Appendix E: Energy Calculations

Phase 1

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2025 (Start of Construction)	Percent
Demolition	0	0		
Site Preparation/Grading	1,137	112,061		
Building Construction	2,463	242,615		
Paving	446	43,946		
Architectural Coating	226	22,238		
Total	4,272	420,859	259,549,258	0.1621%
Off-Site Diesel[1] (on-road construction trips)				
Demolition	0	0		
Site Preparation/Grading	37	3,660		
Building Construction	1,971	194,212		
Paving	47	4,596		
Architectural Coating	0	0		
Total	2,055	202,469	259,549,258	0.0780%
Off-Site Gasoline[2]				
Demolition	0	0		
Site Preparation/Grading	45	5,105		
Building Construction	2,347	266,408		
Paving	58	6,592		
Architectural Coating	320	36,371		
Total	2,771	314,476	698,621,144	0.0450%
Total Diesel Fuel		623,328	259,549,258	0.2402%
Total Gasoline Fuel		314,476	698,621,144	0.0450%
Total Construction Fuel	9,097	937,804		

Construction Phase[3]	Demolition			Site Preparation			Grading/Infrastructure Improvements		
	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	361.5260146	13.46055425	16.2949252	775.8933658	23.69057547	28.67906835
2026	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**362**	**13**	**16**	**776**	**24**	**29**

Construction Phase[3]	Building Construction			Paving			Architectural Coating		
	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	249.9138198	205.2004879	244.7644512	0	0	0	0	0	0
2026	1200.05283	968.2192609	1150.45784	67.77228775	7.241983729	8.982732491	14.75709408	0	21.43318715
2027	1012.571044	797.8323867	951.8323308	358.6278648	37.40945751	46.58907979	158.4315292	0	225.5966239
2028	0	0	0	19.64984825	2.002711713	2.505398282	52.52282563	0	73.39738943
Total	**2,463**	**1,971**	**2,347**	**446**	**47**	**58**	**226**	**0**	**320**

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]	8.0	acres
Days of Soil Disturbance[2]	207	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	5,306	kWh/MG
Total Construction Water	5.00	million gallons
Construction Water Energy	26,536	kWh
	0.0265	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.00015%	

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.

UNMITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2028 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.47%	82,343,172	21.6	3,812,184	Gas	666,185,665	0.5722%
Light/Medium Trucks	1.89%	1,559,209	17.2	90,652	Diesel	258,868,288	0.0350%
Heavy Trucks/Other	2.63%	2,168,866	6.1	355,552	Diesel	258,868,288	0.1373%
Trucks Total	4.53%	3,728,075		446,204		258,868,288	0.1724%
Total	100.00%	86,248,042					
MITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2028 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.47%	82,343,172	21.6	3,812,184	Gas	666,185,665	0.5722%
Light/Medium Trucks	1.89%	1,559,209	17.2	90,652	Diesel	258,868,288	0.0350%
Heavy Trucks/Other	2.63%	2,168,866	6.1	355,552	Diesel	258,868,288	0.1373%
Trucks Total	4.53%	3,728,075		446,204		258,868,288	0.1724%
Total	100.00%	86,248,042					

Fleet Mix[5]	**LDA**	**LDT1**	**LDT2**	**MCY**	**MDV**	**LHD1**	**LHD2**	**MHD**	**OBUS**	**UBUS**	**SBUS**	**MH**	**HHD**
Cars	45.5501	3.9201	24.5081	1.8650	16.2883	2.7070	0.0000	0.0000	0.0560	0.0447	0.1288	0.4045	0.0000
Trucks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8029	1.0907	0.0000	0.0000	0.0000	0.0000	2.6339

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	118.5	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	163	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,672,866	kWh
Operational Water Energy	1.6729	GWh
San Bernardino County Annual Electricity	16,181	GWh
Percentage Increase	0.0103%	
MITIGATED		
Mitigated Indoor	118.5	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	163	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,672,866	kWh
Operational Water Energy	1.6729	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.0094%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
General Office Building	51983033	0	51983033	
Landscape	0	163304377.7	0	163304377.7
Hotel	9512538.75	0	9512538.75	0
Apartments Mid Rise	14195147.48	0	14195147.48	0
Regional Shopping Center	42771547.93	0	42771547.93	0
Total Operational Water (MG/year)	**118**	**163**	**118**	**163**

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).

Elecricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	31,715,442	17,780,573,271	0.1784%
Electricity (GWh/yr)	31.7154	17,781	0.1784%
Natural Gas (kBTU/yr)	30,267,796	43,105,239,200	0.0702%
Natural Gas (therms/yr)	302,678	431,052,392	0.0702%
MITIGATED			
	Mitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	17,396,819	17,780,573,271	0.0978%
Electricity (GWh/yr)	17.3968	17,781	0.0978%
Natural Gas (kBTU/yr)	23,072,568	43,105,239,200	0.0535%
Natural Gas (therms/yr)	230,726	431,052,392	0.0535%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
General Office Building	11,123,620	6,607,195	3,134,306	2,887,372
Parking Lot	4,082,966	4,082,966	0	0
Hotel	5,997,080	2,341,315	18,757,759	16,532,566
Apartments Mid Rise	1,975,046	892,409	4,499,592	0
Regional Shopping Center	8,536,730	3,472,934	3,876,140	3,652,630
Total Energy	**31,715,442**	**17,396,819**	**30,267,796**	**23,072,568**

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)

Phase 2

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2028 (Start of Construction)	Percent
Demolition	0	0		
Site Preparation/Grading	1,143	112,574		
Building Construction	2,462	242,552		
Paving	444	43,741		
Architectural Coating	226	22,281		
Total	4,275	421,148	258,868,288	0.1627%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	0	0		
Site Preparation/Grading	22	2,184		
Building Construction	1,384	136,348		
Paving	30	2,920		
Architectural Coating	0	0		
Total	1,436	141,452	258,868,288	0.0546%

Off-Site Gasoline[2]				
Demolition	0	0		
Site Preparation/Grading	42	4,814		
Building Construction	2,855	324,103		
Paving	54	6,170		
Architectural Coating	392	44,494		
Total	3,344	379,581	666,185,665	0.0570%

Total Diesel Fuel		562,600	258,868,288	0.2173%
Total Gasoline Fuel		379,581	666,185,665	0.0570%
Total Construction Fuel	9,054	942,181		

Construction Phase[3]	Demolition			Site Preparation			Grading/Infrastructure Improvements		
	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)
2028	0	0	0	361.8455372	7.359965544	15.34556448	596.1310637	11.37540253	20.7530491
2029	0	0	0	0	0	0	184.6520751	3.427744206	6.316834456
Total	**0**	**0**	**0**	**362**	**7**	**15**	**781**	**15**	**27**

Construction Phase[3]	Building Construction			Paving			Architectural Coating		
	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)
2028	0	0	0	0	0	0	0	0	0
2029	1055.101841	603.8798968	1237.126115	0	0	0	0	0	0
2030	1199.72635	668.0342828	1383.207184	270.1129623	18.23714379	33.27500676	120.6685167	0	210.7022451
2031	207.076155	112.0183517	235.0098338	173.8549902	11.40355174	21.08190439	105.4802112	0	181.2933004
Total	**2,462**	**1,384**	**2,855**	**444**	**30**	**54**	**226**	**0**	**392**

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]	8.0	acres
Days of Soil Disturbance[2]	207	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	5,306	kWh/MG
Total Construction Water	5.00	million gallons
Construction Water Energy	26,536	kWh
	0.0265	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.00015%	

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.

UNMITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2031 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.32%	44,245,683	21.6	2,048,411	Gas	643,101,872	0.3185%
Light/Medium Trucks	1.92%	849,028	17.2	49,362	Diesel	256,162,718	0.0193%
Heavy Trucks/Other	2.72%	1,204,053	6.1	197,386	Diesel	256,162,718	0.0771%
Trucks Total	4.64%	2,053,080		246,748		256,162,718	0.0963%
Total	99.96%	46,419,606					
MITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2031 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.32%	44,245,683	21.6	2,048,411	Gas	643,101,872	0.3185%
Light/Medium Trucks	1.92%	849,028	17.2	49,362	Diesel	256,162,718	0.0193%
Heavy Trucks/Other	2.72%	1,204,053	6.1	197,386	Diesel	256,162,718	0.0771%
Trucks Total	4.64%	2,053,080		246,748		256,162,718	0.0963%
Total	99.96%	46,419,606					

