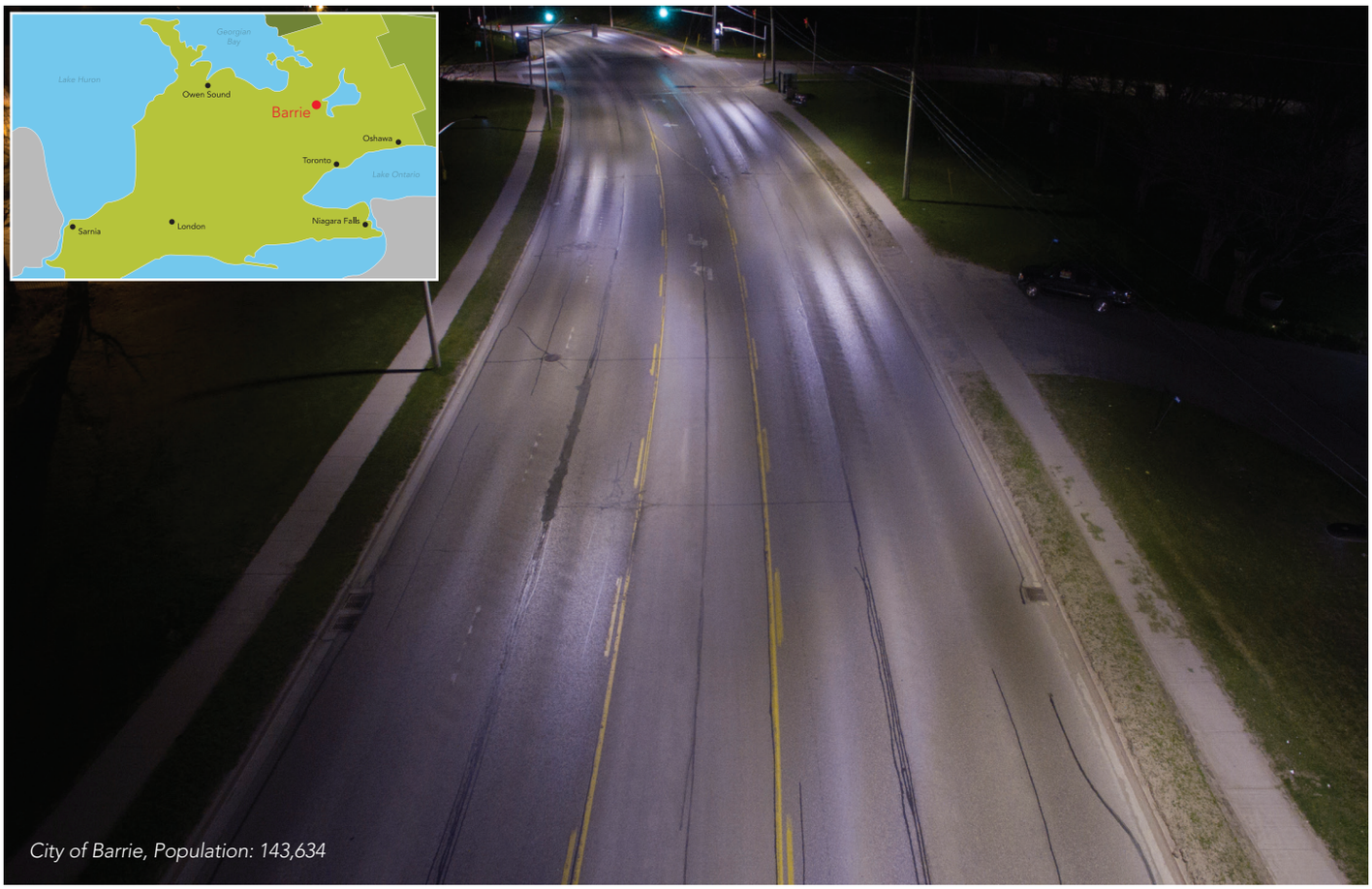
The City of BARRIE

City of Barrie

ONTARIO, CANADA

The City of Barrie is located in Central Ontario, Canada, on the western shore of Lake Simcoe, a short one-hour drive from the City of Toronto. Barrie, home to 143,634 residents, is situated within the northern part of the Greater Golden Horseshoe, the most densely populated and industrialized region in Ontario.

