

Route 66 Residential

Compression-

Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors [1]:

HP: 0 to 100

0.059

HP: Greater than 100

0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phas	Fuel Used (gallons)	Total Gallons
Concrete/Industrial Saws	1	8	33	0.73	Demolition	226.64	226.64
Rubber Tired Dozer	2	8	367	0.4	Demolition	1242.52	2485.03
Excavators	3	8	36	0.38	Demolition	128.70	386.10
Tractors/Loaders/Backhoes	0	0	36	0.38	Demolition	0.00	0.00
Graders	0	8	148	0.41	Site Prep	128.40	0.00
Other Material Handling Eqp.	0	8			Site Prep	0.00	0.00
Rubber Tired Dozer	3	8	367	0.4	Site Prep	310.63	931.89
Tractors/Loaders/Backhoes	4	8	84	0.37	Site Prep	73.10	292.40
Concrete/Industrial Saws	0	0			Grading	0.00	0.00
Graders	1	8	148	0.41	Grading	205.44	205.44
Excavators	1	8	36	0.38	Grading	46.32	46.32
Rubber Tired Dozer	1	8	367	0.4	Grading	497.01	497.01
Tractors/Loaders/Backhoes	3	8	84	0.37	Grading	116.96	350.88
Bore/Drill Rig	0	0			Building Con.	0.00	0.00
Cranes	1	7	367	0.29	Building Con.	9064.54	9064.54
Forklifts	3	8	82	0.2	Building Con.	1774.35	5323.05
Generator Sets	1	8	14	0.74	Building Con.	1120.87	1120.87
Other Construction Eqp.	0	8			Building Con.	0.00	0.00
Rubber Tired Dozer	0	8			Building Con.	0.00	0.00
Tractors/Loaders/Backhoes	3	7	84	0.37	Building Con.	2942.28	8826.84
Welders	1	8	46	0.45	Building Con.	2239.57	2239.57
Cement and Motor Mixers	2	6	10	0.56	Paving	35.56	71.12
Concrete/Industrial Saws	0	8			Paving	0.00	0.00
Dumpers/Tenders	0	8			Paving	0.00	0.00
Graders	0	8			Paving	0.00	0.00
Pavers	1	8	81	0.42	Paving	288.05	288.05
Paving Equipment	2	6	89	0.36	Paving	203.47	406.93
Rollers	2	6	36	0.38	Paving	86.87	173.75
Tractors/Loaders/Backhoes	1	8	84	0.37	Paving	263.16	263.16
Air Compressors	1	6	37	0.48	Architectual Coat.	112.78	112.78
Total Fuel Used						21107.21	33312.37 (Gallons)

Construction Phase	Days of Operation
Demolition	20
Site Preparation	5
Grading	8
Building Construction	230
Paving	18
Architectual Coating	18

WORKER TRIPS

Construction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)	Total Gallons
Demolition	24.0	15	18.5	11.56	231.25
Site Preparation Phase	24.0	18	18.5	13.88	69.38
Grading	24.0	15	18.5	11.56	92.50
Building Construction Phase	24.0	11	18.5	8.48	1950.21
Paving Phase	24.0	20	18.5	15.42	277.50
Architectural Coating	24.0	3	18.5	2.31	41.63
Total				63.21	2662.46

VENDOR TRIPS

Construction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)	Total Gallons
Demolition	7.4	0	10.2	0.00	0.00
Site Preparation Phase	7.4	0	10.2	0.00	0.00
Grading	7.4	0	10.2	0.00	0.00
Building Construction Phase	7.4	4	10.2	5.51	1268.11
Paving Phase	7.4	0	10.2	0.00	0.00
Total				5.51	1268.11

HAULING TRIPS

Construction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)	Total Gallons
Demolition	6.0	0	20	0.00	0.00
Site Preparation Phase	6.0	0	20	0.00	0.00
Grading	6.0	0	20	0.00	0.00
Building Construction Phase	6.0	0	20	0.00	0.00
Paving Phase	6.0	0	20	0.00	0.00
Total				0.00	0.00

Construction Phase	Days of Operation
Demolition	20
Site Preparation	5
Grading	8
Building Construction	230
Paving	18
Architectural Coating	18

Total Gasoline Consumption (gallons):	3930.57
Total Diesel Consumption (gallons):	33312.37

Sources:

[1] United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonrod Compression-Ignition Engines in MOVES2014b. July 2018. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf>.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2018. *National Transportation Statistics 2018*. Available at: <https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-and-data/national-transportation-statistics/223001/ntentire2018q4.pdf>.

Operational Trips

Use	Annual Miles	MPG	Total Gallons (50%)
Multi-Family Residential	799110.0	24	16648.1
	0.0	0	0.0
	0.0	0	0.0
		Total	16648.1

Use	Annual Miles	MPG	Total Gallons (50%)
Multi-Family Residential	799110.0	7	57079.3
	0.0	0	0.0
	0.0	0	0.0
		Total	57079.3
	Grand Total		73727.4

Land Use	Power Cost (per 1000 SF of construction per month) ¹	Size (in 1000 SF)	Construction Duration (months)	Construction Power Cost
Warehouse	\$2.32	141	8	\$2,616.96
Landscape	\$2.32	38.96		\$0.00
Asphalt	\$2.32	116.02		\$0.00
	\$2.32			\$0.00
	\$2.32			\$0.00
Total		295.98		\$2,616.96

Land Use	Cost per kWh ¹	Electricity Usage (kWh)
	\$0.08	32,712.00
	\$0.08	0.00
	\$0.08	0.00
	\$0.08	0.00
Landscape/Open Space	\$0.08	0.00
Total		32,712.00