

**TOWN OF WATERFORD
CAPITAL IMPROVEMENT PLAN
PROJECT CONSOLIDATION FORM-FY 2023-2027**

DEPARTMENT/ AGENCY:		Building Maintenance						
DEPT PRIORITY	PROJECT NAME	FUNDING SOURCE	FISCAL YEAR 2022-2023	FISCAL YEAR 2023-2024	FISCAL YEAR 2024-2025	FISCAL YEAR 2025-2026	FISCAL YEAR 2026-2027	TOTAL
1	UST	1	420,000					420,000
2	Eugene O'Neill Theater - UST	1	260,000					260,000
3	Southwest School - UST	1	130,000					130,000
4	HVAC	6	62,045					62,045
5	YSB Building	6	35,000					35,000
								0
								0
								0
								0
								0
								0
	TOTALS		907,045	0	0	0	0	907,045

INDEX TO FUNDING SOURCES.

- 1 CURRENT YEAR CAPITAL IMPROVEMENTS
- 3 UTILITY BUDGET/SEWER CAPITAL MAINTENANCE FUND
- 3 TRANSFER TO CAPITAL & NONRECURRING.
- 4 SHORT AND LONG TERM DEBT FINANCING
- 5 LoCIP
- 6 CNR UNDESIGNATED FUND BALANCE
- 7 FEDERAL/STATE GRANTS
- 8 OTHER FUNDING

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST**

DEPARTMENT/AGENCY <u>Building Maintenance</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>UST Library/Public Safety</u>	DEPARTMENT PRIORITY <u>1</u>

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)
Underground storage tanks must be removed when they have reached their service life. The Town has several locations that will require the existing to be removed and if natural gas is not available, an above ground tank installed. Not only does the tank need to be removed, all the underground piping and soil testing must be completed to properly close out the removal. This requires the certification of a LEP. The locations that are due: • Public Safety Building (Installed 1994, remove tank and install equipment to accept gas) • Library (Installed 1991), remove tank and install above ground tank for heating oil	

2	PROJECT STATUS IF IN PROGRESS
LEP prepared a status report estimate price ranges	

3	LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST
None.	

4	DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)
The issue is not operational budgets, but the possible of the DEEP issuing a Notice of Violation and the costs associated with possible fines and attorney fees.	

5	GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)
None	

6	ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)
Memorandum dated November 12, 2020 Anchor Engineering	

7	COST/FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital		420,000				
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	420,000	0	0	0	0

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 5, 2021

Re: CIP: Underground Storage Tanks (UST)

A UST must be removed when they have reached their service life. The Town has several locations that will require the existing to be removed and if natural gas is not available, an above ground tank installed. Not only does the tank need to be removed, all the underground piping and soil testing must be completed to properly close out the removal. This requires the certification of a Licensed Environment Professional (LEP).

The locations are:

- Community Center (2 tanks)
- Emergency Management (1 tank)
- Southwest School (2 tanks, removal only) Separate Capital Project
- Library (1 tank)
- Eugene O'Neill (2 tanks) Separate Capital Project

All but the Emergency Management and Community Center tanks have reached their service life limits. Emergency Management must be removed by 2024, Community Center tanks must be removed by 2037. Library is overdue based on 30 year service life.

The Fire Houses are not covered under this project. It is unknown if underground tanks exist and if so, there age and condition.



ANCHOR
a Barton & Loguidice company

MEMORANDUM

DATE: November 12, 2020
PROJECT: 3261.045.001
TO: Gary Schneider, Director of Public Works, Town of Waterford
FROM: D. Scott Atkin
RE: Underground Storage Tanks
Waterford Public Safety Complex, 200 Boston Post Road

In addition to the "new" aboveground diesel and gasoline fuel tanks, there are three other underground storage tanks (USTs) currently located at the Waterford Public Safety Complex, identified in the Town's Assessor's records as the 200 Boston Post Road parcel. Barton & Loguidice (formerly Anchor Engineering Services, Inc.) has performed a site inspection, reviewed DEEP and Town UST filings, and reviewed Town records in attempt to evaluate existing tank sizes, compositions, connections, etc. and to develop action plans for each tank.

This memorandum will refer to the main operating areas / buildings onsite: the Police Station, the Dispatch Center / Fire Department, Youth Services, and the former Dog Pound.

Police Station (41 Avery Lane)

There is a 2,500-gallon diesel/heating oil UST located just outside the Police Station, northeast of the electric gate. This tank was installed in December 1991 and will meet the end of its 30-year service life in December 2021. It currently provides fuel for the building. Site plans, discussions with onsite Town personnel, and the current DEEP UST notification form provide consistent information. Service Station Equipment recently performed some maintenance upgrades to this tank to comply with DEEP's UST regulations. This tank, the associated fuel supply and return piping, the vent, and the electrical service should be removed within the next year. The tank should be replaced with either an aboveground or underground heating oil tank. Aboveground is recommended for environmental and longevity reasons, but an aboveground tank will utilize an approximate 12-ft by 18-ft area.

In addition, there is a 550-gallon waste oil UST located outside the southeast garage bay of the Police Station. This tank was installed in June 1991 and will meet the end of its 30-year service life in June 2021. According to onsite personnel, the tank has never been utilized. Unfortunately, piping details showing the maintenance bay fill port(s) for this waste oil could not be located in the Town files. This tank should be removed or abandoned in place (with approval of the Fire Marshal). Any associated fill port(s) should be identified and sealed or removed.

Dispatch Center / Fire Department (204 Boston Post Road)

There is a 6,000-gallon heating oil UST located just south of the southwest corner of this building. This tank was installed in April 1994 and will meet the end of its 30-year service life in April 2024. It currently provides fuel to the building and to a generator. During the site inspection, we noted a couple sets of pipes heading off from the tank: to the north towards the building and also to the west towards the Boston Post Road. We recommend an underground utility survey to confirm the locations / destinations of piping and conduits associated with this tank. The tank, associated piping, and conduits should be removed within the next three years. A determination will be needed on the type of heating system for the

The experience to
listen
The power to
solve 



building. If it will continue to be heated with oil, then a replacement aboveground or underground tank will be needed. If it will be converted to another heating type, then a new tank will not be required.

Youth Services Building (200 Boston Post Road)

Based upon the most recent DEEP UST notification form and discussions with onsite Town personnel, the 1,000-gallon heating oil UST for this building was removed in 2018. There are no tanks associated with this structure that require removal or replacement.

Note that the fuel tank monitoring system for the recently installed aboveground fueling station is still located in the basement of this building.

Former Dog Pound

There is an old 275-gallon metal aboveground heating oil tank located near the northwest corner of the former Dog Pound. The tank does not appear to be on a stable footing and could fall over causing a release to the environment. This tank should be emptied of any product, sludge, and/or rainwater, and cleaned. The tank, its contents, and the cleaning liquids should be properly disposed. As the tank is not in use, we recommend that this work be completed as soon as possible.

Action Plan and Preliminary Budget Estimates

The two tanks at the Police Station need to be removed in 2021. Although the first of the tanks, the unused waste oil tank, needs to be removed by June, we believe that the DEEP will allow it to be removed in the next fiscal year with:

- Confirmation that the tank is empty or opening the tank, emptying it of all contents including any sludge that may have accumulated, and cleaning it in-situ; and
- Advance notification.

We recommend removing both tanks and associated piping at the Police Station next summer or fall and replacing the 2,500-gallon tank with a double-walled steel or Convault-type aboveground tank. Both existing tanks are located under paved surfaces that will need to be restored after the tanks have been removed.

