



Appendix C

GHG/Energy Modeling

Existing (2024) Fuel Rates

Existing Fuel Consumption

Fuel Type	Weighted Average MPG	VTMT %	VTMT	Fuel Consumption (gal)
Passenger Auto Vehicles				
Diesel	42.6015	0.0024	11,872	505,756
Gasoline	29.4672	0.9221	4,598,344	135,500,457
Plug-in Hybrid	61.0976	0.0297	147,951	9,039,430
Light Duty Trucks				
Diesel	32.5932	0.0029	417	13,579
Gasoline	24.0233	0.9838	141,089	3,389,435
Plug-in Hybrid	64.3872	0.0087	1,241	79,878
Medium Duty Trucks				
Diesel	15.8330	0.1509	6,851	108,466
Gasoline	18.4589	0.8306	37,714	696,150
Plug-in Hybrid	61.4379	0.0063	285	17,506
Natural Gas	4.7930	0.0057	260	1,245
Heavy Duty Trucks				
Diesel	6.1398	0.9626	105,603	648,366
Gasoline	3.7594	0.0002	19	70
Natural Gas	6.1024	0.0149	1,596	9,739

Total Diesel 1,276,186
Total Gasoline 148,722,926
Total Natural Gas 10,985
Total Fuel Consumption 150,010,096

Notes:
Existing VMT from Source: Kimley Horn, March 2025.
Average MPG from Source: EMFAC 2021
Total Natural Gas includes Plug-in Hybrid

Consumption Rates By Vehicle Class

Fuel Type	Fuel Consumption (gal)	Total VMT	MPG	VTMT % of fuel type
Passenger Auto Vehicles				
LDA	312,555,168	9,793,677,200	31.33	
Diesel	550,859	23,467,407	42.60	100.000%
Electricity	-	451,580,280	-	100.000%
Gasoline	307,217,541	9,026,169,518	29.38	90.301%
Plug-in Hybrid	4,786,769	292,459,996	61.10	100.000%
MCV	1,520,588	63,559,962	41.80	
Gasoline	1,520,588	63,559,962	41.80	0.699%
Light Duty Trucks				
LDT1	29,890,082	725,998,216	24.29	
Diesel	7,565	184,552	24.39	1.288%
Electricity	-	1,349,765	-	5.931%
Gasoline	29,881,925	723,077,286	24.21	14.898%
Plug-in Hybrid	20,591	1,386,612	67.34	3.249%
LDT2	173,242,088	4,207,127,582	24.28	
Diesel	432,614	14,140,534	32.70	98.712%
Electricity	-	21,407,672	-	94.069%
Gasoline	172,167,229	4,130,284,696	23.99	85.102%
Plug-in Hybrid	642,245	41,288,681	64.29	96.751%
Medium Duty Trucks				
LHDT1	32,907,484	530,131,844	16.08	
Diesel	11,445,237	236,769,779	20.60	37.864%
Electricity	-	1,830,681	-	6.759%
Gasoline	21,522,247	292,531,383	13.59	8.538%
LHDT2	9,804,939	150,012,964	15.30	
Diesel	6,194,710	106,284,875	17.16	17.078%
Electricity	-	448,948	-	1.658%
Gasoline	3,610,230	43,279,141	11.99	1.263%
MDV	158,480,519	3,113,113,236	19.64	
Diesel	1,903,622	45,103,228	23.69	7.247%
Electricity	-	23,607,054	-	87.163%
Gasoline	156,155,571	3,018,517,564	19.33	88.104%
Plug-in Hybrid	421,326	25,885,390	61.44	100.000%
MH	4,214,631	24,561,911	5.83	
Diesel	724,630	7,619,770	10.37	1.224%
Gasoline	3,480,001	16,942,141	4.87	0.499%
MHDT	30,937,941	254,128,277	8.21	
Diesel	24,221,915	217,266,212	8.97	34.911%
Electricity	-	863,535	-	3.188%
Gasoline	6,394,504	33,151,206	5.18	0.968%
Natural Gas	321,522	2,847,325	8.96	12.065%
OBUS	2,350,165	14,233,211	6.06	
Diesel	770,510	5,792,989	7.52	0.931%
Electricity	-	32,141	-	0.119%
Gasoline	1,507,886	7,702,311	5.11	0.225%
Natural Gas	71,768	705,770	9.83	2.991%
SBUS	2,652,296	17,222,346	6.49	
Diesel	612,557	4,460,867	7.34	0.722%
Electricity	-	29,735	-	0.110%
Gasoline	888,012	7,891,168	8.89	0.230%
Natural Gas	1,151,727	4,807,577	4.17	20.372%
UBUS	4,888,085	21,573,266	4.41	
Diesel	875	9,846	11.26	0.002%
Electricity	-	271,762	-	1.003%
Gasoline	1,073,421	6,053,134	5.64	0.177%
Natural Gas	3,813,789	15,238,504	4.00	64.572%
Heavy Duty Truck				
HHDT	214,988,285	1,322,863,793	6.15	
Diesel	211,707,961	1,299,849,740	6.14	100.000%
Electricity	-	3,139,408	-	100.000%
Gasoline	61,160	229,927	3.76	100.000%
Natural Gas	3,219,164	19,644,718	6.10	100.000%

