ITEM # 37
DATE: 10-28-14

COUNCIL ACTION FORM

SUBJECT: FIRE STATION #3 – HVAC MODIFICATIONS

BACKGROUND:

Fire Station No. 3, built in 2002, uses a hydronic heating system (boilers, piping, heat exchangers, etc.) to heat the entire facility. A roof mounted air-handler is used to cool the living quarters and administrative area of the fire station. The current configuration of the system inhibits the flow of heating water to the living quarters and administrative area, resulting in inconsistent and insufficient heat during winter months. Due to the system's complexity, the nearest qualified service and repair provider is from Des Moines. Travel charges for a technician from Des Moines add to maintenance and repair costs. Further, parts and service for this complex system are significantly more expensive than a more typical heating, ventilation and air conditioning (HVAC) system.

Over the past 11 years, repairs to the existing system have cost $50,203 as of June 2014, with no significant improvement in the system's poor performance. Repair and routine maintenance costs for this system average $6,593 annually. Retaining the existing system and reconfiguring it for improved comfort levels is estimated to cost $40,000. However, maintenance costs would still be at least $2,000 per year.

In order to evaluate alternative ways to heat and cool this facility, the existing system was evaluated by LMV Engineering, L.C., and a new heating, ventilation and cooling (HVAC) system was designed for the living quarters and administrative area. The proposed system utilizes a more conventional gas furnace and air conditioning system, which could be serviced by several local vendors at an estimated annual cost of $830, which is $1,200 per year less than existing maintenance costs. A further $4,563 in average annual unexpected repair costs would also likely be avoided with the new system, and energy cost savings would total $1,047 per year compared to the existing system. The bid package includes an alternate to convert to a hybrid system with heat pumps replacing conventional condensing units. This would improve the efficiency of the system even more over the conventional system.

On October 21, 2014, bids on this project were received as follows

	Base Bid	Alternate #1	Base Bid + Alt. 1
Engineers Estimate	$66,300		
Converse Conditioned Air	$56,444	$2,144	$58,588
Mechanical Comfort, Inc.	$68,360	$1,816	$70,446
Neighbor's Heating & Cooling	$69,923	$1,965	$71,888
Proctor Mechanical Corp.	$89,259	$1,900	$91,159

Two bids received were considered non-responsive for not completing the proper forms and submitting a bid bond.

The cost to design the proposed system was $3,800, bringing total project costs to $62,388. Since this project will result in substantial energy savings, funds from the City's Cool Cities account can be used to finance the installation. The Cool Cities funding was established by the City Council in order to increase energy efficiency and sustainability within City of Ames operations and to reduce our overall carbon footprint. The Cool Cities account balance is currently $70,957. This project is eligible for several utility rebates, which would be returned to the Cool Cities account to be used for future energy efficiency projects.

ALTERNATIVES:

1a. Accept the report of bids for the Ames Fire Station #3 –HVAC Modifications.

b. Approve the final plans and specifications for Ames Fire Station #3 –HVAC Modifications.

c. Award the Ames Fire Station #3 –HVAC Modifications to Converse Conditioned Air of Ames, IA, including Alternate #1, in the amount of $58,588.

2. Do not approve this project.

MANAGER'S RECOMMENDED ACTION:

The high maintenance costs and poor performance of the Fire Station #3 HVAC system have necessitated exploring a simpler and more reliable HVAC system design. A new system will improve occupant comfort and will result in significant maintenance and energy savings over the current configuration. The estimated payback from this investment is approximately ten years. In addition, if this purchase is not made, it will cost at least $40,000 to repair the existing system.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1 as described above.