%

- California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2018
https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/2010-2018_A15_Results.xlsx

Diesel is adjusted to account for retail (48%) and non-retail (52%) diesel sales.

Pacific Square
Construction Energy Analysis

Off-Road Equipment

Equipment ≤ 100 HP

Parameter	Value
pounds diesel fuel/hp-hr (lb/hp-hr): ¹	0.41
diesel fuel density (lb/gal): ¹	7.11
diesel gallons/hp-hr (gal/hp-hr):	0.06
Total hp-hr :	1,387,522
Total diesel consumption (gal):	79,634

Equipment > 100 HP

Parameter	Value
pounds diesel fuel/hp-hr (lb/hp-hr): ¹	0.37
diesel fuel density (lb/gal): ¹	7.11
diesel gallons/hp-hr (gal/hp-hr):	0.05
Total hp-hr:	1,411,100
Total diesel gallons:	72,849

Total diesel gallons (off-road equipment): 152,482

[1. 2017 Off-road Diesel Emission Factors, cells B30 and B31](#)

Phase	Subphase	Equipment	# of Equipment	Hours/ Day	HP	Load Factor	Days	Total hp-hr
1	Site Preparation	Graders	1	8	187	0.41	17	10,427
1	Site Preparation	Scrapers	1	8	367	0.48	17	23,958
1	Site Preparation	Tractors/Loaders/Backhoes	1	7	97	0.37	17	4,271
1	Grading	Graders	1	8	187	0.41	248	152,113
1	Grading	Rubber Tired Dozers	1	8	247	0.40	248	196,019
1	Grading	Tractors/Loaders/Backhoes	2	7	97	0.37	248	124,610
1	Drainage/Utilities/Trenching	Dumpers/Tenders	1	8	16	0.38	63	3,064
1	Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8	100	0.40	63	20,160
1	Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	7	97	0.37	63	15,827
1	Foundation	Cranes	1	8	231	0.29	60	32,155
1	Foundation	Dumpers/Tenders	1	8	16	0.38	60	2,918
1	Foundation	Forklifts	1	7	89	0.20	60	7,476
1	Foundation	Pumps	1	8	84	0.74	60	29,837
1	Building Construction	Cranes	1	8	231	0.29	420	225,086
1	Building Construction	Forklifts	2	7	89	0.20	420	104,664
1	Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37	420	90,443
1	Building Construction	Welders	3	8	46	0.45	420	208,656
1	Paving	Cement and Mortar Mixers	1	8	9	0.56	93	3,750
1	Paving	Pavers	1	8	130	0.42	93	40,622
1	Paving	Paving Equipment	1	8	132	0.36	93	35,355
1	Paving	Rollers	2	8	80	0.38	93	45,235
1	Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	93	26,702
1	Architectural Coating	Air Compressors	1	6	78	0.48	93	20,892
2	Grading	Graders	1	8	187	0.41	253	155,180
2	Grading	Rubber Tired Dozers	1	8	247	0.40	253	199,971
2	Grading	Tractors/Loaders/Backhoes	2	7	97	0.37	253	127,122
2	Drainage/Utilities/Trenching	Dumpers/Tenders	1	8	16	0.38	66	3,210
2	Drainage/Utilities/Trenching	Rough Terrain Forklifts	1	8	100	0.40	66	21,120
2	Drainage/Utilities/Trenching	Tractors/Loaders/Backhoes	1	7	97	0.37	66	16,581
2	Foundation	Cranes	1	8	231	0.29	60	32,155
2	Foundation	Dumpers/Tenders	1	8	16	0.38	60	2,918
2	Foundation	Forklifts	1	7	89	0.20	60	7,476
2	Foundation	Pumps	1	8	84	0.74	60	29,837
2	Building Construction	Cranes	1	8	231	0.29	430	230,446
2	Building Construction	Forklifts	2	7	89	0.20	430	107,156
2	Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37	430	92,596
2	Building Construction	Welders	3	8	46	0.45	430	213,624
2	Paving	Cement and Mortar Mixers	1	8	9	0.56	95	3,830
2	Paving	Pavers	1	8	130	0.42	95	41,496
2	Paving	Paving Equipment	1	8	132	0.36	95	36,115
2	Paving	Rollers	2	8	80	0.38	95	46,208
2	Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	95	27,276
2	Architectural Coating	Air Compressors	1	6	78	0.48	95	21,341

Total ≤ 100	1,387,522
Total >100	1,411,100

Pacific Square
Total On-Road Fuel Consumption

Pacific Square
Total On-Road Fuel Consumption

	gal/mile	gal/min
2020Hauling Hauling	0.15925199	1.51441E-05
2020Vendor Vendor	0.12289509	9.15757E-06
2020Worker Worker	0.03844702	1.94905E-06
2021Hauling Hauling	0.15613658	1.50968E-05
2021Vendor Vendor	0.12720883	9.12128E-06
2021Worker Worker	0.03742093	2.06198E-06
2022Hauling Hauling	0.15194685	1.49226E-05
2022Vendor Vendor	0.12346263	8.98135E-06
2022Worker Worker	0.03636982	2.00421E-06
2023Hauling Hauling	0.14312318	1.42709E-05
2023Vendor Vendor	0.11698571	8.58941E-06
2023Worker Worker	0.03532451	1.94677E-06

