Appendix D

Energy Resources Calculations

Bellwood Senior Residential Community

Draft EIR
Appendix D
Energy Analysis Spreadsheets

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Bellwood Senior Housing Project

Summary of Energy Use During Construction

Electricty		
Water Consumption	2,047	kWh
Temporary Power (lighting, tools)	15,221	kWh
Total:	**17,268**	kWh
Gasoline		
On Road	33,541	Gallons
Off Road	0	Gallons
Total:	**33,541**	Gallons
Diesel		
On Road	88,202	Gallons
Off Road	65,142	Gallons
Total:	**153,345**	Gallons
Total Mobile	**186,886**	

Summary of Energy Use During Operations

		Baseline (Buildout)	Buildout Without Project Features	Buildout With Project Features		Percent Reduction due to Project Features	Project Without Project Features - Baseline (Buildout)	Project (Buildout - Baseline (Buildout)
Electricity								
Electricity (building)		558,067	1,484,554	1,360,427	kWh/year	-8%	926,487	802,360
Electricity (water)		125,828	184,383	184,383	kWh/year	0%	58,555	58,555
EV Chargers		0	38,381	38,381	kWh/year		38,381	38,381
	Electricity Total	**683,895**	**1,707,318**	**1,583,191**	**kWh/year**	**-7%**	**1,023,423**	**899,296**
Natural Gas								
Building		**1,947,257**	**2,409,465**	**2,409,465**	cu ft/year	0%	462,208	462,208
Fireplaces		**0**	**740,571**	**77,143**	cu ft/year	-90%	740,571	77,143
	Natural Gas Total	**1,947,257**	**3,150,036**	**2,486,608**	**cu ft/year**	**-21%**	**1,202,779**	**539,350**
Mobile								
Gasoline		39,879	52,680	40,107	Gallons/year	-24%	12,800	229
Diesel		7,360	9,723	7,402	Gallons/year	-24%	2,362	42
	Mobile Total	**47,240**	**62,402**	**47,510**	**Gallons/year**	**-24%**	**15,163**	**271**

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)	302
Total Construction (kWh)	15,221
Total Construction (MWh)	15.2