An item for consideration is if we should perform a limited subsurface investigation of the soils near each tank to determine if there has been any releases and if contaminated soils will need to be managed and disposed of during tank removal. This investigation is optional; it would provide useful information for future tank removal budgeting. However, if tank inventory reconciliations have been good and the monitoring system has not shown water in the tank, then it is probably not necessary. A limited subsurface investigation of the two tanks could be completed for \$7,500 - \$10,000.

The process for the tank removals / replacement would be:

- Finalize evaluation of existing conditions and temporary fuel supply needs during construction.
- Perform limited subsurface investigation, if desired.
- Confirm requirements for tank replacement: size, composition, location, foundation requirements, etc.
- Apply for local approvals necessary for tank replacement. It appears that this may be possible with site plan approval from Town staff.
- Prepare technical plans and specifications for tank removals and replacement.
- Finalize contract documents and prepare bid package.
- Bid the project, respond to RFIs, issue addenda as needed, evaluate bids, and award the contract.
- Order replacement tank. Note that there is currently a 6 to 8 week lead time on tanks.
- Notify DEEP of tank removal schedule and obtain local permits for tank removals and replacement.
- Install temporary fuel supply, as needed.



- Remove tanks and manage any contaminated soil.
- Install replacement tank and piping; remove temporary tank.
- Site restoration, grading, and re-paving.
- Tank closure report and DEEP notification.

A similar process will be needed for the larger tank at the Dispatch Center / Fire Department Building. The primary issue is if we want to manage this tank at the same time as the Police Station tanks. We recommend an underground utility survey prior to design in order to confirm piping and conduit locations prior to tank removal. Additionally, the existing tank is not located in a paved area. Grading and seeding will be appropriate surface treatments unless a new tank is installed on a concrete pad at the same location.

The preliminary cost estimates for the tank removals and replacement at the Police Station are:

Description	Estimated Costs		
Design and Bidding Phase	\$9,000	-	\$11,000
Ltd Subsurface Investigation (optional)	\$7,500	-	\$10,000
Tank Removals	\$45,000	-	\$65,000
Tank Replacement	\$120,000	-	\$150,000
SPCC Plan	\$2,500	-	\$3,000
Preliminary Budget Estimate	\$184,000	-	\$239,000

If the heating oil UST at the Dispatch Center / Fire Department were removed and replaced at the same time, the estimated costs would increase by \$150,000 to \$200,000.

If the Town waits and the heating oil UST at the Dispatch Center / Fire Department were removed and replaced in 2022 or 2023, the estimated costs would likely increase by another \$20,000 to \$30,000.

If you have any questions about this information, please do not hesitate to contact me at (860) 633-8770.

Project Library and Public Safety Tank Removals

Item #	Item		
1	Public Safety Estimate from Anchor(this is similar to Police Station)	\$	239,000
2	Library (assuming a smaller above ground tank)	\$	150,000
3	Fuel Removal/Transfer	\$	3,000
4	Site Remeidation (Allowance Only)	\$	2,000
5	Tank Rental	\$	4,500
	Grand Total	\$	398,500
	4.5 % escalation from 2020	\$	416,433
	 Rounded	\$	420,000
Anchor Engineering Memo dated November 13, 2020			

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST**

DEPARTMENT/AGENCY <u>Building Maintenance</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>Eugene O'Neill Theater - UST</u>	DEPARTMENT PRIORITY <u>2</u>

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project) The Eugene O'Neill Theater site has two underground storage tanks that must be removed due both being beyond their 30 year service life. Not only do the tanks need to be removed, all the underground piping and soil testing must be completed to properly close out the removal. This requires the certification of a professional engineer (LEP). The Mansion, which serves as the main offices for the organization, and is a key historic building at the campus underground storage tank must be removed as it has reached its service life. It is located under the handicap ramp for the building. Another tank was found that is not in use and is near the structure known as the red barn.																																																																													
2	PROJECT STATUS IF IN PROGRESS <u>None</u>																																																																													
3	LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST <u>None</u>																																																																													
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MEMORANDUM:

TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November, 2021

Re: CIP: Eugene O'Neill Theater Site

The Town is responsible to manage the condition of several buildings at the site and previously funded the replacement of the barn roof at The O'Neill in 2020.

The current focus is on the "Mansion". The roof is in significant disrepair and requires replacement. The Mansion serves as the main offices for the organization, and is a key historic building at the campus.

An initial assessment was performed to highlight the issues with the structure. The replacement of the roof is critical to the building.

Replacement of the roof must take into account that the building, although not on the historic record, it is a historical building that has a national prominence. Careful thought on materials, details and colors carry as much weight as the materials used for the new roof. For instance the house has wooden gutters that have failed. Do they get replaced with wooden gutters or something else? Fascia boards have rotten which may have affected the rafters. The roof replacement must be approached as a system, not just the individual components.

Funds were approved for limited spot repairs (completed) to make the building watertight and to hire an architect to prepare the plans and cost estimates for a roof, chimney (6) repairs, fascia, and gutters project for the following year.

The Town has applied for a Historic Restoration Grant for the work on the mansion.

Two underground tanks have been found at the site. The mansion has an active heating oil under the handicapped ramp and near the "White House", another tank was found that is not in use. Both are beyond their service life must be removed.



- Remove tanks and manage any contaminated soil.
- Install replacement tank and piping; remove temporary tank.
- Site restoration, grading, and re-paving.
- Tank closure report and DEEP notification.

A similar process will be needed for the larger tank at the Dispatch Center / Fire Department Building. The primary issue is if we want to manage this tank at the same time as the Police Station tanks. We recommend an underground utility survey prior to design in order to confirm piping and conduit locations prior to tank removal. Additionally, the existing tank is not located in a paved area. Grading and seeding will be appropriate surface treatments unless a new tank is installed on a concrete pad at the same location.

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If the Town waits and the heating oil UST at the Dispatch Center / Fire Department were removed and replaced in 2022 or 2023, the estimated costs would likely increase by another \$20,000 to \$30,000.

If you have any questions about this information, please do not hesitate to contact me at (860) 633-8770.

Project O'Neill

Item #	Item		
1	Budget Estimate from Anchor(this is similar to Police Station	\$	221,000
2	Assumes an above ground tank to be installed (Included above)	\$	-
3	Replacement of handicapped ramp	\$	25,000
4	Fuel Removal and/or transfer	\$	3,500
5	Temp Tank	\$	4,500
6	Site Remediation (Allowance only)	\$	2,000
	Grand Total	\$	249,500
	4.5 % escalation from 2020	\$	260,728
	Rounded		\$260,000
	Anchor Engineering Memo dated November 13, 2020		

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST**

DEPARTMENT/AGENCY Building Maintenance	CONTACT PERSON Gary J. Schneider
PROJECT NAME Southwest School - UST	DEPARTMENT PRIORITY 3

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project) Underground storage tanks must be removed when they have reached their service life. The Town has several locations that will require the existing to be removed. Not only does the tank need to be removed, all the underground piping and soil testing must be completed to properly close out the removal. This requires the certification of a professional engineer (LEP). The removal of the underground 10,000 and 2,000 gallon heating oil tanks must be completed due to the fact that both are beyond their 30 year service life																																																																														
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MEMORANDUM:

TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 4, 2021

Re: CIP: Vacant School Buildings

Demolitions of vacant structures will eliminate funding yearly building operating (including security measures) costs, avoids any future capital costs to stabilize the buildings, reduces the town's potential liability (risk avoidance) and consolidates our real estate footprint.

It also provides the opportunity for further redevelopment or reuse of the sites that are in tune with the changing dynamics of the town addressing long-term community needs and goals.

Estimated costs to complete the demolition at Cohanize School site, which involves the removal of building and its foundations, removal of asphalt pavements, final grading and loaming and seeding of the site is \$95,000.

