

Request for Proposals

Installment Purchase Contract (Lease/Purchase) Financing for “Energy Performance Contract”

Fiscal Advisors & Marketing, Inc. at the request of:
Beekmantown Central School District
Clinton County, New York
(the “School District”)

1. Requests for written or fax bids for providing Installment Purchase Contract (Lease/Purchase) Financing are due no later than **June 7, 2017 at 11:00 o’clock A.M. EST** at the office of:

Fiscal Advisors & Marketing, Inc.
Corporate Headquarters
120 Walton Street – Suite 600
Syracuse, New York 13202
Attn: Keith Korycinski
(For financing questions call (315) 752-0051 Ext. 342)
Fax Bid Number: (315) 752-0057

2. The principal amount of the installment purchase contract will be **\$7,196,396**.
3. The lease purchase financing will be used to fund various projects of the School District as defined in “Scope and Work of Services” attached to this Request for Proposals. The energy service company is Siemens Industry, Inc., Building Technologies Division, 6 British American Blvd, Latham, NY 12110.
4. The interest rate quoted will be fixed as of the time of the bid and will remain constant throughout the lease term and will include any and all fees or expenses associated with this financing.
5. The financing entity will be provided with an opinion of bond counsel to the effect that the interest component of payments to be made by the School District pursuant to the financing contract (“interest”) is excluded from gross income for federal income tax purposes and is not an item of tax preference for purposes of the individual and corporate federal alternative minimum taxes; such interest is, however included in adjusted current earnings when calculating certain federal corporate alternative minimum taxes. The opinion set forth in the preceding sentence will be subject to the condition that the School District comply with all requirements of the Internal Revenue Code of 1986, as amended (the “Code”) that must be satisfied subsequent to the date of the financing contract in order that interest be, or continue to be, excluded from gross income for federal income tax purposes. The School District will covenant to comply with all such requirements. Failure to comply with all such requirements may cause the interest to be included in gross income for federal income tax purposes retroactive to the date of closing. Bond counsel will not express an opinion regarding other federal tax consequences arising with respect to the lease and the related documents. **The installment purchase contract will be designated by the School District as a “qualified tax-exempt obligation” pursuant to the provisions of Section 265 of the Code.**
6. **All bids shall remain in effect for 30 days from the day quotes are due. It is anticipated that funds will need to be available on or about July 7, 2017.** All quotes should be based upon this estimated time line.
7. Each bid should be accompanied by a repayment schedule listing principal, interest and total annual payments. **No award is final until approved by the Board of Education at its next meeting, currently scheduled for June 13, 2017.** Upon verbal or written notification of successful bid award, the successful bidder shall be required to deliver the proposed forms of the leasing documents to Fiscal Advisors & Marketing, Inc. (address listed above) and to Bond Counsel at:

Trespasz & Marquardt, LLP
Attention: Theodore A. Trespasz, Esq.
251 West Fayette Street
Syracuse, New York 13202
Tel: (315) 466-4444 x1 Fax: (315) 466-5555
Email: ttrespasz@lawtm.com

8. The School District requires the ability to prepay the proposed lease purchase agreement (the "Agreement") in full or in part. Respondents to this Request for Proposals shall clearly define their methodology used for such prepayment of principal prior to maturity. Determination of award will be based in part on the prepayment penalty, if any, which is most favorable to the School District.
9. The current Standard & Poor's Rating of the School District is "A+/Stable".
10. The School District is in material compliance with its Continuing Disclosure requirements related to SEC Rule 15c2-12 for the past five years.
 - a. A copy of the School District's most recent Continuing Disclosure Statement can be found here: <https://emma.msrb.org/ER998059-ER780842-ER1182090.pdf>
 - b. A copy of the School District's June 30, 2016 audited financial statements can be found here: <https://emma.msrb.org/ER992073-ER776611-ER1177883.pdf>
11. Among other factors, the low bid/quote will be determined by the lowest amount indicated for a total of payments with the requirement that the quote will meet all other conditions listed herein that are not affirmatively waived by the School District.
12. Prior to complete delivery of equipment, it will be necessary to make partial payment to vendor(s). In this case, unexpended funds shall be held in an interest bearing escrow fund account established by the winning bidder (the "Lessor") in the name of School District. Interest earnings will begin to accrue to the School District on the date of the deposit to the escrow fund. All interest earnings shall be applied to reduce the last scheduled payment(s) at the end of the financing term. Any unexpended funds after payment to all vendors shall be recalculated to reduce remaining payment amounts equally unless otherwise authorized by the School District. The escrow agent must be a bank or trust company located in and authorized to do such business in New York State. The bank must have an office New York State which is stated in the proposed Escrow Contract. Investments shall be made solely at the direction of the School District and shall be made in accordance with the requirements of General Municipal Law Sections 10 and 11 and the School District's formal investment policy. The School District is not authorized to invest in mutual funds or similar liquid investment vehicles. All monies held in the escrow fund are monies of the School District and shall not be subject to levy, attachment or lien of the escrow agent. All charges of the escrow agent shall be paid by the Lessor.
13. The installment purchase contract financing will be in the amount of **\$7,196,396**.

Interest will be due and payable on July 15, 2018 and annually thereafter on June 15.

