

APPENDIX K: ENERGY CALCULATIONS

Construction Fuel Consumption

On-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2025 County Fuel	Percent
Demolition	50	4,891		
Site Preparation	19	1,841		
Grading	73	7,113		
Infrastructure	54	5,300		
Building Construction	82	8,029		
0	50	4,912		
Total	328	32,085	259,549,258	0.0124%

Off-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2025 County Fuel	Percent
Demolition	49	4,822		
Site Preparation	0	0		
Grading	61	6,019		
Infrastructure	33	3,200		
Building Construction	49	4,823		
0	0	0		
Total	193	18,864	259,549,258	0.0073%

Off-Site Gasoline ²	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2025 County Fuel	Percent
Demolition	3	378		
Site Preparation	1	103		
Grading	4	447		
Infrastructure	35	3,959		
Building Construction	52	5,956		
0	32	3,615		
Total	127	14,458	692,307,874	0.0021%

Total Diesel Fuel		50,949	259,549,258	0.0196%
Total Gasoline Fuel		14,458	692,307,874	0.0021%
Total Construction Fuel	647	65,407		

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)
2025	49.9363497	49.22777704	3.319662055	18.79		0.91	72.62	61.45	3.92
2026									
2027									
Total	49.94	49.23	3.32	18.79	-	0.91	72.62	61.45	3.92

Construction Phase ³	Infrastructure			Building Construction			Architectural Coating/Paving		
	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)
2025	54.11	32.67	34.76	55.05	33.23	35.37			
2026				26.93	16.01	16.93	50.16		31.74
2027									
Total	54	33	35	82	49	52	50	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	65	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	5,306	kWh/MG
Total Construction Water	0.29	million gallons
Construction Water Energy	1,562	kWh
	0.0016	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 Water Energy

Indoor	0.0	million gallons
Indoor Energy Intensity Factor ¹	6,807	kWh/MG
Outdoor	0.2	million gallons
Outdoor Energy Intensity Factor ²	5,306	kWh/MG
Operational Water Energy	1,315	kWh

0.2

	Indoor Water Use (gals)	Outdoor Water Use (gals)
Parking Structure		247856.4733

Total - **247,856**

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	Riverside County Annual Energy (2022) ²	Percent of County
Electricity (kWh/yr)	621,820	17,780,573,271	
Water Electricity (kWh/yr)	1,315	17,780,573,271	
Total Electricity (kWh/yr)	623,135	17,780,573,271	0.0035%
Natural Gas (kBtu/yr)	-		
Natural Gas (therms/yr)	-		

Phase	Electricity (kwh/yr)	Natural Gas kBtu/yr
Unenclosed Parking with Elevator	468419.232	-
Enclosed Parking with Elevator	153401.1302	-

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.