

APPENDIX F

ENERGY CALCULATIONS

Table 1. Summary of Energy Use During Construction

Fuel Type	Quantity
Diesel	
On-Site Construction Equipment	888,437 Gallons
Off-Site Motor Vehicles	148,689,887 Gallons
Total	149,578,324 Gallons
Gasoline	
On-Site Construction Equipment	0 Gallons
Off-Site Motor Vehicles	543,211,581 Gallons
Total	543,211,581 Gallons
Electricity	147,979 kWh

Table 2. Summary of Annual Energy Use During Operation

Source	Units	Project
Electricity		
High School	kWh/yr	2,267,950
Shopping Center	kWh/yr	2,781,860
Residential	kWh/yr	11,615,900
Building Subtotal	kWh/yr	16,665,710
Indoor Water Use	kWh/yr	436,940
Outdoor Water Use	kWh/yr	228,499
Water Subtotal	kWh/yr	665,440
Electricity Total	kWh/yr	17,331,150
Natural Gas		
High School	kBTU/yr	6,865,854
Shopping Center	kBTU/yr	1,257,150
Residential	kBTU/yr	91,788,500
Natural Gas Total	kBTU/yr	99,911,504
Mobile		
Diesel	gallons	2,181,370
Gasoline	gallons	2,174,947

Table 3. Water by Land Use

Land Use	Units	Project		
		Indoor/Outdoor Use	Indoor Use	Outdoor Use
High School	Mgal	2.11438/5.43698	2.11438	5.43698
Shopping Center	Mgal	33.5566/20.567	33.5566	20.567
Residential	Mgal	156.37/98.5809	156.37	98.5809
Sum	Mgal		192.04098	124.58488

Water and Wastewater Electricity Intensity (kWh/gallon)

Supply Water	0.009727
Treat Water	0.000111
Distribute Water	0.001272
Wastewater Treatment	0.001911

Source: CalEEMod User's Guide, Appendix D, Table 9.2 Los Angeles - South Coast Air District

Indoor Water Factor	0.013021 kWh/gallon (supply, treat, distribute, wastewater treatment)
Outdoor Water Factor	0.01111 kWh/gallon (supply, treat, and distribute)

Notes:

Electricity and Natural Gas for the Project is total operational usage. Net difference, takes total Project usage and subtracts existing uses. Electricity, natural gas, and mobile usage was calculated from CalEEMod in **Appendix D** of the EIR

Table 4. Off-road Equipment Fuel Usage During Construction

Phase Name	Off-road Equipment Type	Amount	Hours per Day	Horsepower	Load Factor	Number of Days	Diesel Fuel Usage (Gallons per Project)
Phase 1							
Grading	Excavators	2	8	158	0.38	35	1,681
Grading	Graders	1	8	187	0.41	35	1,073
Grading	Rubber Tired Dozers	1	8	247	0.4	35	1,383
Grading	Scrapers	2	8	367	0.48	35	4,932
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	35	1,005
Building Construction	Cranes	1	7	231	0.29	370	8,675
Building Construction	Forklifts	3	8	89	0.2	370	7,903
Building Construction	Generator Sets	1	8	84	0.74	370	9,200
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	370	13,943
Building Construction	Welders	1	8	46	0.45	370	3,064
Architectural Coating	Air Compressors	1	6	78	0.48	44	494
Paving	Pavers	2	8	130	0.42	20	874
Paving	Paving Equipment	2	8	132	0.36	20	760
Paving	Rollers	2	8	80	0.38	20	486
Phase 2							
Grading	Excavators	2	8	158	0.38	45	2,161
Grading	Graders	1	8	187	0.41	45	1,380
Grading	Rubber Tired Dozers	1	8	247	0.4	45	1,778
Grading	Scrapers	2	8	367	0.48	45	6,342
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	45	1,292
Building Construction	Cranes	1	7	231	0.29	328	7,690
Building Construction	Forklifts	3	8	89	0.2	328	7,006
Building Construction	Generator Sets	1	8	84	0.74	328	8,155
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	328	12,361
Building Construction	Welders	1	8	46	0.45	328	2,716
Architectural Coating	Air Compressors	1	6	78	0.48	67	753
Paving	Pavers	2	8	130	0.42	35	1,529
Paving	Paving Equipment	2	8	132	0.36	35	1,331
Paving	Rollers	2	8	80	0.38	35	851

