

COUNCIL ACTION FORM

SUBJECT: EVAPORATIVE CONDENSER REPLACEMENT PROJECT AT AMES/ISU ICE ARENA

BACKGROUND:

This project is to replace the Evaporative Condenser at the Ames/ISU Ice Arena. The current condenser, installed in 2000, is operating at 50% capacity due to a leak discovered in 2014. At that time, work was done on the condenser to isolate the leak, thus making one half of it not operational. Staff researched options which included repairing or replacing the current equipment. **Cost estimates indicated it is less expensive to replace the condenser than to repair it. In addition, the possibility of losing ice is much less with replaced equipment than with repaired equipment. The condenser needs to be replaced for the ice making system to operate at maximum efficiency.**

This project has been bid twice, with the first being in September when no bids were received. Bids were let a second time in November with a due date of December 6. One bid was received from AJ Allen Mechanical Contractors, Inc. of Des Moines, Iowa. The breakdown of the bid is below:

AJ Allen – Bid to Replace the Evaporative Condenser

<u>Base Bid (March Install)</u>	<u>Base Bid (May Install)</u>	<u>Base Bid (Emergency Install)</u>	<u>Alternate 1 (Install Shut Off Valves)</u>
\$110,200	\$110,200	\$115,300	\$5,500

In addition, Baltimore Air Coil (BAC), the manufacturer of the evaporative condenser, contacted the project engineer regarding two items in the specifications that were of concern. The first was that the specifications called for a 20 horsepower motor, while BAC recommends a 25 horsepower motor which is estimated to cost \$1,000. The second item is a coating recommended to reduce potential corrosion on the evaporative condenser which was included on the original unit, but was not specified for the new unit. This coating is estimated to cost \$3,500.

Both items were brought forth too late in the bid process to do an addendum. Therefore, the engineer recommends adding both of these items to the project after bid award. This is explained in the attached Engineer's recommendation. The final cost of

these two additional items will need to be determined with the contractor and a change order will need to be prepared.

Staff is recommending the Base Bid (March install), Alternate 1 (adding the isolation shut off valves), upgrading to the 25 horsepower motor, and adding the corrosion reduction coating. The total estimated cost of the project with these additions is as follows:

Estimated Project Cost

Materials, equipment, and installation	\$ 110,200
Alternate 1 (isolation shut off valves)	\$ 5,500
Upgrading to a 25 horsepower motor (estimate)	\$ 1,000
Corrosion reduction coating (estimate)	\$ 3,500
Consultant and Design Fees	<u>\$ 11,500</u>
Total	\$ 131,700

Funding for this project (Base Bid) of \$100,000 was included in the FY 2014/15 Capital Improvements Plan (CIP) and Budget. That amount will be carried forward to the FY 2015/16 Budget.

Included in the base bid is \$10,384 to replenish the freon in the ice making system. Since the operating budget for the Ice Arena includes \$6,200 for this same purpose, that amount will not be needed for this purpose and will be available to help finance this capital improvement project.

Currently, the FY 15/16 CIP includes \$25,000 for installing surge protection for the Ice Arena. This will protect the motors and other equipment in the event an electrical surge occurred. Since this is something the facility has gone without for the first 15 years of operation, staff is recommending that those funds be redirected at this time to complete this critical project. Hopefully savings from the flooring CIP project will be available to reinstate the surge protection project.

Plans and specifications are now being developed for replacing flooring in the Ice Arena locker rooms and hallways. The FY 2015/16 CIP and Budget include \$175,000 for the flooring replacement. The engineer's estimate for this project is \$146,000, which includes materials, installation, design fees, and 10% contingency. If bids come in favorably and the total cost of the flooring project is less than \$150,000, the savings could also be used to complete the surge protection at that time.

Summary of Project Funding

CIP Funding (Evaporative Condenser Project)	\$100,000
Operations (Freon replenishment)	\$ 6,200
CIP (Reallocating Surge Protection Project Funds)	\$ 25,000
Operations (Miscellaneous maintenance)	<u>\$ 500</u>
Total	\$131,700

ALTERNATIVES:

1. Award the Evaporative Condenser Replacement contract to AJ Allen Mechanical Contractors, Inc., of Des Moines, Iowa, for the base bid (March install), and alternate 1 (adding isolation shut off valves) for a total amount of \$115,700.
2. Award the Evaporative Condenser Replacement contract to AJ Allen Mechanical Contractors, Inc., of Des Moines, Iowa, for the base bid (March install) only in the amount of \$110,200.
3. Do not award the Evaporative Condenser Replacement contract to AJ Allen Mechanical Contractors, Inc., of Des Moines, Iowa.

MANAGER’S RECOMMENDED ACTION:

The proposed project will replace a key component in the ice making system at the Ice Arena which will restore the efficient operation of making ice. If the condenser is not replaced and fails, the Ice Arena will lose ice and could be shut down for a substantial amount of time.

