

APPENDIX D: ENERGY CONSUMPTION WORKSHEETS

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400 San Vicente Blvd

Total Diesel Usage From Construction Equipment

Phase	Off-Road Equipment Type	Units	Hours	HP	Load Factor	Ave. Daily Factor	Number of Days	Diesel Usage (gallons)
Demolition	Concrete/Industrial Saws	1	8	33	0.73	0.6	22	127
Demolition	Rubber Tired Dozer	2	1	367	0.40	0.6	22	194
Demolition	Tractor/Loader/Backhoe	2	6	84	0.37	0.6	22	246
Grading	Grader	1	6	148	0.41	0.6	66	721
Grading	Rubber Tired Dozer	1	6	367	0.40	0.6	66	1,744
Grading	Tractor/Loader/Backhoe	1	7	84	0.37	0.6	66	431
Grading	Excavator	1	8	36	0.38	0.6	66	217
Building Construction	Forklifts	2	6	82	0.20	0.6	330	1,948
Building Construction	Tractor/Loader/Backhoe	2	8	84	0.37	0.6	330	4,923
Building Construction	Generator Sets	1	8	14	0.74	0.6	330	821
Building Construction	Cement and Mortar Mixers	1	8	10	0.56	0.6	330	444
Building Construction	Welders	3	8	46	0.45	0.6	330	4,918
Architectural Coating	Air Compressors	4	6	37	0.48	0.6	198	2,532
Architectural Coating	Aerial Lifts	2	8	46	0.31	0.6	198	1,355
TOTAL								20,620

Sources: Equipment usage (hours and total days), horsepower (HP) and load factors are per the CalEEMod Worksheets; Fuel rate calculation is per the SCAQMD Air Quality Handbook (1993) Table A9-3E.

Electricity Usage from Watering During Construction (AQMD Rule 403: Fugitive Dust)

Phase	Duration of Phase (days)	Watering Days	Ave. Daily Acreage Disturbed	Water Use (gallons)	Electricity (kWhr)
Demolition	22	22	0.77	51,159	497.62
Grading	66	66	0.77	153,476	1,492.86
Building Construction	330		0	-	-
Architectural Coating	198		0	-	-
TOTAL					1,990.49

Notes:

1. Water Application Rate= 3,020 gal/acre/day per Air & Waste Management Association Air Pollution Engineering Manual (1992 Edition). Water application during the building demolition phase excludes surface parking lot, which would be removed during the grading phase.
2. kWhr equivalent = 0.01 kWhr
3. Electricity consumption per water usage = 0.009727 kWhr/gallon.

Construction Worker, Vendor, and Hauling Gasoline and Diesel Consumption

Phase	Daily Trips		Days	Total Trips			Trip Length			Ave. Daily Factor	Gasoline Usage (gallons)	Diesel Usage (gallons)
	Worker	Vendor		Worker	Vendor	Haul	Worker	Vendor	Haul			
Demolition	13	-	22	275	-	260	12.6	7.75	20	0.6	144	613
Grading	15	-	66	990	-	6,571	12.6	7.75	35	0.6	520	27,121
Building Construction	132	31	330	43,560	10,065	-	12.6	7.75	20	0.6	22,859	9,199
Architectural Coatings	30	-	198	5,841	-	-	12.6	7.75	20	0.6	3,065	-
TOTAL	189	31	616	50,666	10,065	6,831					26,589	36,933

Notes: Assumes an average fuel efficiency of 24.01 miles per gallon (mpg) for gasoline and 8.48 mpg for diesel per 2021 EMFAC Emissions Inventory (see attachment in this Appendix).

