



**REALTERM**  
ENERGY



Case Study:

## Brampton's LED Streetlight Conversion

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*Increased Safety & Decreased Carbon Footprint*

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# Case Study: Brampton's LED Streetlight Conversion

The City of Brampton is located in the southern region of Ontario and is a suburb of the Greater Toronto Area. Brampton, home to almost 600,000 residents over its 266 square kilometers, is Canada's ninth most populous municipality, fourth within Ontario itself.

## OVERVIEW

- The City selected RealTerm Energy as its LED streetlight integrator in the spring of 2017 to perform a multi-year mandate to upgrade all of its existing streetlights
- The first lights to be changed were along the major roadways, in order to maximize immediate energy savings.
- By end of 2018, 8,438 cobra head fixtures were updated to LED on its major roadways
- The remainder of the cobra head streetlights are to be completed by end of 2020
- **Phase I:** Performed a complete Geographic Information System (GIS) Audit of 45,880 fixtures (cobra heads and decoratives), including the installation of the first 5,000 fixtures
- **Phase II:** 3,461 fixtures installed
- **Phase III:** Approximately 7050 fixtures under installation in 2019
- **Phase IV** will install the balance of the cobra head fixtures by December 2020
- Overall, the City achieved a 69% reduction in energy consumption
- Energy costs have been reduced by 48%
- Up to 80% of the city's maintenance costs have been eliminated
- Approximately 12,340 metric tonnes of greenhouse gas eliminated over the life of the luminaire

## OPPORTUNITY

In 2017, the Municipality of Brampton, Ontario wanted to significantly reduce its energy consumption, maintenance costs and the environmental impact associated with its extensive network of streetlights. By converting to light-emitting diode (LED) streetlights, the City realized that it could not only achieve substantial energy and cost savings but also improve its overall lighting quality and roadway safety for both vehicle and pedestrian traffic.

RealTerm Energy was contracted to manage a multi-year LED upgrade of its 45,880 streetlights in addition to the auditing of 4,169 park lights. Of the total, approximately 25,000, are the traditional cobra head style, with the balance made up of a variety of decorative fixtures.

The new LED fixtures are expected to cut Brampton's streetlight energy consumption by approximately 69% overall, as LEDs require significantly less electricity than the high-pressure sodium lights they're replacing.

The planned upgrade will also decrease annual streetlight maintenance costs by up to 80% due to their solid-state technology (with no moving parts) lasting up to four times longer than the City's existing streetlights. The new LED lights also include a 10-year warranty.

By moving forward with the conversion of all of Brampton's streetlights to LED, the City has been able to reduce its greenhouse gas emissions by 537 metric tons per year and approximately 12,340 metric tons over the lifetime of the fixtures. This is the yearly equivalent of the greenhouse gas emissions avoided by recycling 3,077 tons of waste instead of landfilling them, significantly reducing Brampton's carbon footprint.

## CHALLENGES

RealTerm Energy was able to provide annual budgeting and forecasting assistance on an ongoing requirements as the City needs to allocate funds for each year of the project until completion.

This assistance has been provided through a customized, comprehensive tool that allows Brampton to make budget appropriations for each year of the project based upon forecasted energy savings, cost implications and incentive receipts. It is anticipated that the project will run through 2022, based upon current budget allocations.

## RESULTS TO DATE

- All streetlights, both cobra and decoratives, have been audited and updated in the Geographic Information System (GIS) inventory
- All photometric designs for the cobra heads have been completed
- Inventory is being replaced on a yearly basis depending upon the budget allocations as determined by the City
- By the end of 2019, 15,487 cobra head fixtures had been updated to LED
- The remaining cobra head fixtures are scheduled to be completed by the end of 2020

## ADDITIONAL BENEFITS

With a proven installation protocol that has allowed for rapid deployment without any sacrifice in the quality of the installation to date, the conversion of the first 4,977 streetlights was completed in 30 days. RealTerm Energy has also provided a real-time installation map that was posted on the City of Brampton's website allowing the installation progress to be tracked by all residents.

The new streetlights that have been installed to date have added a level of safety and security for Brampton while reducing the City's carbon footprint. This project is a classic win-win as going forward, the community will save millions of dollars in reduced energy costs and provide environmentally-friendly lighting.

City staff report that residents are extremely happy with the conversion so far and are looking forward to upgrading the rest of the city's inventory as a priority item on future budgets.





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