Adding the isolation shut off valves is a good insurance policy if either half of the evaporative condenser needs to be shut down at any time. If the need arises in the future to isolate the evaporative condenser, it will be much more difficult and costly to add the isolation valves at that time. The reason for this added cost and difficulty is due to the need to shut down and isolate the evaporative condenser and evacuate the refrigerant from the unit to do the work.

Upgrading the motor and adding the corrosion reduction coating is recommended by the manufacturer and was an inadvertent omission from the specifications. The motor will ensure efficient operation year round, and since the evaporative condenser is an outside unit, it is imperative the unit is protected from corrosion as well as it can.

Therefore, it is the recommendation of the City Manager the City Council adopts Alternative No. 1 as described above. After that action, staff will administratively approve a change order for the larger motor and the corrosion coating.

December 9, 2015



RESOURCE
CONSULTING
ENGINEERS LLC

Keith Abraham

Parks and Recreation Director

City of Ames

1500 Gateway Hills Park

Ames, IA 50014

Re: Ames/ISU Ice Arena Evaporative Condenser Replacement Project – Bid Results and Recommendation

Dear Keith,

Thank you for the opportunity to work with the City of Ames on the Ames/ISU Ice Arena Evaporative Condenser Replacement Project. At the public bid opening held at 2:00 PM on December 9th, 2015, we received a total of one (1) bid to complete the work of this project. The bid was based on the Contract Documents produced by Resource Consulting Engineers, LLC and the City of Ames Purchasing Department, which were dated November 11th, 2015. After reviewing the bid received, it appears that the organization submitting a bid (AJ Allen Mechanical Contractors, Inc.) is capable of completing the work of this Project. The bid included the appropriate bid bond information and the required bidder status form. A bid tabulation form, documenting the results of the bid, is included with this recommendation.

As indicated on the bid tabulation form, AJ Allen Mechanical Contractors, Inc. is the apparent low bidder for the Base Bid, with a bid of \$110,200.00. The bid was slightly higher than expected, but generally appears reasonable for the work being completed. The bid form also included pricing for Bid Option 1 (\$110,200.00 to match the Base Bid), Bid Option 2 (\$115,300.00) and Alternate #1 (\$5,500.00). We do not believe any advantage could be gained in pricing if the project were to be re-bid, and given the time constraints that exist for the project and limited success we have had attracting bidders for the project, we would recommend moving forward despite the fact that only one bid was received.

As we discussed briefly after the bid opening, a few items were brought up by a potential equipment supplier after the point where they could be addressed by Addendum. Specifically, there is a coating available that should reduce potential corrosion for the evaporative condenser that was included on the original unit, but was not specified for the new unit.

Including this coating would add approximately \$3,500 to the cost of the project. Additionally, the basis of design equipment manufacturer for the evaporative condenser has recommended increasing the size of the fan motor for the evaporative condenser from 20 to 25 horsepower. This recommendation is based on a concern of the 20 horsepower motor operating into its safety factor during dry (winter) operation, which could shorten the life of the motor. Assuming their equipment is provided, an increase in this horsepower would not have an impact on the cost of the evaporative condenser, but would add to the cost of electrical components serving this motor. The expected cost for increasing this motor size is approximately \$1,000. We recommend incorporating both of these items into the project if budget allows.

Resource Consulting Engineers, LLC recommends awarding the Ames/ISU Ice Arena Evaporative Condenser Replacement Project to AJ Allen Mechanical Contractors, Inc., as they are the apparent low bidder and also appear to be capable of completing the work of this Project. With respect to Bid Options and Alternates, we recommend moving forward with the Base Bid installation date assuming equipment lead times and weather allow the work to occur in March. It is likely advisable to keep the planned week in May (Bid Option 1) clear until the replacement has been completed in March, due to the possibility of weather or equipment lead time issues. We also recommend incorporating Alternate #1 (refrigerant isolation valves for each circuit of the evaporative condenser) if budget allows. Finally, we recommend the potential modifications identified above, again if budget allows. These would be prioritized above Alternate #1 if budget constraints are a concern. If you have any questions regarding this recommendation, please do not hesitate to contact me at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'C. Metzger', with a long horizontal line extending to the right.

Corey B. Metzger, PE
Principal
Resource Consulting Engineers, LLC

Ames/ISU Ice Arena Evaporative Condenser Replacement



Bid Tabulation Form

Date: 12/9/2015

Bidder	Bid Bond Present	Bidder Status Form Present	Base Bid	Bid Option 1	Bid Option 2	Alternate #1
AJ Allen Mechanical Contractors, Inc.	X	X	\$ 110,200.00	\$ 110,200.00	\$ 115,300.00	\$ 5,500.00