



Memorandum

Date: July 28, 2010

To: Common Council

From: Adam Alix, Assist. Superintendent of Buildings and Parks

Re: Energy Savings

Last fall we invested in two energy savings projects. First, we retrofitted the existing lighting in many of our City buildings with lower wattage fixtures. Secondly, we installed frequency drives on our HVAC fan motors at the Public Protection Facility.

Following are the energy savings we have experienced as a result of these projects.

City Hall

Anticipated annual savings of 31,440 kWh @ \$.0701/kWh = \$ 2,203.94
Originally projected savings \$ 1,548.00

Senior Center

Anticipated annual savings of 4,911 kWh @ \$.09681/kWh= \$ 475.47
Originally projected savings \$ 587.00

Public Works Facility (Excluding the Sign Shop)

Anticipated annual savings of 44,460 kWh @ \$.0946/kWh = \$ 3,548.00
Originally projected savings \$ 3,766.00

Public Protection Facility

Anticipated annual savings of 91,200 kWh @ \$.0710/kWh = \$ 6,475.00
Originally projected lighting savings \$2,585.00
Originally projected frequency drive savings \$5,000.00 \$ 7,585.00
*Unable to separate energy savings

Summary

Total Net Cost of Lighting Project \$20,068.31
Total Net Cost of Frequency Drives \$ 2,953.60
Total Costs \$23,021.91

Total Energy Savings \$12,702.41

Simple Pay Back 1.81 years



Memorandum

Date: August 12, 2009

To: Common Council

From: Adam Alix, Asst. Superintendent of Buildings & Parks AA

Re: Lighting Proposals

Attached is a summary of the lighting proposals received in response to our request looking to take advantage of the financial incentives currently available to upgrade the existing lighting within the City's buildings. You will notice that I have made adjustments to the proposals in an attempt to provide an apples to apples format for comparison. The adjustments are to either equate the same number of fixtures or for type of fixtures to provide the same level of lighting that currently exists. Likewise, adjustments were made to the proposed annual energy savings as well to account for the differences in the proposals.

In the end the two proposals that took into account most all the lighting in the City's buildings, came out fairly close. The adjusted cost difference is approximately \$1700, based on conservative cost estimates, and the projected annual savings are only about \$300 apart. When factoring in the warranty information and assigning some value, to it I feel that it only brings the overall costs even closer. As for Beck Electric's proposal, they only provided a quote for replacing the Metal Halide fixtures at the Public Works Facility which obviously affords us the greatest energy savings to be realized with the least amount of cost. This does raise the concern as to what type of payback warrants incurring the expense. For example, both proposals that addressed the Pool show an annual energy savings of \$85 at a cost of somewhere around \$650 after incentives for a simple payback of around 8 years. Does it pay to incur this cost now at a building that is only open for roughly 3 months out of the year or do we look to upgrade when the lights require maintenance?

In discussions with vendors and others, there doesn't seem to be a hard fast rule of thumb as to what kind of payback is most desirable. Some have upgraded with a projected 8 year payback because they felt it was the right thing to do being Green. I'm of the opinion that with the bonus incentives currently available, it may make sense to stretch the paybacks out a bit and complete the work. A point to be made here too is that in calculating the paybacks assumptions have been made regarding the burn hours of the lighting and there is the possibility that the real energy savings may not reach those that have been proposed. However, I am certain that, outside of the Public Works Facility, we have no plans to move out of any of the other buildings and that real savings will be realized over time making this a worth while project.

In addition, the Beck Electric proposal suggests the use of controls to further save energy and has it listed as an option. I believe that at this time we concentrate on base load reduction and continue to research the addition of controls to further reduce energy consumption and bring that forward at a later date. I would like to think there will still be some incentives available in the future, maybe not quite to the extent of this fall.

Having had time to review all of this information I recommend the following:

- The City purchase the Orion six bulb fixture directly and install them ourselves with DPW staff as they require no wiring, hang and plug them in. The modular design of these fixtures will allow us to easily look at adding controls to the lighting system and can be moved to a new facility when that happens.
- Contract with Faith Technologies to retrofit the existing light fixtures for the rest of the Public Works Facility, the Public Protection Facility, the Senior Center and City Hall.

Cost Summary of Recommendation

| | <u>Costs</u> | <u>Incentives</u> | <u>Net Cost</u> | <u>Projected Annual Savings</u> | <u>Payback</u> |
|-----------------------|--------------|-------------------|-----------------|---------------------------------|----------------|
| Public Works Facility | | | | | |
| Metal Halides | \$ 7,916.56 | \$ 6,550.00 | \$ 1,366.56 | \$ 3,246.00 | 0.42 yrs |
| T12's | \$ 5,625.00 | \$ 2,095.00 | \$ 3,530.00 | \$ 1,113.00 | 3.17 yrs |
| PPF | \$11,287.00 | \$ 3,754.00 | \$ 7,533.00 | \$ 2,585.00 | 2.91 yrs |
| Senior Center | \$ 3,306.00 | \$ 1,066.00 | \$ 2,240.00 | \$ 587.00 | 3.82 yrs |
| City Hall | \$ 9,622.00 | \$ 3,288.00 | \$ 6,334.00 | \$ 1,548.00 | 4.09 yrs |
| Totals | \$37,756.56 | \$16,753.00 | \$21,003.56 | \$ 9,079.00 | 2.31 yrs |