

Appendix C

Energy Calculations

Construction Fuel Consumption

On-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2027 County Fuel	Percent
Demolition	73	7,115		
Site Preparation	40	3,959		
Grading	111	10,889		
Infrastructure	54	5,299		
Building Construction	428	41,925		
Architectural Coating	5	518		
Total	712	69,704	535,939,687	0.0130%

Off-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2027 County Fuel	Percent
Demolition	19	1,846		
Site Preparation	0	0		
Grading	43	4,211		
Infrastructure	26	2,544		
Building Construction	198	19,424		
Architectural Coating	0	0		
Total	286	28,025	535,939,687	0.0052%

Off-Site Gasoline ²	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2027 County Fuel	Percent
Demolition	5	535		
Site Preparation	2	216		
Grading	6	736		
Infrastructure	63	7,193		
Building Construction	487	55,424		
Architectural Coating	32	3,662		
Total	595	67,766	3,369,809,065	0.0020%

Total Diesel Fuel		97,730	535,939,687	0.0182%
Total Gasoline Fuel		67,766	3,369,809,065	0.0020%
Total Construction Fuel	1,593	165,496		

Construction Phase ³	Demolition			Site Preparation			Grading		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)
2027	72.64	18.84	4.70	40.42		1.89	111.18	43.00	6.46
2028									
2029									
Total	72.64	18.84	4.70	40.42	-	1.89	111.18	43.00	6.46

Construction Phase ³	Infrastructure			Building Construction			Architectural Coating		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gas (Worker)
2027	54.10	25.98	63.15						
2028				214.34	100.58	245.71			
2029				213.71	97.74	240.91	5.29		32.16
Total	54	26	63	428	198	487	5	0	32

Notes:

¹ Fuel used for off-road, hauling, and vendor trips assumed to be diesel.

² Fuel used for worker trips assumed to be gasoline.

³ MTCO₂e rates from CalEEMod (3. Construction Details).

⁴ For CO₂e emissions, The Climate Registry, June 2023 Default Emission Factors, see Table 1.1 (U.S. Default Factors for Calculating CO₂ Emissions from Combustion of Transport Fuels) <https://theclimateregistry.org/wp-content/uploads/2023/06/2023-Default-Emission-Factors-Final-1.pdf>;

Climate Registry Conversion Ratios:

- Gasoline: 8.78 kg CO₂ per gallon / 1,000 kg per metric ton
- Diesel: 10.21 kg CO₂ per gallon / 1,000 kg per metric ton

Construction Water Energy

Daily Soil Disturbance ¹	1.5	acres
Days of Soil Disturbance ²	43	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	5,306	kWh/MG
Total Construction Water	0.19	million gallons
Construction Water Energy	1,034	kWh
	0.0010	GWh

Notes:

¹ Total daily acres disturbed from offroad equipment per CalEEMod (3.0 Construction Detail) and maximum SCAQMD LST values for soil-disturbing equipment.

² Number of days of construction (site prep and grading phases) with soil-disturbing equipment per CalEEMod (3.0 Construction Detail).

³ Water application rate per Air and Waste Management Association's Air Pollution Engineering Manual.

⁴ Water energy intensity factor for county subarea per CalEEMod User Guide, Appendix D, page D-343.

Operational Fuel

Vehicle Type	Percent ¹
Passenger Cars	0.94
Light/Medium Trucks	0.05
Heavy Trucks/Other	0.01
Total Trucks	
Total	1.00

Annual VMT ²	MPG ³	Annual Fuel (Gallons)	Fuel Type	Los Angeles Gallons (2030) ⁴	Los Angeles Percent	
2,597,681	24.8	104,745	Gas	3,171,276,372	0.00330%	
8,769	18.1	484	Diesel	528,535,000	0.0001%	
1,587	7.3	217	Diesel	528,535,000	0.0000%	0.00013%
169,280		702				

Total VMT 2,766,961

Apartments Mi 2,048,726
High Turnover (718,236

Fleet Mix -

Land Use	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
Condo/Townhouse	47.65571654	4.04000394	25.11526942	2.284980938	14.78612125	2.826326154	0.748960208	1.12801902	0.0814531	0.0611678	0.065404299	0.269084494	0.937491283

Notes:

¹ Percent of vehicle trip distribution based on fleet mix from CalEEMod

² Total annual operational VMT based on mitigated annual VMT from CalEEMod (5.9 Operational Mobile Sources).

³ Average fuel economy derived from US Energy Information Administration, Monthly Energy Review (Table 1.8), April 2024 (<https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>)

⁴ Total annual county fuel per EMFAC 2021 model of projected operational fuel usage in 2030 - first operational year of Project

Operational Water Energy

Indoor	8.7	million gallons
Indoor Energy Intensity Factor ¹	6,807	kWh/MG
Outdoor	0.1	million gallons
Outdoor Energy Intensity Factor ²	5,306	kWh/MG
Operational Water Energy	59,576	kWh

8.8

	Indoor Water Use (gals)	Outdoor Water Use (gals)
Apartments Mic	7,790,224	128,884
Recreational Sw	40,454	-
High Turnover (821,059	-
		-
		-
Total	8,651,737	128,884

Notes:

¹ Indoor water energy intensity factor for county subarea per CalEEMod User Guide, Appendix D, page D-343. Factor includes supply, treatment, distribution, and wastewater.

² Outdoor water energy intensity factor for county subarea per CalEEMod User Guide, Appendix D, page D-343. Factor includes supply, treatment, and distribution.

³ Operational water use values: CalEEMod 5.12

Electricity/Natural Gas Energy

	Unmitigated Project Annual Energy	Los Angeles County Annual Energy (2022) ²	Percent of County
Electricity (kWh/yr)	882,792	68,484,956,280	
Water Electricity (kWh/yr)	59,576	68,484,956,280	
Total Electricity (kWh/yr)	942,368	68,484,956,280	0.0014%
Natural Gas (kBTU/yr)	256,244		
Natural Gas (therms/yr)	2,563	2,820,285,935	0.0001%

Phase	Electricity (kwh/yr)	Natural Gas kBTU/yr
Apartments Mid Rise	687,691	-
Recreational Swimming Pool	10,151	-
High Turnover (Sit Down Restaurant)	88,102	256,244
Enclosed Parking with Elevator	96,848	-

Notes:

¹ Energy use per CalEEMod (5.11.1).

² County total energy values from California Energy Commission energy reports available through ecdms.energy.ca.gov.