

SPECIAL FINANCE AND CLAIMS COMMITTEE OF THE COMMON COUNCIL MEETING

AGENDA

Thursday, December 7, 2023, 6:00 P. M.

By Zoom Virtual Teleconference:

To allow public access, anyone may access a meeting by telephone, Zoom, and/or the City of Norwalk YouTube channel. Specific instructions and links can be found at www.norwalkct.org/meetings.

Members of the public can call in and listen to a meeting. They will not be able to speak or see any of the meeting participants. Each meeting will use a unique Meeting/Webinar ID. Please find the information using the link above.

Members of the public who wish to provide "live comments" can use the Zoom meeting platform. All participants will be muted upon entering the meeting. To speak, click the "raise your hand indicator" and you will be called on by the host of the meeting during the public comment section. Please find the information using the link above.

Members of the public who wish to view the meeting, but are not participating, can view a live stream on the City of Norwalk YouTube channel. This stream is delayed by approximately 20 seconds. Please find the information using the link above.

Members of the public who wish to provide public comment are encouraged to submit those via email in advance of the meeting. These comments should be submitted at least three hours in advance of the meeting start time. Please email Chitsamay Lam at clam@norwalkct.org to provide written public comment prior to the meeting.

Public should watch via the youtube link to the City of Norwalk CT
is <https://www.youtube.com/channel/UCRcAj0a6fNzo2prQ6LhSjVA>

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To take part in public participation:

<https://www.norwalkct.org/1913/Meeting-Notices>

AGENDA

1. Call to Order
2. Roll Call
3. Public Participation
4. Approve the allocation of \$3,320,918.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Brien McMahon High School HVAC Improvement project. This special capital appropriation shall be funded through \$3,320,918.00 of authorized but unissued general obligation bonds or notes of the City.
5. Approve the allocation of \$1,330,900.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Brookside Elementary School HVAC Improvement project. This special capital appropriation shall be funded through \$1,330,900.00 of authorized but unissued general obligation bonds or notes of the City.
6. Approve the allocation of \$1,650,085.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Marvin Elementary School HVAC Improvement project. This special capital appropriation shall be funded through \$1,650,085.00 of authorized but unissued general obligation bonds or notes of the City.
7. Approve the allocation of \$1,210,206.00 in Special Capital Appropriation funds the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Silvermine Elementary School HVAC Improvement project. This special capital appropriation shall be funded through \$1,210,206.00 of authorized but unissued general obligation bonds or notes of the City.
8. Approve the allocation of \$4,263,447.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Rowayton Elementary School HVAC Improvement project. This special capital appropriation shall be funded through \$4,263,447.00 of authorized but unissued general obligation bonds or notes of the City.
9. Approve the allocation of \$2,584,750.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Naramake Elementary School HVAC Improvement project. This special capital appropriation shall be funded through \$2,584,750.00 of authorized but unissued general obligation bonds or notes of the City.
10. Adjournment.



CITY OF NORWALK
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TO : MAYOR HARRY RILLING
HENRY DACHOWITZ, CHIEF FINANCIAL OFFICER
TOM ELLIS, BUDGET DIRECTOR

FROM: ALAN LO, BUILDINGS AND FACILITIES MANAGER 

RE : **SPECIAL CAPITAL APPROPRIATION RELATING TO
STATE HVAC SCHOOL GRANT APPLICATION**

DATE: OCTOBER 17, 2023 (*Amended November 9, 2023 in Italic*)

In 2022, the State put in place a school HVAC (Heating, Ventilation and Air Conditioning) grant program. Generally, facility repairs and replacement are not reimbursable by the State. This program offers an opportunity for communities to receive State reimbursement at their normal reimbursement rate. With the recent State Special Legislative action, the City's current reimbursement rate is 60%.

This HVAC grant application has four basic submission requirements. The local school district/the City is required to approve Education Specifications for the specific improvements, complete a conceptual design, prepare professional cost estimates and authorize local share of the costs for each project. The grant application process provides four months between availability of the grant application to submission deadline. However, the required tasks typically would take 4 to 6 months to complete. For last year's grant process, the State was able to approve limited projects. In early September 2023, they issued grant application for a second round of this grant program.

