

Appendix C

Energy

8th, Grand and Hope

Draft EIR

Appendix C

Energy Analysis Spreadsheets

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8th, Grand and Hope

Summary of Energy Use During Construction

Electricity	
Water Consumption	5,981 kWh
Temporary Power (lighting, tools)	33,566 kWh
Total:	39,547 kWh
Gasoline	
On Road	123,758 Gallons
Off Road	0 Gallons
Total:	123,758 Gallons
Diesel	
On Road	109,563 Gallons
Off Road	90,392 Gallons
Total:	199,955 Gallons
Total Mobile	323,713

Summary of Energy Use During Operations

	Baseline (Buildout)	Buildout Without Project Features	Buildout With Project Features		Percent Reduction due to Project Features
Electricity					
Electricity (building)	251,424	3,179,025	2,895,390	kWh/year	-9%
Electricity (water)	0	661,095	528,877	kWh/year	-20%
EV Charger	0	103,418	103,418	kWh/year	0%
Electricity Total	251,424	3,943,537	3,527,684	kWh/year	-11%
Natural Gas	0	5,102,979	4,859,882	cu ft/year	-5%
Mobile					
Gasoline	0	102,531	102,531	Gallons/year	0%
Diesel	0	20,179	20,179	Gallons/year	0%
Mobile Total	0	122,710	122,710	Gallons/year	0%

Existing uses consume electricity for lighting of the parking structure. As a conservative assumption, no credit was taken for existing energy usage when calculating Project energy usage.

Calculation of Diesel Usage During Construction (Offroad Equipment):

Phase Name	Off Road Equipment Type	Units	Hours	HP	Load Factor	Avg. Daily Factor	Number of Days	Diesel Fuel Usage	
Demolition	Air Compressors	2	8	78	0.48	0.6	52	935	
Demolition	Concrete/Industrial Saws	2	8	81	0.73	0.6	52	1,476	
Demolition	Excavators	0	8	158	0.38	0.6	52	0	
Demolition	Rubber Tired Dozers	0	8	247	0.4	0.6	52	0	
Demolition	Tractors/Loaders/Backhoes	2	8	97	0.37	0.6	52	896	
Grading	Bore/Drill Rigs	3	8	221	0.5	0.6	79	6,285	
Grading	Concrete/Industrial Saws	0	8	81	0.73	0.6	79	0	
Grading	Excavators	2	8	158	0.38	0.6	79	2,277	
Grading	Graders	0	8	187	0.41	0.6	79	0	
Grading	Rubber Tired Dozers	0	8	247	0.4	0.6	79	0	
Grading	Rubber Tired Loaders	1	8	203	0.36	0.6	79	1,386	
Grading	Skid Steer Loaders	1	8	65	0.37	0.6	79	456	
Grading	Tractors/Loaders/Backhoes	0	6	97	0.37	0.6	79	0	
Foundation	Plate Compactors	2	8	8	0.43	0.6	143	236	
Foundation	Pumps	2	8	84	0.74	0.6	143	4,267	
Foundation	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	143	1,232	
Foundation	Welders	2	8	46	0.45	0.6	143	1,421	
Building Construction	Aerial Lifts	2	8	63	0.31	0.6	666	6,243	
Building Construction	Air Compressors	2	8	78	0.48	0.6	666	11,969	
Building Construction	Cement and Mortar Mixers	2	8	9	0.56	0.6	666	1,611	
Building Construction	Cranes	1	8	231	0.29	0.6	666	10,708	
Building Construction	Forklifts	1	8	89	0.2	0.6	666	2,845	
Building Construction	Generator Sets	1	8	84	0.74	0.6	666	9,936	
Building Construction	Rough Terrain Forklifts	1	8	100	0.4	0.6	666	6,394	
Building Construction	Signal Boards	2	8	6	0.82	0.6	666	1,573	
Building Construction	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	666	5,737	
Building Construction	Welders	2	8	46	0.45	0.6	666	6,617	
Architectural Coating	Air Compressors	1	8	78	0.48	0.6	130	1,168	
Paving/Landscaping	Cement and Mortar Mixers	1	8	9	0.56	0.6	79	96	
Paving/Landscaping	Pavers	0	8	130	0.42	0.6	79	0	
Paving/Landscaping	Paving Equipment	1	8	132	0.36	0.6	79	901	
Paving/Landscaping	Plate Compactors	1	8	8	0.43	0.6	79	65	
Paving/Landscaping	Rollers	1	8	80	0.38	0.6	79	576	
Paving/Landscaping	Skid Steer Loaders	2	8	65	0.37	0.6	79	912	
Paving/Landscaping	Surfacing Equipment	1	8	263	0.3	0.6	79	1,496	
Paving/Landscaping	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	79	680	
Total Diesel Usage for Construction (Offr								90,392.1	gallons of diesel fuel

gallons of diesel fuel per horsepower-hour= 0.05

Notes: Equipment assumptions are provide in the CalEEMod output files and fuel usage estimate of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

