

Appendix D

Energy Consumption Worksheets

Construction Fuel Consumption

On-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2024 County Fuel	Percent
Demolition	3	297		
Grading/Foundation	101	9,920		
Building Construction	152	14,854		
Paving	0	0		
Architectural Coating	138	13,501		
Total	394	38,572	553,890,415	0.0070%

Off-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2024 County Fuel	Percent
Demolition	7	669		
Grading/Foundation	299	29,248		
Building Construction	45	4,430		
Paving	0	0		
Architectural Coating	0	0		
Total	351	34,347	553,890,415	0.0062%

Off-Site Gasoline ²	MTCO ₂ e	Gallons of Fuel ⁴	Construction Year 2024 County Fuel	Percent
Demolition	0	33		
Grading/Foundation	15	1,752		
Building Construction	49	5,527		
Paving	0	0		
Architectural Coating	10	1,098		
Total	74	8,410	3,514,203,312	0.0002%

Total Diesel Fuel		72,919	553,890,415	0.0132%
Total Gasoline Fuel		8,410	3,514,203,312	0.0002%
Total Propane Fuel ⁵		2,481	588,780,000	0.0004%
Total Construction Fuel	818	83,810		

Construction Phase ³	Demolition			Grading			Foundation		
	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)
2023	3	7	0	67	287	3	35	12	13
2024									
2025									
Total	3	7	0	67	287	3	35	12	13

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)
2023	113	34	36						
2024	38	11	12				138	0	10
2025									
Total	152	45	49	0	0	0	138	0	10

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, The Climate Registry, 2022 Default Emission Factors, see Table 2.1 (U.S. Default Factors for Calculating CO₂ Emissions from Combustion of Transport Fuels):

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

⁵ Propane forklifts consume approximately 6 pounds of propane per hour, assumed to operate 8 hours per day, for a maximum of 219 days. 1 pound of propane = 0.236 gallons. CalEEMod does not separate emissions of propane forklifts. Therefore, all off-road emissions included in the CalEEMod output have been counted as diesel, providing a conservative analysis of diesel consumption.

Construction Water Energy

Daily Soil Disturbance ¹	2	acres
Days of Soil Disturbance ²	87	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	11,110	kWh/MG
Total Construction Water	0.39	million gallons
Construction Water Energy	4,379	kWh
	0.0044	GWh

6.94E-07

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.

Electricity/Natural Gas Energy

	Mitigated Project Annual Energy	Los Angeles County Annual Energy ²	Percentage Increase	
Electricity (kWh/yr)	1,884,725	65,649,878,013	0.0029%	
Water Electricity (kWh/yr)	307,015	65,649,878,013	0.0005%	
Total Electricy (kWh/yr)	2,132,032	65,649,878,013	0.0032%	2.132032228

Land Use	Electricity ¹ (kWh/yr)	
	Unmitigated	Mitigated
Enclosed Parking Structure	463,488	463,488
Strip Mall	1,782	1,782
General Office Building	1,112,440	1,112,440
Total Energy	1,577,710	1,577,710

Notes:

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

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

Operational Fuel - ABCSPA

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

Annual VMT ²	MPG ³	Annual Fuel (Gallons)	Fuel Type	Los Angeles Gallons ⁴	Los Angeles Percent	
2,880,001	21.6	133,333	Gas	3,514,203,312	0.0038%	0.0001%
8,371	17.2	487	Diesel	553,890,415	0.0001%	
1,504	6.1	247	Diesel	553,890,415	0.0000%	
173,652		733				
		134,067		4,068,093,727		

Total VMT

3053653

Fleet Mix -

Land Use	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
Enclosed Parking Structure	0.542639	0.062168	0.185423	0.024766	0.128137	0.023809	0.006526	0.012163	0.000816	0.000502	0.000746	0.003644	0.00866
Strip Mall	0.542639	0.062168	0.185423	0.024766	0.128137	0.023809	0.006526	0.012163	0.000816	0.000502	0.000746	0.003644	0.00866
General Office Building	0.542639	0.062168	0.185423	0.024766	0.128137	0.023809	0.006526	0.012163	0.000816	0.000502	0.000746	0.003644	0.00866
	0.542639	0.062168	0.185423	0.024766	0.128137	0.023809	0.006526	0.012163	0.000816	0.000502	0.000746	0.003644	0.008660

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.

Operational Water Energy

Mitigated Indoor	15.5	million gallons
Indoor Energy Intensity Factor ¹	13,021	kWh/MG
Mitigated Outdoor	9	million gallons
Outdoor Energy Intensity Factor ²	11,110	kWh/MG
Operational Water Energy	307,015	kWh

Total - Las Palmas				
Land Use ³	Unmitigated (MG)		Mitigated (MG)	
	Indoor	Outdoor	Indoor	Outdoor
Enclosed Parking Structure	-	-	-	-
StripMall	0.01	0.01	0.01	0.01
General Office Building	15.47	9.48	15.47	9.48
Total Operational Water	15	9	15	9

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 per CalEEMod (7.2 Water by Land Use).