Costs at Southwest School will include all the above and the removal of hazardous materials (Lead, PCB, mercury), disconnecting electric service, removal of the underground 10,000 gallon heating oil tank, underground 2,000 tank (unknown use), the capping of the sanitary sewer and removal of the water service.

The two underground tanks must be removed. Both are beyond their service life.

It is recommended for this building to program funds for the first year to engage in a consulting engineer to develop abatement and demolition plans and cost estimates.



ANCHOR
a Barton & Loguidice company

MEMORANDUM

DATE: Revised - November 13, 2020
PROJECT: 3261.035.001
TO: Abby Piersall, Planning Director, Town of Waterford
FROM: D. Scott Atkin
RE: Preliminary Cost Estimates
Southwest Elementary School, 51 Daniels Avenue

The Town is considering the demolition of the Southwest Elementary School and subsequent redevelopment of the property. Redevelopment plans have not been finalized, so the information in this memorandum is limited to building demolition and site grading. The purpose of this memorandum is to provide you with planning considerations and preliminary budget estimates.

The existing structure covers approximately 30,000 square feet and there are two underground fuel oil tanks onsite. A hazardous building material (HBM) pre-demolition survey and additional evaluation of the tanks are recommended to further evaluate site conditions.

Underground Storage Tanks

Based on DEEP's database of registered underground storage tanks and a recent site walk, there are two STI-P3 steel fuel oil tanks located at the school. One tank has a 10,000-gallon capacity and the other tank has a 2,000-gallon capacity. Both tanks were installed in 1988 and are past their 30-year service lives. DEEP needs to be notified prior to tank removal and an updated on-line UST notification and tank closure report will need to be filed after tank removal. Local permits and Fire Marshal notification / coordination are also required for tank removals.

Technically, these tanks should be taken out of service. We can reach out to DEEP UST staff and discuss the possibility of continuing to use them for the current heating season, but it would be prudent to review any recent tank and tightness test results prior to making that call. Also, I will review the Governor's recent executive orders related to environmental compliance and the COVID-19 pandemic and see if they provide any automatic extensions (Note that this is unlikely as tank removal should have occurred in 2018, but it is worth reviewing).

If the tanks need to be taken out of service and heat is still required for this year, then a temporary tank and piping (or possibly two sets of tanks and piping) will be required. We are working on an estimated cost for a temporary tank setup.

For budgeting purposes, the existing tanks could be taken out of service but not removed until next spring. We would recommend transferring any usable remaining product out of the tanks to other facilities or to the newly installed temporary tank(s) and disposing of the tank bottoms, which typically consists of the bottom six inches of liquids remaining in the tanks. Note that disposal of tank bottoms typically costs about \$2 per gallon. The exact number of gallons remaining depends on the tank dimensions (diameter and depth), but we estimate that the total volume of tank bottoms would be less than 500 gallons, or \$1,000.

The experience to
listen
The power to
solve



There are two levels of pre-removal tank evaluations that the Town may want to consider at this time:

- The first should be done as soon as possible. It includes opening each tank and determining the quantity of product in each. This evaluation could be performed by Town staff or for minimal cost by Barton & Loguidice.
- The second is to perform a limited subsurface investigation of the soils near each tank to determine if there has been any releases and if contaminated soils will need to be managed and disposed of during tank removal. A limited subsurface investigation for the two tanks could be completed for \$6,000 to \$9,000. This investigation is optional. It would provide useful information for future tank removal budgeting, but may not be worth the expense if the tanks were to be removed right away.

Assuming that the Town wanted to remove the tanks prior to abatement of any HBMs and demolition of the building, the estimated professional fees for design, permitting, bidding, services during construction, and DEEP tank closure reporting are approximately \$15,000 - \$20,000. Based on recent bid results for similar projects, the estimated costs for tank removal and backfill range from \$30,000 to \$50,000.

Abatement and Demolition

The pre-demolition HBM survey should include for asbestos, lead-based paint, PCBs (paint, caulk, fluorescent light ballasts, and any transformers or electrical equipment), and mercury (thermostats, fluorescent lights/ballasts, etc.). The testing should be performed in accordance with all applicable local, state, and national regulations, including Connecticut Department of Public Health guidance for pre-demolition surveys. A detailed survey will identify hazardous building materials that need to be addressed prior to and/or during demolition and will be used to develop design specification and cost estimates for their proper management and disposal. A HBM survey for a school this size could be completed for approximately \$15,000 to \$20,000. This estimate can be refined, and possibly decreased, after a site walk through and review of any recent AHERA asbestos survey reports.

Upon completion of the HBM survey and underground storage tank evaluation, we would develop a list of required work, key design considerations, and permitting requirements. The next step would be to prepare a set of contract bid documents for HBM abatement, building demolition, and site regrading / restoration (assuming that a more detailed final redevelopment option had not yet been selected). These bid documents will include technical specifications, site plans, and details and standard contract language and insurance and bond requirements for the project. Design services for preparation of the contract documents and assistance during bidding are estimated at approximately \$12,000 to \$15,000.

This budget estimate assumes that site mapping suitable for this project exists and is available for use. If a limited site survey were needed for this project, it could be completed for approximately \$6,000.

If you have any questions about these budget estimates, please do not hesitate to contact me at (860) 633-8770.

Project Southwest School

Item #	Item	Estimated Unit Price
1	Engineering/LEP/Testing	\$ 20,000.00
2	Tank Removal	\$ 30,000.00
3	Tank Removal	\$ 50,000.00
4	Fuel Removal and Disposal	\$ 20,000
5	Site Remediation (Allowance Only)	\$ 2,000
Grand Total		\$ 122,000
4.5 % escalation from 2020		\$ 127,490
Rounded		\$ 130,000

Anchor Engineering Memo dated November 13, 2020

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST**

DEPARTMENT/AGENCY Building Maintenance	CONTACT PERSON Gary J. Schneider
PROJECT NAME HVAC	DEPARTMENT PRIORITY 4

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project) A HVAC report found that most of the equipment at Public Safety is "operating beyond their useful service life". For the Police Station; "...existing equipment such as the exhaust systems, cabinet unit heaters, unit heaters and radiant ceiling panels throughout the building are original to the 1990 construction. A large quantity of the equipment mentioned are nonfunctional". A review is being completed for the Community Center as this building is over 17 years old and the system is not responding to the needs of the Center's activities. All buildings will have a Building Management System installed to monitor and control the use of energy. This project would start with the Public Safety building. Using the report, an option would be selected with design proceeding to 30%. At this point, estimates will be prepared and submitted for future funding. Funds are for the initial phase.																																																																													
2	PROJECT STATUS IF IN PROGRESS None																																																																													
3	LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST None																																																																													
4	DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable) None																																																																													
5	GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available) None																																																																													
6	ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below) Attached expanded narrative and excerpts from the Evaluation of HVAC Systems, Police Department and Public Safety Complex Buildings, SPA Associates, January 2020.																																																																													
7	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="7" style="text-align: center;">COST/FUNDING SOURCE</th> </tr> <tr> <th style="width: 35%;">FUNDING SOURCE</th> <th style="width: 10%;">APPROVED FUNDING TO DATE</th> <th style="width: 10%;">FY2023</th> <th style="width: 10%;">FY2024</th> <th style="width: 10%;">FY2025</th> <th style="width: 10%;">FY2026</th> <th style="width: 10%;">FY2027</th> </tr> </thead> <tbody> <tr> <td>1 Current Year Capital</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 Utility Budget/Sewer Cap Maint Fund</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3 Transfer to CNR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4 Short/Long-term Bonds</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5 LoCIP (detail in section 5 above)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6 CNR Undesignated Fund Balance</td> <td></td> <td style="text-align: center;">62,045</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7 Federal/State Grants (detail in section 5)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8 Other Funding (detail in section 5 above)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTALS</td> <td style="text-align: center;">0</td> <td style="text-align: center;">62,045</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	COST/FUNDING SOURCE							FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027	1 Current Year Capital							2 Utility Budget/Sewer Cap Maint Fund							3 Transfer to CNR							4 Short/Long-term Bonds							5 LoCIP (detail in section 5 above)							6 CNR Undesignated Fund Balance		62,045					7 Federal/State Grants (detail in section 5)							8 Other Funding (detail in section 5 above)							TOTALS	0	62,045	0	0	0	0
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MEMORANDUM:

TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 4, 2021

Re: CIP: Heating, Ventilation and Air Conditioning – Town Facilities

The Town Hall and Youth Services and Municipal Complex systems have been addressed. Remaining are the Police Station, Public Safety, Community Center and the Library.