EMFAC2017 Emissions Inventory

Region Type: Air Basin

Region: South Coast

Calendar Year:

2022

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Region	Veh_Class	Fuel	Speed (miles/hr)	Population (vehicles)	VMT (miles/day)	Trips (trips/day)	Fuel_Gas (1000 gallons/day)	Fuel_DSL (1000 gallons/day)	Miles per Gallon
South Coast	LDA	GAS	Aggregate	6,370,883	246,404,319	30,101,253	7,990	0	30.8
South Coast	LDT1	GAS	Aggregate	716,397	26,563,675	3,305,301	1,003	0	26.5
South Coast	LDT2	GAS	Aggregate	2,182,002	82,381,240	10,234,301	3,340	0	24.7
						Construction Worker Trip (Composite LDA/LDT1/LDT2):			28.2
South Coast	HHDT	DSL	Aggregate	98,508	11,795,119	994,225	0	1763.0	6.7

Notes: Consistent with CalEEMod, a construction worker trip is assumed to be a composite of 50% LDA , 25% for LDT1, and 25% for LDT2. Used EMFAC 2011 Categories for construction as EMFAC2011 has specific categories for vehicle class T7.

Calculation of Gasoline and Diesel Usage During Phase 1 Construction (Onroad Vehicles):

Phase Name	Daily Woker Trips	Daily Vendor Trips	Days	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Trip Length (miles)			Total Length (miles)			Avg. Daily Factor (worker and vendor)	Gallons of Fuel	
							Worker	Vendor	Haul	Worker	Vendor	Haul		Gasoline	Diesel
Demolition	40	0	52	2080	0	1250	14.7	6.9	50	30576	0	62500	0.6	650.4	9,341.7
Grading	60	0	79	4740	0	8690	14.7	6.9	50	69678	0	434500	0.6	1,482.2	64,943.6
Foundation	100	150	143	14300	21450	0	14.7	13.8	20	210210	296010	0	0.6	4,471.5	26,546.3
Building Construction	550	20	666	366300	13320	0	14.7	6.9	20	5384610	91908	0	0.6	114,540.0	8,242.4
Architectural Coating	40	0	130	5200	0	0	14.7	6.9	20	76440	0	0	0.6	1,626.0	0.0
Paving/Landscaping	40	10	79	3160	790	0	14.7	6.9	20	46452	5451	0	0.6	988.1	488.8
Total:													123,758.2	109,562.8	

Worker Miles per gallon= 28.21 gasoline
 Vedor/Haul miles per gallon= 6.69 diesel

Notes: Consistent with CalEEMod worker vehicles are assumed to be gasoline and 50% LDA, 25%LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy Duty Trucks (T7).

Construction Electricity Usage**Caterpillar 40-C4.4 Generator^a**

Peak Power Rating - Prime (kW)	36
Typical Load	70%
Average Output (kW)	25.2
Hours per Day	2
Average Daily Output (kWh)	50.4
Building Construction Phase Duration (days)	666
Total Construction (kWh)	33,566
Total Construction (MWh)	33.6

^a<https://www.albancat.com/content/uploads/2014/06/40-C4.4-Spec-Sheet.pdf>

Water Usage for Control of Fugitive Dust during Construction:

Phase	Days	Average Daily Acreage Disturbed	Gallons Per Year	Electricity (kWhr)
Demolition	52	0.5	78,520	764
Grading	79	0.5	119,290	1,160
Foundation	143	0.5	215,930	2,100
Building Construction	666	0.1	201,132	1,956
Architectural Coating	130	0	0	0
Paving/Landscaping	79	0	0	0
Total:			614,872	5,981

Water application rate= 3020 gal/acre/day
 kWhr equivalent= 0.01 kWhr

Notes: 1) Gallons per year of water usage for dust control is calculated based on a minimum control efficiency of 66% (three times daily) with an application rate of 3,020 gal/acre/day (Air & Waste Management Association Air Pollution Engineering Manual (1992 Edition)) and average of 26 construction days per month.