[a]https://www.albancat.com/content/uploads/2014/06/40-C4.4-Spec-Sheet.pdf

Calculation of Diesel Usage During Cosnstruciton (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	1	8	78	0.48	0.6	41	368	
Demolition	Concrete/Industrial Saws	2	8	81	0.73	0.6	41	1,164	
Demolition	Excavators	0	8	158	0.38	0.6	41	0	
Demolition	Other Construction Equipment	1	2	172	0.42	0.6	41	178	
Demolition	Rubber Tired Dozers	2	8	247	0.4	0.6	41	1,944	
Demolition	Rubber Tired Loaders	2	8	203	0.36	0.6	41	1,438	
Demolition	Tractors/Loaders/Backhoes	2	8	97	0.37	0.6	41	706	
Grading	Bore/Drill Rigs	1	8	221	0.5	0.6	66	1,750	
Grading	Excavators	2	8	158	0.38	0.6	66	1,902	
Grading	Forklifts	1	8	89	0.2	0.6	66	282	
Grading	Graders	0	8	187	0.41	0.6	66	0	
Grading	Other Construction Equipment	1	2	172	0.42	0.6	66	286	
Grading	Rubber Tired Dozers	1	8	247	0.4	0.6	66	1,565	
Grading	Rubber Tired Loaders	1	8	203	0.36	0.6	66	1,158	
Grading	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	66	568	
Grading	Welders	1	8	46	0.45	0.6	66	328	
Mat Foundation	Cement and Mortar Mixers	2	8	9	0.56	0.6	2	5	
Mat Foundation	Cranes	0	7	231	0.29	0.6	2	0	
Mat Foundation	Forklifts	0	8	89	0.2	0.6	2	0	
Mat Foundation	Generator Sets	0	8	84	0.74	0.6	2	0	
Mat Foundation	Pumps	4	8	84	0.74	0.6	2	119	
Mat Foundation	Tractors/Loaders/Backhoes	0	7	97	0.37	0.6	2	0	
Mat Foundation	Welders	2	8	46	0.45	0.6	2	20	
Foundation	Concrete/Industrial Saws	1	8	81	0.73	0.6	152	2,157	
Foundation	Cranes	1	8	231	0.29	0.6	152	2,444	
Foundation	Forklifts	2	8	89	0.2	0.6	152	1,299	
Foundation	Graders	0	8	187	0.41	0.6	152	0	
Foundation	Plate Compactors	4	8	8	0.43	0.6	152	502	
Foundation	Pumps	2	8	84	0.74	0.6	152	4,535	
Foundation	Rough Terrain Forklifts	2	8	100	0.4	0.6	152	2,918	
Foundation	Rubber Tired Dozers	0	8	247	0.4	0.6	152	0	
Foundation	Scrapers	0	8	367	0.48	0.6	152	0	
Foundation	Tractors/Loaders/Backhoes	0	7	97	0.37	0.6	152	0	
Foundation	Welders	2	8	46	0.45	0.6	152	1,510	
Building Construction	Aerial Lifts	2	8	63	0.31	0.6	302	2,831	
Building Construction	Air Compressors	2	8	78	0.48	0.6	302	5,427	
Building Construction	Concrete/Industrial Saws	1	8	81	0.73	0.6	302	4,286	
Building Construction	Cranes	1	8	231	0.29	0.6	302	4,855	
Building Construction	Forklifts	3	8	89	0.2	0.6	302	3,870	
Building Construction	Generator Sets	0	8	84	0.74	0.6	302	0	
Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37	0.6	302	1,951	
Building Construction	Welders	1	8	46	0.45	0.6	302	1,500	
Architectural Coating	Aerial Lifts	4	8	63	0.31	0.6	153	2,869	
Architectural Coating	Air Compressors	4	8	78	0.48	0.6	153	5,499	
Architectural Coating	Forklifts	3	8	89	0.2	0.6	153	1,961	
Paving	Cement and Mortar Mixers	1	8	9	0.56	0.6	22	27	
Paving	Pavers	0	8	130	0.42	0.6	22	0	
Paving	Paving Equipment	1	8	132	0.36	0.6	22	251	
Paving	Plate Compactors	1	8	8	0.43	0.6	22	18	
Paving	Rollers	0	8	80	0.38	0.6	22	0	
Paving	Skid Steer Loaders	2	8	65	0.37	0.6	22	254	
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	0.6	22	189	
Paving	Trenchers	1	8	78	0.5	0.6	22	206	
						Total Diesel Usage for Construction (Offr		**65,142.5**	**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.

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
						Construction Worker Trip (Composite LDA/LDT1/LDT2):			**27.4**
South Coast	HHDT	DSL	Aggregate	96,727	11,545,820	974,406	0	1774.2	**6.5**

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 construciton 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	Gallons of Fuel	
							Worker	Vendor	Haul	Worker	Vendor	Haul	(worker and vendor)	Gasoline	Diesel
Demolition	30	10	41	1230	410	820	14.7	6.9	35.4	18081	2829	29028	0.6	395.5	4,721.4
Grading	30	10	66	1980	660	10686	14.7	6.9	35.4	29106	4554	378284.4	0.6	636.7	58,549.2
Mat Foundation	30	400	2	60	800	0	14.7	6.9	20	882	5520	0	0.6	19.3	508.9
Foundation	100	100	152	15200	15200	0	14.7	6.9	20	223440	104880	0	0.6	4,887.6	9,669.9
Building Construction	180	50	302	54360	15100	0	14.7	6.9	20	799092	104190	0	0.6	17,479.7	9,606.3
Architectural Coating	200	50	153	30600	7650	0	14.7	6.9	20	449820	52785	0	0.6	9,839.6	4,866.7
Paving	40	20	22	880	440	0	14.7	6.9	20	12936	3036	0	0.6	283.0	279.9
													Total:	**33,541.4**	**88,202.4**

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).

Water Usage for Control of Fugitive Dust during Construction:

Phase	Days	Average Daily Acreage Distrubed	Gallons Per Year	Electricity (kWhr)
Demolition	41	0.5	61,910	602
Grading	66	0.5	99,660	969
Mat Foundation	2	0.5	3,020	29
Foundation	152	0.1	45,904	447
Building Construction	302	0	0	0
Architectural Coating	153	0	0	0
Paving	22	0	0	0
		Total:	**210,494**	**2,047**

