

**Public Works Committee  
June 13, 2016  
Item 7.1**



**Hamilton**  
Public Works

**Public Works Department  
Engineering Services Division  
Geomatics & Corridor Management**

## **Street Lighting LED Update**

*Providing services that bring our City to life !*

# Presentation Overview

- LED Conversion Review
- Introduce 2016 and forward program

- Community
- People
- Processes
- Finance



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**2015 HIGH WATTAGE  
STREET LIGHT INCENTIVE PROJECT**

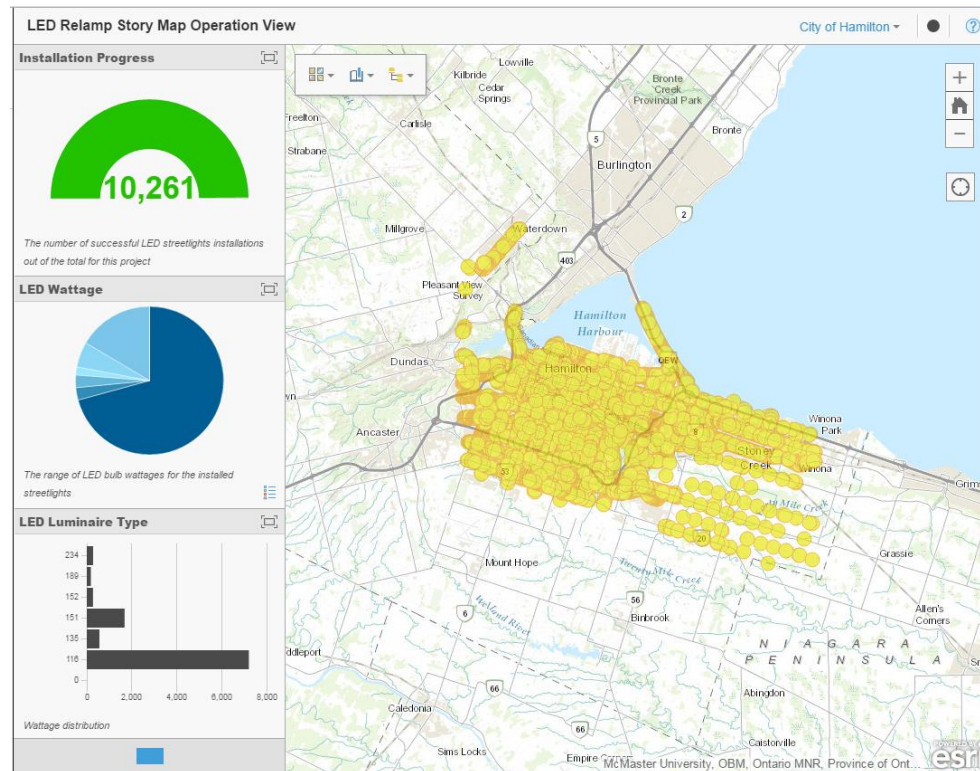
# 2015 LED Conversion review

- Over 10,000 lights replaced at a total project cost of \$4.9M.
- Received a \$3.8M incentive rebate from the Province
- The project borrowed funds internally and will pay back the investment in a 2 year period.
- The lights were targeted at the highest energy usage, and generally were located on arterial or collector roadways.

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## Horizon Utilities announces \$3.8 million incentive for Streetlight conversion that saves Hamilton \$800,000 per year

*Teamwork between local utility and City of Hamilton pays off*

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"ALONG WITH SAVING TAX DOLLARS, THE LED LIGHTS ALSO REDUCE THE CITY'S ENVIRONMENTAL FOOTPRINT. WE'RE LOOKING AT 10.5 GIGAWATT-HOURS OF ANNUAL ENERGY REDUCTION – THAT'S ENOUGH ENERGY TO TAKE 1,200 HOMES OFF THE GRID."

**Gary Moore**  
Director of Engineering Services,  
City of Hamilton



### CITY OF HAMILTON LED STREET LIGHTING

With streetlights accounting for about

visibility and safety along the City's streets and sidewalks, the LED lights consume 60 per cent less electricity and will save about \$800,000 per year in electricity costs.

