LED streetlights FAQ

Q: I've had LED lights in my own home for years, why is the City so late to adopt this energy- and money-saving option?

A: The City of Bellingham began exploring LED use approximately 12 years ago. Although LED technology has been available for decades, it has only recently become cost-competitive for roadway use. In April 2014 the Bellingham City Council voted to approve the LED conversion.

Q: I've heard that some feel LED lighting is too bright, is that a problem?

A: We are aware of varying opinion on LED lighting - it's why we have been careful to research LED implementation in other cities, tested products from several different manufacturers, and followed industry standard (best practice) as well as popular choices in our final selections.

It is encouraging that most, in fact nearly all, who have shared their opinion on this project are supportive. A few people have expressed concern that there may be too much glare; we have instructed the contractor to replace shielding on all lights that currently have glare shields.

Q: Is it really necessary to have new LED lighting?

A: Not only is LED lighting more economical, LED is more environmentally friendly and safety enhancing. It is also vital to the City's commitment to Legacies such as "Safe and Prepared Community" and "Quality, Responsive City Services."

Better light quality and illumination can make Bellingham safer, as the new streetlights will improve visibility for drivers, bicyclists and pedestrians, and keep streets lit for those walking alone at night. The white light emitted by LEDs shows colors as they really are, and provides better visibility. The new LED lights will utilize a special lens to direct the light, to reduce light pollution and improve efficiency.

The LED lighting switch will save approximately $240,000 dollars annually and reduce the city's carbon footprint significantly by reducing greenhouse gas emissions.

Most high-pressure sodium streetlights, which rely on chemicals and wires that degrade over time, must be replaced every 3-5 years. LED lights, which rely on computer chips and electronic parts, last up to six times longer and are less likely to unexpectedly fail. The LED fixtures the City is installing are guaranteed by the manufacturer to last a minimum of 10 years, but are expected to last for at least 20 years.

The old fixtures, which fail every few years, contain mercury and lead. LED fixtures are often 100% recyclable and don't use any toxic substances.

Q: It seems like switching from the current street lights to LED is pretty expensive, at least on the front end. Is it worth it?

A: Yes. Powering the City's current high pressure sodium streetlights costs more than $600,000 each year. LED technology can deliver better lighting with 50-60% less energy. (Although LED technology has been available for decades, it has only recently become cost-competitive for roadway use.) The energy savings from the new LED streetlights will pay for the cost of the $4 million dollar project within 12 years.

Q: What makes "special controls" for these lights so important? How do they work?

A: Beginning in March, each streetlight will be equipped with a node that alerts the central network when it fails or no longer works as expected. Currently, the only way to find out if a light has failed is by observation. The new system will allow the City to immediately pinpoint every single outage and dispatch a maintenance team to get it up and running.

These nodes, provided by Echelon, can relay exactly how much energy each streetlight is using and issue problem alerts. The controls can also dim lights on command during low occupancy times to save additional energy.

These nodes communicate back to a central command center through a hybrid system of two technologies. The first is a radio frequency (RF) signal that communicates to a small localized network of nearby lights. If one fails, the information is relayed via a “daisy chain” signal back to city staff. The second is a signal sent over the power lines. This allows the city to rely on the existing infrastructure in place to communicate information and control the streetlights.

Using both technologies throughout the system enables the city to select the best technology for each specific streetlight. For example, hills or trees can block wireless communications between fixtures, so in those cases it may be better to communicate over the power line. In other circumstances, it’s easier to communicate wirelessly through RF signals. A flexible strategy like this is more cost-effective and less likely to fail than a single technology.

These controls alert the city when lights fail, relay the energy consumption of each streetlight and can dim the lights during low occupancy periods.

Controls help reduce maintenance costs. For example, with controls added, crews don’t have to hunt for outages, and can instead schedule maintenance of multiple nearby light outages together. This saves the time of maintenance professionals, as well as gas and truck costs.

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