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: 2023
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	2023	Annual	HHDT	DSL	Aggregated	Aggregated	99,862	12,043,323	1,008,087	0.00	1,696.53
South Coast	2023	Annual	HHDT	GAS	Aggregated	Aggregated	74	8,047	1,488	1.89	0.00
South Coast	2023	Annual	LDA	DSL	Aggregated	Aggregated	60,891	2,412,432	289,414	0.00	48.32
South Coast	2023	Annual	LDA	GAS	Aggregated	Aggregated	6,459,701	246,807,538	30,522,038	7,786.05	0.00
South Coast	2023	Annual	LDT1	DSL	Aggregated	Aggregated	352	8,196	1,229	0.00	0.36
South Coast	2023	Annual	LDT1	GAS	Aggregated	Aggregated	737,358	27,059,295	3,407,419	995.76	0.00
South Coast	2023	Annual	LDT2	DSL	Aggregated	Aggregated	15,173	633,608	74,552	0.00	17.31
South Coast	2023	Annual	LDT2	GAS	Aggregated	Aggregated	2,219,229	82,875,046	10,414,098	3,244.21	0.00
South Coast	2023	Annual	LHDT1	DSL	Aggregated	Aggregated	121,836	4,855,937	1,532,541	0.00	221.79
South Coast	2023	Annual	LHDT1	GAS	Aggregated	Aggregated	170,372	6,057,759	2,538,296	568.77	0.00
South Coast	2023	Annual	LHDT2	DSL	Aggregated	Aggregated	48,526	1,881,224	610,391	0.00	95.15
South Coast	2023	Annual	LHDT2	GAS	Aggregated	Aggregated	29,153	1,003,759	434,342	108.29	0.00
South Coast	2023	Annual	MCY	GAS	Aggregated	Aggregated	297,600	2,024,754	595,200	55.80	0.00
South Coast	2023	Annual	MDV	DSL	Aggregated	Aggregated	35,107	1,383,747	171,566	0.00	49.25
South Coast	2023	Annual	MDV	GAS	Aggregated	Aggregated	1,540,539	53,902,321	7,127,894	2,607.45	0.00
South Coast	2023	Annual	MH	DSL	Aggregated	Aggregated	12,560	119,509	1,256	0.00	11.19
South Coast	2023	Annual	MH	GAS	Aggregated	Aggregated	33,692	321,144	3,371	61.57	0.00
South Coast	2023	Annual	MHDT	DSL	Aggregated	Aggregated	118,681	7,894,095	1,192,353	0.00	705.12
South Coast	2023	Annual	MHDT	GAS	Aggregated	Aggregated	24,928	1,310,043	498,760	254.98	0.00
South Coast	2023	Annual	OBUS	DSL	Aggregated	Aggregated	4,159	323,909	40,367	0.00	37.17
South Coast	2023	Annual	OBUS	GAS	Aggregated	Aggregated	5,826	235,991	116,575	46.21	0.00
South Coast	2023	Annual	SBUS	DSL	Aggregated	Aggregated	6,393	202,054	73,777	0.00	26.30
South Coast	2023	Annual	SBUS	GAS	Aggregated	Aggregated	2,712	107,297	10,847	11.68	0.00
South Coast	2023	Annual	UBUS	DSL	Aggregated	Aggregated	13	1,417	52	0.00	0.24
South Coast	2023	Annual	UBUS	GAS	Aggregated	Aggregated	958	89,783	3,831	17.62	0.00

				MPG	Gallons Per Mile
Totals	453,562,228.32		15,760.27	2,908.73		
Total (GAS)	421,802,777.34	0.93			**24.3**	0.04
Total (DSL)	31,759,450.98	0.07			**26.8**	0.04
					10.9	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		
Total (GAS)	416,456,015.85	0.94			**21.9**	0.05
Total (DSL)	27,741,675.44	0.06			**23.9**	0.04
					9.5	0.11

Bellwood Senior Housing - Existing Operations Buildout Year
Los Angeles-South Coast County, Annual

Land Use Details

Land Uses	*Size*	*Metric*	*Lot Acreage*	*Floor Surface Area*	*Population*
Condo/Townhouse	112.00	Dwelling Uni	2.22	43,939.00	320

Trip Summary Information

Land Uses	*Average Daily Trip Rate*			*Annual VMT*
	Weekday	*Saturday*	*Sunday*	
User Defined Commercial	299	299	299	1,147,681
Total	**299**	**299**	**299**	**1,147,681**