Source: EMFAC 2021 Riverside County

Consumption Rates By General Vehicle Class

Fuel Type	VTMT	Total VMT	VTMT %	Weighted Average MPG
Passenger Auto Vehicles				
Diesel	23,467,407		0.24%	42.602
Electricity	451,580,280		4.59%	0.000
Gasoline	9,857,237,162	9,857,237,162	92.21%	29.467
Plug-in Hybrid	292,459,996		2.97%	61.098
Light Duty Trucks				
Diesel	14,331,086		0.29%	32.593
Electricity	22,757,437	4,933,125,798	0.46%	0.000
Gasoline	4,853,361,962		98.38%	24.023
Plug-in Hybrid	42,675,293		0.87%	64.387
Medium Duty Trucks				
Diesel	622,340,566		15.09%	15.833
Electricity	27,083,876		0.66%	0.000
Gasoline	3,426,068,047	4,124,977,055	83.06%	18.459
Plug-in Hybrid	25,885,390		0.63%	61.438
Natural Gas	23,599,176		0.57%	4.793
Heavy Duty Trucks				
Diesel	1,299,849,740		98.26%	6.140
Electricity	3,139,408	1,322,863,793	0.24%	
Gasoline	229,927		0.02%	3.759
Natural Gas	19,644,718		1.49%	6.102

Existing (2024) Operational Water Energy

Land Use	Annual Water Usage (million gal [MG]/year)	Energy Intensity Factor (kWh/MG/year)	Annual Operational Water Energy (kWh/year)	Annual Operational Water Energy (GWh/year)
Residential	2,589.27	6,807	17,625,159.87	17.63
Non-Residential	7,646.12	6,807	52,047,168.45	52.05

Operational Water Energy = Annual Water Use * Indoor Water Energy Intensity Factor
Annual Water Use = (gal/year)
Indoor Water Energy Intensity Factor = (kWh/MG); factor includes supply, treatment, distribution, and wastewater factors. Source: CalEEMod User Guide, Appendix G, Tab G-32.

Annual Water Use

Land Use	GCPD	Size	UC	Annual Water Use (gal/year)
Residential	34.50	205,620.00	365	2,589,269,850.00
Commercial/Retail	74,073.00	7,288.05	1	539,847,949.87
Office	177,734.00	465.22	1	82,684,522.81
Industrial	925.00	33,746.99	225	7,023,591,877.50
Total Residential Operational Water				2,589,269,850.00
Total Non-Residential Operational Water				7,646,124,350.18

Water Use = GCPD * Size* UC

Water Use = (gal/year)
GCPD = water consumption rate (gal/size unit/time)
residential 34.5 (gal/person/day)
commercial/retail 74073 (gal/KSF/year)
office 177734 (gal/KSF/year)
industrial 925 (gal/KSF/day)
Size = (size unit)
residential person
commercial/retail KSF
office KSF
industrial KSF
UC = unit conversion (days/year)
residential 365 (days/year)
commercial/retail 1
office 1
industrial 225 (days/year)
KSF = 1000 sq ft

Source: CalEEMod Appendix C, 5.4.1.3, Annual Indoor Water Use
Source: CalEEMod, Appendix G-31, Annual Indoor Nonresidential Water Consumption by Land Use Type
Source: CalEEMod, Appendix G-31, Annual Indoor Nonresidential Water Consumption by Land Use Type
Source: CalEEMod, Appendix D8 - Default Water Use for Industrial Land Uses

Source: CalEEMod Appendix C, 5.4.1.3, Annual Indoor Water Use
Source: CalEEMod Appendix C, 5.4.1.3, Annual Indoor Water Use

Existing (2024) Operational Electricity

Operational Electricity					
Land Use	Size	Size Unit	Energy Use Intensity (GWh/size/year)	Electricity (GWh)	Annual MTCO2e
Residential	53,048	DU	0.0051	272.7	46,358.5
Commercial/Retail/Office	8	1,000 SF	38.885797	301.5	51,253.6
Industrial	33,747	1,000 SF	0.001183	39.9	6,788.6
Total Residential				272.7	46,358.5
Total Non-Residential				341.4	58,042.2

