

**APPENDIX H:
ENERGY DATA**



Operation-Related Annual Vehicle Fuel/Energy Usage Summary

Existing - Baseline Year 2021

Full VMT Scenario

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
Existing Baseline	415,458,921	18,388,098	22.59	97,925,363	14,663,818	6.68	650,744	101,678	6.40	5,271,848	1,840,162	2.86

Proposed Project (GP 2042)

Full VMT Scenario

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
Proposed Project	547,772,702	16,805,262	32.60	121,727,859	15,564,874	7.82	844,712	114,457	7.38	83,574,510	20,978,942	3.98

Net Change

Full VMT Scenario

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
From Existing Baseline	132,313,781	-1,582,836	10.00	23,802,496	901,056	1.14	193,968	12,779	0.98	78,302,662	19,138,780	1.12

Notes

* VMT based on VMT data provided by Kittleson and Associates.

** Fuel consumption rates based on data obtained from EMFAC2021 Web Database, Version 1.0.1. <https://arb.ca.gov/emfac/emissions-inventory/517d3e0c599c7b26ab4e9feca9c2424afa4526d9>

***VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology. California Air Resources Board. 2008, October. Climate Change Proposed Scoping Plan: A Framework for Change.

Existing Baseline Year 2021: Full VMT

Vehicle type	Fleet percent	VMT
LDA	44.09%	228,960,028
LDT1	3.43%	17,786,996
LDT2	14.92%	77,454,833
MDV	16.67%	86,593,102
LHD1	3.39%	17,593,536
LHD2	0.83%	4,310,411
MHD	1.29%	6,685,776
HHD	14.61%	75,872,621
OBUS	0.06%	322,674
UBUS	0.10%	512,007
MCY	0.26%	1,374,840
SBUS	0.15%	783,198
MH	0.07%	379,559
All Other Buses	0.02%	78,114
Motor Coach	0.04%	221,612
PTO	0.07%	377,568
	100%	519,306,876

Vehicle type	Gas percent	Diesel percent	CNG percent	Electricity percent
LDA	97.59%	0.27%	0.00%	2.14%
LDT1	99.93%	0.03%	0.00%	0.04%
LDT2	99.58%	0.22%	0.00%	0.20%
MDV	98.05%	1.71%	0.00%	0.24%
LHD1	44.82%	55.18%	0.00%	0.00%
LHD2	23.90%	76.10%	0.00%	0.00%
MHD	15.44%	83.77%	0.79%	0.00%
HHD	0.02%	99.36%	0.62%	0.00%
OBUS	51.84%	48.13%	0.02%	0.00%
UBUS	41.88%	50.90%	7.22%	0.00%
MCY	100.00%	0.00%	0.00%	0.00%
SBUS	27.73%	60.55%	11.72%	0.00%
MH	72.18%	27.82%	0.00%	0.00%
All Other Buses	0.00%	99.81%	0.19%	0.00%
Motor Coach	0.00%	100.00%	0.00%	0.00%
PTO	0.00%	100.00%	0.00%	0.00%

<< Equal to T6 (<https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf>)

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<< OBUS (<https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf>)

Vehicle type	Gasoline			Diesel			CNG			Electricity		
	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	m/kWh	kWh
LDA	223,437,820	28.15	7,938,454	620,313	43.76	14,175	0	0	0	4,901,896	2.85	1,719,177
LDT1	17,775,009	22.90	776,119	5,349	25.22	212	0	0	0	6,638	2.72	2,440
LDT2	77,128,720	21.85	3,530,668	169,684	32.11	5,284	0	0	0	156,429	3.06	51,052
MDV	84,906,387	18.12	4,685,063	1,479,830	24.57	60,226	0	0	0	206,885	3.07	67,493
LHD1	7,886,233	8.78	898,086	9,707,303	15.76	615,981	0	0	0	0	0.00	0
LHD2	1,030,267	7.93	129,908	3,280,144	12.86	255,014	0	0	0	0	0.00	0
MHD	1,032,107	4.52	228,328	5,600,756	8.59	651,661	52,913	0	0	0	0.00	0
HHD	14,609	2.71	5,390	75,389,133	5.89	12,808,747	468,878	4.95	94,650	0	0.00	0
OBUS	167,285	4.64	36,030	155,310	6.34	24,509	78	0	0	0	0.00	0
UBUS	214,447	5.16	41,584	260,595	9.53	27,355	36,965	5.28	7,007	0	0.00	0
MCY	1,374,840	40.31	34,108	0	0.00	0	0	0	0	0	0.00	0
SBUS	217,220	9.81	22,136	474,220	8.01	59,179	91,758	0	0	0	0.00	0
MH	273,977	4.40	62,223	105,582	9.41	11,219	0	0	0	0	0.00	0
All Other Buses	0	0	0	77,964	8.70	8,965	151	7	21	0	0.00	0
Motor Coach	0	0	0	221,612	5.51	40,245	0	0	0	0	0.00	0
PTO	0	0	0	377,568	4.66	81,047	0	0	0	0	0.00	0
	415,458,921		18,388,098	97,925,363		14,663,818	650,744		101,678	5,271,848		1,840,162