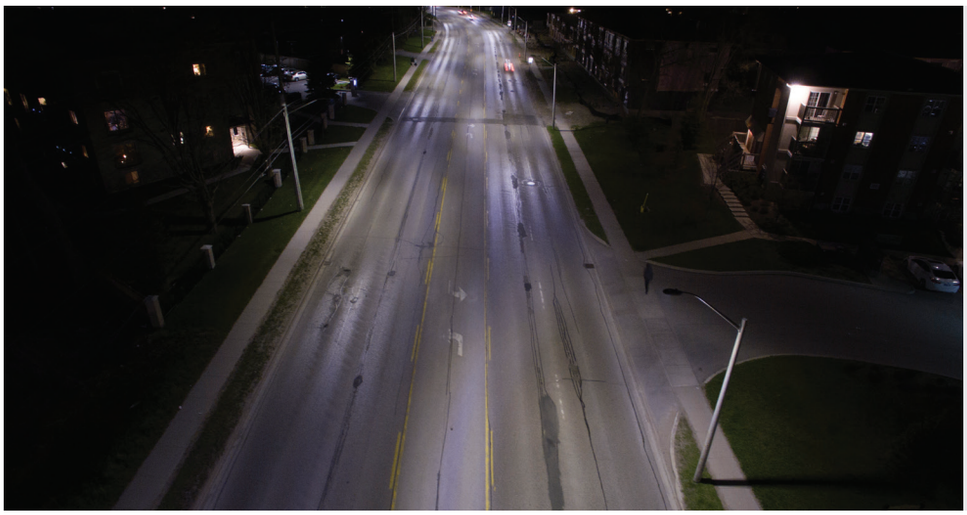


City of Barrie, Population: 143,634

OVERVIEW

+ 10,622 LED streetlights installed in only 57 days
+ $950,000 in energy and maintenance savings
+ 60% reduction in energy consumption
+ 50% savings in energy costs
+ Up to 80% in reduced maintenance costs
+ Approximately 12,000 metric tonnes of greenhouse gas eliminated over the life of the luminaire, equivalent to the greenhouse gas emissions from 2,535 passenger vehicles driven for one year

LAS REALTERM ENERGY CREE



Benefits of an LED upgrade:

+ Typically achieving between 50%-70% savings in energy consumption
+ Up to 80% maintenance reduction
+ Improved visual acuity
+ Reduced light pollution
+ Reduced greenhouse gas emissions

OPPORTUNITY

In 2014, the Municipality of Barrie wanted to significantly reduce its energy consumption, maintenance costs and the environmental impact associated with its network of streetlights. By installing LED streetlights, the City realized that it could not only achieve substantial energy and cost savings, but also improve its overall lighting quality and thus its roadway safety for both vehicle and pedestrian traffic.

The LED retrofit was approved by the City Council as part of the 2015 Budget, at a cost of approximately $5,000,000. However, the City determined that this upgrade would save more than twice that amount in energy and maintenance costs over the next 10 years. LED streetlights are projected to reduce Barrie's energy consumption by 60% and its maintenance costs by up to 80% per year. The new LED lights also included a 10-year warranty. These energy savings are projected to be 5,179,672 kWh per year, which is equivalent to an annual reduction in greenhouse gas emissions of 518 metric tonnes.

The Independent Electricity System Operator (IESO) Incentive Program that applies to exterior LED lighting paid for a substantial portion of the LED Streetlight Project. The City applied for the program and was approved for an incentive in the amount of $962,000, or nearly 20% of the total cost of the project.

SOLUTION

Barrie's City Council entrusted partners LAS and RealTerm Energy to assess its existing streetlight network, create an energy efficient and cost-effective street lighting design and coordinate the purchase and installation of the new LED lights from CREE Canada, one of the world's leading LED manufacturers. Working with LAS, RealTerm Energy and CREE Canada, Barrie was able to take advantage of the expertise and buying power of a province-wide partnership to install a cost-effective solution to the problem of rising energy and maintenance costs.

"We selected LAS' Streetlight Program because we were confident that the partners were in a position to finish our project in the timelines we required. Their relationship with CREE, their installation record and IESO application experience put them at the front of the line to get the project done quickly and properly," said Barry Thompson, Manager of Energy Management for the City of Barrie. "Plus, we believe the LAS program represented the right approach to the project. Many municipalities seemed to be going with a one-for-one replacement and we trusted the GIS mapping and the photometric design to bring additional value to the project," continued Thompson.