2) CalEEMod Default: Each gallon of delivered potable water in Southern California is associated with 0.009727 kWhr of electricity).

Note: The CARB EMFAC2017 model was used throughout the Energy analysis. However, EMFAC2007 and EMFAC2011 vehicle categories were used within EMFAC2017 for consistency with CalEEMod methodology.

EMFAC2017 Emissions Inventory
 Region Type: Air Basin
 Region: South Coast
 Calendar Year: 2025
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories

Region	CalYr	Season	Veh_Class	Fuel	MdYr	Speed (miles/hr)	Population (vehicles)	VMT (miles/day)	Trips (trips/day)	Fuel_Gas (1000 gallons/day)	Fuel_DSL (1000 gallons/day)			
South Coast	2025	Annual	HHDT	DSL	Aggregated	Aggregated	104,110	12,515,660	1,062,535	0.00	1,707.97			
South Coast	2025	Annual	HHDT	GAS	Aggregated	Aggregated	73	8,703	1,459	1.95	0.00			
South Coast	2025	Annual	LDA	DSL	Aggregated	Aggregated	66,922	2,593,390	318,756	0.00	49.38			
South Coast	2025	Annual	LDA	GAS	Aggregated	Aggregated	6,623,933	247,134,863	31,282,323	7,386.88	0.00			
South Coast	2025	Annual	LDT1	DSL	Aggregated	Aggregated	307	7,182	1,077	0.00	0.30			
South Coast	2025	Annual	LDT1	GAS	Aggregated	Aggregated	778,182	27,926,963	3,602,143	977.96	0.00			
South Coast	2025	Annual	LDT2	DSL	Aggregated	Aggregated	17,588	702,823	85,874	0.00	18.22			
South Coast	2025	Annual	LDT2	GAS	Aggregated	Aggregated	2,295,149	83,832,765	10,772,144	3,069.91	0.00			
South Coast	2025	Annual	LHDT1	DSL	Aggregated	Aggregated	133,461	5,159,848	1,678,776	0.00	228.71			
South Coast	2025	Annual	LHDT1	GAS	Aggregated	Aggregated	168,882	5,923,526	2,516,094	543.18	0.00			
South Coast	2025	Annual	LHDT2	DSL	Aggregated	Aggregated	53,523	2,005,570	673,257	0.00	98.54			
South Coast	2025	Annual	LHDT2	GAS	Aggregated	Aggregated	29,352	993,571	437,303	104.80	0.00			
South Coast	2025	Annual	MCY	GAS	Aggregated	Aggregated	314,501	2,073,558	629,002	57.47	0.00			
South Coast	2025	Annual	MDV	DSL	Aggregated	Aggregated	40,102	1,517,288	194,655	0.00	51.21			
South Coast	2025	Annual	MDV	GAS	Aggregated	Aggregated	1,560,708	53,567,630	7,229,536	2,429.85	0.00			
South Coast	2025	Annual	MH	DSL	Aggregated	Aggregated	13,231	123,031	1,323	0.00	11.24			
South Coast	2025	Annual	MH	GAS	Aggregated	Aggregated	33,043	315,800	3,306	58.66	0.00			
South Coast	2025	Annual	MHDT	DSL	Aggregated	Aggregated	129,231	8,213,878	1,308,567	0.00	712.54			
South Coast	2025	Annual	MHDT	GAS	Aggregated	Aggregated	25,223	1,297,263	504,661	245.23	0.00			
South Coast	2025	Annual	OBUS	DSL	Aggregated	Aggregated	4,537	338,774	44,085	0.00	37.70			
South Coast	2025	Annual	OBUS	GAS	Aggregated	Aggregated	5,822	228,042	116,485	43.27	0.00			
South Coast	2025	Annual	SBUS	DSL	Aggregated	Aggregated	6,467	204,500	74,625	0.00	25.94			
South Coast	2025	Annual	SBUS	GAS	Aggregated	Aggregated	3,013	116,477	12,051	12.42	0.00			
South Coast	2025	Annual	UBUS	DSL	Aggregated	Aggregated	6	776	25	0.00	0.14			
South Coast	2025	Annual	UBUS	GAS	Aggregated	Aggregated	969	90,836	3,877	16.68	0.00			
												MPG	Gallons Per Mile	
							Totals	456,892,715.68			14,948.24	2,941.88	25.5	0.04
							Total (GAS)	423,509,995.51	0.93				28.3	0.04
							Total (DSL)	33,382,720.17	0.07				11.3	0.09

