# City of Biggs

## Agenda Item Staff Report
## For the Regular City Council Meeting:
## October 11, 2016

TO: Honorable Mayor and Members of the City Council

FROM: City Administrator

SUBJECT: Consideration of Street Light Retrofit Project

### Background

As part of the State cap and trade program, the City currently receives revenue from the sale of GHG (Green House Gas) credits. Fund 054 was established to track revenues and expenses and currently contains a balance of approximately $152,000. In general, eligible expenses are limited to activities which further the goals of State GHG policies. Projects which provide city energy consumption savings are considered to be eligible expenses. Revenues must be expended within 10-years or forfeited back to the state. Common uses of the GHG revenues among NCPA members has been to improve the energy efficiency of street lighting and reducing distribution system losses by such measures as replacing high load transformers with more modern and efficient models.

**Street Lighting:**
Currently the City of Biggs has approximately 162 street lights, most of which are HPS (High Pressure Sodium) street lights. The following is some preliminary data and analysis regarding the concept of replacing HPS lights with LED lights.

| Current City of Biggs Street Lighting Power Consumption Details | | | | | | |
|---|---|---|---|---|---|---|
| Type | Barn HPS 100W | LED 82W | HPS 100W | HPS 150W | HPS 200W | Total |
| Quantity | **97** | **45** | **7** | **4** | **9** | **162** |
| Lompoc-test data | 138 | 82 | 138 | 198 | 266 | |
| Ameren-report | 138 | 82 | 138 | 188 | 250 | |
| Phillips-report | 130 | 82 | 130 | 190 | 240 | |
| Average | 135 | 82 | 135 | 192 | 252 | |
| Hours/day | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 |
| Hours/year | 4197.5 | 4197.5 | 4197.5 | 4197.5 | 4197.5 | 4197.5 |
| Usage/yr (MWH) | 55.1 | 15.5 | 4.0 | 3.2 | 9.5 | **87.3** |

| City of Biggs Street Lighting Power Consumption After All LEDs Installed | | | | | | |
|---|---|---|---|---|---|---|
| Type | LED 40W | LED 82W | | | | Total |
| Quantity | 117 | 45 | | | | 162 |
| Cooper 82W LED (2010)<br>Evluma 40W LED (2016)<br>GE 40W (2016) | <br>40<br>40 | 82 | | | | |
| Average | 40 | 82 | | | | |
| Hours/day | 11.5 | 11.5 | | | | |
| Hours/year | 4197.5 | 4197.5 | | | | |
| Usage/yr (MWH) | 19.6 | 15.5 | | | | 35.1 |
| **Savings** | | | | | | 52.2 |

The conservative estimate indicates a nearly 60% reduction in energy consumption in street lighting.

**Other advantages:**
-Light Placement: we noted many existing lights on short mounting arms. Most new lights would be installed on longer arms to achieve better lighting of the right of way.
-Improved light performance: LED light fixtures tend to provide a whiter light and provide better light dispersal patterns than HPS.
-LED lights are far more reliable than HPS and would reduce future failures, maintenance time and materials costs.

A few GE Evolve LED fixtures and Evluma LED fixtures will be installed in the next few weeks as a test to offer two examples of fixtures so that we can better evaluate their physical installation attributes and their performance in terms of light temperature, intensity, dispersal pattern and appearance. Observations during the test will help to formulate the final specification.

Previously the city purchased 50 LED lights for $401.15 each. Current LED fixture prices (more efficient lights) are at $195 each. We believe that an RFP for the total number of lights, arms and photo control modules would provide additional price benefits. Based upon current pricing we expect to be able to complete the street light retrofit for under $30,000.

**Recommendation:**
Authorize the City Administrator to issue an RFP for LED street lights, mounting arms and photo control modules, authorize the purchase of materials not to exceed $35,000 charged to Fund 054, and approve a budget modification to increase the authorized expenditures of fund 054 by $35,000 to cover the costs of the LED street light retrofit project.

_____
Mark Sorensen, City Administrator