

TOWN OF OAKVILLE

LED CONVERSION

Case Study



ENVIRONMENTAL LEADERSHIP AND SUSTAINABILITY THROUGH LED STREETLIGHTING

SUMMARY

The Town of Oakville has become an environmental leader through its conversion of 15,851 high-pressure sodium (HPS) street lights to light-emitting diode (LED) street lights. Not only did the LED conversion improve overall aesthetics, it also increased the town's street lighting performance, illumination, and uniformity, while providing luminaires that last four times longer, utilize approximately 50% less energy, plus reduce maintenance costs. The LED conversion contributes significantly to the Town of Oakville's commitment to improving programs and services that are both accessible, and environmentally and fiscally sustainable.

PROJECT HIGHLIGHTS

Project Site:
Oakville, Ontario

LED Conversion:
15,851 total fixtures of which 5,709 were decorative fixtures

Project Budget:
\$12.6 million

Save-On-Energy Rebates:
\$865,000 (estimate)

Energy and Maintenance Cost Savings:
\$971,000 annually



THE CHALLENGE

With a vision to be the most livable town in Canada, the Town of Oakville is continuously improving programs and services that are both accessible and environmentally and fiscally sustainable. With that, it's only suitable that the Town of Oakville wanted to improve their aging High Pressure Sodium (HPS) street lights to light-emitted diode (LED) luminaires to provide their residents with increased lighting performance, improved illumination and uniformity, while significantly reducing energy and maintenance costs. The LED Conversion program also included the implementation of an adaptive control system to allow for remote monitoring of all street lighting fixtures for improved asset management and further energy saving opportunities.

THE SOLUTION

The town's LED conversion project encompassed 15,851 street lights that illuminate both road and sidewalk systems. The town provided total funds of \$12.6 million and qualified for LED retrofit rebates offered under the Ontario Power Authority's (OPA) Save-On-Energy program. A two-phase LED street light conversion program was developed and approved as part of the Town of Oakville Capital Budget process. Phase two of the program was awarded to King Luminaire Co. Inc., in partnership with Tymat Solutions, to convert approximately 5,700 decorative luminaires to LED.

“We have been very pleased with the quality of King Luminaire's products, their technical expertise and their unwavering customer support.”

Martin Maguire, Manager – Traffic Operations, Town of Oakville



THE RESULTS

The project's actual costs were in-line with the total budget estimate. Using the Ontario Power Authority's (OPA) Save-On-Energy incentive program, total estimated rebates of approximately \$865,000 will be provided which off-set conversion expenses and improves the payback time period.

High efficiency LED luminaires typically utilize 50%-70% less energy than HPS fixtures, while maintaining the same lighting levels. Year over year comparisons of energy costs for street lighting both before and after the LED conversion project have indicated a decrease of approximately \$740,000 with further opportunities to decrease energy consumption with practices such as dimming fixtures during select time periods.

With LED luminaires typically lasting 15-20 years in comparison to HPS fixtures which require maintenance approximately once every five years, the Town of Oakville has estimated their maintenance savings at \$231,000 since the system-wide introduction of LED fixtures.



HIGHLIGHTS

Energy Cost Savings:

- Based on a comparison of monthly consumption between 2015 and early 2018, average monthly consumption decreased by 51%.
- A comparison between the last full year prior to the LED conversion program in 2015 and since the conversion began in 2017 indicates that street lighting energy costs have decreased by approximately \$740,000.
- The LED conversion contributed significantly to the Town of Oakville's environmental and sustainability goals by reducing its energy consumption.

Maintenance Cost Savings:

- The maintenance savings due to the lower maintenance requirements and extended life span of LED fixtures is estimated at \$231,000.

“Upgrading to LED streetlights reflects council’s commitment to environmental leadership and sustainability.”

Oakville Mayor, Rob Burton

Adaptive Control System Compatibility:

- The LED streetlight conversion program included the implementation of an adaptive control system which allows for remote monitoring of all street lighting fixtures under the town’s controls for improved asset management and further energy saving opportunities.
- All of King Luminaire’s LED fixtures are compatible with adaptive control systems to further reduce energy costs with practices such as dimming fixtures at select periods of the night.

References

- <https://www.oakville.ca/>
- Town of Oakville, Roads and Works Operations Department Community Services Committee Report, June 18, 2018
- <https://www.insidehalton.com/news-story/6378880-town-of-oakville-begins-conversion-to-led-streetlights/>



THE STRESSCRETE GROUP

With manufacturing facilities in five North American locations, The StressCrete Group produces an extensive line of high performance decorative outdoor lighting fixtures, decorative spun concrete and metal poles, plus pole arms and accessories, bollards and site amenities. We also manufacture a vast range of spun concrete poles for power distribution and transmission, sports lighting, high-mast lighting, and specialty poles for the electrical and communications industries.

We are a family business that operates by the core values of honesty, integrity, compassion and respect to better the lives of our employees, their families, our customers and the communities we represent. The StressCrete Group services multiple market segments through two divisions:

- StressCrete Ltd., established in 1953, is the longest-operating, most experienced manufacturer of spun concrete poles in North America. With plants in Alabama, Kansas and Ontario, we offer the broadest, most diverse range of spun concrete poles and bollards in the industry, with quality second to none.
- King Luminaire Co. Inc. produces a comprehensive assortment of high performance outdoor luminaires, metal poles, pole arms and accessories, plus bollards and site amenities. With an array of state-of-the-art LED Technology and HID optical systems, and plants in Ohio and Ontario, King Luminaire is a North American leader in the outdoor lighting industry.

At The StressCrete Group, we provide every customer with the highest quality innovative products and work as a team to create and maintain life-long customers through world class service.