

## **APPENDIX B: ENERGY CALCULATIONS**

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## 69kV Underground Cable Replacement Construction Fuel Use

### Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Average Daily Factor	Diesel Fuel Usage
Paving	Cement and Mortar Mixers	1	6.00	9	0.56	132	0.6	120
Cable Laying/Valuting	Cranes	1	7.00	231	0.29	132	0.6	1,857
Cable Laying/Valuting	Forklifts	1	8.00	89	0.20	132	0.6	564
Trenching	Excavators	1	8.00	158	0.38	132	0.6	1,902
Paving	Pavers	1	8.00	130	0.42	132	0.6	1,730
Paving	Rollers	1	6.00	80	0.38	132	0.6	722
Trenching	Rubber Tired Dozers	1	8.00	247	0.40	132	0.6	3,130
Cable Laying/Valuting	Tractors/Loaders/Backhoes	1	7.00	97	0.37	132	0.6	995
Cable Laying/Valuting	Generator Sets	1	8.00	84	0.74	132	0.6	1,969
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37	132	0.6	1,137
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37	132	0.6	1,137
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37	132	0.6	1,137
Trenching	Graders	1	8.00	187	0.41	132	0.6	2,429
Paving	Paving Equipment	1	6.00	132	0.36	132	0.6	1,129
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40	132	0.6	3,130
Cable Laying/Valuting	Welders	1	8.00	46	0.45	132	0.6	656
<b>TOTAL</b>								<b>23,744</b>

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

### Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Haul Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Average Daily Factor	Total gallons of gasoline (on-road)	Total gallons of diesel (on-road)
Site Preparation	18	0	0	132	2376	0	0	15.00	9.00	20.00	35640	0	0	0.6	555,658	0
Trenching	15	0	0	132	1980	0	0	15.00	9.00	20.00	29700	0	0	0.6	463,049	0
Cable Laying/Vaulting	0	0	0	132	0	0	0	15.00	9.00	20.00	0	0	0	0.6	0	0
Paving	20	0	0	132	2640	0	0	15.00	9.00	20.00	39600	0	0	0.6	617,398	0
<b>TOTAL</b>														<b>1,636,105</b>	<b>0</b>	
Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).														(+ off-road equipment)	<b>23,744</b>	