

**Cape Elizabeth Boiler Replacement
Life Cycle Cost Analysis**

Project: Cape Elizabeth Boiler Replacement Project

General Modeling Parameters (Fixed Values):

Bond Rate	5.00%
Analysis Term	20 yrs
Net Present Value Discount Rate	5.00%
Energy Unit-Cost Escalation	5.00%
Maintenance Cost Escalation	2.50%

Construction Cost Estimate (Provided by A/E firm):

Estimated Construction Cost \$ 375,000

Estimated Annual Operating Cost Forecast (Provided by A/E firm with fuel savings from Manufacturer's Rep.):

Annual Fuel Savings Estimate	\$ 39,611
Estimated Annual Routine Maintenance	\$ (750)
Net Annual Savings	\$ 38,861

Operating Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Incremental Project Cash Flow:																				
Energy Savings Estimate	\$ 39,611	\$ 41,592	\$ 43,671	\$ 45,855	\$ 48,147	\$ 50,555	\$ 53,083	\$ 55,737	\$ 58,523	\$ 61,450	\$ 64,522	\$ 67,748	\$ 71,136	\$ 74,692	\$ 78,427	\$ 82,348	\$ 86,466	\$ 90,789	\$ 95,329	\$ 100,095
Maintenance Cost Estimate	\$ (750)	\$ (769)	\$ (788)	\$ (808)	\$ (828)	\$ (849)	\$ (870)	\$ (892)	\$ (914)	\$ (937)	\$ (960)	\$ (984)	\$ (1,009)	\$ (1,034)	\$ (1,060)	\$ (1,086)	\$ (1,113)	\$ (1,141)	\$ (1,170)	\$ (1,199)
Cash Flow Before Bond Payments	\$ 38,861	\$ 40,823	\$ 42,883	\$ 45,047	\$ 47,320	\$ 49,706	\$ 52,213	\$ 54,845	\$ 57,610	\$ 60,513	\$ 63,562	\$ 66,764	\$ 70,127	\$ 73,659	\$ 77,367	\$ 81,262	\$ 85,352	\$ 89,648	\$ 94,159	\$ 98,896
Interest Expense	\$ (18,750)	\$ (17,813)	\$ (16,875)	\$ (15,938)	\$ (15,000)	\$ (14,063)	\$ (13,125)	\$ (12,188)	\$ (11,250)	\$ (10,313)	\$ (9,375)	\$ (8,438)	\$ (7,500)	\$ (6,563)	\$ (5,625)	\$ (4,688)	\$ (3,750)	\$ (2,813)	\$ (1,875)	\$ (938)
Principal Expense	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)	\$ (18,750)
Total Bond Payments	\$ (37,500)	\$ (36,563)	\$ (35,625)	\$ (34,688)	\$ (33,750)	\$ (32,813)	\$ (31,875)	\$ (30,938)	\$ (30,000)	\$ (29,063)	\$ (28,125)	\$ (27,188)	\$ (26,250)	\$ (25,313)	\$ (24,375)	\$ (23,438)	\$ (22,500)	\$ (21,563)	\$ (20,625)	\$ (19,688)
Non-annual incremental equipment and/or maintenance costs (-\$)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Cash Impact	\$ 1,361	\$ 4,260	\$ 7,258	\$ 10,360	\$ 13,570	\$ 16,894	\$ 20,338	\$ 23,908	\$ 27,610	\$ 31,451	\$ 35,437	\$ 39,577	\$ 43,877	\$ 48,346	\$ 52,992	\$ 57,825	\$ 62,852	\$ 68,085	\$ 73,534	\$ 79,209
Cumulative Cash Impact	\$ 1,361	\$ 5,621	\$ 12,879	\$ 23,239	\$ 36,809	\$ 53,702	\$ 74,040	\$ 97,948	\$ 125,557	\$ 157,008	\$ 192,445	\$ 232,022	\$ 275,899	\$ 324,245	\$ 377,237	\$ 435,062	\$ 497,914	\$ 566,000	\$ 639,533	\$ 718,742
Project Unadjusted Cash Impact	\$ 718,742 20 Years																			
Project Cash Net Present Value (NPV)	\$ 368,023 20 Years																			