Gasoline and Diesel Usage

	Buildout Year		Existing (Baseline) Year	
	Gasoline	*Diesel*	*Gasoline*	*Diesel*
Miles/Gallon	26.8	10.9	23.9	9.5
% Fleet Mix	93.0%	7.0%	93.8%	6.2%
Total (Gallons):	**39,879**	**7,360**	**44,975**	**7,548**

Energy by Land Use - Natural Gas

Land Uses	*kBTU/yr*	cu ft/year
Condo/Townhouse	2,044,620	1,947,257
Total	**2,044,620**	**1,947,257**

Energy by Land Use - Electricity

Land Uses	*kWH/yr*
Condo/Townhouse	558,067
Total	558,067

Water Detail

Land Uses	*Indoor Use (Mgal)*	*Outdoor Use (Mgal)*	*Electricity Use (kWh/yr)*
Condo/Townhouse	7.297	4.600	125,828
Total	7.30	4.60	**125,828**

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).

Bellwood Senior Housing - Buildout Operations Without Project Features
Los Angeles-South Coast County, Annual

Land Use Details

Land Uses	*Size*	*Metric*	*Lot Acreage*	*Floor Surface Area*	*Population*
Enclosed Parking with Elevator	140.00	Space	0.00	56,000.00	0
Health Club	50.46	1000sqft	1.16	50,463.00	0
Congregate Care (Assisted Living)	192.00	Dwelling Unit	2.22	191,291.00	549

Trip Summary Information

Land Uses	*Average Daily Trip Rate*			*Annual VMT*
	Weekday	*Saturday*	*Sunday*	
Congregate Care (Assisted Living)	0	0	0	0
Enclosed Parking with Elevator	0	0	0	0
Health Club	0	0	0	0
User Defined Commercial	533	533	533	1,516,060
Total	533	533	533	1,516,060

Gasoline and Diesel Usage

	Gasoline	*Diesel*
Miles/Gallon	26.8	10.9
% Fleet Mix	93.0%	7.0%
Total (Gallons):	**52,680**	**9,723**

Energy by Land Use - Natural Gas

Land Uses	*kBTU/yr*	cu ft/year
Congregate Care (Assisted Living)	1685440.0	1,605,181
Enclosed Parking with Elevator	0.0	0
Health Club	844498.0	804,284
Fireplaces	777600.0	740,571
Total	3,307,538	**3,150,036**

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

Land Uses	*kWH/yr*
Congregate Care (Assisted Living)	760,335
Enclosed Parking with Elevator	164,080
Health Club	560,139
Total	**1,484,554**

Water Detail (Unmitigated)

Land Uses	*Indoor Use (Mgal)*	*Outdoor Use (Mgal)*	*Electricity Use (kWh/yr)*
Congregate Care (Assisted Living)	10.008	6.309	172,565
Enclosed Parking with Elevator	0.000	0.000	0
Health Club	0.692	0.424	11,818
Total	10.70	6.73	**184,383**

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 o electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod).

Bellwood Senior Housing - Buildout Operations
Los Angeles-South Coast County, Annual

Land Use Details

Land Uses	*Size*	*Metric*	*Lot Acreage*	*Floor Surface Area*	*Population*
Enclosed Parking with Elevator	140.00	Space	0.00	56,000.00	0
Health Club	50.46	1000sqft	1.16	50,463.00	0
Congregate Care (Assisted Living)	192.00	Dwelling Unit	2.22	191,291.00	549

Trip Summary Information

Land Uses	*Average Daily Trip Rate*			*Mitigated*
	Weekday	*Saturday*	*Sunday*	
Congregate Care (Assisted Living)	0	0	0	0
Enclosed Parking with Elevator	0.0	0.0	0.0	0
Health Club	0.0	0.0	0.0	0
User Defined Commercial	400	400	400	1,154,244
Total	400	400	400	1,154,244

Mitigated Gasoline and Diesel Usage

	Gasoline	*Diesel*
Miles/Gallon	26.8	10.9
% Fleet Mix	93.0%	7.0%
Total (Gallons):	**40,107**	**7,402**

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)

Land Uses	*kBTU/yr*	cu ft/year
Congregate Care (Assisted Living)	1,685,440	1,605,181
Enclosed Parking with Elevator	0	0
Health Club	844,498	804,284
Fireplaces	81,000	77,143
Total	2,610,938	**2,486,608**

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). Consistent with GHG-PDF-1, the Project would include 20 fireplaces in common areas throughout the site.