Hauling Total Diesel Consumption (Gallons) 106,135
Vendor Total Diesel Consumption (Gallons) 48,197
Total Diesel Consumption (Gallons) 154,332
Total Gasoline Fuel Consumption (Gallons) 62,721

Construction Phase	Daily One-Way Trips	Haul Days per Phase (days)	Work Hours per Day (hours/day)	One-Way Trip Distance per Day (miles)	Idling per Day (minutes)	Regional Emissions (gallons)				
						gal/mile	gal/min	gal/day	Total Gallons	
Site Prep-Phase 1										
Total Haul Trips	2021									
Hauling	100	1	8	20	15	0.16	1.51E-05	312	312	
Vendor	0	17	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	17	8	14.7	0	0.04	2.06E-06	11	187	
Grading-Phase 1										
Total Haul Trips	2021									
Hauling	13714	96	8	20	15	0.16	1.51E-05	450	43,169	
Vendor	0	248	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	248	8	14.7	0	0.04	2.06E-06	11	2,728	
Trenching Phase-1										
Total Haul Trips	2021									
Hauling	0	63	8	20	15	0.16	1.51E-05	0	0	
Vendor	0	63	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	63	8	14.7	0	0.04	2.06E-06	11	693	
Foundation-Phase 1										
Total Haul Trips	2021									
Hauling	2671	60	8	20	15	0.16	1.51E-05	144	8,619	
Vendor	0	60	8	6.9	15	0.13	9.12E-06	0	0	
Worker	40	60	8	14.7	0	0.04	2.06E-06	22	1,320	
Building Construction-Phase 1										
Total Haul Trips	2021									
Hauling	0	420	8	20	15	0.16	1.51E-05	0	0	
Vendor	56	420	8	6.9	15	0.13	9.12E-06	49	20,644	
Worker	100	420	8	14.7	0	0.04	2.06E-06	55	23,104	
Paving-Phase 1										
Total Haul Trips	2021									
Hauling	0	93	8	20	15	0.16	1.51E-05	0	0	
Vendor	0	93	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	93	8	14.7	0	0.04	2.06E-06	11	1,023	
Architectural Coating-Phase 1										
Total Haul Trips	2021									
Hauling	0	93	8	20	15	0.16	1.51E-05	0	0	
Vendor	0	93	8	6.9	15	0.13	9.12E-06	0	0	
Worker	40	93	8	14.7	0	0.04	2.06E-06	22	2,046	
Grading-Phase 2										
Total Haul Trips	2021									
Hauling	13714	96	8	20	15	0.16	1.51E-05	450	43,169	
Vendor	0	253	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	253	8	14.7	0	0.04	2.06E-06	11	2,783	
Trenching Phase-2										
Total Haul Trips	2021									
Hauling	0	66	8	20	15	0.16	1.51E-05	0	0	
Vendor	0	66	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	66	8	14.7	0	0.04	2.06E-06	11	726	
Foundation-Phase 2										
Total Haul Trips	2021									
Hauling	3413	60	8	20	15	0.16	1.51E-05	181	10,867	
Vendor	0	60	8	6.9	15	0.13	9.12E-06	0	0	
Worker	40	60	8	14.7	0	0.04	2.06E-06	22	1,320	
Building Construction-Phase 2										
Total Haul Trips	2021									
Hauling	0	430	8	20	15	0.16	1.51E-05	0	0	
Vendor	73	430	8	6.9	15	0.13	9.12E-06	64	27,552	
Worker	100	430	8	14.7	0	0.04	2.06E-06	55	23,654	
Paving-Phase 2										
Total Haul Trips	2021									
Hauling	0	95	8	20	15	0.16	1.51E-05	0	0	
Vendor	0	95	8	6.9	15	0.13	9.12E-06	0	0	
Worker	20	95	8	14.7	0	0.04	2.06E-06	11	1,045	
Architectural Coating-Phase 2										
Total Haul Trips	2021									
Hauling	0	95	8	20	15	0.16	1.51E-05	0	0	
Vendor	0	95	8	6.9	15	0.13	9.12E-06	0	0	
Worker	40	95	8	14.7	0	0.04	2.06E-06	22	2,090	

E-2 Project Operational Emissions

E-2.1 Operational Assumptions

Pacific Square San Gabriel Mixed-Use Development Operational Assumptions

Mobile source emissions

Source: Fehr & Peers. 2019. Pacific Square Mixed Use Project Transportation Impact Study. Nov. Project land uses have been updated since this daily VMT was generated, however, they would result in a lower overall Project VMT. Thus, using this daily VMT value in emissions calculations is conservative.