Notes:

du = dwelling unit

SF = square feet

0.170

MT CO₂e/MWh
per SCE CO₂ Intensity

Existing (2024) Operational Electricity Rates

Residential Electricity Rate			
Zip Code	Electricity (GWh)	Dwelling Units (du)	Energy Use Intensity (GWh/du/year)
SCE			
92551	54.21	8,824.00	0.0061
92553	134.01	20,729.00	0.0065
92555	56.30	11,879.00	0.0047
92557	116.09	16,163.00	0.0072
MVU			
92551, 92553, 92555	48.56086	41,432.00	0.0012
Average			0.0051

Notes:

dwelling units from 2020 US Census, Source: <https://data.census.gov/>

Commercial Electricity Rate					
Land Use	Electricity (GWh)	Employees	SF per Employee	Floor Area (SF)	Energy Use Intensity (GWh/SF/year)
SCE and MVU					
Commercial/Retail	301.4920	47,020	155.00	7,288	0.038886
Office		1,410	329.94	465	

Notes:

SF = square feet

employees and SF per employees based on the estimated existing population, Kimley-Horn and Associates (March 2025)

Industrial Electricity Rate					
Land Use	Electricity (GWh)	Employees	SF per Employee	Floor Area (SF)	Energy Use Intensity (GWh/SF/year)
SCE and MVU					
Industrial	39.93	16,873	2,000.06	33,747	0.001183

Notes:

SF = square feet

employees and SF per employees based on the estimated existing population, Kimley-Horn and Associates (March 2025)

Existing (2024) Operational Natural Gas

Operational Natural Gas						
Land Use	Size	Size Unit	Energy Use Intensity (therms/size/year)	Gas (therms)	Gas (kBTU)	Annual MTCO ₂ e
Residential	53,048	DU	342.14	18,149,722.45	1,814,972,244.61	96,030
Commercial/Retail/Office	7,753	1000 SF	280.00	2,170,915.04	217,091,504.00	11,486
Industrial	33,747	1000 SF	429.50	14,494,432.59	1,449,443,258.70	76,690
Total Residential				18,149,722.45	1,814,972,244.61	96,030
Total Non-Residential				16,665,347.63	1,666,534,762.70	88,176

Notes:

du = dwelling unit

SF = square feet

52.910	Per U.S. EIA, natural gas fuel includes (kg) of CO ₂ per (MMBtu).
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Existing (2024) Operational Gas Rates

Residential Electricity Rate			
Zip Code	Gas (therms)	Dwelling Units (du)	Energy Use Intensity (therms/du/year)
SCG			
92551	3,095,817	8,824	350.8405
92553	6,524,660	20,729	314.7600
92555	4,629,577	11,879	389.7278
92557	5,062,616	16,163	313.2225
Average			342.1377

Notes:

dwelling units from 2020 US Census, Source: <https://data.census.gov/>

Commercial Electricity Rate						
Zip Code	Land Use	Gas (therms)	Employees	SF per Employee	Floor Area (SF)	Energy Use Intensity (Therms/SF/year)
SCG						
92553	Commercial/Retail	2,202,824	47,020	155.00	7,288,053	0.284116
	Office		1,410	329.94	465,215	
92557	Commercial/Retail	187,247	47,020	155.00	7,288,053	0.024151
	Office		1,410	329.94	465,215	
Average						0.154133

Notes:

SF = square feet

employees and SF per employees based on the estimated existing population, Kimley-Horn and Associates (March 2025)

2022 Moval Electricity Consumption

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

Zip Codes	Year	Residential (GWh)	Commercial (GWh)	Industrial (GWh)
92551, 92553, 92555	2022	48.5609	136.1299	15.5103

2022 SCE Quarterly Usage by ZIP Code

Source: <https://www.sce.com/regulatory/energy-data--reports-and-compliances>

Zip Code	Year	Residential (GWh)	Commercial (GWh)	Industrial (GWh)
92551	2022	54.2136	11.4804	-
92553		134.0134	112.1480	24.4227
92555		56.3011	7.4933	-
92557		116.0885	34.2404	-

