

2470 Alvin Avenue Mixed-Use Development Project

Last Updated: 5/3/2024

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

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529
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Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT						Fuel Used (gallons)
Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	
Rubber Tired Dozers	2	8	367	0.4	Demolition Phase	2,483
Excavators	3	8	36	0.38	Demolition Phase	386
Concrete/Industrial Saws	1	8	33	0.73	Demolition Phase	227
Rubber Tired Dozers	3	8	367	0.4	Site Preparation Phase	931
Tractors/Loaders/Backhoes	4	8	84	0.37	Site Preparation Phase	292
Graders	1	8	148	0.41	Grading Phase	205
Excavators	1	8	36	0.38	Grading Phase	51
Rubber Tired Dozers	1	8	367	0.4	Grading Phase	497
Tractors/Loaders/Backhoes	3	8	84	0.37	Grading Phase	351
Cranes	1	7	367	0.29	Building Construction Phase	9,058
Forklifts	3	8	82	0.2	Building Construction Phase	5,320
Generator Sets	1	8	14	0.74	Building Construction Phase	1,120
Tractors/Loaders/Backhoes	3	7	84	0.37	Building Construction Phase	8,821
Welders	1	8	46	0.45	Building Construction Phase	2,238
Air Compressors	1	6	37	0.48	Architectural Coating Phase	338
Pavers	2	8	81	0.42	Paving Phase	576
Paving Equipment	2	8	89	0.36	Paving Phase	542
Rollers	2	8	36	0.38	Paving Phase	232
Total Fuel Used						33,668

(Gallons)

Construction Phase	Days of Operation
Demolition Phase	20
Site Preparation Phase	5
Grading Phase	8
Building Construction Phase	230
Paving Phase	18
Architectural Coating Phase	54
Total Days	335

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Demolition Phase	24.1	15	11.7	145.64
Site Preparation Phase	24.1	17.5	11.7	42.48
Grading Phase	24.1	15	11.7	58.26
Building Construction Phase	24.1	125	11.7	13957.47
Paving Phase	24.1	15	11.7	131.08
Architectural Coating Phase	24.1	25	11.7	655.39
Fuel				14,990.32

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Demolition Phase	7.5	7.65	20.0	20.40
Site Preparation Phase	7.5	1	20.0	2.67
Grading Phase	7.5	2	20.0	5.33
Building Construction Phase	7.5	0	0.0	0.00
Paving Phase	7.5	0	0.0	0.00
Architectural Coating Phase	7.5	0	0.0	0.00
Fuel				28.40

VENDOR TRIPS

Demolition Phase	7.5	0	0.0	0.00
Site Preparation Phase	7.5	0	0.0	0.00
Grading Phase	7.5	0	0.0	0.00
Building Construction Phase	7.5	24.9	8.4	6414.24
Paving Phase	7.5	0	0.0	0.00
Architectural Coating Phase	7.5	0	0.0	0.00
		Fuel		6,414.24

Total Gasoline Consumption (gallons)	14,990
Total Diesel Consumption (gallons)	40,110

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2*. September. Available at: <https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf>.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics*. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.

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Populate one of the following tables (Leave the other blank):

Annual VMT	OR	Daily Vehicle Trips	
Annual VMT:		Daily Vehicle Trips:	51,204
		Average Trip Distance:	11.4

Fleet Class	Fleet Mix	Fuel Economy (MPG) [1]	
Light Duty Auto (LDA)	0.528224	Passenger Vehicles	24.1
Light Duty Truck 1 (LDT1)	0.040364	Light-Med Duty Trucks	17.6
Light Duty Truck 2 (LDT2)	0.230108	Heavy Trucks/Other	7.5
Medium Duty Vehicle (MDV)	0.128589	Motorcycles	44
Light Heavy Duty 1 (LHD1)	0.023273		
Light Heavy Duty 2 (LHD2)	0.005740		
Medium Heavy Duty (MHD)	0.009425		
Heavy Heavy Duty (HHD)	0.007440		
Other Bus (OBUS)	0.001057		
Urban Bus (UBUS)	0.000413		
Motorcycle (MCY)	0.022096		
School Bus (SBUS)	0.000684		
Motorhome (MH)	0.002585		

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT:		Fuel Consumption
			VMT	Vehicle Trips: VMT	(Gallons)
Passenger Vehicles	52.82%	Gasoline	0	308337.87	12,794
Light-Medium Duty Trucks	39.91%	Gasoline	0	232942.12	13,235
Heavy Trucks/Other	5.06%	Diesel	0	29546.44	3,940
Motorcycle	2.21%	Gasoline	0	12898.00	293

Total Gasoline Consumption (gallons)	26,323
Total Diesel Consumption (gallons)	3,940

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2021. National Transportation Statistics. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.