Fleet Mix[5]	**LDA**	**LDT1**	**LDT2**	**MCY**	**MDV**	**LHD1**	**LHD2**	**MHD**	**OBUS**	**UBUS**	**SBUS**	**MH**	**HHD**
Cars	44.4702	3.7143	25.5578	1.8869	16.4039	2.7425	0.0000	0.0000	0.0535	0.0000	0.1258	0.3620	0.0000
Trucks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7924	1.1265	0.0000	0.0000	0.0000	0.0000	2.7213

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	65.9	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	166	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,327,420	kWh
Operational Water Energy	1.3274	GWh
San Bernardino County Annual Electricity	16,181	GWh
Percentage Increase	0.0082%	
MITIGATED		
Mitigated Indoor	65.9	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	166	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,327,420	kWh
Operational Water Energy	1.3274	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.0075%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
Elementary School	666666	3,978,953	666,666	3,978,953
Arena	6730783.085	0	6,730,783	0
Landscape	0	161669517.4	0	161,669,517
Apartments Low Rise	19198021.8	0	19198022	0
Apartments Mid Rise	17042311.73	229.357504	17042312	229
Single Family Housing	22248554.93	0	22248555	0
Total Operational Water (MG/year)	**66**	**166**	**66**	**166**

Notes:

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

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

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

Elecricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	18,487,499	17,780,573,271	0.1040%
Electricity (GWh/yr)	18.4875	17,781	0.1040%
Natural Gas (kBTU/yr)	40,283,187	43,105,239,200	0.0935%
Natural Gas (therms/yr)	402,832	431,052,392	0.0935%
MITIGATED			
	Mitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	10,083,032	17,780,573,271	0.0567%
Electricity (GWh/yr)	10.0830	17,781	0.0567%
Natural Gas (kBTU/yr)	7,309,665	43,105,239,200	0.0170%
Natural Gas (therms/yr)	73,097	431,052,392	0.0170%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
Elementary School	431299.67	155889.0119	342327.0067	329785.8237
Parking Lot	729210.0816	729210.0816	0	0
Arena	6615549.97	2847898.009	7075146.542	6979879.212
Apartments Low Rise	3231685.143	1453181.425	8009945.176	0
Apartments Mid Rise	2371187.54	1071344.358	5402088.391	0
Single Family Housing	5108566.313	3825509.187	19453679.79	0
Total Energy	**18,487,499**	**10,083,032**	**40,283,187**	**7,309,665**

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.

Phase 3

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2031 (Start of Construction)	Percent
Demolition	0	0		
Site Preparation/Grading	1,103	108,621		
Building Construction	2,462	242,553		
Paving	471	46,451		
Architectural Coating	224	22,069		
Total	4,260	419,694	256,162,718	0.1638%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	0	0		
Site Preparation/Grading	16	1,624		
Building Construction	597	58,812		
Paving	25	2,421		
Architectural Coating	0	0		
Total	638	62,857	256,162,718	0.0245%

Off-Site Gasoline[2]				
Demolition	0	0		
Site Preparation/Grading	36	4,080		
Building Construction	1,412	160,238		
Paving	55	6,206		
Architectural Coating	192	21,815		
Total	1,695	192,340	643,101,872	0.0299%

Total Diesel Fuel		482,551	256,162,718	0.1884%
Total Gasoline Fuel		192,340	643,101,872	0.0299%
Total Construction Fuel	6,592	674,890		

Construction Phase[3]	Demolition			Site Preparation			Grading/Infrastructure Improvements		
	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)
2031	0	0	0	321.9336171	4.832013448	10.42184539	79.7347553	1.224110073	2.640200832
2032	0	0	0	0	0	0	700.8385576	10.42846196	22.88465383
Total	**0**	**0**	**0**	**322**	**5**	**10**	**781**	**12**	**26**

Construction Phase[3]	Building Construction			Paving			Architectural Coating		
	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)
2031	0	0	0	0	0	0	0	0	0
2032	654.0982051	163.0297399	382.797736	0	0	0	0	0	0
2033	1199.729518	290.8495083	685.630458	204.3041693	10.82884272	23.85752431	66.41288887	0	57.48025209
2034	608.0837983	143.0659511	343.2707123	267.1696529	13.74284674	30.81759399	157.58421	0	134.7105606
Total	**2,462**	**597**	**1,412**	**471**	**25**	**55**	**224**	**0**	**192**

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]	8.0	acres
Days of Soil Disturbance[2]	207	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	5,306	kWh/MG
Total Construction Water	5.00	million gallons
Construction Water Energy	26,536	kWh
	0.0265	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.00015%	

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.

UNMITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2035 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.23%	27,232,094	21.6	1,260,745	Gas	624,793,405	0.2018%
Light/Medium Trucks	1.95%	531,473	17.2	30,900	Diesel	257,910,985	0.0120%
Heavy Trucks/Other	2.86%	777,512	6.1	127,461	Diesel	257,910,985	0.0494%
Trucks Total	4.81%	1,308,984		158,360		257,910,985	0.0614%
Total	100.04%	28,594,830					
MITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2035 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.23%	27,232,094	21.6	1,260,745	Gas	624,793,405	0.2018%
Light/Medium Trucks	1.95%	531,473	17.2	30,900	Diesel	257,910,985	0.0120%
Heavy Trucks/Other	2.86%	777,512	6.1	127,461	Diesel	257,910,985	0.0494%
Trucks Total	4.81%	1,308,984		158,360		257,910,985	0.0614%
Total	100.04%	28,594,830					

Fleet Mix[5]	**LDA**	**LDT1**	**LDT2**	**MCY**	**MDV**	**LHD1**	**LHD2**	**MHD**	**OBUS**	**UBUS**	**SBUS**	**MH**	**HHD**
Cars	43.3919	3.5277	26.4285	1.9200	16.5882	2.8061	0.0411	0.0000	0.0505	0.0411	0.1211	0.3182	0.0000
Trucks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7846	1.1670	0.0000	0.0000	0.0000	0.0000	2.8551

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	34.5	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	159	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,077,568	kWh
Operational Water Energy	1.0776	GWh
San Bernardino County Annual Electricity	16,181	GWh
Percentage Increase	0.0067%	
MITIGATED		
Mitigated Indoor	34.5	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	159	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,077,568	kWh
Operational Water Energy	1.0776	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.0061%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
Elementary School	341817.84	0	341,818	0
Landscape	0	158763099.2	0	158763099
Apartments Low Rise	20743625.25	0	20743625	0
Single Family Housing	13463019.53	0	13463020	0
Total Operational Water (MG/year)	**35**	**159**	**35**	**159**

Notes:

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

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

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

Elecricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	9,055,645	17,780,573,271	0.0509%
Electricity (GWh/yr)	9.0556	17,781	0.0509%
Natural Gas (kBTU/yr)	20,602,120	43,105,239,200	0.0478%
Natural Gas (therms/yr)	206,021	431,052,392	0.0478%
MITIGATED			
	Mitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	6,216,822	17,780,573,271	0.0350%
Electricity (GWh/yr)	6.2168	17,781	0.0350%
Natural Gas (kBTU/yr)	169,089	43,105,239,200	0.0004%
Natural Gas (therms/yr)	1,691	431,052,392	0.0004%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	**Mitigated**	**Unmitigated**	**Mitigated**
Elementary School	221136.9888	79927.78139	175518.7141	169088.569
Parking Lot	2251355.04	2251355.04	0	0
Apartments Low Rise	3491863.185	1570149.247	8654813.643	0
Single Family Housing	3091289.67	2315390.34	11771787.95	0
Total Energy	**9,055,645**	**6,216,822**	**20,602,120**	**169,089**

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.

Phase 4

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2035 (Start of Construction)	Percent
Demolition	0	0		
Site Preparation/Grading	1,137	112,030		
Building Construction	2,437	240,061		
Paving	446	43,934		
Architectural Coating	226	22,239		
Total	4,245	418,266	257,910,985	0.1622%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	0	0		
Site Preparation/Grading	30	2,974		
Building Construction	2,279	224,504		
Paving	21	2,102		
Architectural Coating	0	0		
Total	2,330	229,581	257,910,985	0.0890%

Off-Site Gasoline[2]				
Demolition	0	0		
Site Preparation/Grading	24	2,762		
Building Construction	4,936	560,222		
Paving	50	5,674		
Architectural Coating	681	77,350		
Total	5,691	646,008	624,793,405	0.1034%