2022 Residential Consumption

ZipCode	Month	Year	CustomerClass	TotalAccounts	TotalkWh	AveragekWh
92551	1	2022	Residential	7105	3512766	494.41
92551	2	2022	Residential	6229	2580681	414.30
92551	3	2022	Residential	7951	2975761	374.26
92551	4	2022	Residential	6229	2287106	367.17
92551	5	2022	Residential	7972	3262471	409.24
92551	6	2022	Residential	7109	5184769	729.32
92551	7	2022	Residential	7094	7361746	1037.74
92551	8	2022	Residential	7106	8160319	1148.37
92551	9	2022	Residential	7059	7822197	1108.12
92551	10	2022	Residential	7137	4712441	660.28
92551	11	2022	Residential	7119	2978303	418.36
92551	12	2022	Residential	7061	3375072	477.99
92553	1	2022	Residential	22265	10372688	465.8741523
92553	2	2022	Residential	15972	6060193	379.4260581
92553	3	2022	Residential	24235	8745763	360.8732412
92553	4	2022	Residential	16016	5543967	346.1517857
92553	5	2022	Residential	22077	7984807	361.6798931
92553	6	2022	Residential	22447	11716744	521.9737159
92553	7	2022	Residential	18253	14901300	816.3753903
92553	8	2022	Residential	25813	23282469	901.9667997
92553	9	2022	Residential	17277	15878973	919.0816114
92553	10	2022	Residential	20578	13758390	668.5970454
92553	11	2022	Residential	18392	7273266	395.458134
92553	12	2022	Residential	20291	8494852	418.6512247
92555	1	2022	Residential	7740	4482904	579.1865633
92555	2	2022	Residential	5994	2723944	454.4451118
92555	3	2022	Residential	7743	3089793	399.043394
92555	4	2022	Residential	5982	2175572	363.6863925
92555	5	2022	Residential	6881	2742933	398.6241825
92555	6	2022	Residential	7750	5178885	668.2432258
92555	7	2022	Residential	5992	6242805	1041.856642
92555	8	2022	Residential	8199	10322472	1258.991584
92555	9	2022	Residential	6387	7981350	1249.624237
92555	10	2022	Residential	6885	5128327	744.8550472
92555	11	2022	Residential	5973	2832237	474.1732798
92555	12	2022	Residential	6791	3399840	500.6390811
92557	1	2022	Residential	15975	8622326	539.7387167
92557	2	2022	Residential	15849	6394524	403.4654552
92557	3	2022	Residential	15980	6132791	383.7791615
92557	4	2022	Residential	15887	5794376	364.72
92557	5	2022	Residential	15987	5750611	359.71
92557	6	2022	Residential	16010	8139480	508.40
92557	7	2022	Residential	15972	14415614	902.5553469
92557	8	2022	Residential	16148	16621897	1029.347102
92557	9	2022	Residential	15751	18675395	1185.664085
92557	10	2022	Residential	16035	11428365	712.7137512
92557	11	2022	Residential	15859	6802419	428.9311432
92557	12	2022	Residential	15865	7310652	460.8037819

2022 Commercial Consumption

ZipCode	Month	Year	CustomerClass	TotalAccounts	TotalkWh	AveragekWh
92551	1	2022	Commercial	253	1105977	4371.45
92551	2	2022	Commercial	177	907560	5127.48
92551	3	2022	Commercial	296	1129115	3814.58
92551	4	2022	Commercial	179	851264	4755.66
92551	5	2022	Commercial	284	1266663	4460.08
92551	6	2022	Commercial	250	1227902	4911.608
92551	8	2022	Commercial	272	1469799	5403.672794
92551	10	2022	Commercial	231	1306867	5657.4329
92551	11	2022	Commercial	218	1152004	5284.422018
92551	12	2022	Commercial	230	1063240	4622.782609
92553	1	2022	Commercial	2623	8363897	3188.68
92553	2	2022	Commercial	2288	6892387	3012.41
92553	3	2022	Commercial	2777	9130523	3287.91
92553	4	2022	Commercial	2316	7237218	3124.878238
92553	5	2022	Commercial	2730	9290688	3403.182418
92553	6	2022	Commercial	2639	10147930	3845.369458
92553	7	2022	Commercial	2448	10186198	4161.028595
92553	8	2022	Commercial	2665	12152661	4560.097936
92553	9	2022	Commercial	2409	11210209	4653.469905
92553	10	2022	Commercial	2530	10950680	4328.332016
92553	11	2022	Commercial	2441	8262011	3384.682917
92553	12	2022	Commercial	2491	8323579	3341.460859
92555	1	2022	Commercial	214	890056	4159.140187
92555	3	2022	Commercial	222	886716	3994.216216
92555	5	2022	Commercial	185	747171	4038.762162
92555	6	2022	Commercial	213	937455	4401.197183
92555	8	2022	Commercial	212	1218949	5749.759434
92555	9	2022	Commercial	156	1127559	7227.942308
92555	10	2022	Commercial	172	998356	5804.395349
92555	12	2022	Commercial	165	687024	4163.781818
92557	1	2022	Commercial	820	2523801	3077.806098
92557	2	2022	Commercial	920	2202976	2394.53913
92557	3	2022	Commercial	815	2663426	3268.007362
92557	4	2022	Commercial	922	2410351	2614.263557
92557	5	2022	Commercial	844	2726218	3230.116114
92557	6	2022	Commercial	819	2991722	3652.896215
92557	7	2022	Commercial	928	3364439	3625.47306
92557	8	2022	Commercial	829	3747978	4521.083233
92557	9	2022	Commercial	785	3495517	4452.887898
92557	10	2022	Commercial	806	3016568	3742.640199
92557	11	2022	Commercial	931	2832250	3042.158969
92557	12	2022	Commercial	797	2265203	2842.161857