In anticipation of the current grant funding cycle, the City, in collaboration with Norwalk Public Schools, has identified 6 priority projects. These HVAC projects include Brien McMahon, Brookside, Marvin, Silvermine, Naramake and Rowayton Schools. The City issued a RFP for mechanical consultants in May 2023 and the mechanical consultant has since completed the conceptual design and the estimator has completed estimates for each project. The estimated total cost is approximately \$36 million. A detailed scope of work is herein attached.

On October 4, 2023, Land Use and Building Management Committee considered and was supportive of the City's intent to submit grant applications for these projects. Based on the Committee's recommendation, I, on behalf of the Committee, am hereby submitting a Special Capital Appropriation request for the City's shares of these projects. It is important to note that:

- under this special HVAC grant program, subject to State approvals, said projects will be reimbursed at 60%.
- we are confirming with the State whether Rowayton and Naramake schools installation of new central air conditioning projects would be eligible as indoor air quality improvement projects under normal grant process. If so, we may consider the deletion of these two projects from this HVAC grant application process.
- from the City's capital budget allocation perspective, it is anticipated that these projects would be on the Board of Education's priority list for Capital Budget funds for the next 3 to 5 years and these projects would probably not be reimbursable by the State at such time.

The estimated costs for these projects are as follows with the City eligible for 60% reimbursement:

School Name	Project Cost	City Share at 40%
Brien McMahon High School	\$ 8,302,296	\$ 3,320,918
Brookside Elementary School	\$ 3,327,252	\$ 1,330,900
Marvin Elementary School	\$ 4,125,212	\$ 1,650,085
Silvermine Elementary School	\$ 3,025,516	\$ 1,210,206
Rowayton Elementary School	\$10,658,618	\$ 4,263,447
Naramake Elementary School	\$ 6,461,876	\$ 2,584,750

The above projects as listed is our general order of priorities, however, it is our understanding that the State will evaluate each grant application independently from other projects. This request includes funding for the City's share with the understanding that actual expenditure of these Special Appropriation funds will be subject to the City receiving grant for said specific project. The grant submission deadline is December 31, 2023. A detailed schedule has been developed with the anticipation of the needs for special meetings in order for the Common Council to approve the Special Appropriation (under Finance Committee portion of the agenda) and application for the grant (under Land Use and Building Management Committee portion of the agenda) on December 12, 2023.

Thank you for your consideration of this matter. If additional information is required, please advise. Thanks

SUGGESTED ACTIONS:

1. ***Approve the allocation of \$3,320,918.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Brien McMahon High School HVAC Improvement project.***
2. ***Approve the allocation of \$1,330,900.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Brookside Elementary School HVAC Improvement project.***
3. ***Approve the allocation of \$1,650,085.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Marvin Elementary School HVAC Improvement project.***
4. ***Approve the allocation of \$1,210,206.00 in Special Capital Appropriation funds the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Silvermine Elementary School HVAC Improvement project.***
5. ***Approve the allocation of \$4,263,447.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Rowayton Elementary School HVAC Improvement project.***
6. ***Approve the allocation of \$2,584,750.00 in Special Capital Appropriation funds for the City's 40% share of the project costs in compliance with State HVAC grant application requirements for Naramake Elementary School HVAC Improvement project.***

Cc: Tom Livingston, Chief-of-Staff
JoAnn Acquarulo, Assistant Building and Facilities Manager
Dr. Alexsandra Estrella, School Superintendent
Sandra Faioes, Assistant School Superintendent
Lunda Asmani, CFO, NPS
Bill Hodel, Facility Director, NPS

SCHOOL HVAC STATE GRANT PROJECTS APPROVAL SCHEDULE (Prepared 10/10/23)

Special Appropriation

- Oct 11 - Alan provide request letter to Henry D. and copy Mayor
- Oct 26 - Henry D. provides recommendation to the Mayor and BET
- Oct 27 - Finance Dept. forward legal notice to the Hour as a BET agenda item in compliance with public notice requirements for Special Capital Appropriation

- Nov 6 - BET meeting
- Nov 7 - Finance forward BET recommendation to Planning and Zoning Commission
- Nov 15 - Planning & Zoning Commission meeting
- Nov 16 - Chitsamay schedule a Special Meeting of Finance Committee after the new Committees are set up....between November 27 to Dec 6.