Principal will be due and payable on July 15, 2018 and annually thereafter on June 15 as follows:

<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>
2018	\$ 50,000	2026	\$ 490,000
2019	96,396	2027	510,000
2020	375,000	2028	525,000
2021	410,000	2029	545,000
2022	430,000	2030	565,000
2023	445,000	2031	585,000
2024	460,000	2032	605,000
2025	475,000	2033	630,000

The School District reserves the right to modify the above principal payments post sale, in any amounts as deemed necessary to achieve substantially level annual payment and/or equal annual payments, or in the case of the first and last payments, to achieve substantially level local share after payment of building aid.

14. There shall be no additional fees or charges (including any Escrow Agent Fees) to the School District other than the annual debt service payments.
15. There shall be a \$1 (one dollar) buyout option in favor of the School District at lease expiration.
16. All manufacturers' warranties shall be assigned by the Lessor to the School District.
17. The Agreement shall be subject to cancellation by the School District annually and shall include the following paragraph:

"Pursuant to the requirements of General Municipal Law section 109-b, the financing contract shall contain the appropriate executory clause which shall state that should financing contract payments not be appropriated by the School District the School District will not be obligated to pay the amounts due beyond the end of the last funded fiscal year. The financing contract shall be deemed executory only to the extent of monies appropriated and available therefor, and no liability on account thereof shall be incurred by the School District beyond the amount of such monies. The financing contract is not a general obligation of the School District. Neither the full faith and credit nor the taxing power of the School District are pledged to the payment of any amount due or to become due under the financing contract. In the case of a failure to appropriate, the sole security shall be the improvements that are the subject of the financing contract. It is understood that neither this contract nor any representation by any public employee or officer creates any legal or moral obligation to appropriate or make available monies available for the purpose of the financing contract. In the event that no funds or insufficient funds are appropriated by the School District the financed improvements may be acquired and sold by or on behalf of the financing entity entitled to receive payments, provided that any excess proceeds from such a sale, after deduction for and payment of fees, expenses and any taxes levied on the sale, shall be paid to the School District as provided in section 109-b of the General Municipal Law."
18. The sole security shall be the equipment, machinery or apparatus financed pursuant to the Agreement. In the event insufficient funds are appropriated to pay this obligation, such equipment, machinery and apparatus may be sold on behalf of the Lessor entitled to receive such payments, provided that any excess proceeds from such a sale shall be paid to the School District after deduction of obligations, taxes or other expenses of the Lessor.
19. Payments by the Lessor shall be made only at the written direction of the School District and may likely require multiple payments. Payments may be required by either check or electronic wiring depending on equipment vendor requirements. All associated costs for these services must be included in the quote.
20. The installment purchase contract financing will be for upgrade, replacement, purchase and installation of energy management equipment and management and control systems. A listing of proposed equipment and upgrades has been provided with this quote.
21. Proposals will be evaluated based on total cost, ability to perform, requirements of the bidder, experience, and any other terms or conditions stipulated in each proposal.
22. The School District reserves the right to reject any or all bids/quotes, to waive any or all informalities, to request new proposals, and to award based upon the overall best interests of the School District. The attached Quote Proposal Form must be completed and included with each quote. The proposed forms of the lease purchase agreement, escrow contract and related documents must be submitted with the bid. Closing is subject to successful negotiation and approval of all such documents by counsel to the School District. The School District reserves the right to rescind an award due to failure of successful negotiation of the parties to agree to the terms and conditions thereof.
23. All agreements and contractual conditions are required to conform with the laws of the State of New York, including, but not limited to, the General Municipal Law, the Local Finance Law, the Energy Law, the Education Law, and regulations of the State Education Department and the Office of the State Comptroller. The School District's legal counsel will review and approve all documents on behalf of the Board of Education.
24. The Lessor shall be responsible for all of the Lessor's legal, issuance and closing costs.
25. Annual Appropriation: The annual lease payments are subject to appropriation each year by the Board of Education of the School District.

26. The School District will not provide a legal description for each School District property in connection with this financing. In the event the Lessor requires this information for the purposes of making a fixture filing pursuant to the applicable provisions of the Uniform Commercial Code, the Lessor may obtain such information at its own effort and expense.
27. By submitting a bid/quote, each bidder is agreeing to abide by all provisions of this Request for Proposals. No terms or conditions of the Lessor may be imposed on the School District that supersede or contradict the terms set forth in this Request for Proposals.

Dated: May 16, 2017

Quote Proposal Form:
***Installment Purchase Contract (Lease/Purchase) Financing for
“Energy Performance Contract”
Beekmantown Central School District
Clinton County, New York***

Fiscal Advisors & Marketing, Inc.
Corporate Headquarters
120 Walton Street – Suite 600
Syracuse, New York 13202
Attn: Keith Korycinski
(Call with questions: (315) 752-0051 Ext. 342)

Fax Quote Number: (315) 752-0057

Lessor/Agent: _____

Address: _____

Phone No. _____ Fax No. _____

E-mail address: _____

Contact Person: _____

Title: _____

Annual Interest Rate: _____

Payment Amounts Years 1-16 _____

Total of Payments: _____

Cost for each Additional \$1,000 _____

Signature: _____ Date: _____

*****NOTE: PLEASE ATTACH A REPAYMENT SCHEDULE WITH YOUR QUOTE.**

Upon verbal or written notification of successful bid award, the successful bidder shall be required to overnight deliver the leasing documents to both Fiscal Advisors & Marketing, Inc., and Bond Counsel at:

FA Fiscal Advisors & Marketing, Inc.
Corporate Headquarters
Attention: Keith Korycinski
120 Walton Street • Suite 600
Syracuse, New York 13202
Tel: (315) 752-0051 Ext. 342 Fax: (315) 752-0057
Email Address: kkorycinski@fiscaladvisors.com

Trespasz & Marquardt, LLP
Attention: Theodore A. Trespasz, Esq.
251 West Fayette Street
Syracuse, New York 13202
Tel: (315) 466-4444 x1 Fax: (315) 466-5555
Email: ttrespasz@lawtm.com

BEEKMANTOWN CENTRAL SCHOOL DISTRICT

SCOPE AND WORK OF SERVICES

Investment Grade Audit

SIEMENS

Updated Investment Grade Audit Scope

for the

Beekmantown Central School District

January 5, 2017



Prepared by:

Siemens Industry, Inc.
Building Technologies Division
6 British American Blvd
Latham, NY 12110

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3.0 MAIN BUILDING COMPLEX

3.3.1 FIM 1 - Replace Boiler with Condensing Boilers

Existing Condition

The primary boilers in the main building operate on fuel oil. The AERCO boiler used in the shoulder seasons operates on propane. The following boilers provide heating hot water to the Main Building.

Boiler Make	Model #	Input Capacity	Output Capacity	No. of Units	Fuel Input	Boiler Type
Cleaver Brooks	CB 800X-150	45 GPH (High Fire)	150 BHP	2	No. 2 Fuel Oil	4 - Pass, Forced Draft, Dry Back, Non Condensing
Cleaver Brooks	CB 200-200	60 GPH (High Fire)	200 BHP	1	No. 2 Fuel Oil	4 - Pass, Forced Draft, Dry Back, Non Condensing
AERCO	BMK 1.5LN	75 - 1,500 MBH	66 – 1,409 MBH	1	Propane	Condensing

Recommendation

SIEMENS will replace one of the 150 HP boilers with two 3,000 MBH modular condensing boilers. The new boilers would operate in condensing mode whenever the return water temperature is below 135°F. At all other times, the boiler plant would operate at existing non condensing boiler efficiency.

- 1) Due to limited space in the boiler room, one of the existing 150 HP boilers will have to be removed. Isolate the existing 150 HP boiler that will be removed from the piping system. Disconnect, dismantle, remove, and dispose of the existing boiler, existing pump, and all associated equipment and components that will not be required for the new boiler installations.
- 2) Furnish and install two 3,000 MBH condensing boilers with accessories and components to operate on propane. Use the two existing 1,000 gallon buried tanks and add a propane vaporizer system adequately sized for the 6,000 MBH load.
- 3) Furnish and install all required piping, valves, and fittings for the hot water supply and return for the new boilers. The boilers will be provided with their own water circulating pump. Connect new boiler supply and return water piping header into the existing main boiler loop piping system.
- 4) Furnish and install fiberglass insulation on all new hot water supply and return piping, valves, and fittings. Repair and/or replace the existing insulation at the points of connection to the existing hot water piping systems.

- 5) Furnish and install the required piping, valves, and fittings to connect the existing propane to the new boilers.
- 6) Furnish and install required vent flue piping and fittings for the flue gas exhaust for the new boilers.
- 7) Furnish, install, and connect the required electric power wiring, controls, and control wiring to the new boilers.
- 8) Furnish, install, and connect additional capacity for propane usage.
- 9) Perform required testing, start-up, and operational check of the new boilers at the completion of the installations.

3.3.2 FIM 2 - Use Condensing Boilers for Domestic Hot Water

Existing Condition

During November through April, No.2 Fuel Oil fired boilers are used for heating domestic water. During May through to October, the propane fired condensing boiler is used.

Recommendation

SIEMENS will use the propane-fired condensing boiler to heat domestic water throughout the year. This will reduce boiler cycling during the heating season. Controls will be implemented to accomplish this along with scheduling the boilers accordingly.

3.3.3 FIM 3 - Install Demand Control Ventilation (DCV)

Existing Condition

Currently, the following spaces have variable occupancy but no DCV controls. The outside air volumetric flow rates are calculated based on ASHRAE Standard 62.1.

Space	Outside Air Volumetric Flow Rate (CFM)
High School Gym	7,347
Middle School Gym	2,577
Library	321
Cafeteria (High School, Middle School and Elementary School Combined)	9,174
Auditorium	2,047

Recommendation

SIEMENS will install CO₂ sensors integrated with the existing building management system, to reduce the ventilation air intake during low occupancy periods in the indicated spaces. The CO₂ sensors will be installed in the space as well the return air ductwork to verify proper operation of the system.

Included in this measure are ductwork and unit modifications to reduce the noise created by the air handling units (AHUs) in the Middle School gymnasium. Additional control routines will be implemented to provide required ventilation of the space. Relief air systems will be installed and controlled to work in conjunction with the air handling systems.

