

# **Appendix E**

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## Energy Calculations

# Mt. Lebanon Project

## Draft EIR

### Appendix F

## Energy Analysis Spreadsheets

- Appendix F: Energy Analysis
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  - Construction Energy Usage
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    - On-Road Fuel Usage Rates
    - On-Road Vehicles
    - Construction Water Usage
  - Operational Energy Usage
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    - Baseline (Existing Operations)
    - Buildout without Project Design Features
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    - Total County Fuel Consumption

## Mt. Lebanon Project

### Summary of Energy Use During Construction

<b>Electricity</b>	
Water Consumption	3,945 kWh
Temporary Power (lighting, tools)	24,091 kWh
<b>Total:</b>	<b>28,036 kWh</b>
<b>Gasoline</b>	
On Road	59,639 Gallons
Off Road	0 Gallons
<b>Total:</b>	<b>59,639 Gallons</b>
<b>Diesel</b>	
On Road	128,158 Gallons
Off Road	79,172 Gallons
<b>Total:</b>	<b>207,329 Gallons</b>
<b>Total Mobile</b>	<b>266,968</b>

### Summary of Energy Use During Operations

	Baseline (Buildout)	Buildout Without Project Features	Buildout With Project Features		Percent Reduction due to Project Features
<b>Electricity<sup>a</sup></b>					
Electricity (building)	213,320	1,335,202	1,194,714	kWh/year	-11%
Electricity (water)	15,831	199,661	159,729	kWh/year	-20%
EV Chargers	0	0	24,114	kWh/year	
<b>Electricity Total</b>	<b>229,151</b>	<b>1,534,863</b>	<b>1,378,556</b>	<b>kWh/year</b>	<b>-10%</b>
<b>Natural Gas<sup>b</sup></b>	<b>331,282</b>	<b>2,237,484</b>	<b>1,647,341</b>	<b>cu ft/year</b>	<b>-26%</b>
<b>Mobile<sup>c</sup></b>					
Gasoline	10,873	89,757	47,443	Gallons/year	-47%
Diesel	2,076	17,137	9,058	Gallons/year	-47%
<b>Mobile Total</b>	<b>12,949</b>	<b>106,894</b>	<b>56,501</b>	<b>Gallons/year</b>	<b>-47%</b>

<sup>a</sup> Reductions are based on implementation of project design feature GHG-PDF-1 which requires LED lighting to reduce electricity usage.

<sup>b</sup> Reductions are based on implementation of project design feature GHG-PDF-4 which prohibits natural gas fireplaces within residential units.

<sup>c</sup> Reductions are based on the LADOT VMT Calculator inputs for population density, proximity to mass transit and intersections near the Project Site

## Construction Electricity Usage

### Construction Electricity Usage

#### Caterpillar 40-C4.4 Generator<sup>a</sup>

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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)	478
Total Construction (kWh)	24,091
Total Construction (MWh)	24.1