Between Nov 27 and Dec 6 – Special meeting of Finance Committee

- Dec 12 - Special Appropriation on Finance Committee's portion of Common Council agenda

Ed Spec

- Oct 25 - Bd of Ed Facilities Committee meeting
- Nov 14 - Action item on the Bd of Ed workshop meeting

Local Approval to submit grant application, designate Land Use as School Building Committee and to proceed with design and cost estimates

- Dec 6 - Land Use and Building Management Committee meeting
- Dec 12 - Common Council approval

Grant application deadline: Dec 31, 2023

NORWALK PUBLIC SCHOOLS

HVAC & ELECTRICAL IMPROVEMENT PROJECT

Brien McMahon High School

\$8,302,296 (includes 20% soft costs)

Chilled Water System

- Provide two (2) 500 ton air cooled chillers to be located outside on grade. Provide each with an integral pump package and all associated accessories (VFDs, disconnects). Provide two vibration isolation curbs. Provide new pipe connections and valves to both chillers. Assume 200 feet of 10" supply and return piping. Basis of design is Trane Ascend, Daikin Pathfinder, or approved equal. Chillers will be located next to school, no buried piping is expected.
- Provide (3) 40 horsepower floor mounted vertical inline pumps. Provide with a VFD, associated valves and new pipe connections. (Chilled Water Pumps)
- Provide one (1) 100 gallon glycol makeup tank and all associated pipe connections, valves, control devices, and appurtenances. Basis of design is Wessels or approved equal.
- Provide one (1) 9,000 MBH plate and frame heat exchanger and all associated pipe connections, valves, control devices, and appurtenances. Basis of design is Xylem Bell & Gossett or approved equal.
- Provide one (1) 185 gallon replaceable bladder type expansion tank and all associated pipe connections, valves, control devices, and appurtenances. Basis of design is Wessels or approved equal.

Rooftop

- Provide four (4) new 12,000 cfm roof mounted heating, ventilating, and cooling air handling units. The unit shall include a 2-pipe heating and cooling coil, energy wheel, and fan VFDs. The unit shall be mounted on the existing roof steel dunnage with new steel dunnage as required and connect to the existing supply and exhaust ductwork on the roof. Basis of design is Trane Performance Climate Changer, Daikin Skyline, or approved equal.
- Provide one (1) new 16,000 cfm roof mounted heating, ventilating, and cooling air handling units. The unit shall include a 2-pipe heating and cooling coil, energy wheel, and fan VFDs. The unit shall be mounted on the existing roof steel dunnage with new steel dunnage as required and connect to the existing supply and exhaust ductwork on the roof. Basis of design is Trane Performance Climate Changer, Daikin Skyline, or approved equal.

Classrooms

- Remove, clean, and re-attach (15) unit ventilator exterior wall louvers.
- Provide new control valves, piping accessories and BMS controls for all 15 unit ventilators.

BAS

- Provide new controls wiring and points to all new pieces of mechanical equipment. Provide all controls to be monitored by the existing BAS system.

Electric Service and Distribution

- The existing electric service provided at 480/277 volt, 3 phase, 4 wire rated for 2500 amperes will be insufficient to support the additional air conditioning equipment promoted by the HVAC improvements outlined herein. To support the additional equipment an additional 2,000 amperes of capacity will be required. A new service switchboard and electric service feeder rated for 2,500 amperes shall be installed. The existing service will remain in use and the new service will be a second service to the building.
- Provide a new service entrance switchboard at 480/277 volt, 3 phase 4, rated for 3000 amperes. Equipment shall be a freestanding pad mounted NEMA 3R dead front enclosure arranged in switch-fuse-meter cold sequence configuration. Provide a distribution section (MSB3) containing the following branch circuit breakers based on the selected chiller option being quoted:

- A new pad mounted transformer will be required for the new service, approximately 2500 kVA. The new transformer shall be provided with grounding, subbase and all appurtenances.
- Two (2) 4" conduits for extension of the primary electric utility feed from the existing Primary Switch Pad to the new transformer pad shall be provided and installed.
- Electrical distribution will need to be provided to satisfy all feeders to new equipment that is an upgrade or provided new for the outlined system improvements. Refer to the following paragraphs for specific electrical requirements.
- Provide new electrical connections for two (2) 500-ton air cooled chiller systems consisting of the following:
- Provide electrical connections to four (4) new 30-ton HVAC Rooftop units that are fit up for hot water and chilled water. Provide (4) 60 ampere circuit breakers in local 480-volt panelboards that currently serve existing to be replaced units. Feeder assemblies shall be 1 1/4" conduit with 3#4 plus ground to a single point power connection for each. Assume feeder length to be 150 feet for each.
- Provide electrical connection to one (1) new 40-ton HVAC Rooftop unit that will be fit up for hot water and chilled water. Provide (1) 80 ampere circuit breakers in a local 480 volt panelboard that currently serves the existing to be replaced unit. Feeder assemblies shall be 1 1/4" conduit with 3#3 plus ground to a single point power connection. Assume feeder length to be 150 feet.

Miscellaneous Fans

- Provide electrical connections to five (5) 1,000 cfm exhaust fans. Provide 1" conduit with 3#12 plus ground from a 20 ampere, 3 pole circuit breaker in panel MH-1 to a fusible disconnect switch at the fan location with final connection in weatherproof flex conduit. Provide a minimum of 100 feet of feeder length.
- Provide electrical connections to two (2) 750 cfm exhaust fans. Provide 1" conduit with 3#12 plus ground from a 20 ampere, 3 pole circuit breaker in panel MH-1 to a fusible disconnect switch at the fan location with final connection in weatherproof flex conduit. Provide a minimum of 100 feet of feeder length.

BAS

- Provide electrical equipment connections for a partial new BAS system. A minimum of (15) 120 volt hardwired connections shall be provided throughout the building footprint to provide power for new BMS control panels.

BROOKSIDE ELEMENTARY -

\$3,327,252 (includes 20% soft costs)

Rooftop

- Provide new:
 - one (1) new 6,500 cfm nominal packaged rooftop unit,
 - one (1) new 12-ton nominal packaged rooftop unit,
 - one (1) new 15-ton nominal packaged rooftop unit.
 - one (1) new 18-ton nominal packaged rooftop unit.
 - 4) new 25-ton nominal packaged rooftop unit

Gymnasium

- Provide one (1) new 20 ton nominal packaged rooftop unit.
- Provide new double wall galvanized steel ductwork to the gymnasium. Ductwork shall be 32" round and approximately 75' long. Provide new duct mounted supply and return grilles to serve the gymnasium.

Electrical and Fire Alarm Scope

- The existing electric service provided at 480/277 volt, 3 phase, 4 wire rated for 2000 amperes will be sufficient to support the HVAC replacements and the addition of cooling to the gymnasium based on CES experience with schools of comparable size (58,335 SF). Further equipment selection and a year's worth of utility electric bills will be needed to confirm no additional capacity will be required. The existing electric service and distribution equipment appears be approximately 15-20 years old and in good condition. The equipment has approximately 15-20 years left of useful life.

- Fused disconnects will need to be provided to satisfy all new equipment being installed with existing feeders to remain.
- Provide fire alarm equipment to suit each new air handling system 2000 cfm and above. Standard provision shall include a supply and return duct smoke detector with shut down relay installed and programmed. Existing air-handling units that are removed shall be refit with new duct smoke detector systems.
- Provide fire alarm equipment to suit each new air handling system 2000 cfm and above. Standard provision shall include a supply and return duct smoke detector with shut down relay installed and programmed. Existing air-handling units that are removed shall be refit with new duct smoke detector systems.