3.3.4 FIM 4 - Install Exhaust Fan Control

Existing Condition

The existing system has an exhaust system that is oversized for the occupancy levels. The classroom exhaust fans currently operate during the occupied periods and were originally designed to be controlled with a variable speed drive. The general practice is to turn them on and allow them to operate at full capacity all day long. During most of the year, this practice results in wasted energy. Not only is exhaust and make-up air fan energy wasted, but more importantly the conditioned air is exhausted at high rate. This causes a lack in comfort conditions and uses more electric and thermal energy than required.

Recommendation

SIEMENS will add control to the existing exhaust fan system via existing BMS. Damper operation will be verified and air balancing will be provided. Included in this measure is the incorporation of the existing unit ventilator controls to coordinate operation of the system.

3.3.5 FIM 5 - Install Walk-In Freezer and Cooler Controllers/Replace Cooler

Existing Condition

The Main Building has a walk in freezer and a walk in cooler with standard temperature controls. The existing water-cooled system currently used a significant amount of water to cool the system.

Recommendation

SIEMENS will replace the walk-in cooler in the Main Building. Included in this measure is the demolition of the existing walk-in cooler and installation of new cooler box and associated cooler equipment and controls. This measure includes installing evaporator fan control, door heater control and electric defrost timer on the new walk-in cooler as well as existing coolers/freezers. The water-cooled condensing system associated with the existing and new cooler/freezers will be removed and replaced with a higher efficiency, non water-cooled system.

3.3.6 FIM 6 - Upgrade Transformers

Recommendation

SIEMENS will remove (7) existing transformers and replace with new, high-efficiency transformers to reduce electrical energy consumption within the facility.

3.3.7 FIM 7 - Replace Kitchen Booster Heater

Existing Condition

The kitchen has a 45 kW Hatco booster heater that is used to raise the temperature of domestic water to the design operating temperature.

Booster Make	Model #	Rating	Phases	Amps	Volts
Hatco	S - 45	45 kW	3	125	208

Recommendation

SIEMENS will replace the 45-kW electric booster heater be with a new heater operating on propane. In addition, 140°F water directly from the mechanical room will be used as a heating source.

4.0 CUMBERLAND HEAD ELEMENTARY SCHOOL

4.3.1 FIM 1 - Install Condensing Boiler

Existing Condition

The following boilers provide heating hot water to the Cumberland Head Elementary School building.

Boiler Make	Model #	Input Capacity	Output Capacity	No. of Units	Fuel Input	Boiler Type
Cleaver Brooks	CB 800 - 80	24 GPH	80 BHP	2	No. 2 Fuel Oil	4 - Pass, Forced Draft, Dry Back, Non Condensing

Recommendation

SIEMENS will add one 3,000 MBH condensing boiler to the boiler system. The new boiler will operate in condensing mode whenever the return water temperature is below 135°F. At all other times, the boiler plant will operate as existing non condensing boilers. The combined heating efficiency of the plant will be approximately 88%. The existing boiler room is large enough to leave both of the existing boilers in place or one can be removed. SIEMENS will perform the following:

- 1) Furnish and install one 3,000 MBH condensing boiler with accessories and components.
- 2) Furnish and install all required piping, valves, and fittings for the hot water supply and return for the new boiler. The boiler will be provided with its own water circulating pumps. Connect new boiler supply and return water piping header into the existing main boiler loop piping system.
- 3) Furnish and install fiberglass insulation on all new hot water supply and return piping, valves, and fittings. Repair and/or replace the existing insulation at the points of connection to the existing hot water piping systems.
- 4) Furnish and install the required piping, valves, and fittings to connect the natural gas to the new boilers.
- 5) Furnish and install all required vent flue piping and fittings for the flue gas exhaust for the new boilers.
- 6) Furnish, install, and connect the required electric power wiring, controls, and control wiring to the new boilers.
- 7) Furnish, install, and connect the required piping for natural gas usage for the new boilers. Further discussion with NYSEG is required to determine the requirements for this installation.
- 8) Perform all required testing, start-up, and operational check of the new boilers at the completion of the installations.

Replace Burners with Dual Fuel Type on Remaining Boilers

Existing Condition

The Cleaver Brooks boilers currently burn No. 2 Fuel Oil. The new condensing boilers will be set up for natural gas only.

Recommendation

SIEMENS will replace the existing burners on the Cleaver Brooks boilers with new dual fuel burners. This will give the school the ability to operate on either natural gas or fuel oil based on availability and lowest cost of fuels.

4.3.2 FIM 2 – Use Heat Exchanger for Heating Domestic Hot Water

Existing Condition

The following hot water heater provides domestic hot water to the Cumberland Head Elementary School building during the non heating periods. The existing heat exchanger was said to be in good condition.

Boiler Make	Input Capacity	Output Capacity	No. of Units	Fuel Input	Boiler Type
A.O. Smith	399 MBH	319 MBH	1	Propane	Non Condensing

Recommendation

SIEMENS will remove the existing hot water heater and the domestic hot water will be heated through the proposed condensing boilers tied into the existing heat exchanger located in the mechanical room.

4.3.3 FIM 3 - Install Demand Control Ventilation (DCV)

Existing Condition

Currently, the following spaces have variable occupancy but no DCV controls. The outside air volumetric flow rates are calculated based on ASHRAE Standard 62.1.