Phase 3

Grading	Excavators	2	8	158	0.38	310	14,890
Grading	Graders	1	8	187	0.41	310	9,507
Grading	Rubber Tired Dozers	1	8	247	0.4	310	12,251
Grading	Scrapers	2	8	367	0.48	310	43,688
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	310	8,901
Building Construction	Cranes	1	7	231	0.29	262	6,143
Building Construction	Forklifts	3	8	89	0.2	262	5,596
Building Construction	Generator Sets	1	8	84	0.74	262	6,514
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	262	9,873
Building Construction	Welders	1	8	46	0.45	262	2,169
Architectural Coating	Air Compressors	1	6	78	0.48	131	1,471
Paving	Pavers	2	8	130	0.42	108	4,717
Paving	Paving Equipment	2	8	132	0.36	108	4,106
Paving	Rollers	2	8	80	0.38	108	2,627

Phase 4

Grading	Excavators	2	8	158	0.38	310	14,890
Grading	Graders	1	8	187	0.41	310	9,507
Grading	Rubber Tired Dozers	1	8	247	0.4	310	12,251
Grading	Scrapers	2	8	367	0.48	310	43,688
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	310	8,901
Building Construction	Cranes	1	7	231	0.29	263	6,166
Building Construction	Forklifts	3	8	89	0.2	263	5,618
Building Construction	Generator Sets	1	8	84	0.74	263	6,539
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	263	9,911
Building Construction	Welders	1	8	46	0.45	263	2,178
Architectural Coating	Air Compressors	1	6	78	0.48	154	1,730
Paving	Pavers	2	8	130	0.42	45	1,966
Paving	Paving Equipment	2	8	132	0.36	45	1,711
Paving	Rollers	2	8	80	0.38	45	1,094

Phase 5

Grading	Excavators	2	8	158	0.38	310	14,890
Grading	Graders	1	8	187	0.41	310	9,507
Grading	Rubber Tired Dozers	1	8	247	0.4	310	12,251

Grading	Scrapers	2	8	367	0.48	310	43,688
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	310	8,901
Building Construction	Cranes	1	7	231	0.29	262	6,143
Building Construction	Forklifts	3	8	89	0.2	262	5,596
Building Construction	Generator Sets	1	8	84	0.74	262	6,514
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	262	9,873
Building Construction	Welders	1	8	46	0.45	262	2,169
Architectural Coating	Air Compressors	1	6	78	0.48	133	1,494
Paving	Pavers	2	8	130	0.42	45	1,966
Paving	Paving Equipment	2	8	132	0.36	45	1,711
Paving	Rollers	2	8	80	0.38	45	1,094
Phase 6							
Grading	Excavators	2	8	158	0.38	310	14,890
Grading	Graders	1	8	187	0.41	310	9,507
Grading	Rubber Tired Dozers	1	8	247	0.4	310	12,251
Grading	Scrapers	2	8	367	0.48	310	43,688
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	310	8,901
Building Construction	Cranes	1	7	231	0.29	262	6,143
Building Construction	Forklifts	3	8	89	0.2	262	5,596
Building Construction	Generator Sets	1	8	84	0.74	262	6,514
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	262	9,873
Building Construction	Welders	1	8	46	0.45	262	2,169
Architectural Coating	Air Compressors	1	6	78	0.48	173	1,943
Paving	Pavers	2	8	130	0.42	44	1,922
Paving	Paving Equipment	2	8	132	0.36	44	1,673
Paving	Rollers	2	8	80	0.38	44	1,070
Phase 7							
Grading	Excavators	2	8	158	0.38	110	5,284
Grading	Graders	1	8	187	0.41	110	3,373
Grading	Rubber Tired Dozers	1	8	247	0.4	110	4,347
Grading	Scrapers	2	8	367	0.48	110	15,502
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	110	3,158
Building Construction	Cranes	1	7	231	0.29	283	6,635
Building Construction	Forklifts	3	8	89	0.2	283	6,045