Gymnasium

- Provide one (1) new 100A-3P, 480V fused disconnect switch with 70A fuses at the location of the new 20-ton nominal packaged rooftop unit. Provide 70A-3P circuit breaker in MDP. Provide 80A feeders (3#2 & 1#6G in 1-1/4" C) from main electrical room to new unit location. Provide a minimum of 200 feet of feeder length. Provide new service receptacle at unit utilizing branch circuit preserved during demolition.

MARVIN ELEMENTARY

\$4,125,212 (includes 20% soft costs)

Rooftop

- Provide one (1) new 25 ton and four (4) new 30-ton nominal packaged rooftop units with natural gas fired furnace heat. The unit shall include hot gas reheat, economizer, power exhaust, and an energy recovery wheel.

Gymnasium

- Provide one (1) new 20-ton nominal packaged rooftop unit with natural gas fired furnace heat. The unit shall include hot gas reheat, economizer, power exhaust, and an energy recovery wheel. The unit shall be mounted on the gymnasium roof with a new roof curb.
- Provide roughly 30'-0" of roof mounted therma-duct ductwork and approximately 75'-0" of internal double wall galvanized steel ductwork in the gymnasium. Ductwork shall be 40x24" on the roof and 34" for internal ductwork.

BAS

- Upgrade to a new BAS system. The system shall include control devices for all new and existing equipment as required to make a complete and fully functional system.

Electrical and Fire Alarm Scope

- Provide electrical power connections to one (1) new 20 ton nominal packaged rooftop unit. Provide (1) new 125 ampere circuit breakers in local 480 volt panelboard that currently serve existing to be replaced units. Feeder assemblies shall be 2" conduit with 3#2/0 plus ground to a single point power connection. Provide a minimum of 150 feet of feeder length.
- Provide electrical equipment connections for a new BAS system. A minimum of (40) 120 volt hardwired connections shall be provided throughout the building footprint to provide power for new BAS control panels. Provide 20 ampere circuit breaker in local 208-volt panelboards to location of new BAS panels. Feeder assemblies shall be 3/4" conduit with 2#12 plus ground.
- Provide fire alarm equipment to suit each new air handling system 2000 cfm and above. Standard provision shall include a supply and return duct smoke detector with shut down relay installed and programmed. Existing air-handling units that are removed shall be refit with new duct smoke detector systems.

SILVERMINE ELEMENTARY - \$3,025,516 (includes 20% soft costs & \$150k environmental)

- Provide two (2) A.O. Smith 119 gallon (25KW each) domestic electric water heaters, two (2) 2,000 mbh oil-fired condensing hot water boilers, two (2) centrifugal vertical inline system hot water pumps sized at 30 horsepower each, one (1) 50 gallon glycol makeup tank, two (2) 65 gallon expansion tanks, one (1) 6" air separator, one (1) duplex fuel oil transfer pump set, and all associated oil pipe connections, valves, control devices, and appurtenances.

Gymnasium

- Provide (1) new 25 ton nominal direct expansion cooling and hot water heating air handling unit. The unit shall include hot gas reheat, economizer, power exhaust, and an energy recovery wheel. The unit shall be mounted on grade with a vibration isolation curb.
- Provide roughly 30'-0" of exterior mounted therma-duct ductwork and approximately 100'-0" of internal double wall 38" galvanized steel ductwork within the gymnasium.
- Provide roughly 30'-0" of insulated exterior hot water piping sized at 2".

BAS

Provide a new BAS system. The system shall include control devices for all new and existing equipment as required to make a complete and fully functional system.