Total Diesel Fuel		647,846	257,910,985	0.2512%
Total Gasoline Fuel		646,008	624,793,405	0.1034%
Total Construction Fuel	12,267	1,293,854		

Construction Phase[3]	Demolition			Site Preparation			Grading/Infrastructure Improvements		
	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)
2035	0	0	0	361.5706868	6.028063893	13.72498837	775.5387153	24.15597954	10.60939245
2036	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**362**	**6**	**14**	**776**	**24**	**11**

Construction Phase[3]	Building Construction			Paving			Architectural Coating		
	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)
2035	247.2400997	238.7527085	507.1554149	0	0	0	0	0	0
2036	1190.660833	1122.076114	2418.198362	73.66736874	3.60171661	8.31994629	15.19351567	0	46.24969545
2037	998.723109	917.8902014	2010.199055	358.5145279	17.09433718	40.12748819	158.4462582	0	477.9952151
2038				13.75124217	0.64424476	1.539736523	52.09073566	0	157.210372
Total	**2,437**	**2,279**	**4,936**	**446**	**21**	**50**	**226**	**0**	**681**

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]	8.0	acres
Days of Soil Disturbance[2]	207	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	5,306	kWh/MG
Total Construction Water	5.00	million gallons
Construction Water Energy	26,536	kWh
	0.0265	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.00015%	

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.

UNMITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2038 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.06%	118,211,943	21.6	5,472,775	Gas	617,956,832	0.8856%
Light/Medium Trucks	1.97%	2,333,705	17.2	135,681	Diesel	261,851,070	0.0518%
Heavy Trucks/Other	2.97%	3,511,289	6.1	575,621	Diesel	261,851,070	0.2198%
Trucks Total	4.94%	5,844,994		711,302		261,851,070	0.2716%
Total	100.00%	124,360,975					
MITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2038 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	95.06%	118,211,943	21.6	5,472,775	Gas	617,956,832	0.8856%
Light/Medium Trucks	1.97%	2,333,705	17.2	135,681	Diesel	261,851,070	0.0518%
Heavy Trucks/Other	2.97%	3,511,289	6.1	575,621	Diesel	261,851,070	0.2198%
Trucks Total	4.94%	5,844,994		711,302		261,851,070	0.2716%
Total	100.00%	124,360,975					

Fleet Mix[5]	**LDA**	**LDT1**	**LDT2**	**MCY**	**MDV**	**LHD1**	**LHD2**	**MHD**	**OBUS**	**UBUS**	**SBUS**	**MH**	**HHD**
Cars	42.8531	3.4297	26.7673	1.9436	16.7051	2.8542	0.0000	0.2924	0.0489	0.0447	0.1165	0.0000	0.0000
Trucks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7797	1.1945	0.0000	0.0000	0.0000	0.0000	2.9703

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	183.8	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	70	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,620,333	kWh
Operational Water Energy	1.6203	GWh
San Bernardino County Annual Electricity	16,181	GWh
Percentage Increase	0.0100%	
MITIGATED		
Mitigated Indoor	183.8	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	70	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,620,333	kWh
Operational Water Energy	1.6203	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.0091%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
General Office Building	44954196.88	0	44,954,197	0
Landscape	0	69572387.84	0	69572388
Apartments Mid Rise	82649110.8	0	82649111	0
Regional Shopping Center	56204747.85	0	56204748	0
Total Operational Water (MG/year)	**184**	**70**	**184**	**70**

Notes:

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

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

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

Elecricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	36,992,155	17,780,573,271	0.2080%
Electricity (GWh/yr)	36.9922	17,781	0.2080%
Natural Gas (kBTU/yr)	34,002,212	43,105,239,200	0.0789%
Natural Gas (therms/yr)	340,022	431,052,392	0.0789%
MITIGATED			
	Mitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	18,671,514	17,780,573,271	0.1050%
Electricity (GWh/yr)	18.6715	17,781	0.1050%
Natural Gas (kBTU/yr)	7,296,765	43,105,239,200	0.0169%
Natural Gas (therms/yr)	72,968	431,052,392	0.0169%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	**Mitigated**	**Unmitigated**	**Mitigated**
General Office Building	9,619,551	4,257,977	2,710,503	2,496,959
Parking Lot	4,655,344	4,655,344	0	0
Apartments Mid Rise	11,499,411	5,194,517	26,198,195	0
Regional Shopping Center	11,217,849	4,563,676	5,093,514	4,799,806
Total Energy	**36,992,155**	**18,671,514**	**34,002,212**	**7,296,765**

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.

