



# CITY OF CONCORD

*New Hampshire's Main Street™*

## Finance

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**From:** Brian G. LeBrun, Deputy City Manager – Finance

**Date:** April 24, 2017 (Revised)

**Subject:** Municipal Complex Boiler Conversion and COMF Boiler Replacement Project

### **Recommendation:**

Accept this report and take action on the attached resolution.

### **Background:**

Concord Steam has notified the Public Utilities Commission and its customers that it will cease operations in May 2017. With this very short time frame, the City needs to convert its City Hall Campus facilities from steam heat to a natural gas boiler system before the fall 2017 heating season begins. The original estimate of conversion from steam to natural gas boilers was \$600,000 using the 2011 ESCO project as a basis.

### **Discussion:**

The City has been contemplating a conversion of its City Hall Campus from Steam Heat to Natural Gas Boilers for a number of years. While the City has worked closely with Concord Steam to stay with steam heat as the first alternative and considering there is also a tax base and water/wastewater utility revenues included in the evaluation. With the announcement by Concord Steam that they would cease operations in May 2017, it has become a necessity to convert the campus before the start of the fall 2017 heating season.

In its evaluation of possible heating systems, the City contracted with the NH Wood Energy Council to evaluate the feasibility of alternative energy sources to heat City Hall Campus, namely using Wood Pellets. While the evaluation did show that heating with wood pellets (over steam heat) would produce a 20 year life cycle savings of \$448,000, the evaluation also concluded that using a combination of natural gas and wood chips would produce a 20 year life cycle savings of \$763,000, using a natural gas central boiler plant would produce a savings of

\$1,600,000, and using individual natural gas boilers in each building would produce a savings of \$2,310,000.

Due to delivery, storage, and space limitations, the woodchip alternative proved not to be a viable solution. The pellet option was not pursued any further because of the cost of operation and storage issues. The viable solution remained as conversion to natural gas.

In April 2016 the City engaged the services of Mcfarland Johnson Engineering to develop a feasibility study to determine if the campus would be best served with a separate boiler in each building or if a central boiler solution was the most practical. The evaluation concluded that a central boiler would be the best solution for this campus. In addition to the Boiler Conversion Project, Mcfarland Johnson was also tasked with the design of the Sidewalk Refurbishment and Landscaping and COMF Boiler Replacement subprojects. The idea is that it made sense to combine the two boiler projects for economies of scale, and due to the trenching work that would need to be done on the City Hall Campus, the sidewalk refurbishment and landscape project should be done in conjunction with the boilers.

The initial budget for all three of these projects was: Municipal Complex Steam to Natural Gas Conversion project (\$600,000), Municipal Complex Sidewalk Refurbishment project (\$240,000) and COMF Boiler Replacement Project (\$300,000), a total of \$1,140,000. Understanding that the original boiler conversion costs stemmed from the 2011 ESCO project, it was anticipated that the final costs would be somewhat higher. The engineer's estimates are as follows: Municipal Complex Steam to Natural Gas Conversion project (\$1,400,000), Municipal Complex Sidewalk Refurbishment project (\$400,000) and the COMF Boiler Replacement Project (\$200,000), a total of \$2,000,000. All three projects total additional funding needs of \$860,000. A request for proposal for these combined projects was issued on February 27, 2017 and responses were due on March 28, 2017.

When the additional cost needs were identified in the engineer's estimates, solutions were developed to try and minimize the additional amount of bonding necessary to complete the project. One solution was to repurpose and utilize the available Insurance Reserve balance of approximately \$638,000 leaving a smaller portion to be additionally bonded. With the completed Downtown Complete Streets Improvement Project surplus of \$662,884.61 identified by the Mayor to help reduce the impact of the FY18 General Fund Operating Budget (and as those funds were bonded in nature and more difficult to utilize to reduce operational costs), this report and resolution recommends using the Downtown Complete Streets Improvement Project surplus to support the Municipal Complex Steam to Natural Gas Conversion project and reassign the Insurance Reserve balance to help offset Health insurance increases and costs in the FY18 budget instead. The dollars of both balances are similar and will achieve nearly the same outcomes.

Two bids were received on March 28<sup>th</sup>, (\$3,927,700 and \$4,116,154) and both far exceeded the engineer's revised estimate for this project (\$2,000,000). Both bids were rejected and the City engaged the bidders to meet separately and discuss a value engineering option. Once these meetings concluded the City selected Structure Tone LLC as the successful vendor to complete this project.

Meetings were held with Structure Tone and options were discussed to change the design and scope of work in order to arrive at a lower cost. The scope of work was changed to a Municipal

Complex Steam to Natural Gas Conversion project only, with an add alternative for the COMF Boiler Replacement project. The scope also eliminated many of the pump redundancies, revised the plan from three boiler to two boiler system in City Hall basement, reconfigured piping between complex buildings to minimize disruption of landscape and find shortest paths between buildings, changed piping work from hard welded pipes to flexible piping with the same lifespan and eliminated the air conditioning unit from the Green Street Community Center gym. These changes reduced the cost to \$2,420,868 with an add alternative for the COMF boiler replacement in the amount of \$294,900. It also provides for a \$100,000 contingency in the event of any unexpected occurrences for a total anticipated project cost of \$2,520,868. The proposed revised resolution includes funding for the Municipal Complex Steam to Natural Gas Conversion Project. It also provides for repurposing \$662,884.61 from the Downtown Complete Streets Improvement and Eagle Square projects surplus and \$240,000 from the Municipal Complex Sidewalk Refurbishment project.

The COMF Boiler Project is being accepted as add alternative to this project and is fully funded through existing appropriations and no additional funding is necessary.