The city was approved to receive a \$3.8 million energy incentive – or the equivalent of \$332 per light – through the IESO saveONenergy incentive program. The LED lights also minimize light pollution and are designed to operate maintenance-free for upwards of 20 years. Adaptive controls on the system make it ready to accept dimming signals, which could further reduce energy consumption.

ENVIRONMENTAL SUSTAINABILITY 19



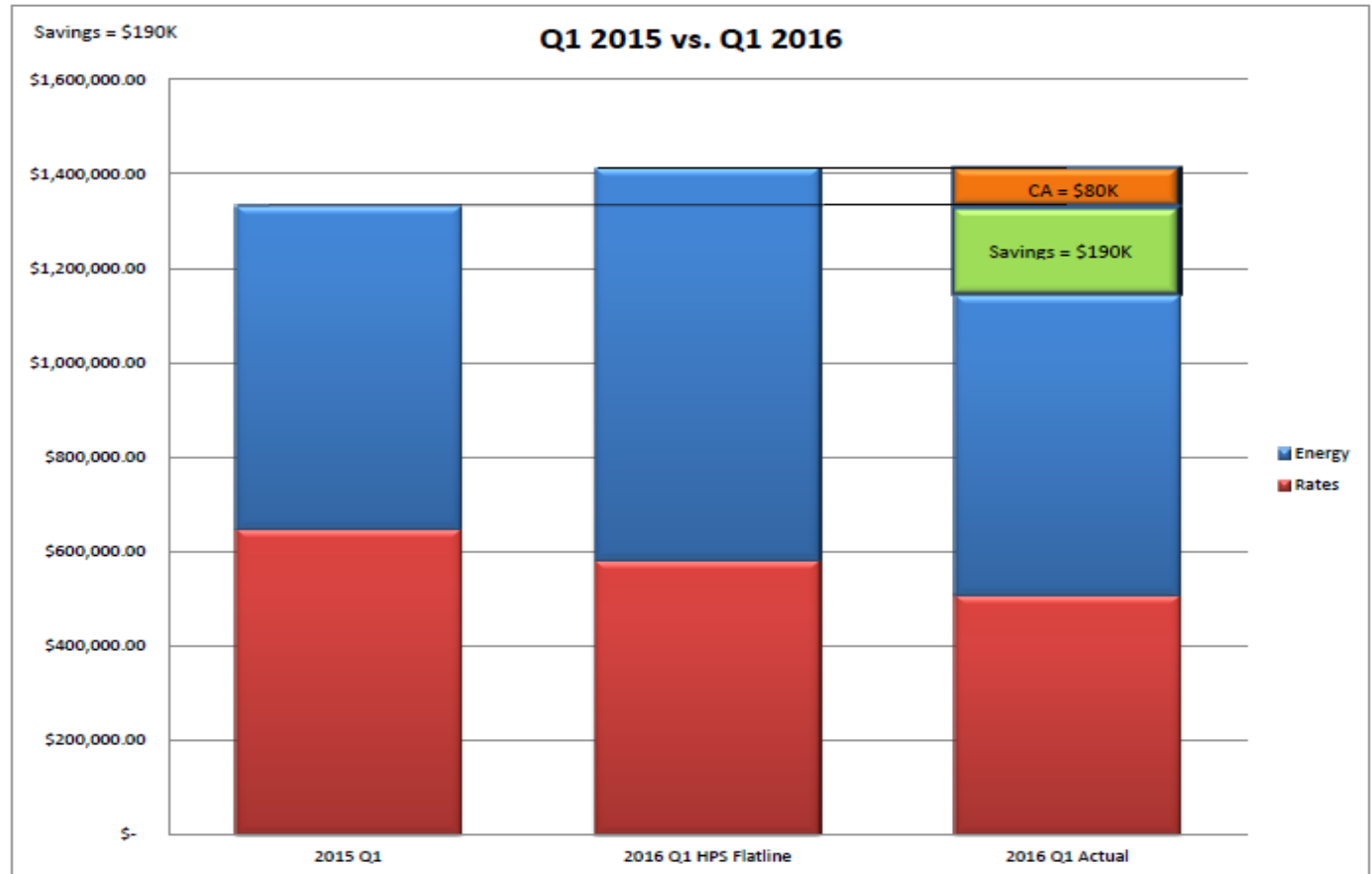
# Quarter over quarter review of financial impact

In the 1<sup>st</sup> quarter of 2016 we have reduced \$190K in energy expenses due to the LED conversion. We have cost avoided an additional \$80K .