Daily VMT 31,209

Area Sources

Defaults used

Water and Wastewater

Source: Water Sensitivity Calc.xls

Water Sensitive Calcs			Project		
landuse type	unit	amount/unit	unit	g/day	g/year
700					
Residential	102	153.16	106	16,235	5,925,639
Restaurant	5,200	2.00	2,086	4,172	1,522,780
Fast Food, no Drivethru			5,650	11,300	4,124,500
Retail (live/work)	7.95	25.00	3.383	85	30,870
Fitness	2.52	650.00	25.233	16,401	5,986,529
800					
Residential	141	151.1	145	21,915	7,998,807
Restaurant			2,914	5,828	2,127,220
Café	3,537	2.00	5,952	11,904	4,344,960
Retail	14.00	25.00	7.115	178	64,924
Retail (live/work)			3.383	85	30,870
Supermarket	20.33	50.00	20.33	1,017	371,023
Combined					
Mid-Rise Apartment				38,149	13,924,446
General Office				169	61,740
Hit-Turn over sit down				10,000	3,650,000
Fast Food, no Drivethru				23,204	8,469,460
Health Club				16,401	5,986,529
strip mall				178	64,924
supermarket				1,017	371,023

CalEEMod Default				Water Sensitive Calcs	
landuse type	indoor (g/yr)	outdoor (g/yr)	% indoor	indoor (g/yr)	outdoor (g/yr)
Residential	16,353,660	10,309,916	0.613		
Restaurant	1,517,669	96,872	0.940		
Fast Food, no Drivethru	3,520,991	224,744	0.940		
Retail (live/work)	1,203,257	737,480	0.620		
Fitness	1,492,182	914,563	0.620		
CalEEMod Adjusted Input					
Mid-Rise Apartment		13,924,446		8,540,327	5,384,119
General Office		61,740		38,279	23,461
Hit-Turn over sit down		3,650,000		3,431,000	219,000
Fast Food, no Drivethru		8,469,460		7,961,292	508,168
Health Club		5,986,529		3,711,648	2,274,881
strip mall		64,924		40,253	24,671
supermarket		371,023		359,892	11,131

Solid Waste

From Utilities Section

	Quantity (sf or units)	Daily Generation Factor	Solid Waste Generation (lb/day)	Solid Waste Generation (lb/year)	Solid Waste Generation (ton/day)
Commercial	76,064	13.00	988.832	360,924	180.46
Residential	251	8.60	2158.6	787,889	393.94

Energy Use

Source: CalEEMod Defaults

*Check Utilities Section for updates before modeling

Replace Defaults with Project Specific Data where applicable. Otherwise use adjusted defaults

Default	KWhr/size/year)			KBTU/size/yr	
	T24E	NT24E	Lighting	T24NG	NT24NG
Mid-Rise Apartment	252.63	3054.1	741.44	7012.17	6384
General Office	4.6	4.62	3.77	10.02	0.39
Hit-Turn over sit down	8.11	28.16	7.87	42.98	187.78
Fast Food, no Drivethru	8.11	28.16	7.87	42.98	187.78
Health Club	2.25	5.75	3.1	13.65	4.45
Enclosed w/ elevator	3.92	0.19	1.75	0	0
strip mall	4.01	3.23	6.26	1.15	0.49
supermarket	4.42	25.88	7.03	9.83	12.24

Adjusted to 2019 Title24

CalEEMod currently uses Title 24 efficiency standards. The project will be built post 2019 therefore as a conservative estimate of T24 efficiencies required, the emission factors are updated to account for the inclusion of 2019 Title 24 standards.

	T24 Electricity	Lighting	T24 NG
Residential 2019	2%	0%	5%
Non-Residential 2019	10.7%	0%	1%

Adjusted	KWhr/size/year)			KBTU/size/yr	
	T24E	NT24E	Lighting	T24NG	NT24NG
Mid-Rise Apartment	247.58	3054.10	741.44	6661.56	6384.00
General Office	4.11	4.62	3.77	9.92	0.39
Hit-Turn over sit down	7.24	28.16	7.87	42.55	187.78
Fast Food, no Drivethru	7.24	28.16	7.87	42.55	187.78
Health Club	2.01	5.75	3.10	13.51	4.45
Enclosed w/ elevator	3.50	0.19	1.75	0.00	0.00
Fast Food, no Drivethru	0.00	0.00	0.00	0.00	0.00
strip mall	3.58	3.23	6.26	1.14	0.49
supermarket	3.95	25.88	7.03	9.73	12.24
Enclosed w/ elevator	0	0	0	0	0

Source: https://ww2.energy.ca.gov/title24/2019standards/post_adoption/documents/2019_Impact_Analysis_Final_Report_2018-06-29.pdf

E-2.2 Operational Emissions Summary

Pacific Square EIR

Project - Greenhouse Gas Summary

Project Operations Summary (Full Buildout Year 2023)	
Category	MTCO₂e/yr
Mobile	4,222
Area	28
Electricity	1,017
Natural Gas	434
Waste	144
Water	102
Construction	119
Project Net Total GHG Emissions	6,066

MTCO₂e=Metric Tons Carbon Dioxide equivalents

E-2.3 Operational Mobile Emissions

**Pacific Square EIR
Draft Environmental Impact Report
Air Quality Assessment
Greenhouse Gas Assessment**

Operational Mobile Emissions

Operational Mobile Emissions				GHG Emissions (metric tons/year)			
Scenario	Year	VMT/day	VMT/year	CO2	CH4	N2O	CO2e
Project	2023	31,209	11,391,285	4,149	0.3	0.22	4,222.08

Source: ESA 2019

Fehr & Peers. 2019. Pacific Square Mixed Use Project Transportation Impact Study. Nov.