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

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	Concrete/Industrial Saws	0	8	81	0.73	0.6	131	0	
Demolition	Excavators	1	8	158	0.38	0.6	131	1,888	
Demolition	Rubber Tired Dozers	0	8	247	0.4	0.6	131	0	
Demolition	Rubber Tired Loaders	1	8	203	0.36	0.6	131	2,298	
Demolition	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	131	1,128	
Grading	Air Compressors	2	8	78	0.48	0.6	129	2,318	
Grading	Bore/Drill Rigs	2	8	221	0.5	0.6	129	6,842	
Grading	Cranes	1	8	231	0.29	0.6	129	2,074	
Grading	Excavators	1	8	158	0.38	0.6	129	1,859	
Grading	Generator Sets	1	8	84	0.74	0.6	129	1,924	
Grading	Graders	1	8	187	0.41	0.6	129	2,374	
Grading	Other Material Handling Equipment	1	8	168	0.4	0.6	129	2,081	
Grading	Rubber Tired Dozers	0	8	247	0.4	0.6	129	0	
Grading	Rubber Tired Loaders	1	8	203	0.36	0.6	129	2,263	
Grading	Tractors/Loaders/Backhoes	0	7	97	0.37	0.6	129	0	
Mat Foundation	Cranes	1	8	231	0.29	0.6	2	32	
Mat Foundation	Forklifts	1	8	89	0.2	0.6	2	9	
Mat Foundation	Generator Sets	1	8	84	0.74	0.6	2	30	
Mat Foundation	Pumps	4	8	84	0.74	0.6	2	119	
Mat Foundation	Tractors/Loaders/Backhoes	0	6	97	0.37	0.6	2	0	
Mat Foundation	Welders	0	8	46	0.45	0.6	2	0	
Building Foundation	Air Compressors	1	8	78	0.48	0.6	41	368	
Building Foundation	Cranes	1	8	231	0.29	0.6	41	659	
Building Foundation	Forklifts	1	8	89	0.2	0.6	41	175	
Building Foundation	Generator Sets	0	8	84	0.74	0.6	41	0	
Building Foundation	Plate Compactors	3	8	8	0.43	0.6	41	102	
Building Foundation	Pumps	1	8	84	0.74	0.6	41	612	
Building Foundation	Rubber Tired Loaders	1	8	203	0.36	0.6	41	719	
Building Foundation	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	41	353	
Building Foundation	Welders	0	8	46	0.45	0.6	41	0	
Building Construction	Air Compressors	2	8	78	0.48	0.6	478	8,590	
Building Construction	Cranes	2	8	231	0.29	0.6	478	15,370	
Building Construction	Forklifts	2	8	89	0.2	0.6	478	4,084	
Building Construction	Generator Sets	0	8	84	0.74	0.6	478	0	
Building Construction	Plate Compactors	2	8	8	0.43	0.6	478	789	
Building Construction	Pumps	2	8	84	0.74	0.6	478	14,262	
Building Construction	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	478	4,117	
Building Construction	Welders	0	8	46	0.45	0.6	478	0	
Paving	Cement and Mortar Mixers	1	8	9	0.56	0.6	65	79	
Paving	Pavers	0	8	130	0.42	0.6	65	0	
Paving	Paving Equipment	1	8	132	0.36	0.6	65	741	
Paving	Rollers	1	8	80	0.38	0.6	65	474	
Paving	Tractors/Loaders/Backhoes	0	8	97	0.37	0.6	65	0	
Architectural Coating	Air Compressors	1	6	78	0.48	0.6	65	438	
		0	0	0	0	0.6	0	0	
<b>Total Diesel Usage for Construction (Offr</b>								<b>79,171.5</b>	<b>gallons of diesel fuel</b>

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.

EMFAC2014 Emissions Inventory

Region Type: Air Basin

Region: South Coast

Calendar Year: 2021

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	6,276,234	246,181,276	29,647,186	8,196	0	30.0
South Coast	LDT1	GAS	Aggregate	695,146	26,066,042	3,200,417	1,010	0	25.8
South Coast	LDT2	GAS	Aggregate	2,144,804	81,991,236	10,052,342	3,442	0	23.8
<b>Construction Worker Trip (Composite LDA/LDT1/LDT2):</b>									<b>27.4</b>
South Coast	HHDT	DSL	Aggregate	96,727	11,545,820	974,406	0	1774.2	<b>6.5</b>

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	50	0	131	6550	0	2620	14.7	6.9	72	96285	0	188640	0.6	2,106.2	28,987.5
Grading	60	5	129	7740	645	8127	14.7	6.9	72	113778	4450.5	585144	0.6	2,488.8	90,326.9
Mat Foundation	60	348	2	120	696	0	14.7	13.8	20	1764	9604.8	0	0.6	38.6	885.6
Building Foundation	60	64	41	2460	2624	0	14.7	6.9	20	36162	18105.6	0	0.6	791.0	1,669.3
Building Construction	350	20	478	167300	9560	0	14.7	6.9	20	2459310	65964	0	0.6	53,796.1	6,081.8
Paving	20	5	65	1300	325	0	14.7	6.9	20	19110	2242.5	0	0.6	418.0	206.8
Architectural Coating	0	0	65	0	0	0	14.7	6.9	20	0	0	0	0.6	0.0	0.0
<b>Total:</b>														<b>59,638.7</b>	<b>128,157.9</b>

Worker Miles per gallon= 27.43 gasoline  
 Vedor/Haul miles per gallon= 6.51 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).  
 Worker and haul trips for the architectural coating phase are included as part of the building construction phase

**Water Usage for Control of Fugitive Dust during Construction:**

Phase	Days	Average Daily Acreage Disturbed	Gallons Per Year	Electricity (kWhr)
Demolition	131	0.5	197,810	1,924
Grading	129	0.5	194,790	1,895
Mat Foundation	2	0.1	604	6
Building Foundation	41	0.1	12,382	120
Building Construction	478	0	0	0
Paving	65	0	0	0
<b>Total:</b>			<b>405,586</b>	<b>3,945</b>

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).