**400 San Vicente Existing Conditions (to be demolished)
Operational Fuel Calculations**

Land Use	Units	Average Daily Trip Rate			Annual VMT
		Weekday	Sat	Sunday	
Retail Strip Mall	22,494	975.00	925.00	449.00	
	TOTAL	975.00	925.00	449.00	2,468,804

Fleet Mix	Fleet Factor	VMT	Fuel (gallons)
HHDT	Diesel	74,064.12	8,733.98
LDA	Gas	2,295,987.72	95,626.31
LDT1		2,370,051.84	
LDT2			
LHDT1			
LHDT2			
MCY			
MDV			
MH			
MHDT			
OBUS			
SBUS			

Notes:

1. Assumes an average fuel efficiency of 24.01 miles per gallon (mpg) for gasoline and 8.48 mpg for diesel per 2021 EMFAC Emissions Inventory (see attachment in this Appendix).
2. CalEEMod Version 2022.1 provides trips/VMT for the existing uses.
3. Fleet Mix provided by EMFAC 2021 Inventory, Los Angeles County, 2023.

**400 San Vicente Avenue Project
Operational Fuel Calculations**

Land Use	Units	Average Daily Trip Rate			Annual VMT
		Weekday	Sat	Sunday	
Apartments (Mid Rise)	126 du	512	462	385	1,519,477
Restaurant	11,615	1,138	1,241	1,446	1,964,054
VMT per CalEEMod		1,650	1,703	1,831	3,483,531

Fleet Mix
HHDT
LDA
LDT1
LDT2
LHDT1
LHDT2
MCY
MDV
MH
MHDT
OBUS
SBUS

	Fleet Factor	VMT	Fuel (gallons)
Diesel	0.03	104,505.93	11,755.45
Gas	0.9	3,135,177.90	120,259.99
		3,239,683.83	

Notes:

1. Assumes an average fuel efficiency of 26.07 miles per gallon (mpg) for gasoline and 8.89 mpg for diesel per 2021 EMFAC Emissions Inventory (see attachment in this Appendix).
2. CalEEMod Version 2022.1 provides trips/VMT for the existing uses.
3. Fleet Mix provided by EMFAC 2021 Inventory, Los Angeles County, 2027.

