Operations Department
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Frequently Asked Questions
Town of Niagara-on-the-Lake LED Street Light Conversion

Why is the Town moving forward with an LED streetlight retrofit?

The Town of Niagara-on-the-Lake wants to reduce its energy consumption, maintenance costs and the environmental impact associated with its network of streetlights. By installing LED streetlights, the Town will benefit from significant energy efficiency and cost savings, reduced maintenance, improved lighting quality and greater roadway safety for both vehicle and pedestrian traffic.

What are LED streetlights?

LED stands for Light Emitting Diodes. LED streetlights are energy efficient, virtually maintenance-free, environmentally friendly and last up to 4 times longer than High Pressure Sodium (HPS) streetlights. LED optics are designed to diffuse and distribute the light in a more precise manner than traditional streetlights, reducing glare and lighting only targeted areas.

Unlike most lights currently in use, the raw materials used to construct an LED contain no toxic materials and may be recycled or disposed of in any landfill with no negative environmental impact.

Why switch to LED streetlights?

- Energy costs lowered by up to 70%
- Reduced maintenance costs by up to 80%
- Improved visual acuity
- Reduced light pollution
- Environmentally friendly

Why now?

Innovations in LED technology and production methods have resulted in dramatically reduced pricing for LED street lights in recent years. LED luminaires are a small component of overall production costs, which for many manufacturers have now stabilized. Given the cost of maintaining an old and expensive lighting system versus the immediate savings, which LED street lighting can provide, the answer is LED.

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How many streetlights will be replaced with LEDs?

This project will replace 598 decorative post-top streetlights throughout the Town with LED streetlights.

How much will the Town save when it upgrades to LED street light fixtures?

The Town expects to save an estimated 212,955 kilowatt-hours of energy per year, equivalent to a 67% reduction, compared to our current consumption. LEDs will also help the Town reduce maintenance costs by up to 80% because LEDs are a solid-state technology (no moving parts) and last up to four times longer than the Town's existing streetlights. The retrofit will also improve the Town's environmental footprint by reducing greenhouse gas emissions by an estimated 6.6 metric tons annually, equivalent to the gas emissions from 1.5 passenger vehicles driven for one year.

LED is a more environmentally-friendly option: it contains no mercury and lasts four times longer (four high-pressure sodium bulbs would need to be disposed of properly for everyone LED recycled).

Do LED lights give off less light?

The level of lighting provided by the LED lights remains the same as previous lights. It was not the Town's intent to increase light levels on city streets; light levels were maintained or reduced to the standard RP-8. LED street lights provide a safer light source with better visibility to both pedestrians and motorists. They offer better clarity and improve the ability to identify colors at night.

Roadway lighting criteria is governed by the Illuminating Engineering Society of North America standard RP-8-14 and this project is designed to meet these criteria.

The LED Streetlight Conversion Project included a change from a drop glass fixture to a flat glass fixture, which changes how light is distributed on the roadway and associated area. This change supports the cities design criteria of being "Dark Sky Compliant" and preventing light from trespassing onto adjacent spaces where it is not intended to be.

The primary purpose of roadway lighting is to provide drivers the ability to navigate roadways safely and recognize objects or pedestrians within the road allowance; the intent is not to provide perimeter lighting for homeowners (in fact it is discouraged and often a source of complaints).

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Please note: Pedestrian lighting systems are a separate set of poles and fixtures at reduced heights/spacing and are reserved for areas with high pedestrian volume, downtown, or where pedestrian security is an issue (i.e. sidewalks tunnels or alleyways).

Will LEDs reduce or contribute to the ever-increasing light pollution problem?

LED lights eliminate the “orange sky glow” found over many cities since the LED is directional and does not disperse in all directions the same way older light technologies do. Regarding night sky pollution, the LED fixtures proposed are “Dark Sky Compliant” as all light is directed downward.

What are the anticipated installation impacts for my neighborhood?

It is anticipated that residents and business owners will experience only minor impacts as a result of this project. There will be no permanent construction sites, as crews will be mobile during the installation phase. Proper traffic control will be in effect, with clear signage directing motorists around the installation locations.

When will the work take place?

Residents will soon start noticing improved lighting along streets and roads. Starting October of 2020, installation crews will begin installation and are expected to be complete by December of 2020.

What wavelength/color temperature (°K) are the LED lights?

The light color is a cool white (not a daylight). Glare and other factors were fully considered. The Town has determined that the best choice is to use a 3000K color temperature for the LED conversion, which is a closer resemblance to the existing fixtures. The previous conversions utilized a cooler light that was often a source of complaints.

How do streetlights turn on/off?

Streetlights are controlled by an individual photo cell which turns the lights on/off based on light levels present, so lights turn on when it gets dark and off when it gets light.

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What is the Town doing to improve lighting deficiencies?

This project is an opportunity to improve the Town's street lighting. The Town's Consultant will complete an audit of the Town's existing system. The audit will be used to complete a photometric design for the new LED system that meets RP-8 industry guidelines for street lighting wherever possible. As a result, each street will have an optimal level of illumination given the current characteristics of the street such as pole spacing and height, road width, etc.

How were the old lights disposed?

All the old lights will be recycled in an IESO-licensed recycling facility.

What is the Town doing with all the streetlights that are being removed?

The existing High-Pressure Sodium (HPS) streetlights will be removed and recycled at qualified environmental disposal centers.