THE CITY OF WATERTOWN

Finance Department
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To: Finance Committee
From: Mark Stevens
Date: February 9, 2026
RE: Municipal Building Boiler Replacement Plan

One of the two 2-MMBTU boilers in the tandem system has failed and cannot be repaired. To address continuous leakage from failed valves on that unit, the entire heating system had to be shut down and fully drained. While the system was offline, the repair contractor also replaced similar failing valves on the remaining operational boiler.

The original system was designed as a simple primary-loop configuration—continuously circulating water through both boilers without the isolation valves needed to separate components during maintenance. This design limitation complicates repairs and increases downtime. In addition, many of the aging gaskets used at piping connections have become dependent on consistently high water temperatures (160° or more) to remain sealed. With only one boiler in service—and undersized for the building's heating load, which the contractor estimates at approximately 2.75 MMBTU—maintaining those temperatures is increasingly difficult.

In short, the system is operating on borrowed time. Requests to replace the boiler plant have been deferred across multiple budget cycles, but replacement is now unavoidable. A preliminary cost estimate was obtained several years ago and has been adjusted annually to reflect rising construction costs; the current estimate is $322,000. The approved 2026 Capital Improvements budget includes $652,426 for this project. Ongoing reliability issues, obsolete controls, and deteriorating piping now pose significant operational and financial risks to the City.

Project Overview

The project includes four major components:

1. **Immediate Repairs (Short-Term Stabilization)**
   Limited repairs are required to keep the current system operational during the design and bidding period. These include leak fixes, circulator replacements, and safety-device updates.
2. **Engineering & Design**
   Full mechanical, electrical, and controls design will define the new boiler plant, venting, pumps, piping, and integration with the Building Automation System (BAS). This phase produces bid-ready construction documents.
3. **Boiler Plant Replacement**
   Installation of new high-efficiency boilers, pumps, venting, expansion tanks, air/dirt separation, near-boiler piping, and updated electrical service. The project also includes hydronic balancing and replacement of failing valves or piping sections discovered during construction.
4. **Controls & BAS Integration**
   Modern boiler controls and full BAS integration will improve efficiency, reliability, and monitoring. New sensors, control valves, and updated sequences of operation are included.

Additional Required Components

To ensure a complete and code-compliant project, the following items may be necessary:

- Temporary heat during construction
- Asbestos/lead abatement if disturbed
- Rigging and access modifications for equipment removal
- Commissioning and functional performance testing
- Staff training and O&M documentation
- Contingency for unforeseen conditions in the existing mechanical room

Phasing Plan

Phase 1 – Stabilization

Perform essential repairs to maintain heat and begin system assessment.

Phase 2 – Engineering & Design

Develop construction documents, conduct structural and venting reviews, and prepare bid package.

Phase 3 – Bidding & Procurement

Public bidding, contractor selection, and ordering of long-lead equipment.

Phase 4 – Construction & Replacement

Temporary heat setup, demolition, installation of new boilers and piping, electrical and controls work, and commissioning.

Phase 5 – Training & Closeout

Staff training, documentation, warranty activation, and seasonal system optimization.

Expected Outcomes

- Reliable, efficient heating for the next 25–30 years
- Reduced energy and maintenance costs
- Improved comfort and control throughout City Hall
- Modernized infrastructure aligned with municipal facility standards

Request:

To proceed responsibly and without delay, the City must engage a qualified mechanical engineering firm to complete the design, prepare construction documents, and support the expedited replacement of the heating plant. The urgency of the situation, combined with the technical complexity of the system, makes a qualifications-based selection both necessary and in the City's best interest.

Requested Action:

Authorize City staff to solicit and contract with a qualified engineering firm for design and related professional services for the boiler plant replacement project, **waiving the low-bid procurement requirement due to the urgent need to protect City facilities and maintain uninterrupted operations**. The low-bid procurement requirement will continue to apply for the boiler system replacement.

Contingency Plan

The second boiler in the current tandem system is the same age and condition as the one that failed. If it were to fail during this heating season, and if temperatures drop below 10 degrees for several days, there is a significant risk of ruptured water pipes throughout the building. This could damage computer and electrical systems and disrupt essential services, including Law Enforcement operations. Such an event could result in substantial repair costs and extended service interruptions. In an emergency of this nature, time would be critical, and the standard bid process—which typically takes weeks or months—would likely need to be bypassed, even if this results in higher installation costs.