Electrical and Fire Alarm Scope

Mechanical Room

- Provide electrical connections to two (2) A.O. Smith 119 gallon (25KW each) domestic electric water heaters. Provide (2) 90 ampere circuit breakers in local 208 volt panelboards that currently serve existing to be replaced units. Feeder assemblies shall be 1-1/4" conduit with 3#2 plus ground to a single point power connection for each. Provide a minimum of 100 feet of feeder length.
- Provide electrical connections to two (2) 2,000 mbh oil-fired condensing hot water boilers. Provide (2) 20 ampere circuit breakers in local 208 volt panelboards that currently serve existing to be replaced units. Feeder assemblies shall be 3/4" conduit with 3#12 plus ground to a single point power connection for each. Provide a minimum of 100 feet of feeder length.
- Provide electrical power connections to two (2) centrifugal vertical inline system hot water pumps sized at 30 horsepower each. Provide (2) 125 ampere circuit breakers in local 208 volt panelboards that currently serve existing to be replaced units. Feeder assemblies shall be 2" conduit with 3#2/0 plus ground to a single point power connection to each. Provide a minimum of 100 feet of feeder length.
- Provide electrical power connections to one (1) 50 gallon glycol makeup tank and all associated pipe connections, valves, control devices, and appurtenances. Provide (1) 20 ampere circuit breakers in local 208 volt panelboards that currently serve existing to be replaced units. Feeder assemblies shall be 3/4" conduit with 2#12 plus ground to a single point power connection. Provide a minimum of 100 feet of feeder length.
- Provide electrical connections for one (1) duplex fuel oil transfer pump set. Provide 20 ampere circuit breaker in local 208 volt panelboards that currently serve existing to be replaced units. Feeder assemblies shall be 3/4" conduit with 2#12 plus ground to a single point power connection. Provide a minimum of 100 feet of feeder length.

Gymnasium

- Provide electrical connections for one (1) new 25 ton nominal direct expansion cooling and hot water heating air handling unit. Provide new 150 ampere circuit breaker in local MDP located in main electrical room. Feeder assemblies shall be 2-1/2" conduit with 3#3/0 plus ground to a single point power connection to each. Provide a minimum of 200 feet of feeder length.

BAS

- Provide electrical equipment connections for a new BAS system. A minimum of (40) 120 volt hardwired connections shall be provided throughout the building footprint to provide power for new BAS control panels.

Provide 20 ampere circuit breaker in local 208 volt panelboards to location of new BAS panels. Feeder assemblies shall be ¾" conduit with 2#12 plus ground.

ROWAYTON ELEMENTARY - \$10,658,618 (includes 20% soft costs & \$150k environmental)

Mechanical Room

- Provide two (2) 2,000 mbh oil-fired condensing hot water boilers, two (2) centrifugal vertical inline system hot water pumps sized at 200 gpm and 20 horsepower each, (1) 50 gallon glycol makeup tank and all associated pipe connections, valves, control devices, and appurtenances, (2) 65 gallon expansion tanks and all associated pipe connections, valves, and appurtenances, (2) 4" air separator and all associated pipe connections, valves, and appurtenances, (1) 1,000 mbh plate and frame heat exchanger for the hot water glycol loop, (1) duplex fuel oil transfer pump set and all associated oil pipe connections, valves, control devices, and appurtenances.

Learning Spaces

- Provide one (1) variable refrigerant flow (VRF) ceiling cassette 2.5 tons each per classroom and 1.0 tons per office.
- Provide one (1) variable refrigerant flow (VRF) ducted concealed unit to the Media Center and Music Room, 3.0 tons each. Provide all associated ductwork, grilles, diffusers, supports, and hangers.
- Provide seven (7) new 16 ton nominal roof mounted VRF high efficiency air source heat pump condensing units to serve all new VRF ceiling cassettes and ducted units. The condensing units shall be installed on equipment rails.
- Provide four (4) new 4,500 CFM packaged dedicated outdoor air rooftop units to ventilate the classrooms, offices and corridors. The new units shall include hot gas reheat for dehumidification purposes, an enthalpic energy recovery wheel, and a hot water heating coil. The units shall be mounted on a new roof curb or on steel dunnage as required.
- Provide ceiling mounted hot water radiant panels to provide heat to twelve classrooms. Provide all associated pipe connections, valves, hangers, control devices and appurtenances. Provide wall-to-wall installation (assume 28'-0" in length per each).

BAS

Provide a new BAS system. The system shall include control devices for all new and existing equipment as required to make a complete and fully functional system.