The Library has a separate CIP project for HVAC at that building. Recent studies completed in January of 2020 for the Police Station (constructed in 1990) and Public Safety (old police station) have identified the need to replace and modernize the equipment.

The report found that most of the equipment at Public Safety is "operating beyond their useful service life". For the Police Station; "...existing equipment such as the exhaust systems, cabinet unit heaters, unit heaters and radiant ceiling panels throughout the building are original to the 1990 construction. A large quantity of the equipment mentioned are nonfunctional".

A review is being completed for the Community Center as this building is over 17 years old and the system is not responding to the needs of the Center's activities. All buildings will have a Building Management System installed to monitor and control the use of energy.

The costs are over \$1.6 million for Police and Public Safety buildings and is unknown for Community Center.

Project Public Safety Building

Item #	Item
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1	Budget Estimate from SPA
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\$	775,560.00
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2	Engineering at 8%
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\$	62,044.80
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Grand Total

\$	837,604.80
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4.5 % escalation from 2019

\$	875,297.02
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SPA Engineering Study dated Nov 2019 (option 1)

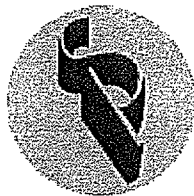
Town of Waterford, Connecticut

Evaluation of HVAC Systems Police Department and Public Safety Complex Buildings

41 Avery Ln,
Waterford, CT 06385

Final Report: January 10, 2020

Prepared by:



Silver/Petrucelli + Associates
Architects / Engineers / Interior Designers
3190 Whitney Avenue
Hamden, CT 06518

condenser pumps. Despite the recent installation of the chiller, the unit appears to be not operating to its full potential. During our observation of the building, the chiller sounded as if the compressors are not engaging properly. Repair or replacement to the unit may be necessary.

Ventilation, or provision for delivering fresh air to the building, has been provided predominantly via air handling units. A combination of mechanical exhaust, natural and mechanical ventilation has been provided throughout the facility. Before the use of mechanical ventilation, it was common practice to simply open the exterior windows. This is not a method that is currently recommended for several reasons. First, during the winter and summer months the windows are generally not opened which fails to meet the requirements of the code. Second, ASHRAE 62 has provisions for how far an exterior window must be from the furthestmost interior wall.

The existing HVAC building management control system is BACnet compatible. The zone controllers, air handling unit controllers, boiler, and air-cooled chiller are all Carrier i-Vu BACnet controls. The interface is an i-Vu 6.0 Web Server that is connected to the Police's Department's network. This system allows the end user to monitor and control the equipment along with the temperature within the building.

Existing equipment such as the exhaust systems, cabinet unit heaters, unit heaters and radiant ceiling panels throughout the building are original to the 1990 construction. A large quantity of the equipment mentioned are nonfunctional.

Natural gas is currently not available at this site. Should the availability change, utilizing gas for ultra-high heating equipment such as the boiler, rooftop units, etc. should be considered. However, if the VRF systems are the option chosen there is no need for the natural gas to be brought to the site at what would be a large effort and expense.

HVAC systems for the Police Department are powered by the 600A / 208V / 3 phase electrical service supplied underground from the Post Road to a pad-mounted transformer serving the Switchgear Room adjacent to the Boiler Room. The building also has an emergency generator which appears to power the entire building. The existing electrical service appears to be capable of supporting both proposed HVAC upgrade options, but demand data on the service should be reviewed during design of the final design. The attached estimate allows for installation of a sub-panel to support the additional equipment needs of Option #2.

Public Safety Complex

In 1993, the Town renovated an existing 9400 sf, single story, 3A construction building with sprinkler protection for the purposes of serving as the Public Safety Complex. Prior to 1991, the building was formerly used as the Town Police Department. At that time, an HVAC system was incorporated into the building with the intent of providing an office-type occupancy level of comfort and ventilation. Existing major heating and cooling equipment is listed below:

<u>Air Handler/Location</u>	<u>Outdoor Unit/Location</u>	<u>Space Served</u>	<u>System Type</u>
AHU-1 / Elect Rm 43	CU-1 / Outside @ Grade	East Exposure	Split System – DX Cooling / Hot Water Duct Coil Heating / Zone Dampers
AHU-2 / Mech Rm 36	CU-2 / Outside @ Grade	Northeast Exposure & Interior Spaces	Split System – DX Cooling / Hot Water Duct Coil Heating / Zone Dampers
RTU-1 / Flat Roof	RTU-1 / Flat Roof	Southeast, South & Southwest Exposure & Interior Spaces	Rooftop Unit – DX Cooling / Hot Water Duct Coil Heating / Zone Dampers
RTU-2 / Flat Roof	RTU-2 / Flat Roof	Server Room	Rooftop Unit – DX Cooling / Electric Heat / Zone Dampers
RTU-3 / Flat Roof	RTU-3 / Flat Roof	Communication/ Dispatch / Dispatch Office / Kitchenette	Rooftop Unit – DX Cooling / Electric Heat / Zone Dampers

The design of the cooling and heating system serving the individual spaces consist of rooftop units and split system indoor air handling units with outdoor condensing units. Associated variable air volume zone dampers throughout the building serve individual rooms and, in some instances, multiple rooms. Upon a call for heating/cooling by the single, wall-mounted thermostat located within the zone, the variable air volume zone damper will be commanded open via DDC actuator and modulate the air flow to maintain the desired temperature of the space.

A central boiler plant located in the mechanical room at the northwest corner of the building provides heating for the entire building. The hot water system consisting of two (2) Weil-McLain boilers with Beckett oil-fired burners and multiple inline system zone pumps. The existing nameplates indicate the boilers are WGO-4 Weil-McLain Boiler with an output capacity of 126,000 Btu/Hr each. The boilers generate heat for the facility and distributes hot water to the duct mounted hot water coil associated with RTU-1, two (2) indoor air handling units, perimeter radiation and unit heaters throughout the building. The domestic water heating is handled elsewhere. The boilers, burners and zone pumps are original to the building. The central heating plant equipment is in poor condition except for the expansion tank which was replaced in 2017. The boilers are almost at the end of their useful life service and the associated burners and zone pumps have exceeded their life expectancies. With proper maintenance of the equipment the life expectancy of a boiler is about 30 years, the burners and pumps are 20 years.

Flue gases are routed through breeching which terminates above the roof. A non-condensing stainless steel double wall positive pressure venting system is currently installed. Combustion air is supplied by outside air ducts with dampers and an intake louver. One duct terminates low

and the other high within the boiler room. At present, the combustion air intake area for the boiler plant appears to be adequate.

