

Fuel and Energy Calculations
3440 Wilshire

Summary of Energy Use during Construction

Electricity

Water Consumption: 3,875 kWh

Gasoline

On Road: 254,938 gallons

Off Road: 0 gallons

Total: 254,938 gallons

Diesel

On Road: 106,022 gallons

Off Road: 96,398 gallons

Total: 202,420 gallons

Construction Transportation Gasoline Fuel

On-road (worker)

Phase	Trips	Days	Length (miles)	Total (miles)	MPG	Gallons
Demolition	15	21				
Site Prep	15	20				
Grading	20	66				
Construction	200	938				
Arch Coating	5	220				
Total	255	1,265	14.7	4,741,853	18.6	254,938

Transportation Diesel Fuel

On-road (vender)

Phase	Trips	Days	Length (miles)	Total (miles)	MPG	Gallons
Demolition	4	21				
Site Prep	4	20				
Grading	4	66				
Construction	20	938				
Arch Coating	4	220				
Total	36	1,265	6.9	314,226	7.4	42,463

On-road (haul)

Phase	Trips	Length (mi)	Total (mil)	MPG	Gallons
Demolition	1,978				
Grading	13,700				
Total	15,678	30	470,340	7.4	63,559

Off-road (equipment)

Phase	Equipment	Units	Hours	HP	Load Factor	Ave. Daily Factor	Days	HP-hours
Demolition	Concrete Saws	2	8	81	0.73	0.6	21	11920
Demolition	Rubber Tired Dozers	1	8	247	0.40	0.6	21	9959
Demolition	Dumpers/Tenders	3	8	16	0.38	0.6	21	1838
Site Preparation	Graders	1	8	187	0.41	0.6	20	7360
Site Preparation	Excavators	1	8	158	0.38	0.6	20	5763
Site Preparation	Cement and Mortar Mixer	1	6	9	0.56	0.6	20	362
Site Preparation	Scrapers	1	8	367	0.48	0.6	20	16911
Grading	Rubber Tired Dozers	1	8	247	0.40	0.6	66	31299
Grading	Tractors/Loaders/Backhoes	1	7	97	0.37	0.6	66	9948

Grading	Graders	1	8	187	0.73	0.6	66	43246
Grading	Welders	1	6	46	0.45	0.6	66	4918
Grading	Sweepers/Scrubbers	1	6	64	0.46	0.6	66	6994
Grading	Excavators	2	8	158	0.38	0.6	66	38041
Construction	Cranes	2	8	231	0.29	0.6	938	603231
Construction	Forklifts	3	6	89	0.20	0.6	938	180321
Construction	Tractors/Loaders/Backhoes	3	8	97	0.37	0.6	938	484773
Construction	Aerial Lifts	2	6	63	0.31	0.6	938	131897
Construction	Generator	1	8	84	0.74	0.6	938	279869
Arch Coatings	Air Compressors	2	6	78	0.48	0.6	220	59304
Total								1,927,964

HP = horsepower
gallons of diesel fuel per HP-hour = 0.05
Equipment assumptions are provide in the CalEEMod output files and fuel usage estimate of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

1,927,964 hp-hours = 96,398 gallons diesel

Water Usage for fugitive dust control during construction

Water application rate = 3,020 gallons/acre/day

Each gallon of delivered potable water in Southern California is associated with 0.009727 kWh of electricity).

Grading 66 days x 2 acres x 3,020 gallons = 398,640 gallons x 0.009727 kWh/gallon = 3,878 kWh

Operation Transportation Fuel

Gasoline and Diesel Use

Proposed Annual VMT: 7,766,464 miles			Fuel	
Fleet	91% Auto	7,067,482 miles	18.6 mpg gas	379,972 gallons
Mix	9% Other	698,982 miles	7.4 mpg diesel	94,457 gallons