2024 SoCal Gas Quarterly Gas Usage by ZIP Code

Source: <https://energydatarequest.socalgas.com/>

ZIP_CODE	MONTH	YEAR	CUSTOMER_CLASS	TOTAL_CUSTOMERS	TOTAL_THERMS
92551	1	2024	RESIDENTIAL	8599	487266
92551	2	2024	RESIDENTIAL	8622	431959
92551	3	2024	RESIDENTIAL	8616	337750
92553	1	2024	COMMERCIAL	737	400119
92553	1	2024	RESIDENTIAL	19501	896621
92553	2	2024	RESIDENTIAL	19502	864570
92553	3	2024	RESIDENTIAL	19550	712232
92555	1	2024	RESIDENTIAL	11714	734986
92555	2	2024	RESIDENTIAL	11727	674973
92555	3	2024	RESIDENTIAL	11738	523522
92557	1	2024	COMMERCIAL	140	65120
92557	1	2024	RESIDENTIAL	14859	857900
92557	2	2024	COMMERCIAL	137	67819
92557	2	2024	RESIDENTIAL	14891	857545
92557	3	2024	RESIDENTIAL	14900	671499
92551	4	2024	RESIDENTIAL	8626	312299
92551	5	2024	RESIDENTIAL	8626	217031
92551	6	2024	RESIDENTIAL	8625	175924
92553	4	2024	RESIDENTIAL	19570	634553
92553	5	2024	RESIDENTIAL	19596	460767
92553	6	2024	COMMERCIAL	810	317437
92553	6	2024	RESIDENTIAL	19613	398459
92555	4	2024	RESIDENTIAL	11766	447536
92555	5	2024	RESIDENTIAL	11787	307782
92555	6	2024	RESIDENTIAL	11790	231488
92557	4	2024	RESIDENTIAL	14885	574860
92557	5	2024	RESIDENTIAL	14888	368147
92557	6	2024	RESIDENTIAL	14898	326871
92551	7	2024	RESIDENTIAL	8638	140897
92551	8	2024	RESIDENTIAL	8645	134838
92551	9	2024	RESIDENTIAL	8658	140039
92553	7	2024	COMMERCIAL	665	187772
92553	7	2024	RESIDENTIAL	19608	315599
92553	8	2024	COMMERCIAL	665	175535
92553	8	2024	RESIDENTIAL	19608	291238
92553	9	2024	COMMERCIAL	665	201791
92553	9	2024	RESIDENTIAL	19630	331490
92555	7	2024	RESIDENTIAL	11814	182990
92555	8	2024	RESIDENTIAL	11807	184847
92555	9	2024	RESIDENTIAL	11831	194074
92557	7	2024	RESIDENTIAL	14899	237293
92557	8	2024	RESIDENTIAL	14892	220330
92557	9	2024	RESIDENTIAL	14929	255785
92551	10	2024	RESIDENTIAL	8667	161824
92551	11	2024	RESIDENTIAL	8665	237058
92551	12	2024	RESIDENTIAL	8663	318932
92553	10	2024	COMMERCIAL	664	193804
92553	10	2024	RESIDENTIAL	19611	349543
92553	11	2024	COMMERCIAL	1190	377303
92553	11	2024	RESIDENTIAL	19590	549443
92553	12	2024	COMMERCIAL	734	349063
92553	12	2024	RESIDENTIAL	19598	720145
92555	10	2024	RESIDENTIAL	11887	225025
92555	11	2024	RESIDENTIAL	11831	398208
92555	12	2024	RESIDENTIAL	11908	524146
92557	10	2024	RESIDENTIAL	14905	263767
92557	11	2024	RESIDENTIAL	14934	472676
92557	12	2024	COMMERCIAL	140	54308
92557	12	2024	RESIDENTIAL	14917	627442