An existing underground fuel oil storage tank provides the fuel oil for the heating plant. Fuel oil piping is run under the side yard from the tank directly to the boiler room, approximately 40 ft. Oil appears to be recirculated between the tank and boiler, but a circulation pump was not observed in the boiler room. The precise age of the fuel oil tank is unknown and should be considered for replacement as part of the work of this project along with the fuel oil piping, alarm and monitoring system.

The Automatic Temperature Controls of the facility are stand alone and cannot be monitored or controlled through a central building management control system or the internet.

Natural gas is currently not available at this site. Should the availability change utilizing gas for ultra-high heating equipment such as the boiler, rooftop units, etc. should be considered. However, if the VRF systems are the option chosen there is no need for the natural gas to be brought to the site.

HVAC systems for the Public Safety Complex are powered by the 600A / 208V / 3-phase electrical service supplied underground from the Post Road to a pad-mounted transformer serving the Electrical Room. The service is split into separately metered distribution for the Safety Complex (400A) and Dispatch Center (225A). The building has both permanent and portable emergency generators. A manual transfer switch allows the portable generator to be brought online if the permanent one should fail. Either generator can be connected to powers all of the complex with the exception of a feed to the "Old Town Hall" building. The existing electrical service appears to be capable of supporting any of the proposed HVAC upgrade options, but demand data on the service should be reviewed during design of the final design. The attached estimates allow for installation of a sub-panel to support the additional equipment needs of Options #2 and #3.

Section III – Recommendations

Police Department

Option #1 – "Replacement of existing nonfunctional equipment and new control system"

Replace in kind all existing nonfunctional and/or outdated equipment such as the chiller, underground fuel oil storage tank, hot water pumps, air separator, exhaust fans, cabinet unit heaters, unit heaters, variable air volume terminal units and variable air volume fan powered terminal units with hot water coils.

Existing Server /Data areas presently served by split-ductless systems will keep their existing equipment as they are in fair condition.

All systems shall be balanced and tested by a TAB Contractor. The existing HVAC controls shall

The refrigerant piping is run from the fan coil unit to a branch-circuit controller/junction box serving a building zone, wherein all the free-energy exchange takes place. The branch-circuit controller then connects to an outdoor condensing unit, along with other branch-circuit connections, to reject or absorb heat as required. These units could easily be placed on grade or at rooftop level as applicable.

Ventilation will still need to be addressed. Our recommendation is the addition of several dedicated outdoor air systems (DOAS) to remediate this concern. Specialized energy recovery units will distribute tempered, dehumidified, outside air to the building via a duct system most-likely located in the existing corridor ceilings. This system implementation will require demolition of the ceiling systems and above-ceiling systems and equipment to a greater extent; however, it limits total removal of ceilings in most "non-corridor" areas.

In the case of highly reputable VRF systems, for example Mitsubishi Electric's City Multi® system with Hyper Heat®, they provide not only design and support for their products, but also extended warranties when the system is designed and installed by certified contractors. Mitsubishi systems are equipped with inverter-duty, variable-speed compressors and not only provide full energy recovery during combined heating / cooling operation and the capability of providing all of the required heating capacity at outdoor design temperatures much lower than those prescribed for this locality, but they also modulate refrigerant output in the exact amount necessary to precisely offset the building's loads at any instant.

Existing Server /Data areas presently served by split-ductless systems will keep their existing equipment as they are in fair condition, however a new VRF fan coil unit will be installed as a supplemental/second stage of cooling. Based on how these systems are controlled, the VRF stage can be programmed to run when the free-energy exchange benefits the system for higher overall system efficiency.

All systems shall be balanced and tested by a TAB Contractor. The existing HVAC controls shall be upgraded to a new building management control system (BMCS). The BMCS will consist of programmable thermostats and controllers capable of being programmed for scheduled occupied and unoccupied operating modes. The new system will also be capable of being monitored and controlled through the internet and existing Town wide control network.

Public Safety Complex

Due to the age and poor condition of the existing mechanical systems and equipment serving the Public Safety Complex, full system replacement is the recommended course of action at this point. With the prospect of equipment replacement comes the opportunity to improve on the conditions within these spaces, target existing IAQ concerns, meet modern energy code requirements (where applicable), and to proactively control the indoor environmental conditions within these spaces. Namely, it provides the opportunity for the Town to:

- Operate these mechanical systems in a manner which promotes a clean and comfortable environment in the most cost- and energy-efficient manner available to the

Town

- Extend the building's usefulness and allow for it to be a prime useable space in the community for the benefit of future generations
- Provide more flexibility to modify space for future uses with less impact on occupants in and around the spaces being modified
- Alleviate airflow distribution, comfort and documented IAQ concerns while increasing energy efficiency
- Improved and simplified maintainability
- The ability to control and monitor operation, alarms, trend data, building occupancy schedules and all system setpoints, for both buildings, from a single location acceptable to the Owner.

Modernization of the HVAC systems and the associated electrical and controls infrastructure here would be the obvious recommendation; however, the way this is to be accomplished needs to best reflect the Building's use, needs and current issues of concern.

Lastly, the ductwork would have to be wholly replaced and redesigned; re-use of the ductwork is not recommended due to the concern for the carry-over of present environmental concerns. Thus, ceiling systems, lighting fixtures and other ceiling-mounted devices would need to be removed and re-installed to accommodate new piping, ductwork and terminal units, which would be highly disruptive to the present occupancy.

Option #1 – "Replacement of existing equipment in kind & Building Management Control System"

Existing equipment such as rooftop units, split system air handling units and outdoor condensing units, boilers, pumps, underground fuel-oil storage tank, perimeter radiation, etc. shall be replaced in kind with exceptions of the expansion tank, water heater, zone dampers and existing system controls. The existing expansion tank and electric water heater are only a few years old and shall remain. The existing zone dampers will be replaced with variable air volume terminal units. The terminal units associated with interior spaces such as the general office, plan room, etc. will be equipped with an electric reheat coil. All systems shall be balanced and tested by a TAB Contractor. The existing stand-alone HVAC controls shall be upgrade to a new building management control system (BMCS). The BMCS will consist of programmable thermostats and controllers capable of being programmed for scheduled occupied and unoccupied operating modes. The new control system will also be capable of being monitored and controlled through the internet and existing Town wide control network.

Option #2 – "Partial upgraded existing equipment, supplemental VRF System & new Building Management Control System"

One seemingly feasible alternative would be to remove some of the existing systems and install

a new, state-of-the-art Variable Refrigerant Flow (VRF) system to serve the facility's offices, conference rooms, multi-purpose rooms, training rooms, etc. Areas such as the communication/dispatch, server room, lobby, toilets rooms, locker rooms, storage rooms, and corridors can be served by a new air handling unit or rooftop unit along with a new duct distribution and duct accessories. The unit will be equipped with 100% outside air economizer capability. Other equipment such as the boilers, burners, pumps, fuel-oil storage tank, exhaust fans and hot water fin-tube radiation shall be replaced with new. The VRF system provides the benefit of free energy exchange while in simultaneous heating and cooling modes and without the need for seasonal equipment changeovers. When units operating along one exposure are in cooling mode while the others across the hall on the opposite exposure are heating, or vice versa (both common scenarios in this specific building), the refrigerant streams effectively transfer energy from one another providing "free energy exchange". Therefore, the outdoor compressors operate at lower capacities resulting in the largest portion of the system's energy consumption being negated. Because of this, VRF systems are considered the most energy efficient systems available and have been successfully implemented in this country for at least a decade - longer elsewhere. They provide one of the most viable retrofit options available as well and potentially have the advantage of being much less disruptive during the upgrade of a building's HVAC infrastructure, requiring only additional circuiting for the added number of terminals and routing small-diameter flexible pipe sets above the ceilings. They are also highly maintenance friendly, as evidenced in the recently updated Waterford Town Hall and Youth Services Bureau (YSB) Buildings preventive maintenance routine.