Building Construction	Generator Sets	1	8	84	0.74	283	7,037
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	283	10,665
Building Construction	Welders	1	8	46	0.45	283	2,343
Architectural Coating	Air Compressors	1	6	78	0.48	131	1,471
Paving	Pavers	2	8	130	0.42	22	961
Paving	Paving Equipment	2	8	132	0.36	22	836
Paving	Rollers	2	8	80	0.38	22	535
Phase 8							
Grading	Excavators	2	8	158	0.38	75	3,602
Grading	Graders	1	8	187	0.41	75	2,300
Grading	Rubber Tired Dozers	1	8	247	0.4	75	2,964
Grading	Scrapers	2	8	367	0.48	75	10,570
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	75	2,153
Building Construction	Cranes	1	7	231	0.29	295	6,917
Building Construction	Forklifts	3	8	89	0.2	295	6,301
Building Construction	Generator Sets	1	8	84	0.74	295	7,335
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	295	11,117
Building Construction	Welders	1	8	46	0.45	295	2,443
Architectural Coating	Air Compressors	1	6	78	0.48	98	1,101
Paving	Pavers	2	8	130	0.42	45	1,966
Paving	Paving Equipment	2	8	132	0.36	45	1,711
Paving	Rollers	2	8	80	0.38	45	1,094
Phase 9							
Grading	Excavators	2	8	158	0.38	310	14,890
Grading	Graders	1	8	187	0.41	310	9,507
Grading	Rubber Tired Dozers	1	8	247	0.4	310	12,251
Grading	Scrapers	2	8	367	0.48	310	43,688
Grading	Tractors/Loaders/Backhoes	2	8	97	0.37	310	8,901
Building Construction	Cranes	1	7	231	0.29	348	8,159
Building Construction	Forklifts	3	8	89	0.2	348	7,433
Building Construction	Generator Sets	1	8	84	0.74	348	8,653
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	348	13,114
Building Construction	Welders	1	8	46	0.45	348	2,881
Architectural Coating	Air Compressors	1	6	78	0.48	282	3,167

Paving	Pavers	2	8	130	0.42	44	1,922
Paving	Paving Equipment	2	8	132	0.36	44	1,673
Paving	Rollers	2	8	80	0.38	44	1,070
							888,437

Notes:

Equipment assumptions from CalEEMod.

Fuel usage estimate of 0.05 gallons per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3 E.