Phase 5

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2038 (Start of Construction)	Percent
Demolition	0	0		
Site Preparation/Grading	1,142	112,527		
Building Construction	2,462	242,552		
Paving	446	43,935		
Architectural Coating	278	27,414		
Total	4,328	426,427	261,851,070	0.1629%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	0	0		
Site Preparation/Grading	13	1,315		
Building Construction	2,265	223,190		
Paving	17	1,647		
Architectural Coating	0	0		
Total	2,295	226,152	261,851,070	0.0864%

Off-Site Gasoline[2]				
Demolition	0	0		
Site Preparation/Grading	37	4,233		
Building Construction	6,377	723,891		
Paving	49	5,582		
Architectural Coating	1,087	123,400		
Total	7,551	857,106	617,956,832	0.1387%

Total Diesel Fuel		652,580	261,851,070	0.2492%
Total Gasoline Fuel		857,106	617,956,832	0.1387%
Total Construction Fuel	14,175	1,509,685		

Construction Phase[3]	Demolition			Site Preparation			Grading/Infrastructure Improvements		
	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)
2038	0	0	0	361.5706868	4.831835698	13.47269457	587.5293297	6.442447597	17.96359276
2039	0	0	0	0	0	0	193.0453512	2.077362677	5.860080209
Total	**0**	**0**	**0**	**362**	**5**	**13**	**781**	**9**	**24**

Construction Phase[3]	Building Construction			Paving			Architectural Coating		
	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)
2038	0	0	0	0	0	0	0	0	0
2039	1048.529629	975.7396737	2727.493192	0	0	0	14.32388181	0	56.43089362
2040	1203.010175	1100.251307	3109.348667	315.2994801	11.87259918	34.82726082	158.8777698	0	621.8697333
2041	210.362435	189.3901763	540.633604	130.6368006	4.842382388	14.34830667	105.0503286	0	408.854163
Total	**2,462**	**2,265**	**6,377**	**446**	**17**	**49**	**278**	**0**	**1,087**

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]	8.0	acres
Days of Soil Disturbance[2]	207	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	5,306	kWh/MG
Total Construction Water	5.00	million gallons
Construction Water Energy	26,536	kWh
	0.0265	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.00015%	

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

UNMITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2041 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	94.88%	128,752,522	21.6	5,960,765	Gas	616,003,242	0.9677%
Light/Medium Trucks	2.01%	2,582,714	17.2	150,158	Diesel	271,663,709	0.0553%
Heavy Trucks/Other	3.12%	4,013,076	6.1	657,881	Diesel	271,663,709	0.2422%
Trucks Total	5.12%	6,595,791		808,039		271,663,709	0.2974%
Total	100.00%	135,704,445					
MITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2041 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	94.88%	128,752,522	21.6	5,960,765	Gas	616,003,242	0.9677%
Light/Medium Trucks	2.01%	2,582,714	17.2	150,158	Diesel	271,663,709	0.0553%
Heavy Trucks/Other	3.12%	4,013,076	6.1	657,881	Diesel	271,663,709	0.2422%
Trucks Total	5.12%	6,595,791		808,039		271,663,709	0.2974%
Total	100.00%	135,704,445					

Fleet Mix[5]	**LDA**	**LDT1**	**LDT2**	**MCY**	**MDV**	**LHD1**	**LHD2**	**MHD**	**OBUS**	**UBUS**	**SBUS**	**MH**	**HHD**
Cars	42.4744	3.3579	26.9537	1.9615	16.7619	2.8900	0.0000	0.0000	0.0478	0.0482	0.1102	0.2715	0.0000
Trucks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7772	1.2288	0.0000	0.0000	0.0000	0.0000	3.1169