Zip Code	Total Therms	
	Residential	Commercial
92551	3095817	2202824
9553	6524660	
9555	4629577	
92557	5062616	187247

Existing (2024) Fuel Rates

Existing Fuel Rates				
Fuel Type	Weighted Average MPG	VMT %	VMT	Fuel Consumption (gal)
Passenger Auto Vehicles				
Diesel	53.1434	0.0006	3,964	210,671
Gasoline	36.0602	0.8518	5,968,231	215,215,707
Plug-in Hybrid	72.0162	0.0398	278,869	20,083,088
Light Duty Trucks				
Diesel	39.7703	0.0032	737	29,314
Gasoline	29.9583	0.9495	218,435	6,543,934
Plug-in Hybrid	71.8541	0.0240	5,513	396,155
Medium Duty Trucks				
Diesel	16.5598	0.1509	13,242	219,290
Gasoline	23.8210	0.8306	72,900	1,736,559
Plug-in Hybrid	70.6721	0.0063	551	38,926
Natural Gas	4.7651	0.0057	502	2,393
Heavy Duty Trucks				
Diesel	7.4839	0.9826	205,619	1,538,836
Gasoline	4.9255	0.000174	36	179
Natural Gas	6.6547	0.0149	3,108	20,680

Total Diesel 1,996,111
Total Gasoline 244,014,548
Total Natural Gas 23,673
Total Fuel Consumption 246,035,732

Notes:
Existing VMT from Source: Kimley Horn, March 2025.
Average MPG from Source: EMFAC 2021
Total Natural Gas includes Plug-in Hybrid

Consumption Rates By Vehicle Class				
Fuel Type	Fuel Consumption (gal)	Total VMT	MPG	VMT % of fuel type
Passenger Auto Vehicles				
LCV	262,435,205	10,845,283,485	41.33	
Diesel	116,138	6,171,948	53.14	100.00%
Electricity	-	1,175,978,839		100.00%
Gasoline	256,290,179	9,228,955,313	36.01	99.32%
Plug-in Hybrid	6,028,888	434,177,385	72.02	100.00%
MCV	1,453,039	63,111,451	43.43	
Gasoline	1,453,039	63,111,451	43.43	0.68%
Light Duty Trucks				
LD1T	21,510,015	678,048,329	31.52	
Diesel	232	6,903	29.71	0.03%
Electricity	-	16,141,869		11.04%
Gasoline	21,528,884	648,761,613	30.42	10.89%
Plug-in Hybrid	180,889	13,117,745	72.52	8.72%
LD2T	179,950,181	5,596,018,298	31.10	
Diesel	505,255	20,095,891	39.77	99.97%
Electricity	-	130,060,544		88.96%
Gasoline	177,533,145	5,308,614,037	29.90	89.11%
Plug-in Hybrid	1,911,780	137,247,626	71.79	91.28%
Medium Duty Trucks				
LMD1T	19,339,693	556,465,436	28.77	
Diesel	6,842,504	148,154,882	21.65	32.73%
Electricity	-	197,661,202		37.13%
Gasoline	12,497,189	210,649,352	16.86	6.13%
LMD2T	5,561,884	144,061,474	25.91	
Diesel	3,824,644	70,391,341	18.40	15.55%
Electricity	-	47,907,337		9.00%
Gasoline	1,737,240	25,782,796	14.84	0.75%
MDV	131,068,294	3,398,450,877	25.93	
Diesel	1,187,306	35,379,816	29.80	7.82%
Electricity	-	121,817,337		22.88%
Gasoline	128,651,108	3,154,335,591	24.52	91.81%
Plug-in Hybrid	1,229,880	86,918,232	70.67	100.00%
MH	2,275,182	13,818,969	6.07	
Diesel	503,383	5,188,038	10.31	1.15%
Gasoline	1,771,799	8,630,931	4.87	0.25%
MMDT	23,517,710	351,958,867	14.97	
Diesel	18,922,075	185,410,696	9.80	40.97%
Electricity	-	138,582,606		26.03%
Gasoline	4,237,043	24,776,684	5.85	0.72%
Natural Gas	358,592	3,188,881	8.89	25.25%
ORUS	1,397,816	13,096,241	9.37	
Diesel	746,914	6,273,760	8.40	1.39%
Electricity	-	2,581,312		0.48%
Gasoline	556,648	3,211,771	5.77	0.09%
Natural Gas	94,253	1,029,397	10.92	8.15%
SBUS	1,841,330	15,691,383	8.52	
Diesel	225,692	1,808,282	8.01	0.40%
Electricity	-	3,884,003		0.73%
Gasoline	571,342	5,371,017	9.40	0.16%
Natural Gas	1,044,296	4,628,090	4.43	36.65%
URUS	1,098,333	26,771,147	24.37	
Electricity	-	19,920,475		4.40%
Gasoline	192,630	3,070,033	15.94	0.58%
Natural Gas	905,703	3,780,639	4.17	0.11%
Heavy Duty Truck				
HHDT	238,677,518	2,015,186,625	8.44	
Diesel	234,890,644	1,980,126,131	8.43	100.00%
Electricity	-	4,782,423		100.00%
Gasoline	17,879	350,259	19.59	100.00%
Natural Gas	3,786,894	29,925,812	7.94	100.00%