Baseline Year
 Calendar Year: 2019
 Season: Annual
 Vehicle Classification: EMFAC2007 Categories

Region	CalYr	Season	Veh_Class	Fuel	MdYr	Speed (miles/hr)	Population (vehicles)	VMT (miles/day)	Trips (trips/day)	Fuel_Gas (1000 gallons/day)	Fuel_DSL (1000 gallons/day)			
South Coast	2019	Annual	HHDT	DSL	Aggregated	Aggregated	92,086	11,035,510	918,238	0.00	1,756.36			
South Coast	2019	Annual	HHDT	GAS	Aggregated	Aggregated	101	7,659	2,026	2.00	0.00			
South Coast	2019	Annual	LDA	DSL	Aggregated	Aggregated	45,875	1,896,329	216,399	0.00	42.12			
South Coast	2019	Annual	LDA	GAS	Aggregated	Aggregated	6,081,048	244,446,391	28,695,373	8,546.80	0.00			
South Coast	2019	Annual	LDT1	DSL	Aggregated	Aggregated	482	11,462	1,689	0.00	0.52			
South Coast	2019	Annual	LDT1	GAS	Aggregated	Aggregated	651,943	24,807,246	2,983,370	1,008.68	0.00			
South Coast	2019	Annual	LDT2	DSL	Aggregated	Aggregated	9,665	445,810	48,035	0.00	13.63			
South Coast	2019	Annual	LDT2	GAS	Aggregated	Aggregated	2,073,197	80,872,282	9,694,322	3,631.58	0.00			
South Coast	2019	Annual	LHDT1	DSL	Aggregated	Aggregated	97,013	4,044,995	1,220,296	0.00	195.55			
South Coast	2019	Annual	LHDT1	GAS	Aggregated	Aggregated	175,207	6,463,196	2,610,330	629.75	0.00			
South Coast	2019	Annual	LHDT2	DSL	Aggregated	Aggregated	37,900	1,552,333	476,734	0.00	83.01			
South Coast	2019	Annual	LHDT2	GAS	Aggregated	Aggregated	28,635	1,024,337	426,614	114.60	0.00			
South Coast	2019	Annual	MCY	GAS	Aggregated	Aggregated	259,354	1,869,286	518,708	51.29	0.00			
South Coast	2019	Annual	MDV	DSL	Aggregated	Aggregated	23,710	1,023,301	117,204	0.00	40.71			
South Coast	2019	Annual	MDV	GAS	Aggregated	Aggregated	1,497,221	54,845,361	6,911,949	2,999.26	0.00			
South Coast	2019	Annual	MH	DSL	Aggregated	Aggregated	11,071	110,800	1,107	0.00	10.76			
South Coast	2019	Annual	MH	GAS	Aggregated	Aggregated	35,590	335,289	3,560	67.31	0.00			
South Coast	2019	Annual	MHDT	DSL	Aggregated	Aggregated	114,051	7,128,971	1,136,926	0.00	714.72			
South Coast	2019	Annual	MHDT	GAS	Aggregated	Aggregated	24,591	1,348,347	492,013	274.04	0.00			
South Coast	2019	Annual	OBUS	DSL	Aggregated	Aggregated	4,004	293,205	39,273	0.00	37.06			
South Coast	2019	Annual	OBUS	GAS	Aggregated	Aggregated	5,873	259,979	117,514	53.24	0.00			
South Coast	2019	Annual	SBUS	DSL	Aggregated	Aggregated	6,233	197,082	71,923	0.00	26.67			
South Coast	2019	Annual	SBUS	GAS	Aggregated	Aggregated	2,128	88,942	8,510	9.98	0.00			
South Coast	2019	Annual	UBUS	DSL	Aggregated	Aggregated	18	1,877	73	0.00	0.30			
South Coast	2019	Annual	UBUS	GAS	Aggregated	Aggregated	931	87,702	3,725	18.65	0.00			
												MPG	Gallons Per Mile	
							Totals	444,197,691.29			17,407.18	2,921.42	21.9	0.05
							Total (GAS)	416,456,015.85	0.94		6,353,621.59	1,066,317.42	23.9	0.04
							Total (DSL)	27,741,675.44	0.06				9.5	0.11

**8th, Grand and Hope - Existing Operations Buildout Year
Los Angeles-South Coast County, Annual**

Land Use Details

<i>Land Uses</i>	<i>Size</i>	<i>Metric</i>	<i>Lot Acreage</i>	<i>Floor Surface Area</i>	<i>Population</i>
Unenclosed Parking with Elevator	324.00	Space	0.83	129,600.00	0