Table 5. On road Vehicle Fuel Usage During Construction

Phase Name	Days	Daily	Total			Trip Length (Miles)			Total Length (Miles)			Fuel Consumption (Gallons)	
		Worker Trips	Worker Trips	Vendor Trips	Haul Trips	Worker	Vendor	Hauling	Worker	Vendor	Hauling	Gasoline	Diesel
Phase 1													
Grading	35	20	700	0	0	15	7	20	10,290	0	0	218,148	59,682
Building Construction	370	143	52,910	51	0	15	7	20	777,777	352	0	16,488,872	4,513,148
Paving	20	15	300	0	0	15	7	20	4,410	0	0	93,492	25,578
Architectural Coating	44	29	1,276	0	0	15	7	20	18,757	0	0	397,653	108,792
Phase 2													
Grading	45	20	900	0	0	15	7	20	13,230	0	0	280,476	76,734
Building Construction	328	235	77,080	87	0	15	7	20	1,133,076	600	0	24,021,211	6,575,323
Paving	35	15	525	0	0	15	7	20	7,718	0	0	163,611	44,762
Architectural Coating	67	47	3,149	0	0	15	7	20	46,290	0	0	981,354	268,484
Phase 3													
Grading	310	20	6,200	0	0	15	7	20	91,140	0	0	1,932,168	528,612
Building Construction	262	696	182,352	266	0	15	7	20	2,680,574	1,835	0	56,828,177	15,557,977
Paving	108	15	1,620	0	0	15	7	20	23,814	0	0	504,857	138,121
Architectural Coating	131	139	18,209	0	0	15	7	20	267,672	0	0	5,674,653	1,552,499
Phase 4													
Grading	310	20	6,200	0	0	15	7	20	91,140	0	0	1,932,168	528,612
Building Construction	263	712	187,256	259	0	15	7	20	2,752,663	1,787	0	58,356,460	15,975,812
Paving	45	15	675	0	0	15	7	20	9,923	0	0	210,357	57,551
Architectural Coating	154	142	21,868	0	0	15	7	20	321,460	0	0	6,814,944	1,864,466
Phase 5													
Grading	310	20	6,200	0	0	15	7	20	91,140	0	0	1,932,168	528,612
Building Construction	262	539	141,218	124	0	15	7	20	2,075,905	856	0	44,009,178	12,045,209
Paving	45	15	675	0	0	15	7	20	9,923	0	0	210,357	57,551
Architectural Coating	133	108	14,364	0	0	15	7	20	211,151	0	0	4,476,397	1,224,675
Phase 6													
Grading	310	20	6,200	0	0	15	7	20	91,140	0	0	1,932,168	528,612
Building Construction	262	692	181,304	273	0	15	7	20	2,665,169	1,884	0	56,501,579	15,468,905
Paving	44	15	660	0	0	15	7	20	9,702	0	0	205,682	56,272
Architectural Coating	173	138	23,874	0	0	15	7	20	350,948	0	0	7,440,093	2,035,497
Phase 7													
Grading	110	20	2,200	0	0	15	7	20	32,340	0	0	685,608	187,572
Building Construction	283	115	32,545	37	0	15	7	20	478,412	255	0	10,142,324	2,776,267
Paving	22	15	330	0	0	15	7	20	4,851	0	0	102,841	28,136
Architectural Coating	131	23	3,013	0	0	15	7	20	44,291	0	0	938,971	256,888
Phase 8													
Grading	75	20	1,500	0	0	15	7	20	22,050	0	0	467,460	127,890
Building Construction	295	844	248,980	329	0	15	7	20	3,660,006	2,270	0	77,592,127	21,241,201
Paving	45	15	675	0	0	15	7	20	9,923	0	0	210,357	57,551
Architectural Coating	98	169	16,562	0	0	15	7	20	243,461	0	0	5,161,382	1,412,076
Phase 9													
Grading	310	20	6,200	0	0	15	7	20	91,140	0	0	1,932,168	528,612
Building Construction	348	1223	425,604	458	0	15	7	20	6,256,379	3,160	0	132,635,231	36,305,326

Paving	44	15	660	0	0	15	7	20	9,702	0	0	205,682	56,272
Architectural Coating	282	245	69,090	0	0	15	7	20	1,015,623	0	0	21,531,208	5,890,613
Total												543,211,581	148,689,887

Fuel Efficiency

Workers 21.2
Vendor/Haul Trucks 5.8

Notes:

Fuel efficiency calculated in **Table 10, EMFAC2014 Results - Construction.**

Table 6. Water Usage for Control of Fugitive Dust During Construction

Phase Name	Days	Total Disturbed Acreage	Gallons for Project	Electricity (kWh)
Phase 1				
Grading	35	87.5	264,250	2,570
Building Construction	370	0	0	0
Paving	20	0	0	0
Architectural Coating	44	0	0	0
Phase 2			0	0
Grading	45	112.5	339,750	3,305
Building Construction	328	0	0	0
Paving	35	0	0	0
Architectural Coating	67	0	0	0
Phase 3			0	0
Grading	310	775	2,340,500	22,766
Building Construction	262	0	0	0
Paving	108	0	0	0
Architectural Coating	131	0	0	0
Phase 4			0	0
Grading	310	775	2,340,500	22,766
Building Construction	263	0	0	0
Paving	45	0	0	0
Architectural Coating	154	0	0	0
Phase 5			0	0
Grading	310	775	2,340,500	22,766
Building Construction	262	0	0	0
Paving	45	0	0	0
Architectural Coating	133	0	0	0
Phase 6			0	0
Grading	310	775	2,340,500	22,766
Building Construction	262	0	0	0
Paving	44	0	0	0
Architectural Coating	173	0	0	0
Phase 7			0	0
Grading	110	775	2,340,500	22,766
Building Construction	283	0	0	0
Paving	22	0	0	0
Architectural Coating	131	0	0	0
Phase 8			0	0
Grading	75	187.5	566,250	5,508
Building Construction	295	0	0	0
Paving	45	0	0	0
Architectural Coating	98	0	0	0
Phase 9			0	0
Grading	310	775	2,340,500	22,766
Building Construction	348	0	0	0
Paving	44	0	0	0

Architectural Coating	282	0	0	0
Total		0	15,213,250	147,979

Notes:

Total disturbed acreage for demolition per Project description, Project Site area. Total disturbed acreage for site preparation through architectural coating per CalEEMod for proposed Project.