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Energy Consumption	Fuel Consumption	Fleet Mix	% of Total
Los Angeles	2023	HHDT	Aggregate	Aggregate	Gasoline	52.4653059	1061138.912	343260.3501	0	268.2675406	HHDT	0.80471018
Los Angeles	2023	HHDT	Aggregate	Aggregate	Diesel	51746.1044	2101481022	250916935	0	351873.0118	LDA	51.8431439
Los Angeles	2023	HHDT	Aggregate	Aggregate	Electricity	40.7704021	829825.7175	204136.9967	1473317.323	0	LDT1	4.5602679
Los Angeles	2023	HHDT	Aggregate	Aggregate	Natural Gas	5423.26572	109588096	10797756.22	0	19053.67767	LDT2	22.2367883
Los Angeles	2023	LDA	Aggregate	Aggregate	Gasoline	3441156.83	47564394973	5555162834	0	1673512.193	LHDT1	2.54413017
Los Angeles	2023	LDA	Aggregate	Aggregate	Diesel	9775.31904	101889869.6	13975474.14	0	2560.710331	LHDT2	0.61504126
Los Angeles	2023	LDA	Aggregate	Aggregate	Electricity	151623.242	2450472127	263814151.8	946084489.4	0	MCY	2.07117892
Los Angeles	2023	LDA	Aggregate	Aggregate	Plug-in Hybrid	86565.9777	1416410641	124208760.3	212068513.4	26068.68884	MDV	13.7260642
Los Angeles	2023	LDT1	Aggregate	Aggregate	Gasoline	323318.13	4089398334	493723563	0	172178.6121	MH	0.30827477
Los Angeles	2023	LDT1	Aggregate	Aggregate	Diesel	135.007332	951589.0639	136376.981	0	41.3313576	MHDT	1.07062962
Los Angeles	2023	LDT1	Aggregate	Aggregate	Electricity	742.994762	9465523.84	1189143.418	3654473.434	0	OBUS	0.08838778
Los Angeles	2023	LDT1	Aggregate	Aggregate	Plug-in Hybrid	309.29905	5567856.511	443796.1955	908028.6301	93.89651694	SBUS	0.06846082
Los Angeles	2023	LDT2	Aggregate	Aggregate	Gasoline	1558892.97	22358214203	2543988797	0	968081.9801	UBUS	0.06292217
Los Angeles	2023	LDT2	Aggregate	Aggregate	Diesel	4736.11341	71985192.78	7947394.731	0	2340.123416		
Los Angeles	2023	LDT2	Aggregate	Aggregate	Electricity	7409.40848	95612799.2	13203232.32	36914431.85	0		
Los Angeles	2023	LDT2	Aggregate	Aggregate	Plug-in Hybrid	11315.605	197120780.1	16236139.26	31094311.55	3461.706262		
Los Angeles	2023	LHDT1	Aggregate	Aggregate	Gasoline	126299.204	1627117891	615306073.6	0	123934.8271		
Los Angeles	2023	LHDT1	Aggregate	Aggregate	Diesel	54739.2956	785030755.5	225156333	0	38707.4254		
Los Angeles	2023	LHDT2	Aggregate	Aggregate	Gasoline	19347.3582	235742673	94256706.94	0	20488.55682		
Los Angeles	2023	LHDT2	Aggregate	Aggregate	Diesel	24418.5419	345969790.5	100439534	0	20303.48912		
Los Angeles	2023	MCY	Aggregate	Aggregate	Gasoline	147383.624	335289879.8	102284234.7	0	8185.583293		
Los Angeles	2023	MDV	Aggregate	Aggregate	Gasoline	951501.414	12587333789	1527702170	0	668938.3558		
Los Angeles	2023	MDV	Aggregate	Aggregate	Diesel	10934.5825	150551126.7	17955771.16	0	6515.308882		
Los Angeles	2023	MDV	Aggregate	Aggregate	Electricity	7971.42103	102939855.2	14207923.1	39743280.21	0		
Los Angeles	2023	MDV	Aggregate	Aggregate	Plug-in Hybrid	6329.58487	99491942.06	9081973.202	15271459.43	1823.377261		
Los Angeles	2023	MH	Aggregate	Aggregate	Gasoline	16465.3417	52069008.9	538632.0416	0	10753.17262		
Los Angeles	2023	MH	Aggregate	Aggregate	Diesel	5471.27251	18575351.26	178910.611	0	1861.869904		
Los Angeles	2023	MHDT	Aggregate	Aggregate	Gasoline	15250.3826	272642900.4	99777397.27	0	53479.96731		
Los Angeles	2023	MHDT	Aggregate	Aggregate	Diesel	60070.2982	800837265.3	229530172.9	0	90155.14254		
Los Angeles	2023	MHDT	Aggregate	Aggregate	Electricity	27.9728905	189139.5219	113067.5316	197687.7009	0		
Los Angeles	2023	MHDT	Aggregate	Aggregate	Natural Gas	836.591496	12716787.09	2257856.056	0	1569.551159		
Los Angeles	2023	OBUS	Aggregate	Aggregate	Gasoline	3862.4698	51457073.73	25270656.71	0	10299.88807		
Los Angeles	2023	OBUS	Aggregate	Aggregate	Diesel	2107.25321	49659649.82	7948501.765	0	7220.224914		
Los Angeles	2023	OBUS	Aggregate	Aggregate	Natural Gas	319.888518	5705979.653	831326.2809	0	663.0803601		
Los Angeles	2023	SBUS	Aggregate	Aggregate	Gasoline	1386.18207	20965177.06	1813126.145	0	2344.546177		
Los Angeles	2023	SBUS	Aggregate	Aggregate	Diesel	2009.95282	13558159.21	9517046.224	0	1845.486944		
Los Angeles	2023	SBUS	Aggregate	Aggregate	Electricity	1.88673012	7166.419629	8933.591632	8286.540637	0		
Los Angeles	2023	SBUS	Aggregate	Aggregate	Natural Gas	1473.60146	12032217.74	6977443.959	0	2891.667036		
Los Angeles	2023	UBUS	Aggregate	Aggregate	Gasoline	438.72576	10187165.99	573853.2936	0	2225.282143		
Los Angeles	2023	UBUS	Aggregate	Aggregate	Diesel	45.0702639	2353427.6	58951.9052	0	384.7411313		
Los Angeles	2023	UBUS	Aggregate	Aggregate	Electricity	85.8300327	1583022.17	112265.6828	3344341.242	0		
Los Angeles	2023	UBUS	Aggregate	Aggregate	Natural Gas	3907.8712	137830322.4	5111495.526	0	45263.93993		
					TOTAL	7115929.12	98306281489					
					GAS	0.92824914	89205874208			3714691.233	MPG	24.0143443
					DSL	0.03178627	4442843199			523808.8657	8.48180222	