Trip Summary Information

<i>Land Uses</i>	<i>Average Daily Trip Rate</i>			<i>Annual VMT</i>
	<i>Weekday</i>	<i>Saturday</i>	<i>Sunday</i>	
Unenclosed Parking with Elevator	0.0	0.0	0.0	0
Total	0.00	0.00	0.00	0

Gasoline and Diesel Usage

	<i>Buildout Year</i>		<i>Existing (Baseline) Year</i>	
	<i>Gasoline</i>	<i>Diesel</i>	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	28.3	11.3	23.9	9.5
<i>% Fleet Mix</i>	92.7%	7.3%	93.8%	6.2%
Total (Gallons):	0	0	0	0

Energy by Land Use - Natural Gas

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Unenclosed Parking with Elevator	-	0
Total	0	0

Energy by Land Use - Electricity

<i>Land Uses</i>	<i>kWH/yr</i>
Unenclosed Parking with Elevator	251,424
Total	251,424

Water Detail

<i>Land Uses</i>	<i>Indoor Use</i>		<i>Electricity</i>
	<i>(Mgal)</i>	<i>Use (Mgal)</i>	<i>Use (kWh/yr)</i>
Unenclosed Parking with Elevator	0.000	0.000	0
Total	0.00	0.00	0

Notes: Indoor water results in 0.0111 kWhr of electricity usage per gallon from delivery, treatment, and distribution of water within Southern California (CalEEMod). Outdoor water results in 0.009727 kWhr of electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod).

**8th, Grand and Hope - Buildout Operations Without Project Features
Los Angeles-South Coast County, Annual**

Land Use Details

<i>Land Uses</i>	<i>Size</i>	<i>Metric</i>	<i>Lot Acreage</i>	<i>Floor Surface Area</i>	<i>Population</i>
Enclosed Parking with Elevator	198.00	Space	0.00	79,200.00	0
Unenclosed Parking with Elevator	438.00	Space	0.00	175,200.00	0
Apartments High Rise	580.00	Dwelling Unit	0.83	548,960.00	1404
Strip Mall	7.50	1000sqft	0.00	7,499.00	0

Trip Summary Information

<i>Land Uses</i>	<i>Average Daily Trip Rate</i>			<i>Annual VMT</i>
	<i>Weekday</i>	<i>Saturday</i>	<i>Sunday</i>	
Apartments High Rise	0	0	0	0
Enclosed Parking with Elevator	0	0	0	0
Strip Mall	0	0	0	0
Unenclosed Parking with Elevator	0	0	0	0
User Defined Commercial	2,398	2,398	2,398	3,133,864
Total	2,398	2,398	2,398	3,133,864

Gasoline and Diesel Usage

	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	28.3	11.3
<i>% Fleet Mix</i>	92.7%	7.3%
Total (Gallons):	102,531	20,179

Energy by Land Use - Natural Gas

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Apartments High Rise	5345830.0	5,091,267
Enclosed Parking with Elevator	0.0	0
Strip Mall	12298.4	11,713
Unenclosed Parking with Elevator	0.0	0
User Defined Commercial	0.0	0
Total	5,358,128	5,102,979

Energy by Land Use - Electricity

<i>Land Uses</i>	<i>kWH/yr</i>
Apartments High Rise	2,348,559
Enclosed Parking with Elevator	236,016
Strip Mall	101,237
Unenclosed Parking with Elevator	441,504
Total	3,127,316

Water Detail (Unmitigated)

<i>Land Uses</i>	<i>Indoor Use (Mgal)</i>	<i>Outdoor Use (Mgal)</i>	<i>Electricity Use (kWh/yr)</i>
Apartments High Rise	37.789	23.824	651,610
Enclosed Parking with Elevator	0.000	0.000	0
Strip Mall	0.556	0.340	9,485
Unenclosed Parking with Elevator	0.000	0.000	0
Total	38.34	24.16	661,095

Notes: Indoor water results in 0.0111 kWhr of electricity usage per gallon from delivery, treatment, and distribution of water within Southern California (CalEEMod). Outdoor water results in 0.009727 kWhr of electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod).