Source: EMFAC 2021, Riverside County

Consumption Rates By General Vehicle Class				
Fuel Type	VMT	Total VMT	VMT %	Weighted Average MPG
Passenger Auto Vehicles				
Diesel	6,171,948		0.06%	53.143
LCV				
Electricity	1,175,978,839	10,908,394,936	10.78%	0.000
Gasoline	9,292,066,764		85.18%	36.060
Plug-in Hybrid	434,177,385		3.98%	72.016
Light Duty Trucks				
Diesel	20,102,794		0.3%	39.770
Electricity	146,202,413		2.3%	0.000
Gasoline	5,957,395,850	6,274,066,627	95.0%	29.958
Plug-in Hybrid	150,365,571		2.4%	71.854
Medium Duty Trucks				
Diesel	681,988,650		15.1%	16.560
Electricity	29,678,723		0.7%	0.000
Gasoline	3,754,438,728	4,520,334,504	83.1%	23.821
Plug-in Hybrid	28,366,369		0.6%	70.672
Natural Gas	25,861,033		0.6%	4.765
Heavy Duty Trucks				
Diesel	1,980,126,131		98.26%	8.430
Electricity	4,782,423		0.24%	
Gasoline	350,259	2,015,186,625	0.02%	19.590
Natural Gas	29,925,812		1.49%	7.940

Note: includes VMT from 2040 EMFAC2021 Scenario but 2024 VMT percentage fleet split to conservatively exclude ACT.

Proposed Project (2040) Operational Water Energy

Land Use	Annual Water Usage (million gal [MG]/year)	Energy Intensity Factor (kWh/MG/year)	Net New Annual Operational Water Energy (kWh/year)	Net New Annual Operational Water Energy (GWh/year)
Residential	1,168.84	6,807	7956265.631	7.956265631
Non-Residential	9,047.97	6,807	61589534.78	61.58953478

Operational Water Energy = Annual Water Use * Indoor Water Energy Intensity Factor

Annual Water Use = (gal/year)

Indoor Water Energy Intensity Factor = (kWh/MG); factor includes supply, treatment, distribution, and wastewater factors. Source: CalEEMod User Guide, Appendix G, Tab G-32.

Annual Water Use

Land Use	GCPD	Pop	UC	Net New Annual Water Use (gal/year)
Residential	35	92820.00	365	1,168,835,850.00
Commercial/Retail	74073	1953.17	1	144,676,791.05
Office	177734	1921.74	1	341,558,537.16
Industrial	925	41137.47	225	8,561,735,111.25
Total Residential Operational Water				1,168,835,850.00
Total Non-Residential Operational Water				9,047,970,439.46

Water Use = GCPD * Pop * UC

Water Use = gal/year

GCPD = water consumption rate

residential 34.5 (gal/person/day)

commercial/retail 74073 (gal/KSF/year)

office 177734 (gal/KSF/year)

industrial 925 (gal/KSF/day)

Pop = land use unit

residential person

commercial/retail KSF

office KSF

industrial KSF

UC = unit conversion from daily to annual

residential 365 days/year

commercial/retail 1

office 1

industrial 225 days/year

KSF = 1000 sq ft

Source: CalEEMod Appendix C, 5.4.1.3, Annual Indoor Water Use e

Source: CalEEMod, Appendix G-31, Annual Indoor Nonresidential Water Consumption by Land Use Type

Source: CalEEMod, Appendix G-31, Annual Indoor Nonresidential Water Consumption by Land Use Type