Emission Factors (Metric Tons/mile)

Year	CO2	CH4	N2O
2022	0.00037631	2.49821E-08	2.02972E-08
2023	0.00036427	2.398E-08	1.9375E-08
2024	0.00035575	2.32508E-08	1.88765E-08
2025	0.0003455	2.25565E-08	1.8372E-08

Source: EMFAC2017

E-2.4 CalEEMod Output

Pacific Square - Operations - Los Angeles-South Coast County, Annual

Pacific Square - Operations
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 Office Building	6.77	1000sqft	0.20	6,766.00	0
Enclosed Parking with Elevator	983.00	Space	1.90	393,200.00	0
Other Non-Asphalt Surfaces	116.46	1000sqft	0.25	116,461.00	0
City Park	0.80	Acre	0.80	35,150.00	0
Fast Food Restaurant w/o Drive Thru	11.60	1000sqft	0.20	11,602.00	0
Health Club	25.23	1000sqft	0.10	25,233.00	0
High Turnover (Sit Down Restaurant)	5.00	1000sqft	0.20	5,000.00	0
Apartments Mid Rise	251.00	Dwelling Unit	2.00	419,498.00	804
Strip Mall	7.12	1000sqft	0.10	7,115.00	0
Supermarket	20.33	1000sqft	0.10	20,330.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	33
Climate Zone	9			Operational Year	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	441.9	CH4 Intensity (lb/MW hr)	0	N2O Intensity (lb/MW hr)	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2e intensity factor adjusted to reflect RPS standards for year 2023. Operational run for full Project including both plazas and

Land Use - see operational assumptions

Construction Phase - operational run only-construction run separately

Off-road Equipment - operational run only-construction run separately

Vehicle Trips - trip rates based on Project's transportation impact study. See operational assumptions

Woodstoves - for fireplaces on 2nd floor terraces of plazas

Energy Use - Adjusted for 2019 Title 24 standards. See operational assumptions.

Water And Wastewater - Based on Project water sensitivity calculations. See operational assumptions.

Solid Waste - Solid waste values from utilities section. Solid waste value for general office building includes solid waste for all commercial uses.

Waste Mitigation - consistent with AB939.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	2.00
tblEnergyUse	T24E	252.63	247.58
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	4.60	4.11
tblEnergyUse	T24E	2.25	2.01
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	4.01	3.58
tblEnergyUse	T24E	4.42	3.95
tblEnergyUse	T24NG	7,012.17	6,661.56
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	10.02	9.92
tblEnergyUse	T24NG	13.65	13.51
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	1.15	1.14
tblEnergyUse	T24NG	9.83	9.73
tblFireplaces	FireplaceDayYear	25.00	365.00
tblFireplaces	FireplaceHourDay	3.00	4.00
tblFireplaces	NumberGas	213.35	5.00

tblFireplaces	NumberNoFireplace	25.10	246.00
tblFireplaces	NumberWood	12.55	0.00
tblLandUse	LandUseSquareFeet	6,770.00	6,766.00
tblLandUse	LandUseSquareFeet	116,460.00	116,461.00
tblLandUse	LandUseSquareFeet	34,848.00	35,150.00
tblLandUse	LandUseSquareFeet	11,600.00	11,602.00
tblLandUse	LandUseSquareFeet	25,230.00	25,233.00
tblLandUse	LandUseSquareFeet	251,000.00	419,498.00
tblLandUse	LandUseSquareFeet	7,120.00	7,115.00
tblLandUse	LotAcreage	0.16	0.20
tblLandUse	LotAcreage	8.85	1.90
tblLandUse	LotAcreage	2.67	0.25
tblLandUse	LotAcreage	0.27	0.20
tblLandUse	LotAcreage	0.58	0.10
tblLandUse	LotAcreage	0.11	0.20
tblLandUse	LotAcreage	6.61	2.00
tblLandUse	LotAcreage	0.16	0.10
tblLandUse	LotAcreage	0.47	0.10
tblLandUse	Population	718.00	804.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	702.44	441.9
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblSolidWaste	SolidWasteGenerationRate	115.46	393.94
tblSolidWaste	SolidWasteGenerationRate	0.07	0.00
tblSolidWaste	SolidWasteGenerationRate	133.62	0.00
tblSolidWaste	SolidWasteGenerationRate	6.30	180.46
tblSolidWaste	SolidWasteGenerationRate	143.81	0.00