Construction Schedule

5 days per week
20 days per month

Water Usage

3,020 gallons per acre per day

Source: Air & Waste Management Association, Air Pollution Engineering Manual, 1992 Edition

Supply Water Electricity Intensity

0.009727 kWh/gallons (CalEEMod default for South Coast Air Basin)

Table 7. On road Vehicles - Operational

Scenario	Annual VMT	Fuel Consumption (gal)	
		Gasoline	Diesel
Buildout	91,924,780	2,174,947	2,181,370

Table 8. Fuel Consumption Summary

Fuel	Fuel Efficiency (MPG)	%Fleet
Gasoline	33.3	78.8%
Diesel	8.9	21.2%

Notes:

*Percent fleet based on VMT from EMFAC2014 as shown in **Table 9, EMFAC2014 Emissions Inventory-Operations**.*

Annual VMT obtained from the Etiwanda Heights Neighborhood & Conservation Plan Transportation Impact Study.

*Fuel efficiency based on calculations in **Table 9, EMFAC2014 Emissions Inventory-Operations**, from EMFAC2014.*

Table 9. EMFAC2014 Emissions Inventory - Operations

Fuel	VMT (miles/day)	Fuel Consumption (1,000 gal/day)	Fuel Efficiency (miles per gallon)	Fuel Percentage
GAS	382,232,939	11,477	33.3	78.8
DSL	38,602,143	4,321	8.9	21.2

Note: Fuel percentage based on VMT.

Fuel efficiency calculated using fuel

consumption and VMT from EMFAC2014.

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Air Basin

Region: South Coast

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdIYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
South Coas	2040	All Other Buses	Aggregated	Aggregated	DSL	6854.86567	390323.2497	0	43.56933
South Coas	2040	LDA	Aggregated	Aggregated	DSL	99729.0184	2940852.909	632623.6	57.08969
South Coas	2040	LDT1	Aggregated	Aggregated	DSL	359.707393	10639.20293	2217.759	0.231936
South Coas	2040	LDT2	Aggregated	Aggregated	DSL	6597.87332	206973.7539	41872.88	4.993328
South Coas	2040	LHD1	Aggregated	Aggregated	DSL	125717.726	3704868.499	1581371	166.3068
South Coas	2040	LHD2	Aggregated	Aggregated	DSL	59324.4788	1880316.765	746227.3	92.71009
South Coas	2040	MDV	Aggregated	Aggregated	DSL	46896.083	1381579.438	295133.8	43.71123
South Coas	2040	MH	Aggregated	Aggregated	DSL	9778.68016	73214.21362	977.868	6.932304
South Coas	2040	Motor Coach	Aggregated	Aggregated	DSL	1483.63719	204693.3193	0	33.30896
South Coas	2040	PTO	Aggregated	Aggregated	DSL	0	312874.4672	0	56.65718
South Coas	2040	SBUS	Aggregated	Aggregated	DSL	5569.65999	198102.9514	0	26.24514
South Coas	2040	T6 Ag	Aggregated	Aggregated	DSL	364.223108	4446.995332	0	0.519653
South Coas	2040	T6 CAIRP heavy	Aggregated	Aggregated	DSL	320.289577	15034.47665	0	1.631454