Proposed Project Year 2042 (GP 2042 Update): Full VMT

Vehicle type	Fleet percent	VMT
LDA	47.84%	359,873,289
LDT1	2.11%	15,909,939
LDT2	18.23%	137,159,992
MDV	11.30%	84,998,456
LHD1	1.89%	14,252,333
LHD2	0.47%	3,517,778
MHD	1.36%	10,236,796
HHD	16.20%	121,873,630
OBUS	0.03%	232,644
UBUS	0.09%	702,873
MCY	0.20%	1,519,936
SBUS	0.11%	793,849
MH	0.04%	274,270
All Other Buses	0.01%	107,234
Motor Coach	0.03%	258,584
PTO	0.07%	550,045
	100%	752,261,647

Vehicle type	Gas percent	Diesel percent	CNG percent	Electricity percent
LDA	87.07%	0.05%	0.00%	12.87%
LDT1	96.08%	0.00%	0.00%	3.92%
LDT2	95.63%	0.36%	0.00%	4.01%
MDV	93.63%	1.07%	0.00%	5.30%
LHD1	36.50%	26.51%	0.00%	36.98%
LHD2	15.94%	49.54%	0.00%	34.52%
MHD	6.30%	54.12%	0.91%	38.67%
HHD	0.00%	88.51%	0.52%	12.32%
OBUS	24.89%	59.84%	1.29%	18.61%
UBUS	7.68%	0.20%	0.80%	91.32%
MCY	100.00%	0.00%	0.00%	0.00%
SBUS	19.72%	36.33%	12.58%	31.38%
MH	63.50%	36.50%	0.00%	0.00%
All Other Buses	0.00%	92.79%	7.21%	0.00%
Motor Coach	0.00%	100.00%	0.00%	0.00%
PTO	0.00%	58.32%	0.00%	41.68%

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Vehicle type	VMT	Gasoline		Diesel		CNG		Electricity					
		mpg	Gallons	mpg	Gallons	mpg	Gallons	m/kWh	kWh				
LDA	313,358,510	37.73	8,304,888	58.69	3,234	0	0	0	46,324,956	2.70	17,170,609		
LDT1	15,286,412	32.28	473,548	32.08	5	0	0	0	623,359	2.78	224,453		
LDT2	131,169,697	31.42	4,174,867	43.15	11,326	0	0	0	5,501,511	2.81	1,954,704		
MDV	79,584,702	25.64	3,104,255	32.03	28,500	0	0	0	4,501,008	2.76	1,629,176		
LHD1	5,202,806	11.11	468,247	16.42	230,177	0	0	0	5,270,640	1.53	0		
LHD2	560,662	9.84	56,985	13.99	124,585	0	0	0	1,214,257	1.56	0		
MHD	645,219	5.46	118,192	9.85	562,256	93,173	0	0	3,958,326	0.92	0		
HHD	2,169	4.71	461	7.47	14,434,071	635,364	5.63	112,791	15,016,909	0.55	0		
OBUS	57,916	5.42	10,683	7.30	19,056	3,004	0	0	43,300	0.00	0		
UBUS	53,990	10.21	5,288	10.50	133	5,613	7.23	776	641,877	0.57	0		
MCY	1,519,936	44.75	33,965	0.00	0	0	0	0	0	0.00	0		
SBUS	156,530	10.85	14,428	8.88	32,473	99,830	0	0	249,103	0.95	0		
MH	174,152	4.41	39,454	9.33	10,732	0	0	0	0	0.00	0		
All Other Buses	0	0	0	9.90	10,048	7,728	9	890	0	0.00	0		
Motor Coach	0	0	0	6.30	41,013	0	0	0	0	0.00	0		
PTO	0	0	0	5.60	57,262	0	0	0	229,264	0.48	0		
	547,772,702		16,805,262		15,564,874		844,712		114,457		83,574,510		20,978,942