tblSolidWaste	SolidWasteGenerationRate	59.50	0.00
tblSolidWaste	SolidWasteGenerationRate	7.48	0.00
tblSolidWaste	SolidWasteGenerationRate	114.66	0.00
tblTripsAndVMT	WorkerTripNumber	0.00	15.00
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AerobicPercent	87.46	97.54
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	AnaerobicandFacultativeLagoonsPerce nt	2.21	2.46
tblWater	IndoorWaterUseRate	16,353,660.43	8,540,327.00
tblWater	IndoorWaterUseRate	3,520,991.06	7,961,292.00
tblWater	IndoorWaterUseRate	1,203,257.47	38,279.00
tblWater	IndoorWaterUseRate	1,492,181.52	3,711,648.00
tblWater	IndoorWaterUseRate	1,517,668.56	3,431,000.00
tblWater	IndoorWaterUseRate	527,396.35	40,253.00

tblWater	IndoorWaterUseRate	2,506,042.81	359,892.00
tblWater	OutdoorWaterUseRate	10,309,916.36	5,384,119.00
tblWater	OutdoorWaterUseRate	953,185.08	0.00
tblWater	OutdoorWaterUseRate	224,744.11	508,168.00
tblWater	OutdoorWaterUseRate	737,480.39	23,461.00
tblWater	OutdoorWaterUseRate	914,562.87	2,274,881.00
tblWater	OutdoorWaterUseRate	96,872.46	219,000.00
tblWater	OutdoorWaterUseRate	323,242.93	24,671.00
tblWater	OutdoorWaterUseRate	77,506.48	11,131.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	12.55	0.00
tblWoodstoves	NumberNoncatalytic	12.55	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Operational mobile emissions calculated outside of CalEEMod

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0793	0.0502	2.6127	2.7000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	27.6308	27.6308	4.5900e-003	4.3000e-004	27.8732
Energy	0.0436	0.3864	0.2621	2.3800e-003		0.0301	0.0301		0.0301	0.0301	0.0000	1,448.0334	1,448.0334	8.2600e-003	7.9000e-003	1,450.5955
Mobile	2.3112	3.4365	18.9185	0.0495	4.7381	0.0390	4.7771	1.2671	0.0363	1.3034	0.0000	4,627.7309	4,627.7309	0.3301	0.0000	4,635.9829
Waste						0.0000	0.0000		0.0000	0.0000	116.5980	0.0000	116.5980	6.8907	0.0000	288.8666
Water						0.0000	0.0000		0.0000	0.0000	8.5205	81.6622	90.1827	0.2446	0.0185	101.8198
Total	4.4340	3.8731	21.7933	0.0521	4.7381	0.0851	4.8232	1.2671	0.0825	1.3496	125.1185	6,185.0572	6,310.1757	7.4783	0.0269	6,505.1381

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.0793	0.0502	2.6127	2.7000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	27.6308	27.6308	4.5900e-003	4.3000e-004	27.8732
Energy	0.0436	0.3864	0.2621	2.3800e-003		0.0301	0.0301		0.0301	0.0301	0.0000	1,448.0334	1,448.0334	8.2600e-003	7.9000e-003	1,450.5955
Mobile	2.3112	3.4365	18.9185	0.0495	4.7381	0.0390	4.7771	1.2671	0.0363	1.3034	0.0000	4,627.7309	4,627.7309	0.3301	0.0000	4,635.9829
Waste						0.0000	0.0000		0.0000	0.0000	58.2990	0.0000	58.2990	3.4454	0.0000	144.4333
Water						0.0000	0.0000		0.0000	0.0000	8.5205	81.6622	90.1827	0.2446	0.0185	101.8198
Total	4.4340	3.8731	21.7933	0.0521	4.7381	0.0851	4.8232	1.2671	0.0825	1.3496	66.8195	6,185.0572	6,251.8767	4.0329	0.0269	6,360.7048

	ROG	NOx	CO	SO2	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	46.60	0.00	0.92	46.07	0.00	2.22

4.0 Operational Detail - Mobile

Operational mobile emissions calculated outside of CalEEMod

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,016.8771	1,016.8771	0.0000	0.0000	1,016.8771
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,016.8771	1,016.8771	0.0000	0.0000	1,016.8771
NaturalGas Mitigated	0.0436	0.3864	0.2621	2.3800e-003		0.0301	0.0301		0.0301	0.0301	0.0000	431.1563	431.1563	8.2600e-003	7.9000e-003	433.7185
NaturalGas Unmitigated	0.0436	0.3864	0.2621	2.3800e-003		0.0301	0.0301		0.0301	0.0301	0.0000	431.1563	431.1563	8.2600e-003	7.9000e-003	433.7185

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					
Apartments Mid Rise	3.27444e+006	0.0177	0.1509	0.0642	9.6000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	174.7364	174.7364	3.3500e-003	3.2000e-003	175.7747
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	2.67229e+006	0.0144	0.1310	0.1100	7.9000e-004		9.9600e-003	9.9600e-003		9.9600e-003	9.9600e-003	0.0000	142.6035	142.6035	2.7300e-003	2.6100e-003	143.4509
General Office Building	69757.5	3.8000e-004	3.4200e-003	2.8700e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7225	3.7225	7.0000e-005	7.0000e-005	3.7446
Health Club	453185	2.4400e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1837	24.1837	4.6000e-004	4.4000e-004	24.3274
High Turnover (Sit Down Restaurant)	1.15165e+006	6.2100e-003	0.0565	0.0474	3.4000e-004		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	61.4564	61.4564	1.1800e-003	1.1300e-003	61.8216

Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	11597.4	6.0000e-005	5.7000e-004	4.8000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6189	0.6189	1.0000e-005	1.0000e-005	0.6226
Supermarket	446650	2.4100e-003	0.0219	0.0184	1.3000e-004		1.6600e-003	1.6600e-003		1.6600e-003	1.6600e-003	0.0000	23.8350	23.8350	4.6000e-004	4.4000e-004	23.9766
Total		0.0436	0.3864	0.2621	2.3700e-003		0.0301	0.0301		0.0301	0.0301	0.0000	431.1563	431.1563	8.2600e-003	7.9000e-003	433.7184

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										M1/yr					
Apartments Mid Rise	3.27444e+006	0.0177	0.1509	0.0642	9.6000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	174.7364	174.7364	3.3500e-003	3.2000e-003	175.7747
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	2.67229e+006	0.0144	0.1310	0.1100	7.9000e-004		9.9600e-003	9.9600e-003		9.9600e-003	9.9600e-003	0.0000	142.6035	142.6035	2.7300e-003	2.6100e-003	143.4509
General Office Building	69757.5	3.8000e-004	3.4200e-003	2.8700e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7225	3.7225	7.0000e-005	7.0000e-005	3.7446
Health Club	453185	2.4400e-003	0.0222	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.1837	24.1837	4.6000e-004	4.4000e-004	24.3274
High Turnover (Sit Down Restaurant)	1.15165e+006	6.2100e-003	0.0565	0.0474	3.4000e-004		4.2900e-003	4.2900e-003		4.2900e-003	4.2900e-003	0.0000	61.4564	61.4564	1.1800e-003	1.1300e-003	61.8216
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	11597.4	6.0000e-005	5.7000e-004	4.8000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6189	0.6189	1.0000e-005	1.0000e-005	0.6226
Supermarket	446650	2.4100e-003	0.0219	0.0184	1.3000e-004		1.6600e-003	1.6600e-003		1.6600e-003	1.6600e-003	0.0000	23.8350	23.8350	4.6000e-004	4.4000e-004	23.9766
Total		0.0436	0.3864	0.2621	2.3700e-003		0.0301	0.0301		0.0301	0.0301	0.0000	431.1563	431.1563	8.2600e-003	7.9000e-003	433.7184

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.01482e+006	203.4137	0.0000	0.0000	203.4137
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	2.13901e+006	428.7480	0.0000	0.0000	428.7480
Fast Food Restaurant w/o Drive Thru	502019	100.6258	0.0000	0.0000	100.6258
General Office Building	84575	16.9524	0.0000	0.0000	16.9524
Health Club	274030	54.9273	0.0000	0.0000	54.9273
High Turnover (Sit Down Restaurant)	216350	43.3657	0.0000	0.0000	43.3657
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	92993.1	18.6398	0.0000	0.0000	18.6398
Supermarket	749364	150.2043	0.0000	0.0000	150.2043
Total		1,016.8771	0.0000	0.0000	1,016.8771

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.01482e+006	203.4137	0.0000	0.0000	203.4137
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	2.13901e+006	428.7480	0.0000	0.0000	428.7480
Fast Food Restaurant w/o Drive Thru	502019	100.6258	0.0000	0.0000	100.6258
General Office Building	84575	16.9524	0.0000	0.0000	16.9524
Health Club	274030	54.9273	0.0000	0.0000	54.9273
High Turnover (Sit Down Restaurant)	216350	43.3657	0.0000	0.0000	43.3657
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	92993.1	18.6398	0.0000	0.0000	18.6398
Supermarket	749364	150.2043	0.0000	0.0000	150.2043
Total		1,016.8771	0.0000	0.0000	1,016.8771

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	2.0793	0.0502	2.6127	2.7000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	27.6308	27.6308	4.5900e-003	4.3000e-004	27.8732
Unmitigated	2.0793	0.0502	2.6127	2.7000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	27.6308	27.6308	4.5900e-003	4.3000e-004	27.8732

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1736					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8239					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3600e-003	0.0202	8.5900e-003	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	23.3734	23.3734	4.5000e-004	4.3000e-004	23.5122
Landscaping	0.0794	0.0300	2.6041	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2574	4.2574	4.1400e-003	0.0000	4.3610
Total	2.0793	0.0502	2.6127	2.7000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	27.6308	27.6308	4.5900e-003	4.3000e-004	27.8732

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1736					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8239					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3600e-003	0.0202	8.5900e-003	1.3000e-004		1.6300e-003	1.6300e-003		1.6300e-003	1.6300e-003	0.0000	23.3734	23.3734	4.5000e-004	4.3000e-004	23.5122
Landscaping	0.0794	0.0300	2.6041	1.4000e-004		0.0144	0.0144		0.0144	0.0144	0.0000	4.2574	4.2574	4.1400e-003	0.0000	4.3610
Total	2.0793	0.0502	2.6127	2.7000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	27.6308	27.6308	4.5900e-003	4.3000e-004	27.8732