Space	Outside Air Volumetric Flow Rate (CFM)
Gym	2,242
Library	323
Cafeteria	2,770

Recommendation

SIEMENS will install CO₂ sensors integrated with the existing building management system, to optimize the ventilation air intake during low occupancy periods in the indicated spaces. Two sensors will be installed for each identified space. One will be installed in the room and an additional unit in the return air ductwork.

4.3.4 FIM 4 - Install Walk-In Freezer and Cooler Controllers/Replace Cooler & Freezer**Existing Condition**

The Cumberland Head Elementary School building has a walk in freezer and a walk in cooler with standard temperature controls. The existing water-cooled system currently used a significant amount of water to cool the system.

Recommendation

SIEMENS will replace the walk-in cooler and freezer in the Cumberland Head Elementary School. Included in this measure is the demolition of the existing walk-in cooler and freezer and installation of new cooler and freezer boxes and associated equipment and controls. This measure includes installing evaporator fan control, door heater control and electric defrost timer on the new walk-in cooler and freezer.

4.3.5 FIM 5 - Replace Kitchen Booster Heater**Existing Condition**

The kitchen has a 45 kW Hatco booster heater that is used to raise the temperature of domestic water to the desired operating temperature.

Booster Make	Model #	Rating	Phases	Amps	Volts
Hatco	S - 45	45 kW	3	125	208

Recommendation

SIEMENS will replace the 45-kW electric booster heater be with a new heater operating on natural gas. In addition, 140°F water directly from the mechanical room will be used as a heating source.

5.0 DISTRICT OFFICE (ANNEX)

5.3.1 FIM 1 - Install High Efficiency Hot Water Heaters

Existing Condition

The following hot water heater provides domestic hot water to the District Office building.

Heater Make	Model #	Storage Capacity	Electric Element Rating	No. of Units	Fuel Input
UL	PV 40 20RS8 F	40 Gallons	4.5 kW	1	Electricity

Recommendation

SIEMENS will replace the existing water heater with appropriately sized propane fired instantaneous (on demand) water heater.

5.3.2 FIM 2 – Install High Efficiency Heating & Cooling System

Existing Condition

The District Office is currently heated using a No.2 Fuel Oil fired furnace that is over thirty years old. The following furnace provides heat to the District Office (Annex) building.

Furnace Make	Model #	Input Capacity	Output Capacity	No. of Units	Fuel Input	Furnace Type
Thermo Pride		3 GPH		1	No. 2 Fuel Oil	

The building has a cooling load of approximately 12 tons that is met by window air conditioning units. Window air conditioning units are less efficient than a larger central system.

Recommendation

SIEMENS will replace the furnace and the window air conditioning units with an appropriately sized heating and cooling system. The furnace will be replaced with a propane fired unit with a DX cooling coil. The existing ductwork will be insulated where exposed to non-conditioned spaces. A new pad will be poured for the installation of a propane tank, as well as space for the DX condensing unit. The propane tank will serve the new domestic water heater, as well as the furnace. Included in this measure is the installation of four reheat coils to allow for zone temperature control and an override to allow for space temperature control by the occupants.

5.3.3 FIM 3 – Install Direct Digital Control (DDC) System

Existing Condition

The District Office currently does not utilize any direct digital control system.

Recommendation

SIEMENS will install a new DDC control system. Included in this measure is the implementation of control strategies including start/stop optimization (SSTO) and night setback.

6.0 BUS GARAGE

6.3.1 FIM 1 - Replace Boiler with Condensing Boiler

Existing Condition

The following boiler provides heating hot water to the Bus Garage.

Boiler Make	Model #	Input Capacity	Output Capacity	No. of Units	Fuel Input	Boiler Type
Weil McClain	78 Boiler Series - #978	8.5 GPH	1,007 MBH	1	Kerosene	Forced Draft, Non Condensing

Recommendation

SIEMENS will leave that the existing boiler in place and a condensing boiler will be added. The new boiler plant will operate in condensing mode whenever the return water temperature is below 135°F. At all other times, the boiler plant will operate as existing non condensing boiler. This is known as a hybrid heating plant. The combined heating efficiency of the plant will be approximately 88%. The condensing boiler will use propane as its fuel source.

SIEMENS will provide the following:

- 1) Furnish and install one 1,200 MBH condensing boiler with accessories and components.
- 2) Furnish and install all required piping, valves, and fittings for the hot water supply and return for the new boiler. The boiler will be provided with its own water circulating pump. Connect new boiler supply and return water piping header into the existing main boiler loop piping system.
- 3) Furnish and install fiberglass insulation on all new hot water supply and return piping, valves, and fittings. Repair and/or replace the existing insulation at the points of connection to the existing hot water piping systems.

- 4) Furnish and install the required piping, valves, and fittings to connect the propane to the new boiler.
- 6) Furnish and install all required vent flue piping and fittings for the flue gas exhaust for the new boiler.
- 7) Furnish, install, and connect the required electric power wiring, controls, and control wiring to the new boiler.
- 8) Perform all required testing, start-up, and operational check of the new boiler at the completion of the installations.
- 9) Included in this measure, a concrete pad will be poured outside of the building and sized for the added propane tank as well as additional capacity to be utilized when the District implements propane-powered buses.