EMFAC2014 Emissions Inventory  
 Region Type: Air Basin  
 Region: South Coast  
 Calendar Year: 2024  
 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	2024	Annual	HHDT	DSL	Aggregated	Aggregated	102,344	12,300,372	1,038,748	0.00	1,709.32			
South Coast	2024	Annual	HHDT	GAS	Aggregated	Aggregated	73	8,361	1,468	1.92	0.00			
South Coast	2024	Annual	LDA	DSL	Aggregated	Aggregated	63,999	2,508,733	304,607	0.00	49.13			
South Coast	2024	Annual	LDA	GAS	Aggregated	Aggregated	6,543,322	247,047,080	30,912,773	7,604.65	0.00			
South Coast	2024	Annual	LDT1	DSL	Aggregated	Aggregated	329	7,658	1,150	0.00	0.33			
South Coast	2024	Annual	LDT1	GAS	Aggregated	Aggregated	758,038	27,517,267	3,506,784	990.06	0.00			
South Coast	2024	Annual	LDT2	DSL	Aggregated	Aggregated	16,403	669,970	80,362	0.00	17.87			
South Coast	2024	Annual	LDT2	GAS	Aggregated	Aggregated	2,256,847	83,361,536	10,593,017	3,162.71	0.00			
South Coast	2024	Annual	LHDT1	DSL	Aggregated	Aggregated	127,721	5,014,850	1,606,565	0.00	225.94			
South Coast	2024	Annual	LHDT1	GAS	Aggregated	Aggregated	169,468	5,984,463	2,524,826	556.70	0.00			
South Coast	2024	Annual	LHDT2	DSL	Aggregated	Aggregated	51,054	1,946,190	642,191	0.00	97.16			
South Coast	2024	Annual	LHDT2	GAS	Aggregated	Aggregated	29,259	998,729	435,923	106.81	0.00			
South Coast	2024	Annual	MCY	GAS	Aggregated	Aggregated	306,168	2,050,950	612,337	56.79	0.00			
South Coast	2024	Annual	MDV	DSL	Aggregated	Aggregated	37,681	1,454,315	183,502	0.00	50.53			
South Coast	2024	Annual	MDV	GAS	Aggregated	Aggregated	1,550,012	53,715,244	7,176,828	2,521.85	0.00			
South Coast	2024	Annual	MH	DSL	Aggregated	Aggregated	12,907	121,381	1,291	0.00	11.24			
South Coast	2024	Annual	MH	GAS	Aggregated	Aggregated	33,327	318,279	3,334	60.14	0.00			
South Coast	2024	Annual	MHDT	DSL	Aggregated	Aggregated	124,153	8,073,272	1,252,041	0.00	712.06			
South Coast	2024	Annual	MHDT	GAS	Aggregated	Aggregated	25,072	1,303,434	501,644	250.47	0.00			
South Coast	2024	Annual	OBUS	DSL	Aggregated	Aggregated	4,310	331,728	41,803	0.00	37.72			
South Coast	2024	Annual	OBUS	GAS	Aggregated	Aggregated	5,824	231,713	116,530	44.76	0.00			
South Coast	2024	Annual	SBUS	DSL	Aggregated	Aggregated	6,430	203,278	74,205	0.00	26.12			
South Coast	2024	Annual	SBUS	GAS	Aggregated	Aggregated	2,862	111,917	11,449	12.05	0.00			
South Coast	2024	Annual	UBUS	DSL	Aggregated	Aggregated	10	1,205	42	0.00	0.21			
South Coast	2024	Annual	UBUS	GAS	Aggregated	Aggregated	963	90,309	3,854	17.14	0.00			
											<b>MPG</b>	Gallons Per Mile		
							Totals	455,372,232.13			15,386.05	2,937.64	<b>24.9</b>	0.04
							Total (GAS)	422,739,281.50	0.93				<b>27.5</b>	0.04
							Total (DSL)	32,632,950.63	0.07				<b>11.1</b>	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			
											<b>MPG</b>	Gallons Per Mile		
							Totals	444,197,691.29			17,407.18	2,921.42	<b>21.9</b>	0.05
							Total (GAS)	416,456,015.85	0.94				<b>23.9</b>	0.04
							Total (DSL)	27,741,675.44	0.06				<b>9.5</b>	0.11