South Coas	2040 T6 CAIRP small	Aggregated	Aggregated	DSL	824.673274	46152.13271	0	5.106843
South Coas	2040 T6 instate construct	Aggregated	Aggregated	DSL	2551.70571	202704.9339	0	22.36764
South Coas	2040 T6 instate construct	Aggregated	Aggregated	DSL	11586.0231	544544.6233	0	60.50509
South Coas	2040 T6 instate heavy	Aggregated	Aggregated	DSL	48197.8713	2465551.597	0	267.8275
South Coas	2040 T6 instate small	Aggregated	Aggregated	DSL	122638.075	6215781.93	0	690.1402
South Coas	2040 T6 OOS heavy	Aggregated	Aggregated	DSL	183.677844	8614.190103	0	0.934793
South Coas	2040 T6 OOS small	Aggregated	Aggregated	DSL	472.506793	26443.43757	0	2.926029
South Coas	2040 T6 Public	Aggregated	Aggregated	DSL	6321.245	105837.1117	0	12.07596
South Coas	2040 T6 utility	Aggregated	Aggregated	DSL	1732.00625	32630.81825	0	3.681162
South Coas	2040 T7 Ag	Aggregated	Aggregated	DSL	316.671005	3307.923851	0	0.645119
South Coas	2040 T7 CAIRP	Aggregated	Aggregated	DSL	9190.57256	2299861.681	0	343.2482
South Coas	2040 T7 CAIRP constructi	Aggregated	Aggregated	DSL	690.247014	143797.3355	0	22.21417
South Coas	2040 T7 NNOOS	Aggregated	Aggregated	DSL	11852.3914	2851831.346	0	433.0544
South Coas	2040 T7 NOOS	Aggregated	Aggregated	DSL	3635.34405	908444.6858	0	137.7453
South Coas	2040 T7 POLA	Aggregated	Aggregated	DSL	22301.0884	4925892.094	0	754.0074
South Coas	2040 T7 Public	Aggregated	Aggregated	DSL	8376.41219	192018.7486	0	33.96179
South Coas	2040 T7 Single	Aggregated	Aggregated	DSL	13461.568	1575698.355	0	231.2995
South Coas	2040 T7 single constructi	Aggregated	Aggregated	DSL	3930.2836	371984.787	0	55.27165
South Coas	2040 T7 SWCV	Aggregated	Aggregated	DSL	8633.50898	397771.5927	0	129.5156
South Coas	2040 T7 tractor	Aggregated	Aggregated	DSL	25289.7266	3336064.799	0	477.1979
South Coas	2040 T7 tractor construct	Aggregated	Aggregated	DSL	3220.63938	277342.1521	0	41.12039
South Coas	2040 T7 utility	Aggregated	Aggregated	DSL	734.0383	16762.58659	0	2.877894
South Coas	2040 UBUS	Aggregated	Aggregated	DSL	3442.03713	329183.6982	13768.15	59.24895
South Coas	2040 LDA	Aggregated	Aggregated	ELEC	1269209.36	38197822.05	8091723	0
South Coas	2040 LDT1	Aggregated	Aggregated	ELEC	308.043602	8896.956003	1862.691	0
South Coas	2040 LDA	Aggregated	Aggregated	GAS	7289475.58	212641740.4	46011437	5342.217
South Coas	2040 LDT1	Aggregated	Aggregated	GAS	633873.107	18867364.33	3934178	522.2141
South Coas	2040 LDT2	Aggregated	Aggregated	GAS	3019809.82	94319556.7	19104080	2940.382
South Coas	2040 LHD1	Aggregated	Aggregated	GAS	63273.5189	1797836.688	942681.2	153.3769
South Coas	2040 LHD2	Aggregated	Aggregated	GAS	24279.199	765130.4771	361723.9	70.91905
South Coas	2040 MCY	Aggregated	Aggregated	GAS	431604.645	2228029.638	863123	64.79676
South Coas	2040 MDV	Aggregated	Aggregated	GAS	1717946.81	49376613.44	10617544	2059.96
South Coas	2040 MH	Aggregated	Aggregated	GAS	34664.0997	260332.4262	3467.797	33.88189
South Coas	2040 OBUS	Aggregated	Aggregated	GAS	11858.2216	434005.4988	237259.3	58.99917
South Coas	2040 SBUS	Aggregated	Aggregated	GAS	3967.75911	127699.2598	15871.04	10.88352
South Coas	2040 T6TS	Aggregated	Aggregated	GAS	22587.3816	973671.1506	451928.3	134.0959

South Coas	2040 T7IS	Aggregated	Aggregated	GAS	1254.57932	130289.4057	25101.62	25.96113
South Coas	2040 UBUS	Aggregated	Aggregated	GAS	3250.46093	310669.8796	13001.84	59.03596