6.3.2 FIM 2 - Install Radiant Tube Heaters in Bus Bays

Existing Condition

The following boiler provides heating hot water to the Bus Garage.

Boiler Make	Model #	Input Capacity	Output Capacity	No. of Units	Fuel Input	Boiler Type
Weil McClain	78 Boiler Series - #978	8.5 GPH	1,007 MBH	1	Kerosene	Forced Draft, Non Condensing

The boiler is fitted with one Power Flame, forced-draft, modulating burner.

Recommendation

SIEMENS will valve off and drain the hot water fan coil units in the two large bus garage bays and replace them with appropriately sized propane fired infrared heaters. Propane will need to be installed in this facility based on the new tube heaters. This piping will need to be extended into the garage bays. The new units will vent the products of combustion out the nearest sidewall.

6.3.3 FIM 3 - Install Walk-In Freezer Controllers

Recommendation

SIEMENS will install evaporator fan control, door heater control and electric defrost timer on the walk-in cooler and walk-in freezer. Additionally, SIEMENS will replace the shaded pole motors with high efficiency EC motors.

7.0 ADDITIONAL MEASURES

7.1 FIM 1 – Building Envelope Improvements (All Buildings)

Please reference the accompanied table showing the amount of building envelope that will be addressed under these measures. Please note that the numbers in this table are in reference to the quantity of measures (the roof/wall interface is in “lineal feet”).

Building Envelope Improvement	Main Building	Cumberland Head ES	District Office	Bus Garage
Single Entry Doors to be Weather Stripped	8	1	1	4
Double Entry Doors to be Weather Stripped	40	13	2	3
Overhead/Roll Up Doors to be Weather Stripped	2	0	1	9
Soffits to be Sealed	9	2	0	0
Exhaust Fans to be Sealed/Cleaned	92	37	0	0
Lineal Feet of Roof/Wall Interface to be Sealed	2422'	860'	0	94'

SIEMENS will install a vestibule at the Middle School entrance in the location pictured at right. This will provide students and faculty with a more energy efficient and convenient means of entering and leaving the Main Building.



SIEMENS will replace the existing roof with a new standing seam roof, and replace the existing front entrance door with an in-kind replacement. Siemens will install a vestibule at the District Office at the front entrance. Windows will be replaced with new energy efficient aluminum windows. Included in this measure is the replacement of all sixteen (16) windows at the District Office (measuring 96" x 55.5" each).



7.2 *FIM 2 – Lighting Improvements*

SIEMENS will retrofit lighting fixtures throughout the District with LED lamps and ballasts along with sensors where applicable. Refer to lighting schedules included with project plans and specifications.

7.3 *FIM 3 – Plug Load Control*

SIEMENS will install Bert plug load control system to provide the Beekmantown Central School District facilities (Main Building and Cumberland Head Elementary School) with more control and efficient plug loads. Siemens will install metering Berts and control Berts which will provide metering and control for various locations in the schools.

7.4 *FIM 4 – Solar (Photovoltaic)*

SIEMENS will install solar arrays to be sized based on capacity of the ground mount system at Cumberland Head Elementary School as detailed in the contract plans and specifications.

7.5 *FIM 5 – Wind Turbines*

SIEMENS will install (1) 1-kW wind turbine at the Cumberland Head Elementary School. This turbine will be used for energy production as well as provide the school with an educational resource to teach students about renewable energy.