Merced (SJV)	2021 T7 POLA Class 8	Aggregate	Aggregate	Diesel	157.3008357	20603.7206	20603.7206	0	2573.442	3.621720385	0
Merced (SJV)	2021 T7 POLA Class 8	Aggregate	Aggregate	Natural Gas	1.474195629	193.4176437	193.4176437	0	24.11784	0.039939427	0
Merced (SJV)	2021 T7 Public Class 8	Aggregate	Aggregate	Diesel	240.1023625	10093.347	10093.347	0	1231.725	1.99616104	0
Merced (SJV)	2021 T7 Public Class 8	Aggregate	Aggregate	Natural Gas	12.84131193	657.2385098	657.2385098	0	65.87593	0.146949675	0
Merced (SJV)	2021 T7 Single Concrete/Transit I	Aggregate	Aggregate	Diesel	60.17924732	4089.224222	4089.224222	0	566.8885	0.706460521	0
Merced (SJV)	2021 T7 Single Concrete/Transit I	Aggregate	Aggregate	Natural Gas	1.741866893	118.8406917	118.8406917	0	16.40839	0.021695326	0
Merced (SJV)	2021 T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	99.10258177	6114.942432	6114.942432	0	933.5463	1.060885014	0
Merced (SJV)	2021 T7 Single Dump Class 8	Aggregate	Aggregate	Natural Gas	3.12206616	200.2729012	200.2729012	0	29.40986	0.037708729	0
Merced (SJV)	2021 T7 Single Other Class 8	Aggregate	Aggregate	Diesel	378.343914	19786.82536	19786.82536	0	3564	3.368660582	0
Merced (SJV)	2021 T7 Single Other Class 8	Aggregate	Aggregate	Natural Gas	14.11477625	805.692371	805.692371	0	132.9612	0.158465693	0
Merced (SJV)	2021 T7 SWCV Class 8	Aggregate	Aggregate	Diesel	59.91386305	3883.340351	3883.340351	0	275.6038	1.573379524	0
Merced (SJV)	2021 T7 SWCV Class 8	Aggregate	Aggregate	Natural Gas	24.5062646	1584.808906	1584.808906	0	112.7288	0.37038981	0
Merced (SJV)	2021 T7 Tractor Class 8	Aggregate	Aggregate	Diesel	2792.016589	237105.7177	237105.7177	0	40568	39.43156069	0
Merced (SJV)	2021 T7 Tractor Class 8	Aggregate	Aggregate	Natural Gas	47.22474328	4112.344686	4112.344686	0	686.1755	0.773679388	0
Merced (SJV)	2021 T7 Utility Class 8	Aggregate	Aggregate	Diesel	26.03168034	1261.387554	1261.387554	0	333.2055	0.223048497	0
Merced (SJV)	2021 T7IS	Aggregate	Aggregate	Gasoline	9.09198606	239.0576539	239.0576539	0	181.9125	0.088202041	0
Merced (SJV)	2021 UBUS	Aggregate	Aggregate	Gasoline	33.21303422	3509.158298	3509.158298	0	132.8521	0.680473341	0
Merced (SJV)	2021 UBUS	Aggregate	Aggregate	Diesel	28.91680558	4264.31718	4264.31718	0	115.6672	0.447628071	0
Merced (SJV)	2021 UBUS	Aggregate	Aggregate	Natural Gas	5.237976438	604.8874504	604.8874504	0	20.95191	0.114664402	0