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# 2016-2019 LED conversion program

Starting Q3 this year we have scheduled to replace 8000 lights

Our program will extend until 2019 and we will replace all the standard “cobra head” fixtures in Hamilton by that time. For a total of 27,000 lights in this program.

This program will reduce our overall energy use by greater than **50%** **or 4 MW** of energy once completed while increasing service levels.

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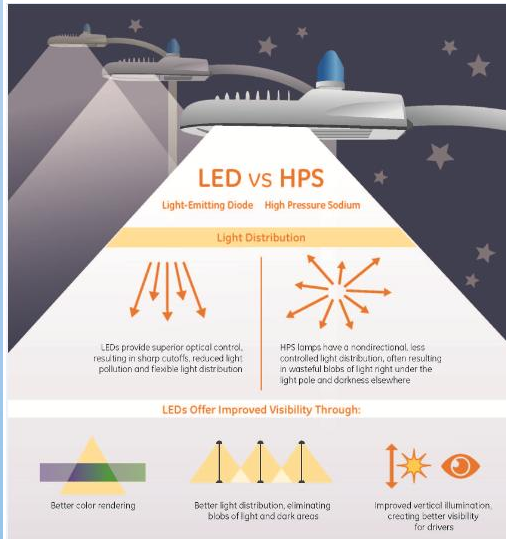


# The LED advantage also includes higher service levels and compliance with Dark Sky requirements

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## Our LED Street Lights:

- use less energy
- light sidewalks and roads better
- are Dark Sky approved and result in less light pollution

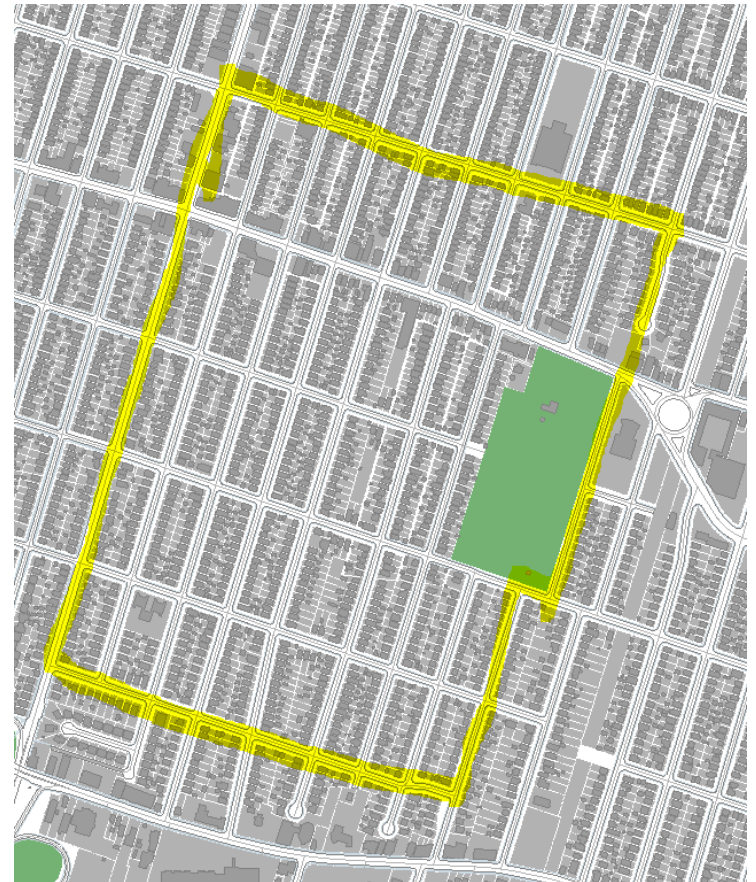


The Fixture Seal of Approval provides objective, third-party certification for luminaires that minimize glare, reduce light trespass, and don't pollute the night sky.