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2027

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	Trips	Energy Consumption	Fuel Consumption	Fleet Mix	% of Total
Los Angeles	2027	HHDT	Aggregate	Aggregate	Gasoline	28.51963201	791982.7104	186593.0007	0	181.9173778		
Los Angeles	2027	HHDT	Aggregate	Aggregate	Diesel	57907.1921	2239136626	283361641.8	0	354785.0971	HHDT	0.898005166
Los Angeles	2027	HHDT	Aggregate	Aggregate	Electricity	1004.970646	34684885.22	4322568.958	61853670.3	0	LDA	49.44389192
Los Angeles	2027	HHDT	Aggregate	Aggregate	Natural Gas	6435.903944	124283793.5	12902425.59	0	20462.57432	LDT1	4.22722417
Los Angeles	2027	LDA	Aggregate	Aggregate	Gasoline	3252972.868	44211710201	5234326450	0	1434647.508	LDT2	23.88841177
Los Angeles	2027	LDA	Aggregate	Aggregate	Diesel	6767.856667	70036243.65	9744776.938	0	1665.438524	LHDT1	2.705034196
Los Angeles	2027	LDA	Aggregate	Aggregate	Electricity	229680.9803	3753020861	393504561.6	1448975806	0	LHDT2	0.696729649
Los Angeles	2027	LDA	Aggregate	Aggregate	Plug-in Hybr	110193.3003	1708401265	158110305.9	276535299.3	28875.84151	MCY	2.209167929
Los Angeles	2027	LDT1	Aggregate	Aggregate	Gasoline	305004.155	3848674184	466774501.5	0	150215.9735	MDV	14.32406928
Los Angeles	2027	LDT1	Aggregate	Aggregate	Diesel	46.31412876	317797.899	45029.9649	0	13.19062895	MH	0.285721172
Los Angeles	2027	LDT1	Aggregate	Aggregate	Electricity	1549.983911	24629680.41	2616510.635	9509089.436	0	MHDT	1.105869739
Los Angeles	2027	LDT1	Aggregate	Aggregate	Plug-in Hybr	1149.988113	19572251.29	1650054.693	3423695.887	301.2425611	OBUS	0.084128833
Los Angeles	2027	LDT2	Aggregate	Aggregate	Gasoline	1690654.952	24002342021	2760393344	0	940250.4001	SBUS	0.069746247
Los Angeles	2027	LDT2	Aggregate	Aggregate	Diesel	5724.008731	83915469.12	9526072.238	0	2504.962338	UBUS	0.061999936
Los Angeles	2027	LDT2	Aggregate	Aggregate	Electricity	21158.47599	256205912.1	37063129.06	98916627.88	0		
Los Angeles	2027	LDT2	Aggregate	Aggregate	Plug-in Hybr	21587.09609	350158920.6	30974136.89	59365652.95	5638.226032		
Los Angeles	2027	LHDT1	Aggregate	Aggregate	Gasoline	126122.2747	1647348123	614444108.7	0	114407.5701		
Los Angeles	2027	LHDT1	Aggregate	Aggregate	Diesel	66210.8642	939171041.2	272341746.7	0	45169.21424		
Los Angeles	2027	LHDT1	Aggregate	Aggregate	Electricity	4598.803585	97286742.59	21022245.17	54441027.33	0		
Los Angeles	2027	LHDT2	Aggregate	Aggregate	Gasoline	18986.19599	231590955.9	92497192.08	0	18499.83909		
Los Angeles	2027	LHDT2	Aggregate	Aggregate	Diesel	30543.23938	422343840.8	125631937.7	0	23952.03411		