The VRF system consists of multiple "fan coil units", similar to the ductless-indoor units which have become commonplace, and which can be configured to be mounted in a myriad of configurations, such as:

- High-wall mounted
- Low-wall (floor) mounted
- Lay-in cassettes at the ceiling level (preferred method)
- Ceiling mounted
- Above the ceiling (concealed) with duct connections to diffusers serving the space

The benefit to this HVAC retrofit application is that there is no addition of ductwork, duct insulation, dampers, diffusers, registers and grilles (except for the aforementioned concealed units, which would not be recommended in this case), thus minimizing space disruption full removal of the ceilings in a building which is going to be occupied and functioning throughout the upgrade process. In addition, the flexible refrigerant piping and small electrical power and control circuits serving the fan coil units is more easily run through an existing ceiling space. The refrigerant piping is run from the fan coil unit to a branch-circuit controller/junction box serving a building zone, wherein all the free-energy exchange takes place. The branch-circuit controller then connects to an outdoor condensing unit, along with other branch-circuit connections, to reject or absorb heat as required. These units could easily be placed on grade or at rooftop level as applicable.

Ventilation will still need to be addressed. Our recommendation is the addition of several

dedicated outdoor air systems (DOAS) to remediate this concern. Specialized energy recovery units will distribute tempered, dehumidified, outside air to the building via a duct system most-likely located in the existing corridor ceilings. This system implementation will require demolition of the ceiling systems and above-ceiling systems and equipment to a greater extent; however, it limits total removal of ceilings in most "non-corridor" areas.

In the case of highly reputable VRF systems, for example Mitsubishi Electric's City Multi® system with Hyper Heat®, they provide not only design and support for their products, but also extended warranties when the system is designed and installed by certified contractors. Mitsubishi systems are equipped with inverter-duty, variable-speed compressors and not only provide full energy recovery during combined heating / cooling operation and the capability of providing all of the required heating capacity at outdoor design temperatures much lower than those prescribed for this locality, but they also modulate refrigerant output in the exact amount necessary to precisely offset the building's loads at any instant.

All systems shall be balanced and tested by a TAB Contractor. The existing stand-alone HVAC controls shall be upgraded to a new building management control system (BMCS). The BMCS will consist of programmable thermostats and controllers capable of being programmed for scheduled occupied and unoccupied operating modes. The new system will also be capable of being monitored and controlled through the internet and existing Town wide control network.

Option #3 – "VRF System for the entire building"

Another feasible alternative would be to remove the existing systems and install a new, state-of-the-art Variable Refrigerant Flow (VRF) system to serve the entire facility. Equipment such as the existing exhaust fans and hot water fintube radiation shall be replaced with new. The existing hot water fintube radiation will be replaced with electric fintube radiation. The VRF system provides the benefit of free energy exchange while in simultaneous heating and cooling modes and without the need for seasonal equipment changeovers. When units operating along one exposure are in cooling mode while the others across the hall on the opposite exposure are heating, or vice versa (both common scenarios in this specific building), the refrigerant streams effectively transfer energy from one another providing "free energy exchange". Therefore, the outdoor compressors operate at lower capacities resulting in the largest portion of the system's energy consumption being negated. Because of this, VRF systems are considered the most energy efficient systems available and have been successfully implemented in this country for at least a decade - longer elsewhere. They provide one of the most viable retrofit options available as well and potentially have the advantage of being much less disruptive during the upgrade of a building's HVAC infrastructure, requiring only additional circuiting for the added number of terminals and routing small-diameter flexible pipe sets above the ceilings. They are also highly maintenance friendly, as evidenced in the recently updated Waterford Town Hall and Youth Services Bureau (YSB) Buildings preventive maintenance routine.

The VRF system consists of multiple "fan coil units", similar to the ductless-indoor units which have become commonplace, and which can be configured to be mounted in a myriad of

configurations, such as:

- High-wall mounted
- Low-wall (floor) mounted
- Lay-in cassettes at the ceiling level (preferred method)
- Ceiling mounted
- Above the ceiling (concealed) with duct connections to diffusers serving the space

The benefit to this HVAC retrofit application is that there is no addition of ductwork, duct insulation, dampers, diffusers, registers and grilles (except for the aforementioned concealed units, which would not be recommended in this case), thus minimizing space disruption full removal of the ceilings in a building which is going to be occupied and functioning throughout the upgrade process. In addition, the flexible refrigerant piping and small electrical power and control circuits serving the fan coil units is more easily run through an existing ceiling space. The refrigerant piping is run from the fan coil unit to a branch-circuit controller/junction box serving a building zone, wherein all the free-energy exchange takes place. The branch-circuit controller then connects to an outdoor condensing unit, along with other branch-circuit connections, to reject or absorb heat as required. These units could easily be placed on grade or at rooftop level as applicable.

Ventilation will still need to be addressed. Our recommendation is the addition of several dedicated outdoor air systems (DOAS) to remediate this concern. Specialized energy recovery units will distribute tempered, dehumidified, outside air to the building via a duct system most-likely located in the existing corridor ceilings. This system implementation will require demolition of the ceiling systems and above-ceiling systems and equipment to a greater extent; however, it limits total removal of ceilings in most "non-corridor" areas.

In the case of highly reputable VRF systems, for example Mitsubishi Electric's City Multi® system with Hyper Heat®, they provide not only design and support for their products, but also extended warranties when the system is designed and installed by certified contractors. Mitsubishi systems are equipped with inverter-duty, variable-speed compressors and not only provide full energy recovery during combined heating / cooling operation and the capability of providing all of the required heating capacity at outdoor design temperatures much lower than those prescribed for this locality, but they also modulate refrigerant output in the exact amount necessary to precisely offset the building's loads at any instant.

All systems shall be balanced and tested by a TAB Contractor. The existing stand-alone HVAC controls shall be upgraded to a new building management control system (BMCS). The BMCS will consist of programmable thermostats and controllers capable of being programmed for scheduled occupied and unoccupied operating modes. The new system will also be capable of being monitored and controlled through the internet and existing Town wide control network.

Areas such as the 911 dispatch room and IT room which support 24-hour 7 days a week operation shall have their own independent VRF System. Each VRF system will consist of appropriate quantity of Fan Coil Units required for the space along with a BC controller,

Outdoor Hyper-heat Unit, Energy Recovery Ventilation Unit and associated ductwork/piping distribution.

Section IV – Conclusions

The Waterford Police Department and Public Safety Buildings have served the community in many ways for generations. However, it will be important to take the proper steps in preparing these buildings for their next cycle of use. With the present adverse environmental conditions that have been experienced in these crucial operations, circumstances indicate that HVAC system upgrade/ replacement and associated electrical power and controls upgrades to support the HVAC, is both overdue and of the utmost importance for the Town as a part of maintaining the use of these buildings into the future. Other than the existing environmental conditions, these buildings remain useful and viable among the Town's assets. By taking full advantage of modern and state-of-the-art HVAC systems and technology during this potential upcoming and timely upgrade, these buildings can support the current space use and many unforeseen space use reconfigurations that may be yet to come. In doing this, the Town of Waterford can fully realize benefits including:

- Reduced energy usage resulting in lower fossil fuel consumption, lower combined energy costs and a considerably reduced "carbon footprint"
- Leading by example in the realm of sustainability and environmental responsibility, providing a successful case study for the Town's students, taxpayers and residents to follow
- Saving taxpayers money for utilities spending, maintenance spending and increased productivity within Town settings.
- Providing a comfortable, healthy and productive workplace environment for Town personnel to thrive in, including individual occupant control of thermal comfort conditions within their own workspace and effective and efficient fresh air delivery to every space.
- Eliminating the need for expensive, materially wasteful and often disruptive newly-constructed buildings and sites to take the place of existing, viable structures in need of a partial overhaul. In doing so, the Town acts in the most environmentally sound (green) manner by reducing the demolition waste of the existing buildings and the construction waste of any new building(s).
- In the case of VRF systems, potentially providing building automation systems and extended warranties on new HVAC systems which already have among the longest service life available in the industry today.
- Ease of maintenance and accessibility for all future routine preventative maintenance requirements.