**Mt Lebanon Project - 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>
Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Commercial	1.00	User Definec	0.00	0.00	0
Place of Worship	19.22	1000sqft	0.97	19,218.00	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>	
Place of Worship	0.0	0.0	0.0	0
User Defined Commercial	69.0	273.2	273.2	321,811
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>321,811</b>

**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>	27.5	11.1	23.9	9.5
<i>% Fleet Mix</i>	92.8%	7.2%	93.8%	6.2%
<b>Total (Gallons):</b>	<b>10,873</b>	<b>2,076</b>	<b>12,611</b>	<b>2,117</b>

**Energy by Land Use - Natural Gas**

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Place of Worship	347,846	331,282
<b>Total</b>	<b>347,846</b>	<b>331,282</b>

**Energy by Land Use - Electricity**

<i>Land Uses</i>	<i>kWH/yr</i>
Place of Worship	213,320
<b>Total</b>	<b>213,320</b>

**Water Detail**

<i>Land Uses</i>	<i>Indoor Use</i>		<i>Electricity</i>
	<i>(Mgal)</i>	<i>Outdoor Use (Mgal)</i>	<i>Use (kWh/yr)</i>
Place of Worship	0.601	0.941	15,831
<b>Total</b>	<b>0.60</b>	<b>0.94</b>	<b>15,831</b>

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).

**Mt. Lebanon Project - 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>
General Office Building	3.40	1000sqft	0.97	3,400.00	0
User Defined Commercial	1.00	User Defined Un	0.00	0.00	0
Place of Worship	21.19	1000sqft	0.97	21,191.00	0
Enclosed Parking with Elevator	397.00	Space	3.57	158,800.00	0
Apartments High Rise	153.00	Dwelling Unit	0.97	148,641.00	398

**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
General Office Building	0	0	0	0
Place of Worship	0	0	0	0
User Defined Commercial	1,104	1,740	1,740	2,656,489
<b>Total</b>	<b>1,104</b>	<b>1,740</b>	<b>1,740</b>	<b>2,656,489</b>

Note: Annual VMT was obtained from the CalEEMod output files for Project without PDFs

**Gasoline and Diesel Usage**

	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	27.5	11.1
<i>% Fleet Mix</i>	92.8%	7.2%
<b>Total (Gallons):</b>	<b>89,757</b>	<b>17,137</b>

**Energy by Land Use - Natural Gas**

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Apartments High Rise	1,343,090	1,279,133
Enclosed Parking with Elevator	0	0
General Office Building	31,987	30,464
Place of Worship	354,631	337,744
User Defined Commercial	0	0
Fireplaces	619,650	590,143
<b>Total</b>	<b>2,349,358</b>	<b>2,237,484</b>

Note: CalEEMod provide pollutant emissions associated fireplaces, but does not include natural gas usage in output files. The provided usage rate is consistent with CalEEMod default factors (i.e., 90 percent of DUs have 60,000 btu/hr fireplaces, operate 25 days per year for three hours).

**Energy by Land Use - Electricity**

<i>Land Uses</i>	<i>kWH/yr</i>
Apartments High Rise	603,375
Enclosed Parking with Elevator	458,773
General Office Building	42,602
Place of Worship	230,452
User Defined Commercial	0
<b>Total</b>	<b>1,335,202</b>

**Water Detail**

<i>Land Uses</i>	<i>Indoor Use (Mgal)</i>	<i>Outdoor Use (Mgal)</i>	<i>Electricity Use (kWh/yr)</i>
Apartments High Rise	9.969	6.285	171,890
Enclosed Parking with Elevator	0.000	0.000	0
General Office Building	0.604	0.370	10,317
Place of Worship	0.663	1.037	17,454
User Defined Commercial	0.000	0.000	0
<b>Total</b>	<b>11.24</b>	<b>7.69</b>	<b>199,661</b>

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).

