Appendix E

Energy Calculations

Kimley»Horn

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2027 (Start of Construction)	Percent
Demolition	69	6,758		
Site Preparation/Grading	85	8,353		
Building Construction	103	10,128		
Paving	65	6,428		
Architectural Coating	4	395		
Total	325	32,062	4,129,527,647	0.0008%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	81	8,017		
Site Preparation/Grading	268	26,394		
Building Construction	138	13,619		
Paving	87	8,578		
Architectural Coating	0	0		
Total	575	56,608	4,129,527,647	0.0014%

Off-Site Gasoline[2]				
Demolition	4	458		
Site Preparation/Grading	4	500		
Building Construction	109	12,428		
Paving	2	214		
Architectural Coating	12	1,365		
Total	132	14,965	4,129,744,580	0.0004%

Total Diesel Fuel		88,670	4,129,527,647	0.0021%
Total Gasoline Fuel		14,965	4,129,744,580	0.0004%
Total Construction Fuel	1,032	103,635		

Construction Phase[3]	Phase 1 Demolition			Phase 1 Site Preparation			Phase 1 Grading		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)
2025	69	81	4	58	0	3	27	268	2
2026	0	0	0	0	0	0	0	0	0
2027	0	0	0	0	0	0	0	0	0
Total	**69**	**81**	**4**	**58**	**0**	**3**	**27**	**268**	**2**

Construction Phase[3]	Phase 1 Building Construction and Utilities (2026)			Phase 2 Interior Construction (2027)			Phase 1 Paving (2026)		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)
2025	0	0	0	0	0	0	0	0	0
2026	38	51	41	0	0	0	14	0	2
2027	0	0	0	65	87	69	0	0	0
Total	**38**	**51**	**41**	**65**	**87**	**69**	**14**	**0**	**2**

Construction Phase[3]	Phase 2 Architectural Coating		
	On-Site Diesel (Off-Road)	Off-Site Diesel (Hauling/Vendor)	Off-Site Gasoline (Worker)
2025	0	0	0
2026	0	0	0
2027	4	0	12
Total	**4**	**0**	**12**

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] $MTCO_2e$ rates from CalEEMod (3.0 Construction Emissions Details).

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

Construction Water Energy

Daily Soil Disturbance[1]	56.0	acres
Days of Soil Disturbance[2]	44	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	6,807	kWh/MG
Total Construction Water	7.44	million gallons
Construction Water Energy	50,653	kWh
	0.0507	GWh
Los Angeles County Annual Electricity	68,485	GWh
Percentage Increase	0.000%	
	50.65	MWh
	68,484,956.28	MWh

Notes:

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

[2] Number of days of construction with soil-disturbing equipment per CalEEMod (5.1 Construction Schedule).

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

[4] Water energy intensity factor for subarea per CalEEMod User Guide, Appendix G, Tab G-32.

Operational Fuel

Vehicle Type	Percent	Annual VMT[1]	MPG[2]	Annual Fuel (Gallons)	Fuel Type	Los Angeles County Gallons[3]	RS Percent
Passenger Cars	0.941	219,715	21.6	10,172	Gas	3,369,809,065	0.0003%
Light/Medium Trucks	0.050	11,624	17.2	676	Diesel	535,939,687	0.0001%
Heavy Trucks/Other	0.009	2,088	6.1	342	Diesel	535,939,687	0.0001%
Total	1.00	233,427		1,018			0.0002%

Land Use[5]	LDA	LDT1	LDT2	MCY	MDV	LHD1	LHD2	MHD	OBUS	UBUS	SBUS	MH	HHD
General Office Building	49.328	4.2329	24.0235	2.2009	14.3400	2.6967	0.6925	1.1011	0.0845	0.0619	0.0649	0.2781	0.8945

Notes:

[1] Total annual operational VMT based on annual VMT from CalEEMod (5.9 Operational Mobile Sources).

[2] Average fuel economy derived from Department of Transportation.

[3] Total annual county fuel per EMFAC 2021 model of projected operational fuel usage.

Operational Water Energy

UNMITIGATED		
Unmitigated Indoor	6.9	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	5	million gallons
Outdoor Energy Intensity Factor[2]	6,807	kWh/MG
Operational Water Energy	82,070	kWh
Operational Water Energy	0.0821	GWh
Los Angeles County Annual Electricity	68,485	GWh
Percentage Increase	0.0001%	
MITIGATED		
Mitigated Indoor	6.9	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	5	million gallons
Outdoor Energy Intensity Factor[2]	6,807	kWh/MG
Operational Water Energy	82,070	kWh
Operational Water Energy	0.0821	GWh
Los Angeles County Annual Electricity	68,485	GWh
Percentage Increase	0.0001%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
General Office Building	5840365	5165115	5840365	5,165,115
Parking Lot	0	0	0	0
General Office Building (Proxy to substation)	1051200	0	1,051,200	0
Total Operational Water (MG/year)	**6.892**	**5.165**	6.892	5

Notes:

[1] Indoor water energy intensity factor for subarea per CalEEMod User Guide, Appendix G, Tab G-32. Factor includes supply, treatment, distribution, and wastewater.

[2] Outdoor water energy intensity factor for subarea per CalEEMod User Guide, Appendix G, Tab G-32. Factor includes supply, treatment, and distribution.

[3] Operational water use values per CalEEMod (5.12 Operational Water and Wastewater Consumption).

Electricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	**Los Angeles County Annual Energy[3]**	**Percentage Increase**
Electricity (kWh/yr)	438,014,593	68,484,956,280	0.6396%
Electricity (GWh/yr)	438.0146	68,485	0.6396%
Natural Gas (kBTU/yr)	0	282,028,593,500	0.0000%
Natural Gas (therms/yr)	0	2,820,285,935	0.0000%
MITIGATED			
	Mitigated Project Annual Energy	**Los Angeles County Annual Energy[3]**	**Percentage Increase**
Electricity (kWh/yr)	0	68,484,956,280	0.0000%
Electricity (GWh/yr)	0.0000	68,485	0.0000%
Natural Gas (kBTU/yr)	0	282,028,593,500	0.0000%
Natural Gas (therms/yr)	0	2,820,285,935	0.0000%

Land Use	**Electricity[1] (kWh/yr)**		**Natural Gas[2] (kBTU/yr)**	
	Unmitigated	**Mitigated**	**Unmitigated**	**Mitigated**
General Office Building	437991240	0	0	0
Parking Lot	23353.04	0	0	0
Total Energy	**438,014,593**	**0**	0	0

Notes:

[1] Electricity use per CalEEMod (5.11 Operational Energy Consumption).

[2] Natural Gas use per CalEEMod (5.11 Operational Energy Consumption).

[3] County total energy values from California Energy Commission energy reports available through ecdms.energy.ca.gov. (year 2022)

DFWCGI

October 28, 2024

To whom it may concern,

The Applicant is proposing to construct a new data center located at 1977 Saturn Street, Monterey Park California. The project would develop an approximately 218,400 square foot building that includes data hall space and other support spaces for operations. We have conservatively estimated the peak energy load for the project. The table below provides approximately energy loads associated with the project at this stage of design.

Data Hall Area (SF)	Server Load (KW)	Mechanical Load (KW)	House Power and Lighting Loads (KW)	**Total Load (KW)**
~110,769	33,000	16,833	166	**49,999**

These energy load estimates are valid based on the level of development we are at, and can be utilized for initial analysis and modeling of the project.

Very Respectfully,

Cutis C. Spraggins, PE

California Mechanical PE#41851