Los Angeles	2027	LHDT2	Aggregate	Aggregate	Electricity	1193.887611	24027927.86	5178557.531	13453386.64	0		
Los Angeles	2027	MCY	Aggregate	Aggregate	Gasoline	160831.8787	361668687.4	111617323.8	0	8694.798658		
Los Angeles	2027	MDV	Aggregate	Aggregate	Gasoline	995506.8199	13168623492	1605314829	0	633660.0953		
Los Angeles	2027	MDV	Aggregate	Aggregate	Diesel	11636.58936	154520909.6	18907672.02	0	6187.176699		
Los Angeles	2027	MDV	Aggregate	Aggregate	Electricity	22470.3464	271463716.4	39333257.01	104807399.6	0		
Los Angeles	2027	MDV	Aggregate	Aggregate	Plug-in Hybr	13207.36346	199125291.7	18950519.42	33647651.2	3265.142801		
Los Angeles	2027	MH	Aggregate	Aggregate	Gasoline	14694.27766	49405826.47	480695.0806	0	10203.29837		
Los Angeles	2027	MH	Aggregate	Aggregate	Diesel	6106.799638	21036858.7	199692.3482	0	2110.015429		
Los Angeles	2027	MHDT	Aggregate	Aggregate	Gasoline	13816.7581	246915825.6	90397742.62	0	46369.9162		
Los Angeles	2027	MHDT	Aggregate	Aggregate	Diesel	63902.51544	820128977	245448413.9	0	90810.2505		
Los Angeles	2027	MHDT	Aggregate	Aggregate	Electricity	1749.121237	30370026.79	7398423.065	31800124.83	0		
Los Angeles	2027	MHDT	Aggregate	Aggregate	Natural Gas	1041.151539	14694203.87	2779603.887	0	1797.260555		
Los Angeles	2027	OBUS	Aggregate	Aggregate	Gasoline	3402.812669	41672128.76	22263296.61	0	8035.413377		
Los Angeles	2027	OBUS	Aggregate	Aggregate	Diesel	2298.258032	49882639.07	8847544.904	0	7026.304713		
Los Angeles	2027	OBUS	Aggregate	Aggregate	Electricity	51.74958778	1221669.238	338577.681	1285721.185	0		
Los Angeles	2027	OBUS	Aggregate	Aggregate	Natural Gas	371.9283173	6203748.628	966567.3109	0	694.0621975		
Los Angeles	2027	SBUS	Aggregate	Aggregate	Gasoline	1518.749108	22712586.26	1986523.833	0	2493.166233		
Los Angeles	2027	SBUS	Aggregate	Aggregate	Diesel	1772.30207	11778945.33	8391779.407	0	1580.947838		
Los Angeles	2027	SBUS	Aggregate	Aggregate	Electricity	78.00496061	799967.1385	283508.9138	925003.0762	0		
Los Angeles	2027	SBUS	Aggregate	Aggregate	Natural Gas	1708.611277	13380752.64	8090206.05	0	3142.741064		
Los Angeles	2027	UBUS	Aggregate	Aggregate	Gasoline	433.2360292	9967782.029	566672.7262	0	2149.168586		
Los Angeles	2027	UBUS	Aggregate	Aggregate	Diesel	14.34866314	772868.0169	18768.05138	0	135.0547802		
Los Angeles	2027	UBUS	Aggregate	Aggregate	Electricity	330.0255695	10406974.91	431673.4449	21897172.81	0		
Los Angeles	2027	UBUS	Aggregate	Aggregate	Natural Gas	3736.110098	132036051.5	4886832.008	0	42501.11876		
					TOTAL	7280201.588	99728440655					
					GAS	0.904366921	87843423797			3369809.065		26.0677748
					DSL	0.034742209	4813042217			535939.6869		8.980566907