FIM-#	Facility	Facility Improvement Measure	Electricity Incremental kWh/yr	Nat'l Gas Savings therms/yr	Propane Savings gallons/yr	Fuel Oil Savings gallons/yr	Guaranteed Cost Savings	Implementation Cost	Simple Payback	Notes
3.3.1	Main Bldg K-12	Boiler Improvements/Additional Controls & Balancing	0	0	-125,988	95,532	\$152,470	\$981,573	6.4	Reduced Operating Costs, Improved Supply Water Temperature Control, Reduced Maintenance Costs, Improved Reliability, Operational Flexibility, Improved Control
3.3.2	Main Bldg K-12	Condensing Boiler for DHW	0	0	-2,297	1,769	\$2,925	\$4,300	1.5	Operational Flexibility, Reduced Maintenance Costs, Improved Reliability, Improved Control
3.3.3	Main Bldg K-12	Demand Control Ventilation/Middle School Gym AHU/Additional Controls	0	0	0	7,745	\$25,296	\$621,358	24.6	Reduced Energy Usage and Cost, Improved Comfort, Improved Control and Reliability
3.3.4	Main Bldg K-12	DDC Exhaust Fan Control	4,490	0	0	2,091	\$7,222	\$322,976	44.7	Reduced Energy Usage and Costs, Improved Comfort
3.3.5	Main Bldg K-12	Walk-in Freezer and Cooler Controls/Cooler Replacement	18,500	0	0	0	\$1,624	\$101,325	62.4	Reduced Electric Usage and Demand
3.3.6	Main Bldg K-12	Transformer Replacements	54,995	0	0	0	\$4,829	\$111,071	23.0	Reduced Electric Usage and Demand
3.3.7	Main Bldg K-12	Kitchen Booster Heater Replacement	14,580	0	-695	0	\$468	\$30,771	65.8	Reduced Operating Costs
4.3.1	Cumberland Head Elementary	Boiler Improvements	0	-38,818	0	27,154	\$60,357	\$505,932	8.4	Reduced Operating Costs, Improved Supply Water Temperature Control, Reduced Maintenance Costs, Improved Reliability, Operational Flexibility
4.3.2	Cumberland Head Elementary	Use Heat Exchanger for Domestic Hot Water	0	-1,572	1,716	0	\$1,270	\$16,678	13.1	Reduced Operating Costs, Reduced Maintenance Costs, Increased Reliability
4.3.3	Cumberland Head Elementary	Demand Control Ventilation	0	0	0	1,281	\$4,183	\$41,695	10.0	Reduced Energy Usage and Cost, Improved Comfort
4.3.4	Cumberland Head Elementary	Walk-in Freezer and Cooler Controls/Cooler & Freezer Replacement	6,705	0	0	0	\$699	\$194,626	278.6	Reduced Electric Usage and Demand
4.3.5	Cumberland Head Elementary	Kitchen Booster Heater Replacement	4,860	-247	0	0	\$353	\$30,788	87.3	Reduced Operating Costs
5.3.1	Annex District Office	Install High Efficiency Water Heaters	2,068	0	-79	0	\$135	\$30,788	227.4	Reduced Operating Costs, Reduced Maintenance Costs, Increased Reliability
5.3.2	Annex District Office	Install High Efficiency Heating & Cooling System	5,767	0	-2,171	1,575	\$2,920	\$247,837	84.9	Reduced Operating Costs, Improved Comfort Conditions and Temperature Control, Improved Reliability
5.3.3	Annex District Office	DDC Night Setback	0	0	0	230	\$782	\$30,021	38.4	Reduced Energy Usage and Cost
6.3.1	Bus Garage	Condensing Boiler	0	0	-7,101	5,371	\$11,308	\$183,960	16.3	Reduced Operating Costs, Reduced Maintenance Costs, Increased Reliability
6.3.2	Bus Garage	Radiant Tube Heating	0	0	-4,165	3,867	\$9,513	\$95,524	10.0	Reduced Energy Usage and Cost, Improve Comfort Conditions
6.3.3	Bus Garage	Walk-in Freezer Controls	6,022	0	0	0	\$571	\$7,672	13.4	Reduced Electric Usage and Demand
7.1	Main Bldg K-12	Building Envelope (including Middle School vestibule)	0	0	13,098	0	\$17,997	\$312,807	17.4	Reduced Energy Cost, Improved Comfort Conditions
7.1	Cumberland Head Elementary	Building Envelope	0	5,960	0	0	\$5,066	\$66,055	13.0	Reduced Energy Cost, Improved Comfort Conditions
7.1	Annex District Office	Building Envelope	18,757	0	0	0	\$2,264	\$531,995	235.0	Reduced Energy Cost, Improved Comfort Conditions
7.1	Bus Garage	Building Envelope	0	0	2,763	0	\$3,996	\$19,639	4.9	Reduced Energy Cost, Improved Comfort Conditions
7.2.1	Main Bldg K-12	Lighting Improvements	631,440	0	0	0	\$55,440	\$1,186,118	21.4	Improved quality of lighting, Reduced Electric Usage and Cost, Reduced Electric Demand, Reduced Maintenance
7.2.2	Cumberland Head Elementary	Lighting Improvements	184,073	0	0	0	\$19,180	\$469,872	24.5	Improved quality of lighting, Reduced Electric Usage and Cost, Reduced Electric Demand, Reduced Maintenance
7.2.3	Annex District Office	Lighting Improvements	16,897	0	0	0	\$2,039	\$56,205	27.6	Improved quality of lighting, Reduced Electric Usage and Cost, Reduced Electric Demand, Reduced Maintenance
7.2.4	Bus Garage	Lighting Improvements	31,018	0	0	0	\$2,940	\$71,883	24.4	Improved quality of lighting, Reduced Electric Usage and Cost, Reduced Electric Demand, Reduced Maintenance
7.3	All	Plug Load Controllers	33,850	0	0	0	\$3,448	\$34,290	9.9	Reduced Electric Usage and Demand
7.4	All	Solar	78,643	0	0	0	\$8,195	\$283,990	34.7	Reduced Energy Cost, Reduced Emissions, Improve Conditions, Reduce Emissions
7.5	Cumberland Head Elementary	Wind Turbine 1 kW	0	0	0	0	\$0	\$50,034	n/a	Reduced Energy Cost, Reduced Emissions
	All	Commissioning	0	0	0	0	\$0	\$37,526	n/a	
	All	A & E, Fiscal Advisor Costs and Abatement Costs	0	0	0	0	\$0	\$655,000	n/a	
		Total	1,112,665	-34,677	-124,919	146,615	\$407,492	\$7,334,310		

Annual Financial Projections: PRO FORMA DATA

Total Implementation Cost:	(\$7,334,310)	Other Costs(Construction Interest):	(\$241,948)
Implementation Cost + Other Credits:	(\$7,334,310)	Other Credits (Rebates/Incentives):	\$134,430
Interest Rate (5):	3.25%	Net Financed Investment:	(\$7,576,258)
Financial Term in Years:	15	Construction Period Escrow Interest:	\$56,230
State Aid Rate:	65.3%	Service Inflation Rate:	2%
Simple Payback (yrs) (6):	18.0	Energy Inflation Rate:	3%
Guarantee Period(yrs):	18	Operational Savings Inflation Rate:	2%
Annual Payment:	(\$638,832)		