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	91.9	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	185	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,608,449	kWh
Operational Water Energy	1.6084	GWh
San Bernardino County Annual Electricity	16,181	GWh
Percentage Increase	0.0099%	
MITIGATED		
Mitigated Indoor	91.9	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	185	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,608,449	kWh
Operational Water Energy	1.6084	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.0090%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
General Office Building	3728854.033	0	3728854.033	0
Elementary School	3743026.56	0	3743026.56	0
Landscape	0	185284166.1	0	185284166.1
Apartments Low Rise	54136794.53	0	54136794.53	0
Apartments Mid Rise	1545603.45	0	1,545,603	0
Condo/Townhouse	59221016.4	0	59221016	0
Single Family Housing	26437953.75	0	26437954	0
Regional Shopping Center	4661383.777	0	4661384	0
Total Operational Water (MG/year)	**92**	**185**	**92**	**185**

Notes:

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

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

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

Elecricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	34,855,963	17,780,573,271	0.1960%
Electricity (GWh/yr)	34.8560	17,781	0.1960%
Natural Gas (kBTU/yr)	79,121,958	43,105,239,200	0.1836%
Natural Gas (therms/yr)	791,220	431,052,392	0.1836%
MITIGATED			
	Mitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	19,801,562	17,780,573,271	0.1114%
Electricity (GWh/yr)	19.8016	17,781	0.1114%
Natural Gas (kBTU/yr)	2,456,790	43,105,239,200	0.0057%
Natural Gas (therms/yr)	24,568	431,052,392	0.0057%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	Mitigated	Unmitigated	Mitigated
General Office Building	797,921	353,190	224,830	207,117
Elementary School	2,421,551	875,246	1,922,010	1,851,597
Parking Lot	4,636,265	4,636,265	0	0
Apartments Low Rise	9,113,078	4,097,270	22,587,367	0
Apartments Mid Rise	215,048	97,427	489,927	0
Condo/Townhouse	10,671,230	4,818,061	30,358,585	0
Single Family Housing	6,070,508	4,545,612	23,116,804	0
Regional Shopping Center	930,361	378,492	422,434	398,076
Total Energy	**34,855,963**	**19,801,562**	**79,121,958**	**2,456,790**

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.

Phase 6

Construction Fuel Consumption

On-Site Diesel[1] (off-road construction Equipment)	$MTCO_2e$	Gallons of Fuel[4]	County Fuel in 2041 (Start of Construction)	Percent
Demolition	0	0		
Site Preparation/Grading	1,187	116,924		
Building Construction	2,462	242,552		
Paving	446	43,934		
Architectural Coating	239	23,565		
Total	4,334	426,975	271,663,709	0.1572%

Off-Site Diesel[1] (on-road construction trips)				
Demolition	0	0		
Site Preparation/Grading	15	1,513		
Building Construction	717	70,642		
Paving	19	1,886		
Architectural Coating	0	0		
Total	752	74,041	271,663,709	0.0273%

Off-Site Gasoline[2]				
Demolition	0	0		
Site Preparation/Grading	38	4,335		
Building Construction	1,877	213,074		
Paving	48	5,495		
Architectural Coating	275	31,259		
Total	2,239	254,163	616,003,242	0.0413%

Total Diesel Fuel		501,016	271,663,709	0.1844%
Total Gasoline Fuel		254,163	616,003,242	0.0413%
Total Construction Fuel	7,324	755,179		

Construction Phase[3]	Demolition			Site Preparation			Grading/Infrastructure Improvements		
	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)
2041	0	0	0	414.6010542	6.137082522	15.15382564	4.19663807	0.050972446	0.125862339
2042	0	0	0	0	0	0	767.9847667	9.167015424	22.91589113
Total	**0**	**0**	**0**	**415**	**6**	**15**	**772**	**9**	**23**

Construction Phase[3]	Building Construction			Paving			Architectural Coating		
	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)
2041	0	0	0	0	0	0	0	0	0
2042	598.2181745	176.4924621	458.2773373	0	0	0	0	0	0
2043	1199.723262	349.3931012	914.8705587	254.397299	10.9773253	27.67250211	80.74116169	0	93.24160214
2044	663.9564354	191.1275972	504.030136	191.5355422	8.169245562	20.74061469	158.4436775	0	182.1495046
Total	**2,462**	**717**	**1,877**	**446**	**19**	**48**	**239**	**0**	**275**

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]	8.0	acres
Days of Soil Disturbance[2]	218	days
Water Concentration[3]	3,020	gallons/acre
Water Energy Intensity[4]	5,306	kWh/MG
Total Construction Water	5.27	million gallons
Construction Water Energy	27,946	kWh
	0.0279	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.00016%	

