

Moving Forward

As the City of Holland updates its lighting systems to LED technology, it is a visual sign that we are committed to becoming a 21st Century community. This project marks a significant step by the City to reduce our use of electricity, thereby reducing greenhouse gas emissions while saving money and providing quality lighting, leading to a brighter future for Downtown Holland.



CITY OF HOLLAND
MICHIGAN

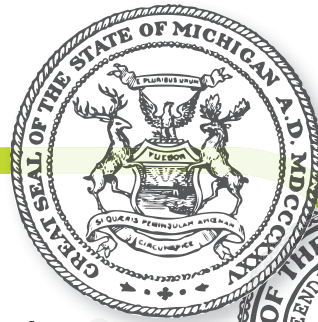
Downtown Pedestrian Lighting

LED Retrofit Project

*Downtown
Holland*

Funding Sources

Federal
Funding
via the
State of Michigan



City of Holland



Holland
Board of Public Works



*City of Holland
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The Project

The City of Holland has retrofitted over 300 downtown street lamps with new Light Emitting Diode [LED] bulbs. This project was primarily funded by a \$113,000 Federal Energy Efficiency and Conservation Block Grant utilized to demonstrate the viability of this lighting system in an urban setting and to showcase LEDs for their illumination qualities.

Reasoning behind the change includes, but is not limited to:

[Efficiency]

Holland City government set a goal to become more energy efficient by replacing many of its relatively inefficient metal halide pedestrian light fixtures with LED fixtures that produce more light with less electricity.

[Economy]

By updating many of its lighting fixtures to LEDs, the City will save 65% on its downtown pedestrian lighting energy bills, equating to annual cost savings of approximately \$10,000. With an average lifetime 7.5 times longer than traditional bulbs, reduced replacement and maintenance costs will continue to save the City money in the long run.

[Environment]

Metal halide bulbs also contain mercury vapor, making disposal and handling hazardous. Once complete, the retrofit will result in a net savings of 75 metric tons of carbon dioxide [CO₂] emissions per year, decreasing the City's overall carbon footprint.

So, what's the difference?

METAL HALIDE VS. LIGHT EMITTING DIODE



Out with the old...

The old metal halide lamps are the same kind commonly used in athletic fields, factories, warehouses and parking lots. These lamps have a low initial cost and are used in settings where large amounts of light are often required.

Light is produced by passing an electric arc through a mixture of gases which require optimal temperature and pressure for operation, resulting in extended warm-up times for the lamps to achieve full brightness.

Because the average life of metal halide lamps is 10,000 hours, continuous maintenance and frequent replacement is both commonplace and expensive.



...and in with the new.

LEDs are known for their highly energy-efficient operation. Compared to metal halide, fluorescent, argon and other bulbs, LEDs have a higher light output per unit of power input.

In contrast to the four to six minute start-up time for metal halide bulbs, LEDs feature instant on and instant off operation, creating a safer environment in the event of momentary power failure.

Although light emitting diodes carry a high up-front cost, an average life of 75,000 hours reduces the need to replace bulbs and will save the City thousands of dollars in capital costs alone.