Electric Service and Distribution

- The existing electric service provided at 208Y/120 volt, 3 phase, 4 wire rated for 1200 amperes will be insufficient to support the additional air conditioning equipment promoted by the HVAC improvement options outlined herein. To support the additional equipment an additional 1,200 amperes of capacity will be required. A new service switchboard and electric service feeder rated for 2,500 amperes shall be provided at 208Y/120 volt, 3 phase, 4 wire. The new service shall replace the existing service.
- Provide a new service entrance switchboard at 208/120 volt, 3 phase 4, rated for 2500 amperes. Equipment shall be a freestanding pad mounted NEMA 3R deadfront enclosure arranged in switch-fuse-meter cold sequence configuration. Provide a distribution section containing a minimum of two distribution circuit breakers; (1) 1200 ampere to feed the existing 1200 ampere building distribution system (existing to remain) and (1) 1200 ampere branch device to feed a new 1200 ampere distribution switchboard (MDP2) dedicated to new mechanical equipment.
- The project will need to incorporate appropriate scope to replace the existing transformer with a new minimum size 1000 kVA transformer and pad, new service feeder and all appurtenances related to the upsized service entrance. The existing transformer pad may be retained for use as a primary voltage pullbox to extend primary electric service to a new pad mounted transformer. The new transformer shall be provided with grounding, concrete pad, required sub-base material and all appurtenances.

- New electrical distribution will need to be provided to satisfy all feeders to new equipment to support the outlined system improvements. A 1200 ampere distribution panel at 208Y/120 volt, 3 phase 4 wire (MDP) shall be provided to support new circuits for major equipment. A 225 ampere branch circuit panelboard at 208Y/120 volt, 3 phase 4 wire (MP1) shall be provided to support miscellaneous circuits for VRF cassettes, branch controllers, 120 volt BMS panel connections and receptacle power. Refer to the following paragraphs for specific electrical requirements.

Mechanical Room

- Provide electrical connections to two (2) hot water boilers, two (2) centrifugal vertical inline 20 HP hot water pumps, two (2) centrifugal vertical inline 10 HP hot water pumps, and one (1) duplex fuel oil transfer pump set.

Learning Spaces

- Provide electrical connections to (35) VRF ceiling cassette units, one per classroom and (18) VRF ceiling cassette units, one per office space.
- Provide one (1) variable refrigerant flow (VRF) ducted concealed unit to the Media Center and Music Room, 3.0 tons each. Provide all associated ductwork, grilles, diffusers, supports, and hangers. Basis of design is Mitsubishi PEFY series or equal. Assume a total of 2 units.
- Provide electrical connections to a total of (7) VRF heat pump style condensing units that will support all VRF ceiling cassette units. Provide (7) 150 ampere circuit breakers in new Panel MSB to serve this new equipment.
- Provide electrical connections to five (4) new 4,500 CFM packaged dedicated outdoor air rooftop units. Provide (4) 100 ampere circuit breakers in new Panel MSB to serve this new equipment. Feeder assemblies shall be 1 1/4" conduit with 3#2 plus ground to a single point power connection at each unit. Assume feeder length to be 150 feet for each.

BAS

- Provide electrical equipment connections for a new BAS system. A minimum of (40) 120-volt hardwired connections shall be provided through the building footprint to provide power for BMS control panels.

NARAMAKE ELEMENTARY - \$6,461,876 (includes 20% soft costs & \$150k environmental)

Gymnasium

- Provide one (1) new 30-ton nominal packaged rooftop unit. The unit shall include hot gas reheat, economizer, power exhaust, an energy recovery wheel, and a hot water heating coil. The unit shall be mounted on a new roof curb or on steel dunnage as required.
- Provide approximately 100'-0" of internal double wall 40" galvanized steel ductwork, approximately 50'-0" of insulated interior hot water piping sized at 2" to feed the rooftop unit, approximately 75'-0" of new perimeter hot water radiation mounted on the wall 10'-0" AFF. Include all associated pipe connections, valves, control devices, hangers, and supports.

