Agenda Item Summary

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Submitted By
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Agenda Item Title
A Motion to Concur with the Public Works Director's Recommendation to Install 3,000 Kelvin LED Lighting as Part of the Village's Residential Street Lighting System Replacement Project

Overview
The purpose of this item is to seek concurrence from the Village Board on the recommended LED street light lamp to be installed as part of the Village-Wide Residential Street Lighting System Replacement Project.

Anticipated Future Actions/Commitments
Once the lighting lamp selection is approved staff will seek competitive bids for lamp materials and contractor costs to install the lamps.

Report
The last Village wide streetlighting system improvement project was completed in the early/mid 1970's. There are over 6,000 street and alley lights in the system. Of that amount approximately 2,500 street lights are considered residential lights. These light fixtures are mounted on top of a 15 foot tall concrete pole. The typical lamp in the fixture is a 100 Watt Mercury Vapor lamp. They primarily exist on the north/south residential streets.

The 2019-2023 Capital Improvement Plan includes the replacement of the existing 2,500 residential lamps with new LED lamps. The FY2019 budget includes the first year of a three year program to complete this work and is budgeted at $170,000 per year in the Sustainability Fund. Work is proposed in the east third of the Village (Ridgeland to Austin, Roosevelt to North Ave.) in 2019, the west third in 2020 and the middle third in 2021.

The Village Board met on February 12, 2018 and again on June 11, 2018 to discuss a Village-Wide Residential Street Lighting System Replacement Project.

At the June 11, 2018 meeting staff presented information regarding a pilot area in the vicinity of the Public Works Center which highlighted four different LED lighting options. The purpose of installing the various options was to gain feedback from the community on the lighting preference.

Below is a summary of the locations of the LED lighting, noting the Kelvin rating and a comment of the type of color:

- Location 1: On the 100 block of S. Taylor, installed 26 Watt "corn cob" lamps, with 3500 Kelvin. The

color is similar to household incandescent lighting.
- Location 2: On the 200 block of S. Taylor, installed 26 Watt “corn cob” lamps, with 2500 Kelvin. The color is orange commonly seen with the Sodium Vapor lighting on streets in Chicago.
- Location 3: On the 300 block of S. Taylor, installed 26 Watt “corn cob” lamps, with 3000 Kelvin. The color is similar to a dim incandescent light.
- Location 4: On the 100 block of S. Humphrey, installed 26 Watt “corn cob” lamps, with 4000 Kelvin. The color is similar to a common “bright white” household incandescent bulb.

The following are notes for the above summary:

1. The LED lamps provide a similar light intensity as the existing 100 Watt Mercury Vapor lamps.
2. The “corn cob” lamp is the screw in type that replaces the existing lamp. To install the LED lamp the existing ballast would need to be removed.
3. Kelvin is the unit of measure on the light color spectrum.
4. The higher the Kelvin the better our eyes pick up detail. In the industry it is referred to as Color Rendering Index or CRI. In other words, if you want security and the ability to give acute details on a face you’ll want 4000 Kelvin or higher. Lower Kelvin diminishes our eyes abilities to pick up finer details. For instance you’ll have a more difficult time describing the color of clothing someone is wearing in lower ends of the CRI.
5. The vast majority of residential street lighting is diffused and cuts the harshness. Most of the lighting is focused downwards. This helps reduce light pollution since the lamps aren’t casting a lot of light into the sky.
6. The existing 100 Watt Mercury Vapor lamps diminish light intensity over time and dull out. Switching to LED lamps will maintain the lamp within 90% of their original wattage output through the life of the lamp, whereas Mercury Vapor goes down to around 40% at the 4-5 year range.
7. Installing LED lamps will not only reduce energy usage and cost but will also reduce maintenance costs since these lamps typically do not burn out as fast as other lamps do.

A survey was placed on the Village website seeking input on the lighting preference. The survey was open from July 2018 into January 2019. The survey results and comments are attached. A majority of the respondents preferred the lighting on the 300 block of S. Taylor, which is a 26 Watt, 3000 Kelvin lamp. On October 2, 2018, staff presented these options to the Environment and Energy Commission. The Commission concurred that the 3000 Kelvin lamp was the preferred option.

Public Works staff completed light readings of the four options and compared them to a control section which included new 100 Watt Mercury Vapor lamps. The results showed that the 3000 Kelvin lamps provided similar lighting levels to the new 100 Watt Mercury Vapor lamps.

Staff concurs with the consensus to move forward using an 26 Watt (or similar) 3000 Kelvin lamp as the lamp for Village wide replacement. Staff will also coordinate with ComEd and apply for their LED Street Light Energy Efficiency Program. A rebate of $0.70 per watt reduced could be received.

Alternatives
The Village Board may request additional information and discuss this item further.