**8th, Grand and Hope - Buildout Operations
Los Angeles-South Coast County, Annual**

Land Use Details

<i>Land Uses</i>	<i>Size</i>	<i>Metric</i>	<i>Lot Acreage</i>	<i>Floor Surface Area</i>	<i>Population</i>
User Defined Commercial	1.00	User Defined U	0.00	1.00	0
Enclosed Parking with Elevator	198.00	Space	0.00	79,200.00	0
Unenclosed Parking with Elevator	438.00	Space	0.00	175,200.00	0
Apartments High Rise	580.00	Dwelling Unit	0.83	548,960.00	1404
Strip Mall	7.50	1000sqft	0.00	7,499.00	0

Trip Summary Information

<i>Land Uses</i>	<i>Average Daily Trip Rate</i>			<i>Mitigated</i>
	<i>Weekday</i>	<i>Saturday</i>	<i>Sunday</i>	
Apartments High Rise	0	0	0	0
Enclosed Parking with Elevator	0.0	0.0	0.0	0
Strip Mall	0.0	0.0	0.0	0
Unenclosed Parking with Elevator	0.0	0.0	0.0	0
User Defined Commercial	2,398	2,398	2,398	3,133,864
Total	2,398	2,398	2,398	3,133,864

Mitigated Gasoline and Diesel Usage

	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	28.3	11.3
<i>% Fleet Mix</i>	92.7%	7.3%
Total (Gallons):	102,531	20,179

Note: Fleet mix is 92.3% gasoline @ 30.6 miles/gallon and 7.7% diesel @ 12.1 miles/gallon.

Energy by Land Use - Natural Gas (Mitigated)

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Apartments High Rise	5,091,440	4,848,990
Enclosed Parking with Elevator	0	0
Strip Mall	11,436	10,891
Unenclosed Parking with Elevator	0	0
Total	5,102,876	4,859,882

Energy by Land Use - Electricity (Mitigated)

<i>Land Uses</i>	<i>kWh/yr</i>
Apartments High Rise	2,283,208
Enclosed Parking with Elevator	186,239
Strip Mall	86,494
Unenclosed Parking with Elevator	339,450
Total	2,895,390

Note: Reduction in electricity usage reflects implementation of CalGreen and 2019 Title 24 which exceeds 2016 Title 24 by at least 10 percent for energy efficiency, based on 2016 standards and 25% for lighting).

Water Detail (Unmitigated)

<i>Land Uses</i>	<i>Indoor Use (Mgal)</i>	<i>Outdoor Use (Mgal)</i>	<i>Electricity Use (kWh/yr)</i>
Apartments High Rise	30.232	19.059	521,289
Enclosed Parking with Elevator	0.000	0.000	0
Strip Mall	0.444	0.272	7,588
Unenclosed Parking with Elevator	0.000	0.000	0
Total	30.68	19.33	528,877

Notes: Indoor water results in 0.0111 kWhr of electricity usage per gallon from delivery, treatment, and distribution of water within Southern California (CalEEMod). Outdoor water results in 0.009727 kWhr of electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod). The City of Los Angeles Green Building Code (Chapter IX, Article 9, of the LAMC) requires newly constructed non-residential and high-rise residential buildings to reduce indoor water use by at least 20 percent by: (1) using water saving fixtures or flow restrictions; and/or (2) demonstrating a 20 percent reduction in baseline water

Peak Electricity Demand Calculations

Electrical Load Factor Equation

$$f_{Load} = \frac{\text{Average load}}{\text{Maximum load in given time period}}$$

Load Factor (%)¹ **52%**

Project Electricity Demand (Operational)

Annual Demand	Baseline	
	(Existing)	Project
Building (MWh)	0	2,844
Water (MWh)	0	529
Total (MWh)	0	3,373

Average Daily Demand		
Building (kWh)	0	7,791
Water (kWh)	0	1,449
Total (kWh)	0	9,240

Average Load		
Building (kW)	0	325
Water (kW)	0	60
Total (kW)	0	385

Peak Load Calculation

Peak Load (kW) ²	0	685
Systemwide Peak Load (MW)		5,854
Percent of Peak		0.012%

¹2017 Report: System Efficiency of California's Electric Grid. California Public Utilities Co 2017. Page 11, Figure 6. Visual estimate.

² Peak Load is conservatively calculated without any reductions from removal of existing uses.

