

KNOWN VALVES:

Project Life:	30 Years
Heating Value of Fuel Oil at 70% efficiency	98,000 BTU/Gal
Heating Value of Wood Chips	5,100 btu/lb
Repair Costs for Oil Boilers	\$1,200 /Boiler Plant
Repair Costs for Wood Plant	\$1,000 /Boiler Plant

ASSUMPTIONS:

Cost for Wood Chips	\$60.00 /ton
Cost for Electricity	\$0.10 /kwhr
Cost for Labor - Hourly Rate	\$30 /hr
Hours per week required to maintain the wood chip plant	10.0 hours/week
Weeks per year required to maintain the wood chip plant	30 weeks/year
General Rate of Inflation:	3.25%
Discount Rate:	4.50%
Oil Rate of Inflation (without the Woodchip Plant):	6.25%
Oil Rate of Inflation (with the Woodchip Plant):	6.25%
Wood Chip Rate of Inflation:	3.25%

NOTES:

NET PRESENT VALUE OF LIFE CYCLE COSTS	\$380,373
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Fossil Fuel Usage: 12% Refer to wood chip boiler sizing for more information

School	Area (sf)	Total Cost	Unit Costs (\$ / sf)	Unit Consump. (gal / sf)
School Totals	88,000	\$105,000	\$0.84	0.34

Previous Year Fuel Oil Consumption:

Heating Degree Days	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total DD
Average DD	1,390	1,232	1,104	687	0	0	0	0	241	533	843	1,246	7,276

Oil Consumption	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
School	5,731	5,080	4,552	2,833	0	0	0	0	994	2,198	3,476	5,137	30,000
Percent Total Usage	19%	17%	15%	9%	0%	0%	0%	0%	3%	7%	12%	17%	100%

Proposed Fossil Fuel Consumption Model of the School:

Oil Consumption Model	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Oil Consumption (gallons)	5,731	5,080	4,552	2,833	0	0	0	0	994	2,198	3,476	5,137	30,000
Costs	\$20,059	\$17,779	\$15,932	\$9,914	\$0	\$0	\$0	\$0	\$3,478	\$7,692	\$12,165	\$17,981	\$105,000

Proposed Fossil Fuel Consumption Model of the School:

Oil and Wood Consumption Model	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Oil Consumption (gallons)	708	628	563	350	0	0	0	0	123	272	430	635	3,708
Costs	\$2,479	\$2,197	\$1,969	\$1,225	\$0	\$0	\$0	\$0	\$430	\$951	\$1,503	\$2,222	\$12,976

Proposed Wood Chip Consumption Model of the School:

Wood Chip Consumption Model	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Wood Chip Consump. (tons)	48	43	38	24	0	0	0	0	8	19	29	43	800
Cost of Wood Chips	\$2,896	\$2,566	\$2,300	\$1,431	\$0	\$0	\$0	\$0	\$502	\$1,110	\$1,756	\$2,596	\$15,157

Proposed Total Costs of the School:

Gas and Wood Chip Consumption Model	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Total Costs	\$5,375	\$4,764	\$4,269	\$2,656	\$0	\$0	\$0	\$0	\$932	\$2,061	\$3,260	\$4,818	\$28,133

Savings

Savings	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Savings	\$14,685	\$13,015	\$11,663	\$7,258	\$0	\$0	\$0	\$0	\$2,546	\$5,631	\$8,906	\$13,163	\$76,867

historic fuel consumption