Merced (SJV)	2042 T6 Public Class 4	Aggregate	Aggregate	Electricity	11.827818	481.0298747	0	481.0299	60.67671	0	568.0484471
Merced (SJV)	2042 T6 Public Class 4	Aggregate	Aggregate	Natural Gas	2.1716648	76.2620342	76.2620342	0	11.14064	0.011345178	0
Merced (SJV)	2042 T6 Public Class 5	Aggregate	Aggregate	Diesel	29.758431	1024.50992	1024.50992	0	152.6608	0.11997805	0
Merced (SJV)	2042 T6 Public Class 5	Aggregate	Aggregate	Electricity	20.354664	826.309589	0	826.3096	104.4194	0	975.7894542
Merced (SJV)	2042 T6 Public Class 5	Aggregate	Aggregate	Natural Gas	4.3511766	148.7646967	148.7646967	0	22.32154	0.022397303	0
Merced (SJV)	2042 T6 Public Class 6	Aggregate	Aggregate	Diesel	47.61289	1638.108843	1638.108843	0	244.2541	0.190719801	0
Merced (SJV)	2042 T6 Public Class 6	Aggregate	Aggregate	Electricity	32.534978	1313.367256	0	1313.367	166.9044	0	1550.956125
Merced (SJV)	2042 T6 Public Class 6	Aggregate	Aggregate	Natural Gas	6.5194481	225.3377698	225.3377698	0	33.44477	0.033725748	0
Merced (SJV)	2042 T6 Public Class 7	Aggregate	Aggregate	Diesel	84.49939	3528.084077	3528.084077	0	433.4819	0.401115176	0
Merced (SJV)	2042 T6 Public Class 7	Aggregate	Aggregate	Electricity	47.600424	2404.877429	0	2404.877	244.1902	0	2839.921097
Merced (SJV)	2042 T6 Public Class 7	Aggregate	Aggregate	Natural Gas	12.075014	502.9167152	502.9167152	0	61.94482	0.073346179	0
Merced (SJV)	2042 T6 Utility Class 5	Aggregate	Aggregate	Diesel	23.392386	924.0898806	924.0898806	0	299.4225	0.096243683	0
Merced (SJV)	2042 T6 Utility Class 5	Aggregate	Aggregate	Electricity	28.138459	1172.594393	0	1172.594	360.1723	0	1313.380048
Merced (SJV)	2042 T6 Utility Class 5	Aggregate	Aggregate	Natural Gas	0.0527272	2.083796662	2.083796662	0	0.674908	0.000266535	0
Merced (SJV)	2042 T6 Utility Class 6	Aggregate	Aggregate	Diesel	4.4260145	174.7671195	174.7671195	0	56.65299	0.018202659	0
Merced (SJV)	2042 T6 Utility Class 6	Aggregate	Aggregate	Electricity	5.3144962	221.4631524	0	221.4632	68.02555	0	248.0527688
Merced (SJV)	2042 T6 Utility Class 6	Aggregate	Aggregate	Natural Gas	0.0099875	0.394408555	0.394408555	0	0.12784	5.0455E-05	0
Merced (SJV)	2042 T6 Utility Class 7	Aggregate	Aggregate	Diesel	4.8947686	236.8645135	236.8645135	0	62.65304	0.024519319	0
Merced (SJV)	2042 T6 Utility Class 7	Aggregate	Aggregate	Electricity	5.899117	314.4376878	0	314.4377	75.5087	0	352.1901419
Merced (SJV)	2042 T6 Utility Class 7	Aggregate	Aggregate	Natural Gas	0.0110434	0.534478788	0.534478788	0	0.141355	6.72703E-05	0
Merced (SJV)	2042 T6TS	Aggregate	Aggregate	Gasoline	108.17009	10104.60389	10104.60389	0	2164.267	1.850979233	0
Merced (SJV)	2042 T6TS	Aggregate	Aggregate	Electricity	70.618641	9661.305864	0	9661.306	1412.938	0	11282.37488
Merced (SJV)	2042 T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	2023.2005	419509.6454	419509.6454	0	46493.15	56.92734708	0
Merced (SJV)	2042 T7 CAIRP Class 8	Aggregate	Aggregate	Electricity	541.00612	117075.5646	0	117075.6	12432.32	0	213771.3264
Merced (SJV)	2042 T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	2217.9602	634409.1471	634409.1471	0	50968.72	81.8914799	0
Merced (SJV)	2042 T7 NOOS Class 8	Aggregate	Aggregate	Diesel	956.63355	230469.5741	230469.5741	0	21983.44	30.07943716	0
Merced (SJV)	2042 T7 Other Port Class 8	Aggregate	Aggregate	Diesel	33.013054	8135.967357	8135.967357	0	540.0936	1.120984536	0
Merced (SJV)	2042 T7 Other Port Class 8	Aggregate	Aggregate	Electricity	7.2924907	2011.054006	0	2011.054	119.3051	0	3660.052402
Merced (SJV)	2042 T7 POAK Class 8	Aggregate	Aggregate	Diesel	162.60458	18879.13922	18879.13922	0	2660.211	2.648372582	0
