



Agenda Item Summary

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Submitted By

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Agenda Item Title

Presentation and Discussion of Pilot Streetlighting Program

Overview

The purpose of this item is to provide an update related to the residential streetlight pilot program as a follow-up to the February 12, 2018 Special Meeting of the Village Board.

Anticipated Future Actions/Commitments

The Village Board is asked to provide feedback on the pilot areas so that the FY19 budget recommendation can be developed for the 2,500 residential street lights which require retrofitting.

Report

Public Works staff has installed four different LED lighting options in the vicinity of the Public Works Center. The intent of this effort is to display various LED lighting that could be considered in moving forward with a residential lighting retrofit project.

The following 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 30 Watt "corn cob" lamps, with 3500Kelvin. The color is similar to household incandescent lighting.
- Location 2: On the 200 block of S. Taylor, installed 30 Watt "corn cob" lamps, with 2500Kelvin. 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 30 Watt "corn cob" lamps, with 3000Kelvin. The color is similar to a dim incandescent light.
- Location 4: On the 100 block of S. Humphrey, installed 30 Watt "corn cob" lamps, with 4000Kelvin. The color is similar to a common "bright white" household incandescent bulb.

The following are notes & definitions for the above summary:

1. The 30 Watt 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.
3. The K stands for Kelvins. It 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 CRI or Color Rendering Index. In other words, if you want security and the ability to give acute details on a face you'll want 4000K 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 lighting is diffused and cuts the harshness that some people complain about with LED lighting. 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. 4000K matches the current residential 100 W mercury vapor lamps. The examples on the 100 block of S. Humphrey closely mimic the existing lighting when the mercury vapor lamps are new.
7. The existing 100 W 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.

Implementation/Next Steps

To retro-fit the 2,500 existing residential street lights with one of the above options is estimated to cost approximately \$200 per streetlight. The project total of \$500,000 could be phased in over a five years period which is estimated at \$100,000 per year beginning in FY 2019. The above summary was developed based on the previous Board discussion on February 12, 2018 (noted as staff Option 2 in the original agenda materials attached).

The next step would be to gain consensus on the lamp color (or Kelvin). Once this is accomplished then staff can prepare a budget and implementation schedule for the approximately 2,500 residential lights to be retrofit.

Summary of Village Board Special Meeting on February 12, 2018.

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 lights are post top mount fixtures on a 15 foot tall concrete pole. The typical fixture is a 100 watt mercury vapor lamp. They primarily exist on the north/south residential streets.

Until approximately 2004, all Village streetlights were changed every four years. This program was stopped due to budgetary issues.

The attached Residential Streetlighting System Matrix shows four options that could be considered to modify the 2,500 residential streetlights.

All of the options would result in the same light output as putting a new lamp in the existing 100 watt light fixtures. The LED lamps would also result in a 50%-70% energy savings.

Included as attachments is a picture of the existing 100 watt mercury vapor lamp fixture, Option 2, which showing that it looks like the existing fixture, the "Corn cob" insert that goes in Option 2 and a picture of Option 3.

Staff recommendation would be to consider option 2 in a pilot area to determine its acceptance.

Regarding alley lighting there are approximately 1,000 lights in the Village system. There are generally two

lights in the north/south alleys. Some alleys have three lights. These lights are similar to the streetlights in terms of the existing lamps. They are 100 watt mercury vapor lamps that will dim over time. An option to change them out to LED would cost approximately \$350 per fixture or \$350,000 total. Adding an additional light in an alley costs approximately \$550 per fixture. See attached picture.

Alternatives

The Village Board may request staff to create a pilot program of the options or request additional information.