**ITEM # __49__**
**DATE: 06-14-16**

## COUNCIL ACTION FORM

**SUBJECT: AMES/ISU ICE ARENA LIGHTING REPLACEMENT PROJECT**

**BACKGROUND:**

This project is to replace the lighting over the ice at the Ames/ISU Ice Arena. In 2012, an energy assessment was conducted for the Ice Arena to determine where potential savings could be achieved. One item identified was replacing the existing metal halide lamps over the ice with LED lighting. Not only are the existing lamps energy inefficient, they do not provide enough light to meet the NCAA standards for collegiate hockey games. These lights also take time to warm up once started, so turning them off to save energy can only be done when there is a long period of time before the next activity on the ice sheet.

KCL Engineering of West Des Moines was hired to assess the lighting and provide recommendations to maximize energy savings and meet the lighting standards of the Ice Arena user groups. Lighting bids were solicited for the following items:

**Base Bid –** Provide all labor, equipment, materials, and other components necessary to replace the existing metal halide lighting with LED lighting and keep the current on/off controls functions.

**Alternate #1 –** Add dimming controls and dimmable LED lamps so the lighting could be dimmed between 10% and 100% of full intensity.

**Ice Arena Lighting Project**

| Bidder | Base Bid | Add Alternate #1 | Total Bid with Alternate |
|---|---|---|---|
| Van Maanen Electric, Inc., Newton, IA | $38,046 | $6,800 | $44,846 |
| Jaspering Electric, Ames, IA | $42,400 | $4,940 | $47,340 |
| NAI, Ames, IA | $50,200 | $9,100 | $59,300 |

**ENERGY COMPARISON:**

Below is a breakdown of the energy savings comparison between the base bid and the Alternate. This comparison assumes the lights will be dimmed for different activities. While some users may be concerned as to why some activities get 100% lighting while others get less than full intensity, dimming may be used when no activities are taking place on the ice or for activities that do not require the full intensity of the light. The engineer recommends installing the dimming controls and lamps now, since the alternate bids came in less than anticipated and this option would be much more costly to add in the future. It is important to note that the dimmed LED lights will have a light output similar to what is available with the current lighting, which is sufficient for non-competitive and recreational use of the ice.

| | **Base Bid** | **Bid w/Alternate** |
|---|---|---|
| Existing Lighting Annual Energy Costs | $23,048 | $23,048 |
| New Lighting Est. Annual Energy Costs | $6,146 | $4,610 |
| % Energy Savings | 73% | 80% |
| Annual Savings | $17,982 | $19,518 |
| Payback (in years) | 2.0 | 2.6 |

**PROJECT COST AND FUNDING:**

The total cost of the Lighting Replacement Project is as follows:

| | |
|---|---|
| Base Bid | $ 38,046 |
| Alternate #1 | $ 6,800 |
| Design Fees | $ 10,000 |
| Estimated Rebates | ($15,840) |
| **Total Project Cost** | **$ 39,006** |

After retaining an engineer to complete plans and specifications, it was discovered that the project would likely require additional funding. The engineer's estimate, including the base bid, Alternate #1, design fees and rebates, was $60,760.

Funding in the amount of $20,000 was included in the FY 2015/16 Capital Improvement Plan for this project. Additional funding in the amount of $19,006 is available from savings in the Rubber Flooring Replacement Project at the Ice Arena.

The contractor will be completing this project August 1-5.

**ALTERNATIVES:**

1a. Award the Ice Arena Lighting contract to Van Maanen Electric, Inc. of Newton, Iowa, for the base bid and Alternate #1, in the amount of $44,846.

b. Authorize reallocation of $19,006 of savings from the Ice Arena Flooring Project to the Ice Arena Lighting Project.

2. Award the Ice Arena Lighting contract to another contractor and authorize reallocation of savings from the Ice Arena Flooring Project to cover the shortfall in funding.

3. Accept the report of bids but do not award a contract at this time.

4. Reject all bids.

**MANAGER'S RECOMMENDED ACTION:**

The proposed project (base bid) will replace the lighting over the ice at the Ice Arena which will result in significant energy savings. The lighting will also meet the NCAA standards for collegiate hockey games. By approving Alternate #1, greater energy savings can be achieved, and staff will have the flexibility to dim the lights based on each program or activity's lighting needs. In addition, the Ice Arena user groups are supportive of improving the lighting.

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