# Environmental Benefits 2016-2019 program

By reducing an additional 2.4 MW after the 2015 program the City will create these additional benefits annually:

- Reduce 1028 tons of CO<sub>2</sub> which is equivalent to 47,000 trees
- Offset 1071 homes of energy



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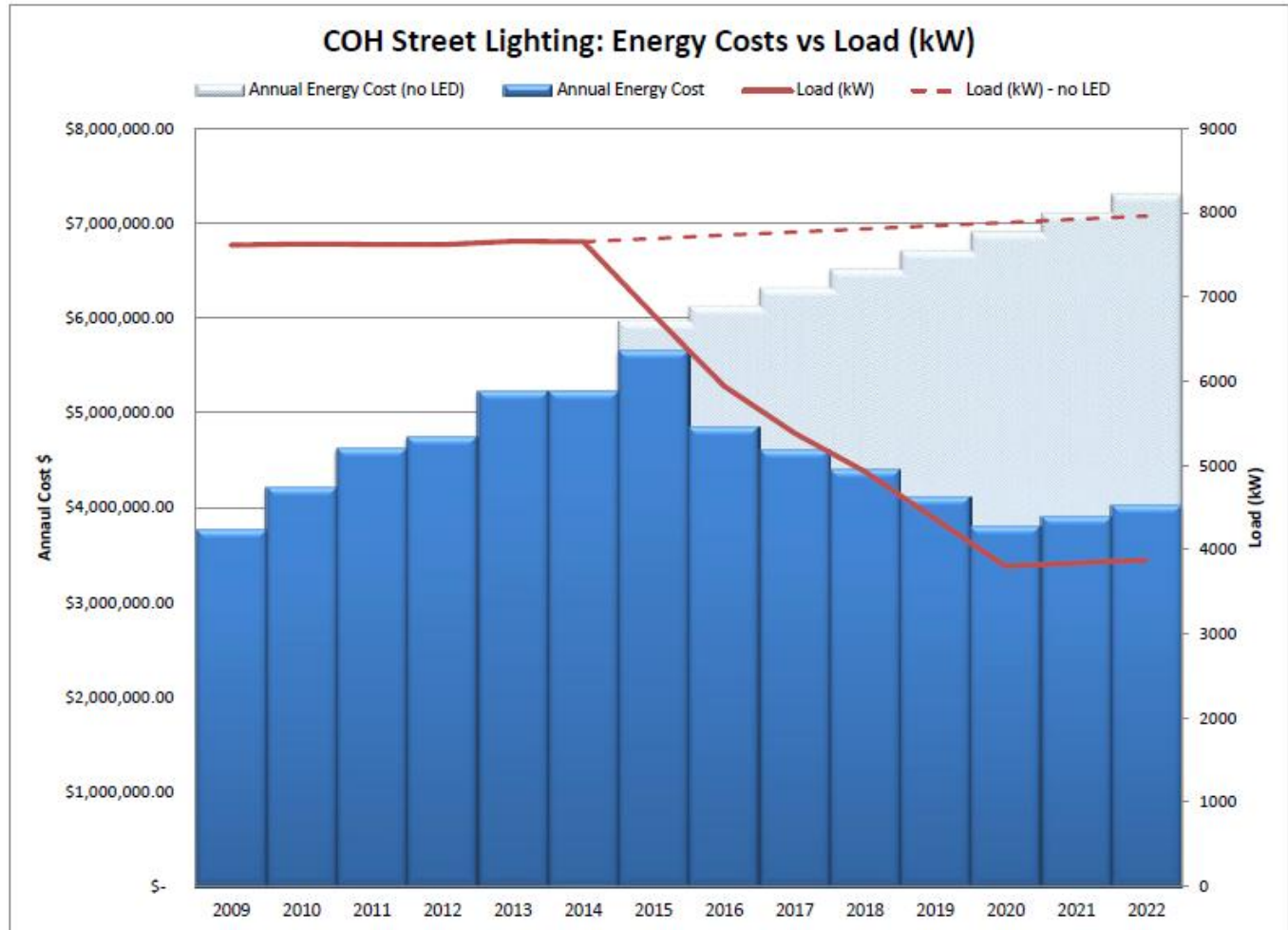
# 2016-2019 energy usage and cost

Without an LED conversion the City will be exposed to greater operating costs.

