

APPENDIX 4.11
FUEL USE ESTIMATES

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UC Merced 2020 LRDP
Fuel Use Estimates

Construction Diesel

Phase	Equipment Type	Units	Hours	Horse Power	Load Factor	Number of Days	Fuel Usage/ HP/hr	Diesel Usage (in gallons)
Site Preparation	Rubber Tired Dozers	3	8	247	0.48	60	0.05	8,536
	Tractors/Loaders/Backhoes	4	8	97	0.74	60	0.05	6,891
Grading	Excavators	2	8	158	0.38	155	0.05	7,445
	Graders	1	8	187	0.36	155	0.05	4,174
	Rubber Tired Dozers	1	8	247	0.82	155	0.05	12,557
	Scrapers	2	8	367	0.46	155	0.05	20,934
	Tractors/Loaders/Backhoes	2	8	97	0.43	155	0.05	5,172
Building Construction	Cranes	1	7	231	0.38	1550	0.05	47,621
	Forklifts	3	8	89	0.74	1550	0.05	122,500
	Generator Sets	1	8	84	0.36	1550	0.05	18,749
	Tractors/Loaders/Backhoes	3	7	97	0.48	1550	0.05	75,776
	Welders	1	6	46	0.82	1550	0.05	17,540
Paving	Pavers	2	8	130	0.38	1831	0.05	72,361
	Paving Equipment	2	8	132	0.74	1831	0.05	143,082
	Rollers	2	8	80	0.41	1831	0.05	48,045
Architectural Coating	Air Compressors	1	6	78	0.44	1852	0.05	19,068

Total 630,451

Phase	Number of Daily Trips	Number of Days	Average Round-Trip Commute Distance (in miles)	Fuel Usage (mpg) ^a	Gasoline/Diesel Usage (in gallons)
Worker Trips (Gasoline)					
Site Preparation	18	60	10.8	18.6	627
Grading	20	155	10.8	18.6	1,800
Building Construction	1,729	1550	10.8	18.6	1,556,100
Paving	15	1831	10.8	18.6	15,947
Architectural Coating	346	1852	10.8	18.6	372,073
Total Gasoline Usage					1,946,547

Source	Fleet Mix ^a	VMT	MPG	Generation Factor ^{b, c}	Annual Consumption (in gallons)
Mobile					
Diesel (gallons)	16.60%	17,516,332	6.5	2,694,820	447,340
Gasoline (gallons)	83.40%	17,516,332	18.6	941,738	785,410
Total					1,232,750

^a Data Source: FHWA OHPI, Highway Statistics, Fuel Consumption by State and Type
<http://www.fhwa.dot.gov/policyinformation/pubs/hf/pl11028/chapter5.cfm>

^b Data Source: California Department of Transportation, 2007 California Motor Vehicle Stock, Travel and Fuel Forecast, <http://www.energy.ca.gov/2008publications/CALTRANS-1000-2008-036/CALTRANS-1000-2008-036.PDF>

^c Rentar Environmental Solutions, Inc. 2017. Here Are The Diesel Truck Miles Per Gallon (MPG). Available online at: <https://rentar.com/diesel-truck-miles-per-gallon-mpg/>, accessed August 22, 2018.