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	90.1827	0.2446	0.0185	101.8198
Unmitigated	90.1827	0.2446	0.0185	101.8198

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	8.54033 / 5.38412	37.3015	0.0868	6.5700e-003	41.4283
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	7.96129 / 0.508168	24.7270	0.0809	6.1300e-003	28.5741
General Office Building	0.038279 / 0.023461	0.1657	3.9000e-004	3.0000e-005	0.1842
Health Club	3.71165 / 2.27488	16.0664	0.0377	2.8600e-003	17.8599
High Turnover (Sit Down Restaurant)	3.431 / 0.219	10.6564	0.0349	2.6400e-003	12.3143
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.040253 / 0.024671	0.1742	4.1000e-004	3.0000e-005	0.1937
Supermarket	0.359892 / 0.011131	1.0914	3.6600e-003	2.8000e-004	1.2653
Total		90.1827	0.2446	0.0185	101.8198

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	8.54033 / 5.38412	37.3015	0.0868	6.5700e-003	41.4283
City Park	0 / 0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	7.96129 / 0.508168	24.7270	0.0809	6.1300e-003	28.5741
General Office Building	0.038279 / 0.023461	0.1657	3.9000e-004	3.0000e-005	0.1842
Health Club	3.71165 / 2.27488	16.0664	0.0377	2.8600e-003	17.8599
High Turnover (Sit Down Restaurant)	3.431 / 0.219	10.6564	0.0349	2.6400e-003	12.3143
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.040253 / 0.024671	0.1742	4.1000e-004	3.0000e-005	0.1937
Supermarket	0.359892 / 0.011131	1.0914	3.6600e-003	2.8000e-004	1.2653
Total		90.1827	0.2446	0.0185	101.8198

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	58.2990	3.4454	0.0000	144.4333
Unmitigated	116.5980	6.8907	0.0000	288.8666

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	393.94	79.9663	4.7259	0.0000	198.1130
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000
General Office Building	180.46	36.6318	2.1649	0.0000	90.7536
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
Supermarket	0	0.0000	0.0000	0.0000	0.0000
Total		116.5980	6.8907	0.0000	288.8666

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	196.97	39.9831	2.3629	0.0000	99.0565
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000

Fast Food Restaurant w/o Drive Thru	0	0.0000	0.0000	0.0000	0.0000
General Office Building	90.23	18.3159	1.0824	0.0000	45.3768
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0	0.0000	0.0000	0.0000	0.0000
Supermarket	0	0.0000	0.0000	0.0000	0.0000
Total		58.2990	3.4454	0.0000	144.4333

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

E-2.5 Operational Energy Calculations

Pacific Square

Operational Energy Analysis - Electricity and Natural Gas Consumption

Electricity	kWh/yr	GWh/yr
Apartments Mid Rise	1,014,820	1.015
City Park	0	0.000
Enclosed Parking with Elevator	2,139,010	2.139
Fast Food Restaurant w/o Drive Thru	502,019	0.502
General Office Building	84,575	0.085
Health Club	274,030	0.274
High Turnover (Sit Down Restaurant)	216,350	0.216
Other Non-Asphalt Surfaces	0	0.000
Strip Mall	92,993	0.093
Supermarket	749,364	0.749
Total	5,073,161	5.073
Total (including water, see below)	5,496,710	5.497
Net Project Energy Consumption	5,496,710	5.497

Electricity	GWh/yr
SCE 2018 Electricity Sales ¹	87,143
Project Annual	5.497
Percent Net Project of SCE	0.006%

Electricity	GWh/yr
SCE 2023 Electricity Consumption ⁶	118,294
Project Annual	5.497
Percent Net Project of SCE	0.005%

Water	Indoor (Mgal)	Outdoor (Mgal)
Apartments Mid Rise	8.54	5.38
City Park	0.00	0.00
Enclosed Parking with Elevator	0.00	0.00
Fast Food Restaurant w/o Drive Thru	7.96	0.51
General Office Building	0.04	0.02
Health Club	3.71	2.27
High Turnover (Sit Down Restaurant)	3.43	0.22
Other Non-Asphalt Surfaces	0.00	0.00
Strip Mall	0.04	0.02
Supermarket	0.36	0.01
Subtotal	24.08	8.45
Total	32.53	

Electricity Intensity Factors ⁴	kWh/Mgal
Electricity Factor - Supply	9,727
Electricity Factor - Treat	111
Electricity Factor - Distribute	1,272
Electricity Factor - Wastewater Treatment	1,911

Electricity from Water Demand	kWh/yr	GWh/yr
Total	423,549	0.424

Source: California Air Resources Board, CalEEMod, Version 2016.3.2.

Base water demand is based on rates provided in City of Los Angeles Department of Public Works, Sewage Facilities Charge, Sewage Generation Factor for Residential and Commercial Categories, 2012.

