

Appendix G
Energy Calculations

Construction Fuel

	MTCO ₂ e	Gallons of Fuel ⁴	2024 County Fuel	Percent Increase Countywide
On-Site Diesel¹				
Demolition	96	9,443		
Site Preparation/Grading	119	11,714		
Building Construction	306	30,100		
Paving	29	2,883		
Architectural Coating	22	2,158		
Total	571	56,299	103,305,683.89	0.0545%
Off-Site Diesel¹				
Demolition	178	17,514		
Site Preparation/Grading	19	1,872		
Building Construction	620	61,108		
Paving	0	0		
Architectural Coating	0	0		
Total	817	80,495	103,305,683.89	0.0779%
Off-Site Gasoline²				
Demolition	3	341		
Site Preparation/Grading	3	341		
Building Construction	466	52,924		
Paving	1	114		
Architectural Coating	61	6,879		
Total	534	60,597	593,817,094	0.0102%
Total Diesel Fuel		136,793	103,305,684	0.1324%
Total Gasoline Fuel		60,597	593,817,094	0.0102%
Total Construction Fuel	1,922	197,390		

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)
2024	96	178	3	9	0	1	110	19	2
2025									
Total	96	178	3	9	0	1	110	19	2
Construction Phase ³	Building Construction			Paving			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)
2024	112	230	173	0	0	0	0	0	0
2025	194	391	293	29	0	1	22	0	61
Total	306	620	466	29	0	1	22	0	61

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 (3.0 Construction Details).

⁴ For CO₂e emissions, see Chapter 13 (page 94); Conversion Ratios: Climate Registry, General Reporting Protocol, 2016.

Operational Fuel

Vehicle Type	Percent ¹	Annual VMT ²	MGP ³	Annual Fuel	Fuel Type	County Gallons ⁴	County Percent	Statewide	Statewide percent
Passenger Cars	0.6640	4,493,269	21.6	208,022	Gas	593,817,094	0.0350%	14,773,931,520	0.0014%
Light/Medium Trucks	0.15000	1,015,046	17.2	59,014	Diesel	103,305,684	0.0074%	3,625,305,260	0.0016%
Heavy Trucks/Other	0.17	1,136,851	6.1	186,369	Diesel	103,305,684	0.0233%		
Total	0.982	6,766,972		245,383		800,428,462	0.2375%		

Notes:

¹ Percent of vehicle trip distribution based on fleet mix from CalEEMod (4.4 Fleet Mix).

² Total annual operational VMT based on mitigated annual VMT from CalEEMod (4.2 Trip Summary Information).

³ Average fuel economy derived from Department of Transportation.

⁴ Total annual county fuel per EMFAC 2017 model of projected operational fuel usage.

Electricity and Natural Gas

	Mitigated Project Annual Energy	County Annual Energy ³	Percentage Increase
Electricity (kWh/yr)	2,672,476	16,435,721,919.00	0.0163%
Electricity (MWh/yr)	2,672	16,435,722	0.0163%
Electricity (GWh/yr)	2.67	16,436	0.0163%
Natural Gas (kBTU/yr)	2,457,850	418,684,416.00	0.5870%
Natural Gas (therms)	24,579	459,720,764.00	0.0053%

Land Use	Electricity ¹ (kWh/yr)		Natural Gas ² (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
City Park	0	0	0.00E+00	0.00E+00
Parking Lot	171756	171756	0	0
Warehouse	2.50E+06	2.50E+06	2.46E+06	2.46E+06
Total Energy	2,672,476	2,672,476	2,457,850	2,457,850

Notes:

¹ Electricity use per CalEEMod (5.3 Energy by Land Use).

² Natural Gas use per CalEEMod (5.2 Natural Gas by Land Use).

³ County total energy values from California Energy Commission energy reports available through ecdms.energy.ca.gov.

Construction Water

Daily Soil Disturbance ¹	120	acres
Days of Soil Disturbance ²	40	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	3,500	kWh/MG
Total Construction Water	14.50	million gallons
Construction Water Energy	50,736	kWh
	0.5074	GWh
Percentage Increase Countywide	0.003087%	

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 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.