Source: CalEEMod, Appendix D8 - Default Water Use for Industrial Land Uses

Source: CalEEMod Appendix C, 5.4.1.3, Annual Indoor Water Use

Source: CalEEMod Appendix C, 5.4.1.3, Annual Indoor Water Use

Project (2040) Operational Electricity and Natural Gas

Annual Electricity Usage

Land Use	Size	Size Unit	Electricity Rate (kWh/size unit/year)	Annual Electricity Usage (kWh/year)	Annual Electricity Usage (GWh/year)	Annual MTCO ₂ e
Single-Family	7,320	dwelling unit	9,339.2	68,362,944	68.36	11,621.7
Multi-Family	26,542	dwelling unit	6,846.8	181,727,766	181.73	30,893.7
Total Residential				250,090,710	250.09	42,515.42
Commercial/Retail	1,953.2	1,000 sq ft	9,758.4	19,059,765	19.06	3,240.2
Office	1,921.7	1,000 sq ft	17,443.2	33,521,295	33.52	5,698.6
Industrial	41,137.5	1,000 sq ft	9,569.1	393,648,526	393.65	66,920.2
Total Non-Residential				446,229,586	446.23	75,859.03

Notes:

rate from Source: CalEEMod, Appendix G-28, Annual Energy Use by Land Use Subtype and EDFZ
EDFZ = 11 (Eastern), Source: CalEEMod, Appendix D-5, Analysis of Building Energy Use Data

0.170

MT CO₂e/MWh
per SCE CO₂ Intensity

Annual Natural Gas Usage

Land Use	Size	Size Unit	Natural Gas Rate (kBtu/size unit/year)	Annual Natural Gas Usage (kBtu/year)	Annual Natural Gas Usage (therms/year)	Annual MTCO ₂ e
Single-Family	7,320	dwelling unit	35,564.3	260,330,676	2,603,307	13,774
Multi-Family	26,542	dwelling unit	16,970.2	450,423,048	4,504,230	23,832
Total Residential				710,753,724	7,107,537	37,606
Commercial/Retail	1,953.2	1,000 sq ft	5,922.2	11,567,034	115,670	612
Office	1,921.7	1,000 sq ft	27,586.7	53,014,465	530,145	2,805
Industrial	41,137.5	1,000 sq ft	42,950.3	1,766,866,506	17,668,665	93,485
Total Non-Residential				1,831,448,005	18,314,480	96,902

Notes:

Rate Source: CalEEMod, Appendix G-28, Annual Energy Use by Land Use Subtype and EDFZ
EDFZ = 11 (Eastern), Source: CalEEMod, Appendix D-5, Analysis of Building Energy Use Data

52.910

Per U.S. EIA, natural gas fuel includes
(kg of CO₂ per (MMBtu).

Revised Generator Calculations

		SF	KSF	Daily Truck Trips	Forklifts	Hostlers	kWh	# Generators	Gallons per hour	Gallons per year	MTCO ₂ e
2024	Non-WLC (Unref)	27,908,000	22,326	10,270	447	80	102,755,023	29	20	29,325	299
	Non-WLC (Ref)		5,582	2,568	112	20	122,066,801	35	35	60,964	621
2024	WLC	0	0	0	0	0	0	0	0	0	0
								64	Total	90,289	919
2040	Non-WLC (Unref)	35,804,000	28,643	13,176	573	103	131,827,464	38	20	37,622	383
	Non-WLC (Ref)		7,161	3,294	143	26	32,956,866	9	35	16,460	168
2040	WLC (unref)	40,400,000	40,400	18,584	808	145	185,936,960	53	20	53,064	540
		76,204,000	76,204	35,054	1,524	274	350,721,290	100	Total	107,146	1,091

Trip Generation

Trips per KSF	1.71
Truck Trips Per KSF (ITE 150)	0.46

Statistical Measure Number of Pallet Jacks/Forklifts at Facility per Thousand Square Feet of Building Area

Minimum	0.02
Maximum	0.4
Average	0.12

Hostlers: 3.6 hostlers per million sf

Source: SCAQMD High Cube Warehouse Truck Trip Study White Paper Summary of Business Survey Results , June 2014, Table 9 Pallet Jack/Forklift Usage, page 9.
<http://www.aqmd.gov/docs/default-source/ceqa/handbook/high-cube-warehouse-trip-rate-study-for-air-quality-analysis/business-survey-summary.pdf>

Electricity	kWh/KSF	Backup at 200 hrs/year kWh/KSF
General Heavy/Light Industrial	9569.1	218.4726027
General Office Building	17443.2	398.2465753
Manufacturing	9569.1	218.4726027
Refrigerated Warehouse-No Rail/Rail	21869.5	499.303653
Research & Development	17443.2	398.2465753
Unrefrigerated Warehouse-No Rail/Rail	4602.4	105.0776256

*Moreno Valley is in Electricity Demand Forecast Zone (EDFZ) 11
Source: CalEEMod 2022 User Guide, Appendix G, Table G-28.

Avg Gen HP: 400