GSMA™

The brighter way to light up your city.

Verizon Intelligent Lighting delivers cost savings, while helping to maintain safety and improve sustainability and quality of life.

Many city leaders are well aware of the cost benefits of LED lights over traditional street lights. But LEDs alone are an incomplete solution. Lighting control provides additional cost savings and quality-of-life benefits when used in conjunction with LEDs.

Challenges

LEDs on their own can't be remotely monitored or controlled. With traditional street lighting, regular on-the-street inspections and resident complaints are the ways to determine if they're working properly. And both of those can be costly - the former financially and the latter in good will.

Stand-alone LEDs also can't be dimmed or brightened remotely. That can waste money and energy, while leaving residents frustrated with too little or too much light.

And street lights that operate at full intensity all night can contribute to light pollution, which may disorient wildlife and negatively impact human sleep and health.[2]

To gain the most benefit from their street lighting—while minimizing costs and energy use—cities that are transitioning to LED lights should implement smart lighting controls.

Solution

The Verizon Intelligent Lighting solution transforms street lights into smart lights, enabling operators to monitor and control them remotely to increase efficiency, effectiveness and sustainability while decreasing costs.

Intelligent Lighting converts LED fixtures into sensor-equipped smart devices that capture and transmit data. The solution connects to the Intelligent Lighting Central Management System (CMS) platform, so operators can remotely manage and monitor every light in the system from a single, user-friendly interface.

The Intelligent Lighting solution includes three interacting components, bundled together

Lighting control nodes

Verizon cellular network

CMS

Benefits

Making the business case for Intelligent Lighting is easy, as the solution provides both hard-dollar savings and enhanced community value when compared to LED-only lighting.

With the Intelligent Lighting platform, operators can monitor, manage and optimize street lights remotely, in near real time, minimizing costly truck rolls.

Lights can be controlled individually or by group, and programmed to dim, turn on or turn off, according to preset definitions. For example, lights can be controlled to dim in residential areas late at night, when there is limited pedestrian or driver activity, and to brighten during early evening, special events or inclement weather.

The platform also empowers users to check status information in near real time, providing insights into energy/power consumption, connectivity status, usage duration and more.

That means operators can fine-tune individual lights or groups of lights for optimal savings, while providing residents and visitors with quality lighting when it's most needed.

[1] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812554
[2] https://www.nps.gov/articles/nocturnal_earthnight.htm

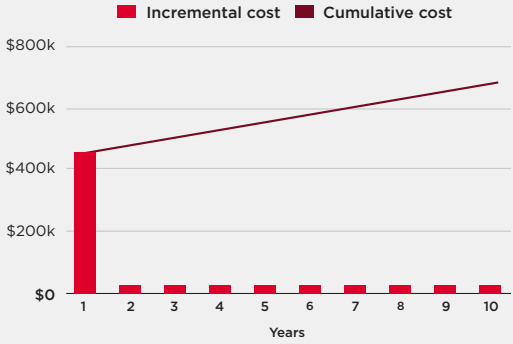
verizon business

Operators also know exactly when and where lights go out, which helps them reduce costly and time-consuming inspections and improve response times. And those quick repairs and replacements can make for safer streets and better community relations.

Cost

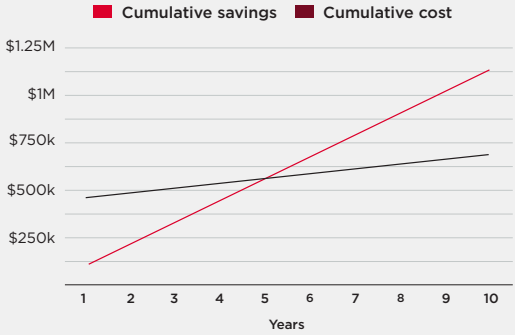
A typical smart lighting control implementation for 5,000 street lights would include a one-time charge for hardware, warranty and activations, along with yearly recurring Software as a Service (SaaS), which includes connectivity costs. (Because the system uses cellular connectivity, there are no field network deployment or ongoing network maintenance costs.) In our example, we assumed that the customer is installing Light Sense nodes at the same time when transitioning to LED luminaries. As such, the installation fee is excluded.

Intelligent Lighting: Incremental cost and cumulative cost



For our example, we used 20% energy savings due to dimming and a significant reduction in maintenance costs, eliminating a large percentage of up to $400-per-truck-roll expenses.

Cumulative savings vs cumulative cost



Based on Verizon's estimate of 20% savings in energy cost for dimming and 50% savings in maintenance cost for items such as reduced truck roll

A typical payback period for installing a smart networked lighting-control solution is four to six years.

Other benefits

There are other qualitative benefits to Intelligent Lighting as well, including:

- Positive environmental impact, due to lower energy consumption and less light pollution
- Better experience for constituents, thanks to more efficient, sustainable and proactive city services
- Improved lighting uptime, which helps to maintain safety in neighborhoods and on roadways
- The ability to communicate lighting stats with citizens and city officials
- The capability to incorporate the solution into city dispatch centers, enabling location data for faster repairs

Intelligent Lighting can help cities reduce street-lighting energy and management costs through:

- Proactive maintenance; fewer costly truck rolls and no more manual inspections
- Remote monitoring, management and control
- Dimming; reduced burn time and extended bulb lifetimes
- Automatic outage detection

Lack of adequate lighting can lead to increases in traffic accidents[1] and crime.[2]

Learn more

Verizon offers expertise in outdoor lighting to help cities, utilities, and businesses of all sizes better manage resources and create inviting communities.

Learn how our Intelligent Lighting solution can help you deliver smarter, more cost-effective and sustainable services. Contact your Verizon Representative, or visit our website by visiting: **https://www.verizon.com/business/products/internet-of-things/iot-applications/intelligent-lighting/**

[1] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812554

[2] https://www.nps.gov/articles/nocturnal_earthnight.htm