In the fall of 2015, RealTerm Energy delivered a complete turnkey LED streetlight upgrade in the City of Barrie. The Municipality had ambitious goals of finishing the entire project by the end of 2015 in order to qualify for the provincial incentive.

"The LED streetlight conversion project went very smoothly. We found their field crew to be extremely responsive to any issues or requests we made and everything was done in a very professional manner."

Barry Thompson
Manager of Energy Management

LAS REALTERM ENERGY CREE

With a proven installation protocol that allowed for rapid deployment without any sacrifice in the quality of the installation, the conversion of all 10,622 LED streetlights was completed in 57 working days, several weeks ahead of the original completion date. Installation crews worked day and night to make this happen. RealTerm Energy also provided a real-time installation map that was posted on the City's website allowing the installation progress to be tracked by all residents.

"The LED streetlight conversion project went very smoothly. We found their field crew to be extremely responsive to any issues or requests we made and everything was done in a very professional manner," added Thompson.

BENEFITS

The LED retrofit has delivered a number of improvements to the City. Firstly, a substantial drop in energy use and corresponding drop in its utility bills gave the municipality a $280,000 cost avoidance in 2015, which was unforeseen at the outset of the project, owing to RealTerm Energy completing the project well ahead of schedule. In 2016, a full year of energy cost reductions of nearly $700,000 and maintenance costs reduction of $253,440 are expected. Secondly, with better lighting quality and reduced light pollution, the city has noticeably less excessive brightness in its lighting profile. One of the concerns residents had expressed prior to the project going ahead was that LED might be too bright. However, through Real Term Energy's design process and LED colour selection from the wide catalogue range of CREE fixtures, this has turned out to be not a concern at all.

Annual Hydro savings	**$696,650**
Annual Maintenance savings	**$253,440**

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Barry Thompson
Manager of Energy Management

	Before Upgrade	After Upgrade	Savings
Total Number of Fixtures	10,622	10,622	---
Demand	1,995 kW	787 kW	61%
Annual Electricity Consumption (kWh)	8,600,402 kWh	3,420,730 kWh	60%
Annual Energy Cost	$1,400,000	$703,440	50%
Annual Maintenance Cost	$330,000	$76,560	77%
Total Annual Cost	$1,730,000	$780,000	55%

OUR SERVICES

GIS Data Collection

Investment Grade Audit

Photometric Design

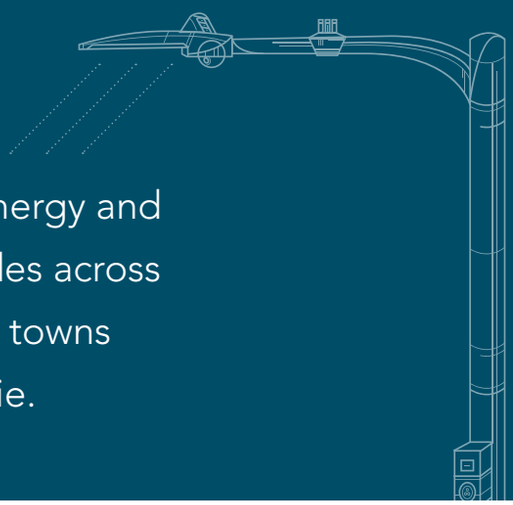
Incentive Application & Paperwork

Installation & Project Management

Recycling

Oversees Billing Changes

Final Report & Binder



The partnership between LAS, RealTerm Energy and CREE is leading the LED streetlight upgrades across Ontario communities in over 140 cities and towns including Niagara Falls, Georgina and Barrie.

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Local Authority Services (LAS) is a preferred provider of competitively priced and sustainable co-operative business services for Ontario municipalities and the broader public sector. Part of the AMO family, LAS helps its customers "save money, make money, and build capacity."

RealTerm Energy Corp., a Realterm company, is redefining the municipal street lighting market with intelligent LED lighting systems and services that deliver unmatched energy and maintenance savings. We create and foster long-term partnerships with forward-thinking private, public and government market leaders to deliver innovative and cost-effective lighting solutions.

Cree Canada Corp. provides interior and exterior LED lighting solutions for commercial, industrial, architectural, parking, and street lighting applications. Our products feature technologies that have become revolutionary approaches to lighting and have set the standard for LED illumination. Cree luminaires provide improved illumination performance, consume less energy, and require less maintenance than traditional lighting solutions. A market leader, Cree has thousands of successful LED installations worldwide including tens of thousands of streetlights in Ontario, Canada.

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