Natural Gas	kBtu/yr	cubic foot (cf) ³	Per day Usage (cf)	Natural Gas	cubic foot (cf)
Apartments Mid Rise	3,274,440	3,160,656		SoCalGas 2018 Supplied ²	857,750,000,000
City Park	0	0		Project Annual	8,766,266
Enclosed Parking with Elevator	0	0		Percent Net Project of SoCalGas	0.0010%
Fast Food Restaurant w/o Drive Thru	2,672,290	2,579,431			
General Office Building	69,758	67,333			
Health Club	453,185	437,437			
High Turnover (Sit Down Restaurant)	1,151,650	1,111,631			
Other Non-Asphalt Surfaces	0	0			
Strip Mall	11,597	11,194			
Supermarket	446,650	431,129			
Mobile (NG Vehicles)	1,002,282	967,453			
Project Total	9,081,852	8,766,266	24,017	Percent Net Project of SoCalGas	0.002%

Natural Gas	MMkbtu/yr
SoCalGas 2018 Sales ⁵	515,607
Project Annual	9.082

1. Southern California Edison, 2018 Financial and Statistical Report, 2nd page of report.

[2018 Financial and Statistical Report](#)

2. California Gas and Electric Utilities, 2019. 2019 California Gas Report Supplement, pg. 26

https://www.socalgas.com/regulatory/documents/cgr/2019_CGR_Supplement_7-1-19.pdf

3. Conversion factor of 1,036 Btu per cubic foot based on United States Energy Information Administration data

<https://www.eia.gov/tools/faqs/faq.php?id=45&t=8>

4. California Air Resources Board, CalEEMod, Version 2016.3.2.

5. CEC, Gas Consumption by Entity

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

6. The California Energy Demand 2018-2030 Revised Baseline Forecast – Form 1.1 –SCE Planning Area, Electricity Consumption by Sector (GWh)

https://www2.energy.ca.gov/2017_energy/policy/documents/. Accessed December 27, 2019.

Pacific Square

Operational Energy Analysis - Transportation Energy

Project Fuel Usage

Annual VMT (All): 11,391,285 miles/year
4,222.08 MT CO2e/year

Fuel Type:¹	GAS	DSL	NG
Percent Emissions:	82%	17%	1%
Mcf			967
MMkBTU			1,002
Project Annual Fuel Usage (gallons):	389,309	69,855	

	Los Angeles County Fuel Consumption²		State Fuel Consumption²	
	Gasoline	Diesel	Gasoline	Diesel
Project Annual:	3,169,000,000 389,309	475,000,000 69,855	13,475,000,000 389,309	3,337,500,000 69,855
Net Project Annual:	389,309	69,855	389,309	69,855
Percent Net Project of Los Angeles County:	0.01%	0.01%	0.003%	0.002%

Notes:

1. California Air Resources Board, EMFAC2014 (Los Angeles County; Annual; 2023, Aggregate Fleet).
2. California Energy Commission, California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, 2018.
Available at: http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html.
Accessed March 2019. Diesel is adjusted to account for retail (48%) and non-retail (52%) diesel sales

Pacific Square Operational Vehicle Fuel Consumption

Op year 1

Unmitigated CO₂e (MT/year) 4,222.08
Mitigated CO₂e (MT/year) 4,222.08

Op year 1

Summary	Unmitigated	Mitigated	
Gasoline	389,309	389,309	gallons
Diesel	69,855	69,854.91	gallons
Electric	0.000	0.000	GWh
Natural Gas	1,002.28	1,002.28	MBTU

Operational Year 1 2023

Unmitigated Calculations

	% Emissions	CO ₂ e (MT)	CO ₂ e (kg)	CO ₂ e (lbs)	kg CO ₂ /gallon	Gallons	Mcf	MBTU	GWh
Gasoline	0.81972918	3460.958532	3,460,959	NA	8.89	389,309	NA	NA	NA
Diesel	0.168098815	709.7258981	709,726	NA	10.16	69,855	NA	NA	NA
Electric	0	0	NA	0	NA	NA	NA	NA	0.00
Natural Gas	0.012172004	51.39112165	51,391	NA	NA	NA	967.45	1,002.28	NA

Mitigated Calculations

	% Emissions	CO ₂ e (MT)	CO ₂ e (kg)	CO ₂ e (lbs)	kg CO ₂ /gallon	Gallons	Mcf	MBTU	GWh
Gasoline	0.81972918	3460.958532	3,460,959	NA	8.89	389,309	NA	NA	NA
Diesel	0.168098815	709.7258981	709,726	NA	10.16	69,855	NA	NA	NA
Electric	0	0	NA	0	NA	NA	NA	NA	0.00
Natural Gas	0.012172004	51.39112165	51,391	NA	NA	NA	967.45	1,002.28	NA

Conversion Factors:

1000 kg/MT		
8.89 kg CO ₂ /gallon gasoline	https://www.eia.gov/environment/emissions/co2_vol_mass.php	Feb. 2016
10.16 kg CO ₂ /gallon diesel	https://www.eia.gov/environment/emissions/co2_vol_mass.php	Feb. 2016
53.12 kg CO ₂ / thousand cubic feet	https://www.eia.gov/environment/emissions/co2_vol_mass.php	Feb. 2016
1036 btu/cubic foot		
441.8972 CO ₂ lbs/MWh	Project Specific Op Year 1	
0.907185 MT/ton		
2000 lbs/ton		