	VMT Sum	Fuel Sum
Diesel	38602142.8	4320.880444
Gas	382232939.3	11476.72349

Table 10. EMFAC2014 Results - Construction

Vehicle Class	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)
LDA	GAS	225,731,691	7,010	32.20
LDT1	GAS	17,469,020	687	25.45
LDT2	GAS	82,812,268	3,608	22.96
Average (LDA, LDT1, LDT2)				26.87
T7 Tractor Construction	DSL	310,701	48	6.42

Construction Worker Fleet Mix

LDA	50%
LDT1	25%
LDT2	25%

Vendor and Delivery/Haul Truck Fleet Mix

HHDT	100%
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EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Air Basin

Region: South Coast

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
South Coast	2023	LDA	Aggregated	Aggregated	GAS	6264982	209913843.8	39567465	6950.725
South Coast	2023	LDA	Aggregated	Aggregated	DSL	68231.28	2395771.457	427576.6	59.47674
South Coast	2023	LDA	Aggregated	Aggregated	ELEC	309061	13422075.82	2011963	0
South Coast	2023	LDT1	Aggregated	Aggregated	GAS	524963.8	17443322.44	3198449	685.9809
South Coast	2023	LDT1	Aggregated	Aggregated	DSL	566.9173	15079.56095	2949.351	0.530284
South Coast	2023	LDT1	Aggregated	Aggregated	ELEC	344.4233	10618.35479	2076.609	0
South Coast	2023	LDT2	Aggregated	Aggregated	GAS	2280873	82643235.78	14458786	3602.056
South Coast	2023	LDT2	Aggregated	Aggregated	DSL	4457.653	169032.7022	28615.44	5.518573

South Coast	2023 T7 tractor constr	Aggregated	Aggregated	DSL	3462.268	310701.2867	0	48.42664
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EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Air District

Region: South Coast AQMD

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
South Coast	2023	All Other Buses	Aggregated	Aggregated	DSL	4513.789	305619.1663	0	35.29696
South Coast	2023	LDA	Aggregated	Aggregated	DSL	68231.28	2395771.457	427576.6	59.47674
South Coast	2023	LDT1	Aggregated	Aggregated	DSL	566.9173	15079.56095	2949.351	0.530284
South Coast	2023	LDT2	Aggregated	Aggregated	DSL	4457.653	169032.7022	28615.44	5.518573
South Coast	2023	LHD1	Aggregated	Aggregated	DSL	96131.44	3321303.353	1209213	158.9217
South Coast	2023	LHD2	Aggregated	Aggregated	DSL	42055.05	1595083.718	528999.6	83.03195
South Coast	2023	MDV	Aggregated	Aggregated	DSL	27835.22	1018901.6	178160.8	43.04525
South Coast	2023	MH	Aggregated	Aggregated	DSL	9347.503	77260.38527	934.7503	7.498704
South Coast	2023	Motor Coach	Aggregated	Aggregated	DSL	1097.301	165059.5225	0	27.535
South Coast	2023	PTO	Aggregated	Aggregated	DSL	0	242195.0827	0	46.00545
South Coast	2023	SBUS	Aggregated	Aggregated	DSL	5195.767	196760.975	0	27.05793
South Coast	2023	T6 Ag	Aggregated	Aggregated	DSL	261.6309	4446.995332	0	0.545592
South Coast	2023	T6 CAIRP heavy	Aggregated	Aggregated	DSL	225.2994	12123.42222	0	1.335901
South Coast	2023	T6 CAIRP small	Aggregated	Aggregated	DSL	567.3786	37215.91408	0	4.154102
South Coast	2023	T6 instate constr	Aggregated	Aggregated	DSL	2992.489	227086.5907	0	26.06179
South Coast	2023	T6 instate constr	Aggregated	Aggregated	DSL	10341.28	610043.2762	0	68.91412
South Coast	2023	T6 instate heavy	Aggregated	Aggregated	DSL	38285.78	1951545.774	0	219.146
South Coast	2023	T6 instate small	Aggregated	Aggregated	DSL	80739.99	4937365.334	0	558.502
South Coast	2023	T6 OOS heavy	Aggregated	Aggregated	DSL	131.1044	6946.265317	0	0.765708
South Coast	2023	T6 OOS small	Aggregated	Aggregated	DSL	325.0866	21323.32013	0	2.380144
South Coast	2023	T6 Public	Aggregated	Aggregated	DSL	5771.869	94698.12086	0	11.09543
South Coast	2023	T6 utility	Aggregated	Aggregated	DSL	1486.47	28090.43785	0	3.279579
South Coast	2023	T7 Ag	Aggregated	Aggregated	DSL	192.2314	3307.923851	0	0.637955
South Coast	2023	T7 CAIRP	Aggregated	Aggregated	DSL	7976.475	1854550.368	0	288.4648
South Coast	2023	T7 CAIRP constru	Aggregated	Aggregated	DSL	666.3811	161093.497	0	25.26838
South Coast	2023	T7 NNOOS	Aggregated	Aggregated	DSL	8792.57	2299644.764	0	348.5759