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

UNMITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2045 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	94.57%	36,654,871	21.6	1,696,985	Gas	617,999,237	0.2746%
Light/Medium Trucks	2.07%	757,121	17.2	44,019	Diesel	292,027,876	0.0151%
Heavy Trucks/Other	3.36%	1,232,439	6.1	202,039	Diesel	292,027,876	0.0692%
Trucks Total	5.43%	1,989,560		246,058		292,027,876	0.0843%
Total	100.00%	38,758,620					
MITIGATED							
Vehicle Type	**Percent**	**Annual VMT[1]**	**MPG[2]**	**Annual Fuel (Gallons)**	**Fuel Type**	**County Fuel in 2045 - Opening Year (Gallons)[3]**	**RS Percent**
Passenger Cars	94.57%	36,654,871	21.6	1,696,985	Gas	617,999,237	0.2746%
Light/Medium Trucks	2.07%	757,121	17.2	44,019	Diesel	292,027,876	0.0151%
Heavy Trucks/Other	3.36%	1,232,439	6.1	202,039	Diesel	292,027,876	0.0692%
Trucks Total	5.43%	1,989,560		246,058		292,027,876	0.0843%
Total	100.00%	38,758,620					

Land Use[5]	**LDA**	**LDT1**	**LDT2**	**MCY**	**MDV**	**LHD1**	**LHD2**	**MHD**	**OBUS**	**UBUS**	**SBUS**	**MH**	**HHD**
Unrefrigerated Warehouse - Passenger Cars	42.0991	3.2881	27.0447	1.9850	16.7826	2.9200	0.0000	0.0000	0.0467	0.0527	0.1031	0.2502	0.0000
Unrefrigerated Warehouse - Trucks	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7774	1.2882	0.0000	0.0000	0.0000	0.0000	3.3623

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	49.1	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Unmitigated Outdoor	155	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,157,551	kWh
Operational Water Energy	1.1576	GWh
San Bernardino County Annual Electricity	16,181	GWh
Percentage Increase	0.0072%	
MITIGATED		
Mitigated Indoor	49.1	million gallons
Indoor Energy Intensity Factor[1]	6,807	kWh/MG
Mitigated Outdoor	155	million gallons
Outdoor Energy Intensity Factor[2]	5,306	kWh/MG
Operational Water Energy	1,157,551	kWh
Operational Water Energy	1.1576	GWh
Riverside County Annual Electricity	17,781	GWh
Percentage Increase	0.0065%	

Land Use[3]	Unmitigated (gal/year)		Mitigated (gal/year)	
	Indoor	Outdoor	Indoor	Outdoor
Elementary School	2111513.04	0	2,111,513	0
Landscape	0	155130076.3	0	155130076
Apartments Low Rise	29041075.35	0	29041075	0
Single Family Housing	17977808.55	0	17977809	0
Total Operational Water (MG/year)	**49**	**155**	**49**	**155**

Notes:

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

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

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

Elecricity/Natural Gas Energy

UNMITIGATED			
	Unmitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	11,298,408	17,780,573,271	0.0635%
Electricity (GWh/yr)	11.2984	17,781	0.0635%
Natural Gas (kBTU/yr)	28,920,412	43,105,239,200	0.0671%
Natural Gas (therms/yr)	289,204	431,052,392	0.0671%
MITIGATED			
	Mitigated Project Annual Energy	Riverside County Annual Energy[3]	Percentage Increase
Electricity (kWh/yr)	6,699,055	17,780,573,271	0.0377%
Electricity (GWh/yr)	6.6991	17,781	0.0377%
Natural Gas (kBTU/yr)	1,044,525	43,105,239,200	0.0024%
Natural Gas (therms/yr)	10,445	431,052,392	0.0024%

Land Use	Electricity[1] (kWh/yr)		Natural Gas[2] (kBTU/yr)	
	Unmitigated	**Mitigated**	**Unmitigated**	**Mitigated**
Elementary School	1,366,048	493,745	1,084,246	1,044,525
Parking Lot	915,805	915,805	0	0
Apartments Low Rise	4,888,608	2,198,082	12,116,739	0
Single Family Housing	4,127,946	3,091,424	15,719,427	0
Total Energy	**11,298,408**	**6,699,055**	**28,920,412**	**1,044,525**

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.