Merced (SJV)	2042 T7 POAK Class 8	Aggregate	Aggregate	Electricity	35.406021	4059.459035	0	4059.459	579.2425	0	7388.082444
Merced (SJV)	2042 T7 POLA Class 8	Aggregate	Aggregate	Diesel	163.318	31124.33371	31124.33371	0	2671.882	4.418408169	0
Merced (SJV)	2042 T7 POLA Class 8	Aggregate	Aggregate	Electricity	25.657391	4820.156785	0	4820.157	419.7549	0	8772.527426
Merced (SJV)	2042 T7 POLA Class 8	Aggregate	Aggregate	Natural Gas	0.7346211	139.9257643	139.9257643	0	12.0184	0.022059666	0
Merced (SJV)	2042 T7 Public Class 8	Aggregate	Aggregate	Diesel	198.88297	8004.297996	8004.297996	0	1020.27	1.340750051	0
Merced (SJV)	2042 T7 Public Class 8	Aggregate	Aggregate	Electricity	103.00532	5147.90697	0	5147.907	528.4173	0	10103.19245
Merced (SJV)	2042 T7 Public Class 8	Aggregate	Aggregate	Natural Gas	23.916799	971.9335073	971.9335073	0	122.6932	0.199038815	0
Merced (SJV)	2042 T7 Single Concrete/Transit	Aggregate	Aggregate	Diesel	32.216926	2070.430173	2070.430173	0	303.4834	0.308602234	0
Merced (SJV)	2042 T7 Single Concrete/Transit	Aggregate	Aggregate	Electricity	34.386118	2517.271114	0	2517.271	323.9172	0	4589.373337
Merced (SJV)	2042 T7 Single Concrete/Transit	Aggregate	Aggregate	Natural Gas	1.1656531	75.18878641	75.18878641	0	10.98045	0.012090473	0
Merced (SJV)	2042 T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	83.201355	4005.998822	4005.998822	0	783.7568	0.630272729	0
Merced (SJV)	2042 T7 Single Dump Class 8	Aggregate	Aggregate	Electricity	42.039713	2850.216722	0	2850.217	396.0141	0	5196.384512
Merced (SJV)	2042 T7 Single Dump Class 8	Aggregate	Aggregate	Natural Gas	2.8969183	141.574532	141.574532	0	27.28897	0.024235784	0
Merced (SJV)	2042 T7 Single Other Class 8	Aggregate	Aggregate	Diesel	305.4666	18330.01378	18330.01378	0	2877.495	2.846234075	0
Merced (SJV)	2042 T7 Single Other Class 8	Aggregate	Aggregate	Electricity	144.96219	12714.70704	0	12714.71	1365.544	0	23180.8712
Merced (SJV)	2042 T7 Single Other Class 8	Aggregate	Aggregate	Natural Gas	11.325395	676.9385419	676.9385419	0	106.6852	0.115009788	0
Merced (SJV)	2042 T7 SWCV Class 8	Aggregate	Aggregate	Diesel	24.827731	1612.211022	1612.211022	0	114.2076	0.557569872	0
Merced (SJV)	2042 T7 SWCV Class 8	Aggregate	Aggregate	Electricity	39.532003	2550.632928	0	2550.633	181.8472	0	4745.581894
Merced (SJV)	2042 T7 SWCV Class 8	Aggregate	Aggregate	Natural Gas	46.646512	3021.220321	3021.220321	0	214.574	0.552627413	0
Merced (SJV)	2042 T7 Tractor Class 8	Aggregate	Aggregate	Diesel	4928.4777	311728.2354	311728.2354	0	71610.78	43.12364734	0
Merced (SJV)	2042 T7 Tractor Class 8	Aggregate	Aggregate	Electricity	757.21413	54931.66215	0	54931.66	11002.32	0	100014.6156
Merced (SJV)	2042 T7 Tractor Class 8	Aggregate	Aggregate	Natural Gas	78.101118	4923.47594	4923.47594	0	1134.809	0.841321915	0
Merced (SJV)	2042 T7 Utility Class 8	Aggregate	Aggregate	Diesel	23.978544	989.3988558	989.3988558	0	306.9254	0.154927953	0
Merced (SJV)	2042 T7 Utility Class 8	Aggregate	Aggregate	Electricity	13.323518	667.8143682	0	667.8144	170.541	0	1257.359746
Merced (SJV)	2042 T7IS	Aggregate	Aggregate	Gasoline	0.1414044	33.96869269	33.96869269	0	2.829219	0.007214082	0
Merced (SJV)	2042 T7IS	Aggregate	Aggregate	Electricity	0.0891109	30.44441288	0	30.44441	1.782931	0	61.1763649
Merced (SJV)	2042 UBUS	Aggregate	Aggregate	Gasoline	9.5452314	845.5181852	845.5181852	0	38.18093	0.082809972	0
Merced (SJV)	2042 UBUS	Aggregate	Aggregate	Diesel	0.1530543	21.81986824	21.81986824	0	0.612217	0.002078249	0
Merced (SJV)	2042 UBUS	Aggregate	Aggregate	Electricity	78.193081	10052.26725	0	10052.27	312.7723	0	17523.55576
Merced (SJV)	2042 UBUS	Aggregate	Aggregate	Natural Gas	0.6165903	87.90289776	87.90289776	0	2.466361	0.012149908	0