Learning Spaces

- Provide one (1) variable refrigerant flow (VRF) ceiling cassette unit per classroom, 2.5 tons each. Assume a total of 30 units.
- Provide one (1) variable refrigerant flow (VRF) ceiling cassette unit per office, 1.5 tons each. Assume a total of 12 units.
- Provide six (6) new 16-ton nominal roof mounted VRF high efficiency air source heat pump condensing units to serve all new VRF ceiling cassettes. The condensing units shall be installed on equipment rails.
- Provide five (5) new 4,000 CFM packaged dedicated outdoor air rooftop units to ventilate the classrooms and corridors. The new units shall include hot gas reheat for dehumidification purposes, an enthalpic energy recovery wheel, and a hot water heating coil. The units shall be mounted on a new roof curb or on steel dunnage as required.

BAS

- Provide a new BAS system. The system shall include control devices for all new and existing equipment as required to make a complete and fully functional system.

Electric Service and Distribution

- The existing electric service provided at 208Y/120 volt, 3 phase, 4 wire rated for 1200 amperes will be insufficient to support the additional air conditioning equipment promoted by the HVAC improvement options outlined herein. To support the additional equipment an additional 1,200 amperes of capacity will be required. A new service switchboard and electric service feeder rated for 2,500 amperes shall be provided at 208Y/120 volt, 3 phase, 4 wire. The new equipment shall replace the existing service equipment.
- Provide a new service entrance switchboard at 208/120 volt, 3 phase 4, rated for 2500 amperes. Equipment shall be a freestanding NEMA 1 enclosure arranged in switch-fuse-meter cold sequence configuration. Provide a distribution section containing a minimum of two distribution circuit breakers; (1) 1200 ampere to feed the existing 1200 ampere building distribution system (existing to remain) and (1) 1200 ampere branch device to feed a new 1200 ampere distribution switchboard (MDP2) dedicated to new mechanical equipment.
- The project will need to incorporate appropriate scope to replace the existing transformer with a new minimum size 1000 kVA transformer and pad, new service feeder and all appurtenances related to the upsized service entrance. The existing transformer pad may be retained for use as a primary voltage pullbox to extend primary electric service to a new pad mounted transformer. The new transformer shall be provided with grounding, concrete pad, required sub-base material and all appurtenances.
- New electrical distribution will need to be provided to satisfy all feeders to new equipment to support the outlined system improvements. A 1200 ampere distribution panel at 208Y/120 volt, 3 phase 4 wire (MDP2) shall be provided to support new circuits for major equipment. A 225 ampere branch circuit panelboard at 208Y/120 volt, 3 phase 4 wire (MP1) shall be provided to support miscellaneous circuits for VRF cassettes, branch controllers, 120 volt BMS panel connections and receptacle power. Refer to the following paragraphs for specific electrical requirements.

Gymnasium

- Provide electrical connections for one (1) new 30 ton nominal DX / HW packaged rooftop unit. Provide one (1) 200 ampere circuit breaker in Panel MDP2 to serve this unit with a 200 ampere fusible switch located at the unit. Provide a feeder assembly with 2" conduit with 3 #3/0 plus ground. Assume feeder length to be 150 feet.

Learning Spaces

- Provide electrical connections to VRF ceiling cassette units, one per classroom, one per office.
- Provide electrical connections to a total of (6) VRF heat pump style condensing units that will support all VRF ceiling cassette units. Provide (6) 70 ampere circuit breakers in new Panel MH-1 (480 volt) to serve this new equipment.
- Provide electrical connections to five (5) new 4,000 CFM packaged dedicated outdoor air rooftop units. Provide (5) 50 ampere circuit breakers in new Panel MH-1 (480 volt) to serve this new equipment. BAS
- Provide electrical equipment connections for a new BAS system.

Fire Alarm

- Provide fire alarm equipment to suit each new air handling system 2000 cfm and above. Standard provision shall include a supply and return duct smoke detector with shut down relay installed and programmed.
- Smoke detectors for (5) air handling systems shall be included with pairs of duct detectors for each unit.