Existing Fuel Consumption for LA County

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: LOS ANGELES

Calendar Year: 2019

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Y	Vehicle Cat	Fuel	Population	VMT	Trips	Fuel Consumption	Annual Diesel (gallons)	Annual Gasoline (gallons)
LOS ANGEL	2019	HHDT	GAS		70	5,792	1,405	1.523168207	
LOS ANGEL	2019	HHDT	DSL	54,812	6,603,619	543,252	1069.423537		
LOS ANGEL	2019	HHDT	NG	2,081	84,666	8,117	39.44724398		
LOS ANGEL	2019	LDA	GAS	3,910,633	155,554,966	18,429,245	5534.467921		
LOS ANGEL	2019	LDA	DSL	28,694	1,164,035	134,586	26.61758667		
LOS ANGEL	2019	LDA	ELEC	48,807	1,892,040	245,523	0		
LOS ANGEL	2019	LDT1	GAS	422,288	16,201,420	1,934,642	668.3866199		
LOS ANGEL	2019	LDT1	DSL	354	8,935	1,263	0.420503689		
LOS ANGEL	2019	LDT1	ELEC	1,203	40,998	5,783	0		
LOS ANGEL	2019	LDT2	GAS	1,322,659	51,708,278	6,182,580	2360.887797		
LOS ANGEL	2019	LDT2	DSL	6,288	288,595	31,262	9.026741232		
LOS ANGEL	2019	LDT2	ELEC	6,372	223,212	32,483	0		
LOS ANGEL	2019	LHDT1	GAS	109,171	4,065,289	1,626,492	399.8502533		
LOS ANGEL	2019	LHDT1	DSL	52,085	2,287,937	655,168	109.966414		
LOS ANGEL	2019	LHDT2	GAS	17,626	632,472	262,600	71.41417543		
LOS ANGEL	2019	LHDT2	DSL	20,921	888,923	263,160	47.4169888		
LOS ANGEL	2019	MCY	GAS	159,698	1,179,045	319,395	32.88189308		
LOS ANGEL	2019	MDV	GAS	910,342	32,993,615	4,202,927	1833.649813		
LOS ANGEL	2019	MDV	DSL	14,081	599,298	69,775	24.3209761		
LOS ANGEL	2019	MDV	ELEC	1,208	42,517	6,156	0		
LOS ANGEL	2019	MH	GAS	19,930	196,954	1,994	39.83124756		
LOS ANGEL	2019	MH	DSL	5,223	55,384	522	5.433139501		
LOS ANGEL	2019	MHDT	GAS	14,515	803,916	290,410	165.3190893		
LOS ANGEL	2019	MHDT	DSL	63,348	3,902,064	619,932	398.9359112		
LOS ANGEL	2019	OBUS	GAS	4,075	182,512	81,541	37.6754357		
LOS ANGEL	2019	OBUS	DSL	2,993	221,332	29,464	28.24953109		
LOS ANGEL	2019	SBUS	GAS	1,086	46,379	4,343	5.180408747		
LOS ANGEL	2019	SBUS	DSL	3,791	120,178	43,750	16.21254828		
LOS ANGEL	2019	UBUS	GAS	451	32,997	1,805	8.150533952		
LOS ANGEL	2019	UBUS	DSL	41	5,505	165	0.856786864		
LOS ANGEL	2019	UBUS	ELEC	14	1,218	56	0		
LOS ANGEL	2019	UBUS	NG	4,100	434,419	16,399	109.2870991		

EMFAC Emission inventories for County

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: **2022** (Construction Start Year)