South Coast	2023 T7 NOOS	Aggregated	Aggregated	DSL	3202.31	732546.8486	0	116.1518
South Coast	2023 T7 POLA	Aggregated	Aggregated	DSL	15312.94	2517620.159	0	410.563
South Coast	2023 T7 Public	Aggregated	Aggregated	DSL	7375.42	169060.3715	0	33.09152
South Coast	2023 T7 Single	Aggregated	Aggregated	DSL	11203.1	1219742.847	0	187.8262
South Coast	2023 T7 single constr	Aggregated	Aggregated	DSL	4295.697	416727.6812	0	64.57042
South Coast	2023 T7 SWCV	Aggregated	Aggregated	DSL	7117.749	327846.9493	0	122.7443
South Coast	2023 T7 tractor	Aggregated	Aggregated	DSL	19319.44	2655028.377	0	394.9814
South Coast	2023 T7 tractor constr	Aggregated	Aggregated	DSL	3462.268	310701.2867	0	48.42664
South Coast	2023 T7 utility	Aggregated	Aggregated	DSL	631.4442	14430.17436	0	2.688921
South Coast	2023 UBUS	Aggregated	Aggregated	DSL	4123.342	453343.6808	16493.37	92.69913
South Coast	2023 LDA	Aggregated	Aggregated	ELEC	309061	13422075.82	2011963	0
South Coast	2023 LDT1	Aggregated	Aggregated	ELEC	344.4233	10618.35479	2076.609	0
South Coast	2023 LDA	Aggregated	Aggregated	GAS	6264982	209913843.8	39567465	6950.725
South Coast	2023 LDT1	Aggregated	Aggregated	GAS	524963.8	17443322.44	3198449	685.9809
South Coast	2023 LDT2	Aggregated	Aggregated	GAS	2280873	82643235.78	14458786	3602.056
South Coast	2023 LHD1	Aggregated	Aggregated	GAS	101835.8	2836538.916	1517202	256.8878
South Coast	2023 LHD2	Aggregated	Aggregated	GAS	23131.97	792817.5726	344631.9	76.60381
South Coast	2023 MCY	Aggregated	Aggregated	GAS	308501.6	1969480.034	616941.6	56.14954
South Coast	2023 MDV	Aggregated	Aggregated	GAS	1435218	46739844.42	8932874	2782.188
South Coast	2023 MH	Aggregated	Aggregated	GAS	34406.25	277627.0723	3442.001	37.202
South Coast	2023 OBUS	Aggregated	Aggregated	GAS	8907.143	391252.705	178214.1	53.8881
South Coast	2023 SBUS	Aggregated	Aggregated	GAS	2552.006	93077.74203	10208.03	8.137395
South Coast	2023 T6TS	Aggregated	Aggregated	GAS	19258.5	928087.5087	385324	130.932
South Coast	2023 T7IS	Aggregated	Aggregated	GAS	845.2226	107869.2013	16911.21	22.32172
South Coast	2023 UBUS	Aggregated	Aggregated	GAS	2458.623	269036.4331	9834.493	53.04317

Fuel	Total
Diesel	3526.789227
Gas	14716.1165