**Mt. Lebanon Project - 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>
Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	3.40	1000sqft	0.97	3,400.00	0
User Defined Commercial	1.00	User Defined U	0.00	0.00	0
Place of Worship	21.19	1000sqft	0.97	21,191.00	0
Enclosed Parking with Elevator	397.00	Space	3.57	158,800.00	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>	
Enclosed Parking with Elevator	0.0	0.0	0.0	0
General Office Building	0.0	0.0	0.0	0
Place of Worship	0.0	0.0	0.0	0
User Defined Commercial	580	914	914	1,404,132
<b>Total</b>	<b>580</b>	<b>914</b>	<b>914</b>	<b>1,404,132</b>

Note: Annual VMT was obtained from the CalEEMod output files for Project with PDFs

**Gasoline and Diesel Usage**

	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	27.5	11.1
<i>% Fleet Mix</i>	92.8%	7.2%
<b>Total (Gallons):</b>	<b>47,443</b>	<b>9,058</b>

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**

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Apartments High Rise	1,343,090	1,279,133
Enclosed Parking with Elevator	0	0
General Office Building	31,987	30,464
Place of Worship	354,631	337,744
User Defined Commercial	0	0
<b>Total</b>	<b>1,729,708</b>	<b>1,647,341</b>

**Energy by Land Use - Electricity**

<i>Land Uses</i>	<i>kWh/yr</i>
Apartments High Rise	575,015
Enclosed Parking with Elevator	366,272
General Office Building	39,398
Place of Worship	214,029
<b>Total</b>	<b>1,194,714</b>

Note: Reduction in electricity usage reflects implementation of CalGreen and GHG-PDF-1 (Exceed Title 24, Part 6, CEC baseline requirements by 10 percent for energy efficiency, based on 2016 standards and 25% for lighting). Reductions are based only on project design features and does not take credit for mitigation measures.

**Water Detail**

<i>Land Uses</i>	<i>Indoor Use (Mgal)</i>	<i>Outdoor Use (Mgal)</i>	<i>Electricity Use (kWh/yr)</i>
Apartments High Rise	7.975	5.028	137,512
Enclosed Parking with Elevator	0.000	0.000	0
General Office Building	0.483	0.296	8,254
Place of Worship	0.530	0.830	13,963
<b>Total</b>	<b>8.99</b>	<b>6.15</b>	<b>159,729</b>

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

## Peak Electricity Demand Calculations

### Electrical Load Factor Equation

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

Load Factor (%)<sup>1</sup> **52%**

### Project Electricity Demand (Operational)

Annual Demand	Baseline	
	(Existing)	Project
Building (MWh)	213	1,195
Water (MWh)	16	160
Total (MWh)	229	1,379

### Average Daily Demand

Building (kWh)	584	3,273
Water (kWh)	43	438
Total (kWh)	628	3,777

### Average Load

Building (kW)	24	136
Water (kW)	2	18
Total (kW)	26	157

### Peak Load Calculation

Peak Load (kW) <sup>2</sup>	49	281
Systemwide Peak Load (MW)		5,854
Percent of Peak		0.005%

<sup>1</sup>2017 Report: System Efficiency of California's Electric Grid. California Public Utilities Co 2017. Page 11, Figure 6. Visual estimate.

<sup>2</sup> Peak Load is conservatively calculated without any reductions from removal of existing uses.