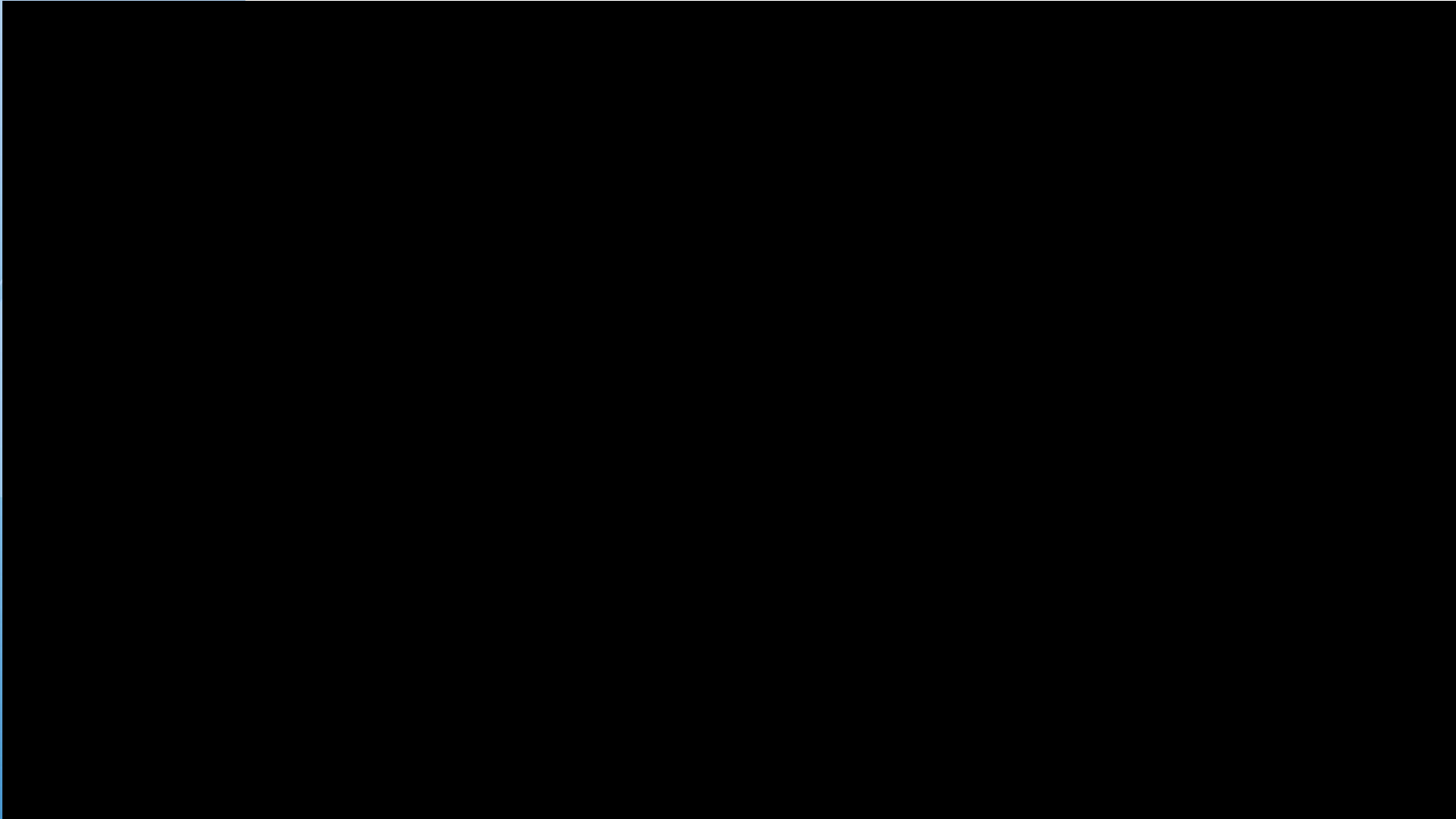
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# LED Conversion 2015 recap



# Closing thoughts

- For 2016 we reduced our operating budget \$200K over 2015.
- In 2015 we were successful in the largest incentive to date for a street light project
- From 2016 to 2019 we will further reduce our energy consumption
- This reduction will allow the City to save \$3M annually in operating costs
- LED systems have a 10 year warranty and we project maintenance savings after the removal of the older lights.

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