The addition of HVAC equipment, upgraded electrical support systems and control wiring, and small sized fresh air ductwork in the corridors, along with the selective demolition of existing pipes, dropped ceilings and ductwork, and the temporary imposition of staff will be somewhat

disruptive in the short term. But in the long view, these facilities will benefit from these minor disruptions for many healthy, energy efficient and productive years to come.

Waterford Public Safety Complex - Evaluation of HVAC Systems						Date:	11/26/19
204 Boston Post Road						Job No.:	18.218
Owner: Town of Waterford							
OPINION OF PROBABLE CONSTRUCTION COST							
OPTION #1							
9,400 APPROXIMATE TOTAL NET SQUARE FOOTAGE (Area of Work)							
SECTION NUMBER	WORK CATEGORIES/DESCRIPTIONS	QTY.	UNIT	MATERIAL & LABOR COST			TOTAL \$
				UNIT COST	TOTAL		
	OTHER COSTS:						
	Permit (0.5% of construction cost)	1	LS				\$2,809
	Bonds (1.5% of construction cost)	1	LS				\$8,383
	Insurance (0.25% of construction cost)	1	LS				\$1,397
						OTHER COSTS SUBTOTAL	\$12,590
	DIVISION 2 - DEMOLITION						
	Dumpsters	3	EA	\$1,000.00	\$3,000.00		\$3,000
						DIVISION 2 SUBTOTAL	\$3,000
	DIVISION 23 - HVAC/MECHANICAL						
	Demolition	1	LS		\$35,250.00		\$35,250
	Rooftop Units	1	LS		\$143,400.00		\$143,400
	Air Handling Unit with DX, Hot Water Duct Coil, VFD	1	LS		\$36,400.00		\$36,400
	Refrigerant Piping	1	LS		\$4,700.00		\$4,700
	Ductwork, Duct Insulation & Duct Accessories	1	LS		\$15,000.00		\$15,000
	VAV Terminal Units	1	LS		\$38,058.75		\$38,059
	Exhaust Fans	1	LS		\$9,400.00		\$9,400
	Underground Fuel Oil Storage Tank	1	LS		\$60,760.00		\$60,760
	Fuel Oil Piping - Interior & Exterior	1	LS		\$9,000.00		\$9,000
	Electronic Gasging & Leak Detection	1	LS		\$9,500.00		\$9,500
	Bollers	1	LS		\$42,000.00		\$42,000
	Hot Water System Pumps	1	LS		\$23,625.00		\$23,625
	Hot Water Piping, Pipe Insulation & Pipe Accessories	1	LS		\$8,500.00		\$8,500
	Hot Water Fintube Radiation	1	LS		\$28,500.00		\$28,500
	Controls	1	LS		\$47,000.00		\$47,000
	Duct Cleaning	1	LS		\$1,600.00		\$1,600
	Testing and Balancing	1	LS		\$10,000.00		\$10,000
	Crane Service	1	LS	\$5,000.00	\$5,000.00		\$5,000
						DIVISION 23 SUBTOTAL	#####
	DIVISION 26 - ELECTRICAL						
	Demolition	1	LS		\$2,000.00		\$2,000
	Electrical wiring, conduits, connections, etc	1	LS		\$12,000.00		\$12,000
						DIVISION 26 SUBTOTAL	\$14,000
	DIVISION 31						
	Earth Moving	1	LS		\$16,000.00		\$16,000
						DIVISION 31 SUBTOTAL	\$16,000
	DIVISION 32						
	Turf & Grass	1	LS		\$1,205.00		\$1,205
						DIVISION 32 SUBTOTAL	\$1,205
						SUBTOTAL =	\$574,489
						CONTINGENCY 10.00%	\$57,449
						GEN. CONDITIONS 5.00%	\$28,724
						OVERHEAD 10.00%	\$57,449
						PROFIT 10.00%	\$57,449
						CONSTRUCTION TOTAL =	\$775,560



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Waterford Public Safety Complex - Evaluation of HVAC Systems						Date:	11/26/19
204 Boston Post Road						Job No.:	18.218
Owner: Town of Waterford							
OPINION OF PROBABLE CONSTRUCTION COST							
OPTION #2							
9,400 APPROXIMATE TOTAL NET SQUARE FOOTAGE (Area of Work)							
SECTION NUMBER	WORK CATEGORIES/DESCRIPTIONS	QTY.	UNIT	MATERIAL & LABOR COST			TOTAL \$
				UNIT COST	TOTAL		
OTHER COSTS							
	Permit (0.5% of construction cost)	1	LS				\$3,270
	Bonds (1.5% of construction cost)	1	LS				\$9,765
	Insurance (0.25% of construction cost)	1	LS				\$1,628
				OTHER COSTS SUBTOTAL		\$14,663	
DIVISION 22 DEMOLITION							
	Dumpsters	3	EA	\$1,000.00	\$3,000.00		\$3,000
				DIVISION 22 SUBTOTAL		\$3,000	
DIVISION 23 HVAC/MECHANICAL							
	Demolition (Selective)	1	LS		\$25,000.00		\$25,000
	Rooftop Units	1	LS		\$104,800.00		\$104,800
	Air Handling Unit with DX, Hot Water Duct Coil, VFD	1	LS		\$18,200.00		\$18,200
	VRF System (Fan Coil Units, ERV, BC Controllers, Etc)	1	LS		\$136,500.00		\$136,500
	Refrigerant Piping	1	LS		\$11,750.00		\$11,750
	Ductwork, Duct Insulation & Duct Accessories	1	LS		\$15,000.00		\$15,000
	VAV Terminal Units	1	LS		\$17,088.75		\$17,089
	Exhaust Fans	1	LS		\$9,400.00		\$9,400
	Underground Fuel Oil Storage Tank	1	LS		\$60,760.00		\$60,760
	Fuel Oil Piping - Interior & Exterior	1	LS		\$9,000.00		\$9,000
	Electronic Gauging & Leak Detection	1	LS		\$9,500.00		\$9,500
	Boilers	1	LS		\$42,000.00		\$42,000
	Hot Water System Pumps	1	LS		\$23,625.00		\$23,625
	Hot Water Piping, Pipe Insulation & Pipe Accessories	1	LS		\$8,500.00		\$8,500
	Hot Water Fintube Radiation	1	LS		\$28,500.00		\$28,500
	Controls	1	LS		\$56,400.00		\$56,400
	Duct Cleaning	1	LS		\$2,800.00		\$2,800
	Testing and Balancing	1	LS		\$10,000.00		\$10,000
	Crane Service	1	LS	\$5,000.00	\$5,000.00		\$5,000
				DIVISION 23 SUBTOTAL		#####	
DIVISION 26 ELECTRICAL							
	Demolition	1	LS		\$4,000.00		\$4,000
	Electrical wiring, conduits, connections, etc	1	LS		\$36,000.00		\$36,000
				DIVISION 26 SUBTOTAL		\$40,000	
DIVISION 31							
	Earth Moving	1	LS		\$16,000.00		\$16,000
				DIVISION 31 SUBTOTAL		\$16,000	
DIVISION 32							
	Turf & Grass	1	LS		\$1,205.00		\$1,205
				DIVISION 32 SUBTOTAL		\$1,205	
				SUBTOTAL =			\$668,692
				CONTINGENCY		10.00%	\$66,869
				GEN. CONDITIONS		5.00%	\$33,435
				OVERHEAD		10.00%	\$66,869
				PROFIT		10.00%	\$66,869
				CONSTRUCTION TOTAL =			\$902,734