2022 CALIFORNIA GAS REPORT

PREPARED BY THE CALIFORNIA GAS AND ELECTRIC UTILITIES

**Southern California Gas Company
Pacific Gas and Electric Company
San Diego Gas & Electric Company
Southwest Gas Corporation
City of Long Beach Energy Resources Department
Southern California Edison Company**

EXECUTIVE SUMMARY

California benefits from substantial gas storage capacity in dedicated gas storage facilities across the state. These gas storage facilities supplement pipeline gas supply during high demand periods and also provide supply reliability. Additionally, storage allows gas customers to take advantage of low prices and store gas for use in periods with higher prices. Various regulations and standards⁷ have been implemented to ensure safe and reliable operations of California gas storage facilities. The table below gives the current status of gas storage capacity in California.

Table 1: California Natural Gas Storage Capacities				
Recorded Year 2021				
	Inventory (Bcf)	Injection (MMcf/d)	Withdrawal (MMcf/d)	Cite
<u>Northern California</u>				
<u>Independent Storage Providers</u>				
				1
Lodi Gas Storage	31	552	750	
Wild Goose Storage	75	525	950	
Gill Ranch	15	165	162	
Central Valley	11	300	300	
<u>Pacific Gas & Electric Company-Utility Storage***</u>	35	315	1,144	2
Northern California Total	167	1,857	3,306	
<u>Southern California</u>				
Southern California Gas Company-Utility Storage	137	790	2,660	3
California Total	375	3,432	7,995	
<u>Citations</u>				
1) Capacities derived from information provided by Independent Storage Providers				
2) ***Firm maximum inventory level				
3) Per the current active Triennial Cost Allocation Proceeding, D 20-02-045				

⁷ See Geologic Energy Management Division's Underground Natural Gas Storage for more details on regulations and standards at:

<https://www.conservation.ca.gov/calgem/Pages/UndergroundGasStorage.aspx>.

EXECUTIVE SUMMARY

**TABLE 4 – STATEWIDE TOTAL SUPPLY SOURCES-TAKEN
AVERAGE TEMPERATURE AND NORMAL HYDRO YEAR
(MMcf/d)
2022-2035**

Utility	2022	2023	2024	2025	2026
<i>Northern California</i>					
California Sources ⁽¹⁾	56	56	56	56	56
Out-of-State	2,049	2,054	2,043	2,038	2,063
Northern California Total	2,105	2,110	2,099	2,094	2,119
<i>Southern California</i>					
California Sources ⁽²⁾	61	61	61	61	61
Out-of-State	2,379	2,354	2,266	2,219	2,190
Southern California Total	2,440	2,415	2,327	2,280	2,251
Utility Total	4,545	4,525	4,427	4,374	4,369
Non-Utility Served Load ⁽³⁾	1,024	1,010	990	995	999
Statewide Supply Sources Total	5,570	5,535	5,416	5,368	5,369
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Utility	2027	2028	2029	2030	2035
<i>Northern California</i>					
California Sources ⁽¹⁾	56	56	56	56	56
Out-of-State	1,749	1,738	1,722	1,698	1,681
Northern California Total	1,805	1,794	1,778	1,754	1,737
<i>Southern California</i>					
California Sources ⁽²⁾	61	61	61	61	61
Out-of-State	2,160	2,106	2,080	2,034	1,912
Southern California Total	2,221	2,167	2,141	2,095	1,973
Utility Total	4,026	3,961	3,919	3,848	3,711
Non-Utility Served Load ⁽³⁾	995	979	1,006	1,025	1,147
Statewide Supply Sources Total	5,021	4,940	4,926	4,874	4,857
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Notes:					
(1) Includes utility purchases and exchange/transport gas.					
(2) Includes utility purchases and exchange/transport gas and City of Long Beach "own-source" gas.					
(3) Cogen, EOR steaming and powerplant customers, and gas consumption at Elk Hills powerplant.					
Source: CEC staff-provided forecast results from their own model simulations.					