

LED Streetlight Conversion Information

Report Purpose

To inform Council regarding the impact on the County's dark skies commitments, and any environmental concerns with respect to LED lighting, including information on how such concerns are being addressed in other communities.

Recommendation

THAT the LED Conversion option upgrade with FortisAlberta for all Rate 31 streetlights, be approved.

Council History

February 7, 2017 – Council requested additional information on the potential effects of converting to LED streetlights from existing HPS streetlights.

Strategic Plan Priority Areas

Economy: As the cost of energy increases, the potential savings achieved by using LED streetlights will increase.

Governance: Continue a cooperative partnership with business.

Social: LED lights create less light pollution and improve dark skies.

Culture: n/a

Environment: Reducing power consumption improves environmental impact.

Other Impacts

Policy: SER-009-012 Street Lighting, SER-009-038 Light Efficient Community

Legislative/Legal: The *Electric Utilities Act* requires Alberta Utilities Commission approval for tariff changes

Interdepartmental: Transportation and Agriculture Services; Planning and Development Services; Capital Planning and Construction; Facility Services; Recreation, Parks and Culture

Summary

Strathcona County is a Light Efficient Community, which means the most effective and efficient artificial lighting available will be used to minimize energy waste, glare, light trespass and light pollution. According to the International Dark Skies Association (IDA), the Light Emitting Diode (LED) is transforming the way we light our municipalities, offering a chance to radically improve how we use energy and our outdoor spaces at night. The IDA has a list of recommendations to consider when converting to LED lighting that aids in the selection of lighting that ensures safety, protects the environment, and promotes the goal of dark night skies, including using shielded fixtures that emit no light upward, and using "warm white" light to eliminate potentially harmful blue emission. (Enclosure 1)

In 2016, FortisAlberta changed its standard for streetlights to LED technology and is offering an option for those who wish to convert existing streetlights from High Pressure Sodium (HPS) to LED fixtures. The LED lights they use eliminate blue emission and have about 50% lower energy consumption compared to HPS predecessors. They are installing 3,000K LED light fixtures designed to be low on the blue light scale while still providing a comfortable, whiter light than that of the HPS lights. (Enclosure 2)

FortisAlberta has addressed the issue of light pollution through two factors – the amount of up-light and the lumen output (light level) of the fixture. The new LEDs are “cobra-head” fixtures, which are “dark sky” friendly with zero up-light, which means less light pollution and/or sky glow because the light is directed downward. To address the lumen output, LEDs typically require about half of the lumen output of the HPS light to achieve the same light levels on the pavement. This is due to the efficiency of the light source being able to direct the light where it needs to be, versus the HPS light having a lot of wasted light and lack of control.

Today’s LED technology used by FortisAlberta is cost efficient and ensures safety and security, protects wildlife, and promotes dark night skies.

Communication Plan

All urban Sherwood Park residents will be impacted by the LED streetlight conversion. A collaborative communicating strategy with FortisAlberta will be implemented to inform the community of the reduced energy consumption and long-term cost savings. Print, website and radio media will be used to distribute messaging.

Enclosure

- 1 IDA “The Promise and Challenges of LED Lighting: A Practical Guide”
- 2 LED Streetlight Information – FortisAlberta