Energy by Land Use - Electricity (Mitigated)

Land Uses	*kWH/yr*
Congregate Care (Assisted Living)	721,587
Enclosed Parking with Elevator	129,164
Health Club	509,676
Total	**1,360,427**

Note: Reduction in electricity usage reflects implementation of CalGreen and GHG-PDF-1 (Exceed Title 24, Part 6, CEC baseline requriements by 10 percent for energy efficiency, based on 2016 standards and 25% for lighting).

Water Detail (Unmitigated)

Land Uses	*Indoor Use (Mgal)*	*Outdoor Use (Mgal)*	*Electricity Use (kWh/yr)*
Congregate Care (Assisted Living)	10.008	6.309	172,565
Enclosed Parking with Elevator	0.000	0.000	0
Health Club	0.692	0.424	11,818
Total	10.70	6.73	**184,383**

15.600465

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 ofelectricity 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)

	Baseline	
Annual Demand	**(Existing)**	**Project**
Building (MWh)	558	1,360
Water (MWh)	126	184
Total (MWh)	684	1,545
Average Daily Demand		
Building (kWh)	1,529	3,727
Water (kWh)	345	505
Total (kWh)	1,874	4,232
Average Load		
Building (kW)	64	155
Water (kW)	14	21
Total (kW)	78	176

Peak Load Calculation

Peak Load (kW)[2]	137	320
Systemwide Peak Load (MW)		5,854
Percent of Peak		0.005%

[1]2017 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.

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	33,541	153,345
					Percentage of County for Construction	0.0006%	0.014%

EMFAC Emission inventories for County

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: **2023** (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	2023	HHDT	Aggregatec	Aggregatec	DSL	0.00	1696.53
Los Angeles	2023	HHDT	Aggregatec	Aggregatec	GAS	1.89	0.00
Los Angeles	2023	LDA	Aggregatec	Aggregatec	DSL	0.00	48.32
Los Angeles	2023	LDA	Aggregatec	Aggregatec	GAS	7786.05	0.00
Los Angeles	2023	LDT1	Aggregatec	Aggregatec	DSL	0.00	0.36
Los Angeles	2023	LDT1	Aggregatec	Aggregatec	GAS	995.76	0.00
Los Angeles	2023	LDT2	Aggregatec	Aggregatec	DSL	0.00	17.31
Los Angeles	2023	LDT2	Aggregatec	Aggregatec	GAS	3244.21	0.00
Los Angeles	2023	LHDT1	Aggregatec	Aggregatec	DSL	0.00	221.79
Los Angeles	2023	LHDT1	Aggregatec	Aggregatec	GAS	568.77	0.00
Los Angeles	2023	LHDT2	Aggregatec	Aggregatec	DSL	0.00	95.15
Los Angeles	2023	LHDT2	Aggregatec	Aggregatec	GAS	108.29	0.00
Los Angeles	2023	MCY	Aggregatec	Aggregatec	GAS	55.80	0.00
Los Angeles	2023	MDV	Aggregatec	Aggregatec	DSL	0.00	49.25
Los Angeles	2023	MDV	Aggregatec	Aggregatec	GAS	2607.45	0.00
Los Angeles	2023	MH	Aggregatec	Aggregatec	DSL	0.00	11.19
Los Angeles	2023	MH	Aggregatec	Aggregatec	GAS	61.57	0.00
Los Angeles	2023	MHDT	Aggregatec	Aggregatec	DSL	0.00	705.12
Los Angeles	2023	MHDT	Aggregatec	Aggregatec	GAS	254.98	0.00
Los Angeles	2023	OBUS	Aggregatec	Aggregatec	DSL	0.00	37.17
Los Angeles	2023	OBUS	Aggregatec	Aggregatec	GAS	46.21	0.00
Los Angeles	2023	SBUS	Aggregatec	Aggregatec	DSL	0.00	26.30
Los Angeles	2023	SBUS	Aggregatec	Aggregatec	GAS	11.68	0.00
Los Angeles	2023	UBUS	Aggregatec	Aggregatec	DSL	0.00	0.24
Los Angeles	2023	UBUS	Aggregatec	Aggregatec	GAS	17.62	0.00
						5,752,498,849	1,061,687,376
					Net Fuel Usage for Project Operation	229	42
					Percentage of County for Operation	0.0000%	0.0000%