

Pool Committee: New Pool and Parking Lot Lights

This originally started as a Pool project but the Parking Lot was added at the last minute due to upcoming changes to the KCPL rebate program.

The new LED fixtures include Day/Night sensor for on/off operation. The LED fixtures Auto-Dim to 20% output when there is no motion for 20 minutes. They return to 100% in 3 seconds upon seeing motion within a 30 ft radius. LEDs require no warm up on restart. No cold temperature issues like CFLs. They are a color temp of 5000 Kelvin to match the streetlight fixtures that are the new standard for KCPL for a consistent light stage in the area. LEDs use about 75% less energy than the Nickle Metal Hydride lights previously used, coupled with the dimming features making the new lights 90% more efficient.

The estimated yearly energy cost to run the OLD parking lot and pool lights was \$3,910.00. We were able to obtain the usage cost by looking at the Kw/Hr cost to run the pool lights in Jan, Feb, Mar. This was adjusted for daylight hours for summer operation. This is the lowest energy load as there are no pumps, heaters or appliances running at the pool that time of year. We then doubled this number as the Parking Lot has the same number of identical fixtures. **The estimated yearly energy cost to run the new lights is \$448.00. This is a savings of \$3,462.00 /year**

Project cost was \$19,905 (\$2,000 under budget), less the KCPL rebate of \$9,953 = \$9,952 total cost installed. $\$9,952 / \3462 (energy savings/year) = 2 years ,11 months payback for positive cash flow. KCPL estimates 10 year Energy Savings of \$34,804 less \$9,952 initial cost = \$24,852 for an Internal Rate of Return of 44% over 10 years.

We expect the total savings of **\$59,656.00** over the 20 year life of the lights. Yes, \$60K you read that right.

-

We chose not to include Maintenance savings in the calculation (we have to expect something to go wrong). But if we had included it, the maintenance savings for light bulbs, internal parts and labor hours would have been \$4,181 over 10 years. (418.00 /year) We expect no bulb changes and associated labor on these LED fixtures for 20 years. We also chose not to include the higher cost of FUTURE energy. Including these soft costs would have the return even higher as KCPL is currently planning a 13% increase for next year. Note: That the Staff changed all the Dock lights to LED this year as well.

Emissions: We project an 89% reduction in Greenhouse Gas Emissions based on the amount of energy consumed. The old fixtures would have produce 67,074 pounds of Carbon Dioxide vs a projected 7,692 pounds of Carbon Dioxide of the new fixtures. The Comparable would have the effect of having planted 2226 mature trees or 8 fewer cars on the road for the life of the car.

Pool Committee: Bob Hoffman, Karen Giudici, Paul Landes, Tim Lucas, Diana Pirkle, Jim Taaffe