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Fuel_Gasoline (1000 gallons/day)	Fuel_DSL (1000 gallons/day)
Los Angeles	2022	HHDT	Aggregatec	Aggregatec	DSL	0.00	1762.99
Los Angeles	2022	HHDT	Aggregatec	Aggregatec	GAS	1.88	0.00
Los Angeles	2022	LDA	Aggregatec	Aggregatec	DSL	0.00	47.39
Los Angeles	2022	LDA	Aggregatec	Aggregatec	GAS	7989.70	0.00
Los Angeles	2022	LDT1	Aggregatec	Aggregatec	DSL	0.00	0.39
Los Angeles	2022	LDT1	Aggregatec	Aggregatec	GAS	1003.18	0.00
Los Angeles	2022	LDT2	Aggregatec	Aggregatec	DSL	0.00	16.65
Los Angeles	2022	LDT2	Aggregatec	Aggregatec	GAS	3339.89	0.00
Los Angeles	2022	LHDT1	Aggregatec	Aggregatec	DSL	0.00	217.11
Los Angeles	2022	LHDT1	Aggregatec	Aggregatec	GAS	583.23	0.00
Los Angeles	2022	LHDT2	Aggregatec	Aggregatec	DSL	0.00	92.89
Los Angeles	2022	LHDT2	Aggregatec	Aggregatec	GAS	110.13	0.00
Los Angeles	2022	MCY	Aggregatec	Aggregatec	GAS	54.92	0.00
Los Angeles	2022	MDV	Aggregatec	Aggregatec	DSL	0.00	47.80
Los Angeles	2022	MDV	Aggregatec	Aggregatec	GAS	2704.45	0.00
Los Angeles	2022	MH	Aggregatec	Aggregatec	DSL	0.00	11.12
Los Angeles	2022	MH	Aggregatec	Aggregatec	GAS	62.96	0.00
Los Angeles	2022	MHDT	Aggregatec	Aggregatec	DSL	0.00	720.16
Los Angeles	2022	MHDT	Aggregatec	Aggregatec	GAS	259.39	0.00
Los Angeles	2022	OBUS	Aggregatec	Aggregatec	DSL	0.00	37.46
Los Angeles	2022	OBUS	Aggregatec	Aggregatec	GAS	47.77	0.00
Los Angeles	2022	SBUS	Aggregatec	Aggregatec	DSL	0.00	26.42
Los Angeles	2022	SBUS	Aggregatec	Aggregatec	GAS	11.27	0.00
Los Angeles	2022	UBUS	Aggregatec	Aggregatec	DSL	0.00	0.25
Los Angeles	2022	UBUS	Aggregatec	Aggregatec	GAS	18.40	0.00
						5,908,313,954	1,087,928,967
Fuel Usage for Project Construction						123,758	199,955
Percentage of County for Construction						0.0021%	0.018%

EMFAC Emission inventories for County

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: **2025** (Operational Start Year)

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Fuel_Gasoline (1000 gallons/day)	Fuel_DSL (1000 gallons/day)
Los Angeles	2025	HHDT	Aggregatec	Aggregatec	DSL	0.00	1707.97
Los Angeles	2025	HHDT	Aggregatec	Aggregatec	GAS	1.95	0.00
Los Angeles	2025	LDA	Aggregatec	Aggregatec	DSL	0.00	49.38
Los Angeles	2025	LDA	Aggregatec	Aggregatec	GAS	7386.88	0.00
Los Angeles	2025	LDT1	Aggregatec	Aggregatec	DSL	0.00	0.30
Los Angeles	2025	LDT1	Aggregatec	Aggregatec	GAS	977.96	0.00
Los Angeles	2025	LDT2	Aggregatec	Aggregatec	DSL	0.00	18.22
Los Angeles	2025	LDT2	Aggregatec	Aggregatec	GAS	3069.91	0.00
Los Angeles	2025	LHDT1	Aggregatec	Aggregatec	DSL	0.00	228.71
Los Angeles	2025	LHDT1	Aggregatec	Aggregatec	GAS	543.18	0.00
Los Angeles	2025	LHDT2	Aggregatec	Aggregatec	DSL	0.00	98.54
Los Angeles	2025	LHDT2	Aggregatec	Aggregatec	GAS	104.80	0.00
Los Angeles	2025	MCY	Aggregatec	Aggregatec	GAS	57.47	0.00
Los Angeles	2025	MDV	Aggregatec	Aggregatec	DSL	0.00	51.21
Los Angeles	2025	MDV	Aggregatec	Aggregatec	GAS	2429.85	0.00
Los Angeles	2025	MH	Aggregatec	Aggregatec	DSL	0.00	11.24
Los Angeles	2025	MH	Aggregatec	Aggregatec	GAS	58.66	0.00
Los Angeles	2025	MHDT	Aggregatec	Aggregatec	DSL	0.00	712.54
Los Angeles	2025	MHDT	Aggregatec	Aggregatec	GAS	245.23	0.00
Los Angeles	2025	OBUS	Aggregatec	Aggregatec	DSL	0.00	37.70
Los Angeles	2025	OBUS	Aggregatec	Aggregatec	GAS	43.27	0.00
Los Angeles	2025	SBUS	Aggregatec	Aggregatec	DSL	0.00	25.94
Los Angeles	2025	SBUS	Aggregatec	Aggregatec	GAS	12.42	0.00
Los Angeles	2025	UBUS	Aggregatec	Aggregatec	DSL	0.00	0.14
Los Angeles	2025	UBUS	Aggregatec	Aggregatec	GAS	16.68	0.00
						5,456,109,145	1,073,785,458
Net Fuel Usage for Project Operation						102,531	20,179
Percentage of County for Operation						0.0019%	0.0019%