18 -Year Cash Flow Model

Beekmantown Central School District Proforma

Yr	Energy Costs	Assets						Liabilities			Net Annual Benefit	Cumulative Cash Flow
	Base Year Energy Costs	Energy Savings	Energy Cost with Improvements	Associated Savings	Escrow Interest, Potential Rebates & Incentives (11)	NYSED Building Aid	Total Assets	Payment (2)	On-Going Services (3,4)	Total Liabilities		
1	\$794,908	\$407,492	\$387,416	\$21,754	\$136,888	\$326,799	\$871,179	(\$638,832)	(\$21,754)	(\$660,586)	\$210,593	\$210,593
2	\$818,755	\$419,717	\$399,038	\$22,189	\$53,772	\$326,799	\$800,288	(\$638,832)	(\$74,997)	(\$713,829)	\$86,459	\$297,052
3	\$843,318	\$432,308	\$411,009	\$22,633	\$0	\$326,799	\$759,107	(\$638,832)	(\$76,497)	(\$715,329)	\$43,779	\$340,830
4	\$868,617	\$445,278	\$423,340	\$23,086	\$0	\$326,799	\$772,077	(\$638,832)	(\$78,027)	(\$716,859)	\$55,218	\$396,048
5	\$894,676	\$458,636	\$436,040	\$23,547	\$0	\$326,799	\$785,435	(\$638,832)	(\$79,587)	(\$718,419)	\$67,016	\$463,064
6	\$921,516	\$472,395	\$449,121	\$24,018	\$0	\$326,799	\$799,194	(\$638,832)	(\$81,179)	(\$720,011)	\$79,183	\$542,247
7	\$949,161	\$486,567	\$462,595	\$24,499	\$0	\$326,799	\$813,366	(\$638,832)	(\$82,803)	(\$721,635)	\$91,731	\$633,978
8	\$977,636	\$501,164	\$476,472	\$24,989	\$0	\$326,799	\$827,963	(\$638,832)	(\$84,459)	(\$723,291)	\$104,672	\$738,650
9	\$1,006,965	\$516,199	\$490,767	\$25,488	\$0	\$326,799	\$842,998	(\$638,832)	(\$86,148)	(\$724,980)	\$118,018	\$856,668
10	\$1,037,174	\$531,685	\$505,490	\$25,998	\$0	\$326,799	\$858,484	(\$638,832)	(\$87,871)	(\$726,703)	\$131,781	\$988,449
11	\$1,068,289	\$547,635	\$520,654	\$26,518	\$0	\$326,799	\$874,434	(\$638,832)	(\$89,628)	(\$728,460)	\$145,974	\$1,134,423
12	\$1,100,338	\$564,064	\$536,274	\$27,048	\$0	\$326,799	\$890,863	(\$638,832)	(\$91,421)	(\$730,253)	\$160,611	\$1,295,034
13	\$1,133,348	\$580,986	\$552,362	\$27,589	\$0	\$326,799	\$907,785	(\$638,832)	(\$93,249)	(\$732,081)	\$175,704	\$1,470,738
14	\$1,167,349	\$598,416	\$568,933	\$28,141	\$0	\$326,799	\$925,215	(\$638,832)	(\$95,114)	(\$733,946)	\$191,269	\$1,662,006
15	\$1,202,369	\$616,368	\$586,001	\$28,704	\$0	\$326,799	\$943,167	(\$638,832)	(\$97,017)	(\$735,849)	\$207,319	\$1,869,325
16	\$1,238,440	\$634,859	\$603,581	\$29,278	\$0	\$0	\$634,859	\$0	(\$98,957)	(\$98,957)	\$535,902	\$2,405,227
17	\$1,275,593	\$653,905	\$621,688	\$29,864	\$0	\$0	\$653,905	\$0	(\$100,936)	(\$100,936)	\$552,969	\$2,958,196
18	\$1,313,861	\$673,522	\$640,339	\$30,461	\$0	\$0	\$673,522	\$0	(\$102,955)	(\$102,955)	\$570,567	\$3,528,764
Total		\$9,541,195	\$9,071,119	\$465,803	\$190,660	\$4,901,988	\$14,633,843	(\$9,582,480)	(\$1,522,599)	(\$11,105,079)	\$3,528,764	

Notes:

- Associated Savings include operational cost savings.
- Payment represents an annual sum of periodic payments.
- Technical Support Program is escalated at Service Inflation Rate.
- Performance Assurance required during guarantee period only.
- Interest Rate Subject to Change.
- Simple Payback= Total Project Cost / (First Year Energy Savings plus Associated Savings plus Maintenance Savings plus First Year On-Going services).
- Annual guarantee may not exceed Total Project Cost.
- Construction interest based on 12-month funding to payment schedule.
- Annual guarantee amount is based on revenue neutral program.
- Cash Flow is for discussion purpose only.
- Total NYSEDA grant incentives applied over years 1, 2.