

Construction Fuel

On-Site Diesel ¹	MTCO ₂ e	Gallons of Fuel ⁴	2023 County Fuel	Percent Increase Countywide
Demolition	668	65,764		
Site Preparation/Grading	2,165	213,300		
Building Construction	8,904	877,192		
Paving	791	77,941		
Architectural Coating	390	38,414		
Total	12,917	1,272,611	155,890,839.27	0.8163%
Off-Site Diesel¹				
Demolition	19	1,892		
Site Preparation/Grading	106	10,473		
Building Construction	6,850	674,828		
Paving	0	0		
Architectural Coating	0	0		
Total	6,975	687,192	155,890,839.27	0.4408%
Off-Site Gasoline²				
Demolition	18	2,089		
Site Preparation/Grading	53	5,959		
Building Construction	7,092	805,028		
Paving	35	3,984		
Architectural Coating	851	96,640		
Total	8,050	913,700	553,890,645	0.1650%
Total Diesel Fuel		1,959,803	155,890,839	1.2572%
Total Gasoline Fuel		913,700	553,890,645	0.1650%
Total Construction Fuel	27,942	2,873,503		

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)
2023	667.5	19.2	18.4	658	0	21.5	1507	106.3	31
2024	380	10.8	10.2	664	0	21.1	2024	141	40
2025	0	0	0	0	0	0	1529	104	30
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
2028	0	0	0	0	0	0	0	0	0
Total	668	19	18	658	0	22	1,507	106	31
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	151.6	0	9.2	0	0	0	0	0	0
2024	2435	1605.2	1686.5	133.2	0	6	33.8	0	76.8
2025	2937.7	2181.2	2262.6	526.7	0	23.4	133.4	0	296.6
2026	2364.4	1903.2	1957	131.2	0	5.7	128.1	0	278.2
2027	760.5	873.6	886.4	0	0	0	66.7	0	141.8
2028	254.3	286.3	290.6	0	0	0	27.9	0	58
Total	8,904	6,850	7,092	791	0	35	390	0	851

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	2028 County Gallons ⁴	County Percent	Statewide	Statewide percent
Passenger Cars	0.5920	17,576,714	21.6	813,737	Gas	510,772,956	0.1593%	14,773,931,520	0.0055%
Light/Medium Trucks	0.15000	4,453,559	17.2	258,928	Diesel	152,160,799	0.0318%	3,625,305,260	0.0071%
Heavy Trucks/Other	0.26	7,660,122	6.1	1,255,758	Diesel	152,160,799	0.1541%		
Total	1.000	29,690,396		1,514,686		815,094,554	0.9955%		

Electric (Alameda County)	Alameda County 2028	Project
Total VMT	45,328,509.16	29,690,396.00
Electric VMT	2,823,731.03	1,849,557.68
Percent Electric	6%	
Operational Mobile Electrical Use	591,858	KWh

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)	14,490,410	10,247,410,444	0.1414%
Electricity (MWh/yr)	14,490	10,247,410	0.1414%
Electricity (GWh/yr)	14.490	10,247	0.1414%
Adjusted Electricity (GWh/yr)	37.238	10,247	0.3634%
Natural Gas (million therms)		419	
Natural Gas (kBTU/yr)	-	36,646,503,800	0.0000%
Natural Gas (therms)	-	366,465,038	0.0000%

Land Use	Electricity ¹ (kWh/yr)		Natural Gas ² (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
Parking Lot	284480	284480	0	0
City Park	0	0	0	0
Fast Food Resturant w/o Drive Thru	1995360	1995360	0	0
High Turnover (Sit Down Resturant)	2993040	2993040	0	0
Hotel	1544930	1544930	0	0
Apartments Mid Rise	2782680	2782680	0	0
Condo/Townhome	1031200	1031200	0	0
Single Family Housing	2148000	2148000	0	0
Regional Shopping Center	1710720	1710720	0	0
Total Energy	14,490,410	14,490,410	0	0

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	6550	acres
Days of Soil Disturbance ²	1047	days
Water Concentration ³	3,020	gallons/acre
Water Energy Intensity ⁴	3,500	kWh/MG
Total Construction Water	20,710.71	million gallons
Construction Water Energy	72,487,475	kWh
	72487.4745	MWh
Percentage Increase Countywide	0.707374%	

Add together # days for site prep + grading

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.

Operational Water

Mitigated Indoor	54	million gallons
Indoor Energy Intensity Factor ¹	5,411	kWh/MG
Mitigated Outdoor	36	million gallons
Outdoor Energy Intensity Factor ²	3,500	kWh/MG
Operational Water Energy	414438.5	kWh
Operational Water Energy	414.4385	MWh
Operational Water Energy	0.4144385	GWh
Percentage Countywide	0.0040%	
Total water use	89	million gallons

Land Use ³	Unmitigated (MG)		Mitigated (MG)	
	Indoor	Outdoor	Indoor	Outdoor
Parking Lot	0	0	0	0
City Park	0	3	0	2.8
Fast Food Resturant w/o Drive Thru	3.6	0.2	2.9	0.2
High Turnover (Sit Down Resturant)	5.5	0.3	4.4	0.3
Hotel	3.6	0.4	2.8	0.4
Apartments Mid Rise	25.4	16	20.3	15
Condo/Townhome	7.2	4.5	5.7	4.2
Single Family Housing	9.8	6.2	7.8	5.8
Regional Shopping Center	12	7.3	9.6	7
Total Operational Water	67	38	54	36

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).