**EMFAC Emission inventories for County**

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: **2021** (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	2021	HHDT	Aggregatec	Aggregatec	DSL	0.00	1774.20
Los Angeles	2021	HHDT	Aggregatec	Aggregatec	GAS	1.89	0.00
Los Angeles	2021	LDA	Aggregatec	Aggregatec	DSL	0.00	46.12
Los Angeles	2021	LDA	Aggregatec	Aggregatec	GAS	8195.76	0.00
Los Angeles	2021	LDT1	Aggregatec	Aggregatec	DSL	0.00	0.43
Los Angeles	2021	LDT1	Aggregatec	Aggregatec	GAS	1009.57	0.00
Los Angeles	2021	LDT2	Aggregatec	Aggregatec	DSL	0.00	15.84
Los Angeles	2021	LDT2	Aggregatec	Aggregatec	GAS	3441.72	0.00
Los Angeles	2021	LHDT1	Aggregatec	Aggregatec	DSL	0.00	211.28
Los Angeles	2021	LHDT1	Aggregatec	Aggregatec	GAS	598.07	0.00
Los Angeles	2021	LHDT2	Aggregatec	Aggregatec	DSL	0.00	90.14
Los Angeles	2021	LHDT2	Aggregatec	Aggregatec	GAS	111.80	0.00
Los Angeles	2021	MCY	Aggregatec	Aggregatec	GAS	53.90	0.00
Los Angeles	2021	MDV	Aggregatec	Aggregatec	DSL	0.00	46.02
Los Angeles	2021	MDV	Aggregatec	Aggregatec	GAS	2808.58	0.00
Los Angeles	2021	MH	Aggregatec	Aggregatec	DSL	0.00	11.04
Los Angeles	2021	MH	Aggregatec	Aggregatec	GAS	64.52	0.00
Los Angeles	2021	MHDT	Aggregatec	Aggregatec	DSL	0.00	727.46
Los Angeles	2021	MHDT	Aggregatec	Aggregatec	GAS	264.51	0.00
Los Angeles	2021	OBUS	Aggregatec	Aggregatec	DSL	0.00	37.68
Los Angeles	2021	OBUS	Aggregatec	Aggregatec	GAS	49.58	0.00
Los Angeles	2021	SBUS	Aggregatec	Aggregatec	DSL	0.00	26.53
Los Angeles	2021	SBUS	Aggregatec	Aggregatec	GAS	10.85	0.00
Los Angeles	2021	UBUS	Aggregatec	Aggregatec	DSL	0.00	0.25
Los Angeles	2021	UBUS	Aggregatec	Aggregatec	GAS	18.46	0.00
						6,069,653,628	1,090,251,415
Fuel Usage for Project Construction						59,639	174,301
Percentage of County for Construction						0.0010%	0.016%

**EMFAC Emission inventories for County**

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: **2024** (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	2024	HHDT	Aggregatec	Aggregatec	DSL	0.00	1709.32
Los Angeles	2024	HHDT	Aggregatec	Aggregatec	GAS	1.92	0.00
Los Angeles	2024	LDA	Aggregatec	Aggregatec	DSL	0.00	49.13
Los Angeles	2024	LDA	Aggregatec	Aggregatec	GAS	7604.65	0.00
Los Angeles	2024	LDT1	Aggregatec	Aggregatec	DSL	0.00	0.33
Los Angeles	2024	LDT1	Aggregatec	Aggregatec	GAS	990.06	0.00
Los Angeles	2024	LDT2	Aggregatec	Aggregatec	DSL	0.00	17.87
Los Angeles	2024	LDT2	Aggregatec	Aggregatec	GAS	3162.71	0.00
Los Angeles	2024	LHDT1	Aggregatec	Aggregatec	DSL	0.00	225.94
Los Angeles	2024	LHDT1	Aggregatec	Aggregatec	GAS	556.70	0.00
Los Angeles	2024	LHDT2	Aggregatec	Aggregatec	DSL	0.00	97.16
Los Angeles	2024	LHDT2	Aggregatec	Aggregatec	GAS	106.81	0.00
Los Angeles	2024	MCY	Aggregatec	Aggregatec	GAS	56.79	0.00
Los Angeles	2024	MDV	Aggregatec	Aggregatec	DSL	0.00	50.53
Los Angeles	2024	MDV	Aggregatec	Aggregatec	GAS	2521.85	0.00
Los Angeles	2024	MH	Aggregatec	Aggregatec	DSL	0.00	11.24
Los Angeles	2024	MH	Aggregatec	Aggregatec	GAS	60.14	0.00
Los Angeles	2024	MHDT	Aggregatec	Aggregatec	DSL	0.00	712.06
Los Angeles	2024	MHDT	Aggregatec	Aggregatec	GAS	250.47	0.00
Los Angeles	2024	OBUS	Aggregatec	Aggregatec	DSL	0.00	37.72
Los Angeles	2024	OBUS	Aggregatec	Aggregatec	GAS	44.76	0.00
Los Angeles	2024	SBUS	Aggregatec	Aggregatec	DSL	0.00	26.12
Los Angeles	2024	SBUS	Aggregatec	Aggregatec	GAS	12.05	0.00
Los Angeles	2024	UBUS	Aggregatec	Aggregatec	DSL	0.00	0.21
Los Angeles	2024	UBUS	Aggregatec	Aggregatec	GAS	17.14	0.00
						5,615,909,317	1,072,239,895
Net Fuel Usage for Project Operation						47,443	9,058
Percentage of County for Operation						0.0008%	0.0008%