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Waterford Public Safety Complex - Evaluation of HVAC Systems

Date: 11/26/19

204 Boston Post Road

Job No.: 18.218

Owner: Town of Waterford

OPINION OF PROBABLE CONSTRUCTION COST
OPTION #3

9,400 APPROXIMATE TOTAL NET SQUARE FOOTAGE (Area of Work)

SECTION NUMBER	WORK CATEGORIES/DESCRIPTIONS	QTY.	UNIT	MATERIAL & LABOR COST		TOTALS
				UNIT COST	TOTAL	
OTHER COSTS						
	Permit (0.5% of construction cost)	1	LS			\$2,048
	Bonds (1.5% of construction cost)	1	LS			\$6,098
	Insurance (0.25% of construction cost)	1	LS			\$1,016
				OTHER COSTS SUBTOTAL		\$9,162
DIVISION 2 - DEMOLITION						
	Dumpsters	3	EA	\$1,000.00	\$3,000.00	\$3,000
				DIVISION 2 SUBTOTAL		\$3,000
DIVISION 23 - HVAC/MECHANICAL						
	Demolition (Selective)	1	LS		\$25,000.00	\$25,000
	VRF System (Fan Coil Units, ERV, BC Controllers, Etc)	1	LS		\$225,000.00	\$225,000
	Refrigerant Piping	1	LS		\$18,800.00	\$18,800
	Ductwork, Duct Insulation & Duct Accessories	1	LS		\$15,000.00	\$15,000
	Exhaust Fans	1	LS		\$9,400.00	\$9,400
	Electric Radiation	1	LS		\$9,000.00	\$9,000
	Controls	1	LS		\$21,150.00	\$21,150
	Testing and Balancing	1	LS		\$2,000.00	\$2,000
	Crane Service	1	LS	\$5,000.00	\$5,000.00	\$5,000
				DIVISION 23 SUBTOTAL		#####
DIVISION 26 - ELECTRICAL						
	Demolition	1	LS		\$5,000.00	\$5,000
	Electrical wiring, conduits, connections, etc	1	LS		\$54,000.00	\$54,000
				DIVISION 26 SUBTOTAL		\$1,016
DIVISION 31						
	Earth Moving	1	LS		\$16,000.00	\$16,000
				DIVISION 31 SUBTOTAL		\$16,000
DIVISION 32						
	Turf & Grass	1	LS		\$1,205.00	\$1,205
				DIVISION 32 SUBTOTAL		\$1,205
				SUBTOTAL =		\$418,717
				CONTINGENCY 10.00%		\$41,872
				GEN. CONDITIONS 5.00%		\$20,936
				OVERHEAD 10.00%		\$41,872
				PROFIT 10.00%		\$41,872
				CONSTRUCTION TOTAL =		\$565,269

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**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST**

DEPARTMENT/AGENCY

Building Maintenance

CONTACT PERSON

Gary J. Schneider

PROJECT NAME

Youth Service Bureau

DEPARTMENT PRIORITY

5

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The building constructed in 19mm as the town hall. Several additions were made in 19hh and 20gg. When the Jordan School was remodeled in 1983 and "Town Hall" was moved into the newly remodeled building. The old Town Hall become the home of YSB. The use changed from general offices of a town hall nature (office workers) to a client support function. The facility needs to support the Department's mission of providing community services. Step one would be to secure the services of an architect who would develop a space needs report based of the services that YSB is providing. Using this information and the current space configuration, options will be identified and discussed. Selection of the most preferred option would then be a basis for future funding requests. This would fund step 1

2 PROJECT STATUS IF IN PROGRESS

None

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Reduce the maintenance calls involving electrical circuits, Life Safety and ADA requirements

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None known

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

None

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance		35,000				
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS		0	35,000	0	0	0

MEMORANDUM:

TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 5, 2021

Re: CIP: Youth Services Bureau

Overall the building, the shell is in good condition. However the building does not function well for its current use.

The building constructed in 1912. When the Jordan School was remodeled in 1983 and "Town Hall" was moved into the newly remodeled building. The old Town Hall become the home of YSB. The use changed from general offices of a town hall nature (office workers) to a client support function.

The move from one use to another often works for the first several years until the new use in an existing building settles in and then the short comings become evident.

Today the staff at YSB provides private counseling, youth programs and more recently, a food bank out of a building that was built as an administration center.

The building needs to be inviting. It must have community orientation. Customers must feel comfortable using the services at the facility. The space also needs to be flexible so staff can focus on their current and future missions and not be concerned about the limitations of the bricks and mortar that they work out of.

Briefly, what facility has:

- Counseling areas that are dark, almost dungeon like
- Toilets facilities not ADA compliant. No separation of public/staff toilets
- Potential fall hazards. Second floor stair case has a low railing at the top landing
- No center entrance or reception area
- Uneven heating and air conditioning throughout the entire building
- Lack of electrical circuits. Panels are filled with no room for expansion
- Basement used for storage that has no humidity control
- Layout not conducive to the mission of the Department, especially for early evening appointments and activities
- Safety concerns, evening hours when the building is open for appointments
- A maze created due to the additions being added to the building with no thought of how this would affect the flow in the remaining sections of the building
- Lack of an internal, silent duress alarm system with activation points at the reception desk and the counseling and therapy areas and the alarm signal at the management areas

- Trees/plantings have overgrown the building

The facility needs to support the Department's mission of providing community services by providing:

- Wayfinding & accessibility of services to promote client self-navigation
- Quality customer service through appropriate facility design
- Safe & ample parking areas
- Sufficient and adequately designed client / staff interaction spaces
- Safe & secure employee work environment. Create workplaces that support a variety of workspace & settings (individual vs. meeting vs. open collaboration space)
- Increased flexibility of the facility to accommodate future changes
- Various types of client interaction (i.e. triage teams, larger client meetings, ebb and flow of client demand)
- Physically separate private spaces from public spaces. Clients are not brought back into the employee workspace; instead, client meetings occur in public client space.
- An image of respect and integrity towards employees & clients
- Accessibility: spaces need to be able to accommodate strollers & mobility aids
- Safe and calm, non-threatening environment
- Acoustical privacy
- A sense of welcome and arrival at the entrance, lobby, and control desk.
- In the counseling and therapy spaces, use indirect lighting as main ambient lighting
- Easily-cleaned finishes and avoiding "institutional" finishes, textures, and colors
- Nontoxic building materials
- Good indoor air quality and ample natural light
- Barriers to prevent unauthorized access by potentially dangerous persons

Project YSB

Item #	Item	Unit Measures	Quantity	Estimated Unit Price	Extended
1	Square feet of interiors	SF	7350	\$ 200.00	\$ 1,470,000.00
2	Architect Fees (typical 8% of construction)		0.08	\$ 1,470,000.00	\$ 117,600.00
3	Schematic Concepts (30% of total fee)		0.3	\$ 117,600.00	\$ 35,280.00

Grand Total \$ 35,280.00

Check
SPA Architect \$191/hr. Weeks of effort \$ 191.00 \$ 35,280.00 184.71 Hours
4.62 Weeks

Estimate only. Scope needs to be negotiated the year before funding is requested