



City of
Peterborough

To: Members of the Committee of the Whole

From: W.H. Jackson, Director of Utility Services

Date: April 18, 2017

**Subject: Report USEC17-008
Award of Cooperative Purchasing Contract for the Design,
Installation, and Contract Administration to Retrofit the City's
Streetlights**

Purpose

A report to award the design, installation, and contract administration for the retrofit of City streetlights from the current fixtures to Light Emitting Diode (LED) fixtures.

Recommendations

That Council approve the recommendations outlined in Report USEC17-008 dated April 18, 2017, of the Director of Utility Services, as follows:

- a) That the presentation from Realterm Energy and LAS on the LED streetlight retrofit be received for information;
- b) That the City enter into a formal agreement with Realterm Energy., 1237 de la Montagne Street, Suite 400, Montreal, QC for an investment grade audit and the design, installation, and contract administration for the retrofit of City streetlights from the current fixtures to LED fixtures at a cost of \$4,900,000 plus HST of \$637,000 for a total cost of \$5,537,000;
- c) That Council create a 2017 Capital Budget in the amount of \$5,200,000 in non-tax supported debenture financing for the construction and contract administration costs for the retrofit of City streetlights from the current fixtures to LED fixtures; and
- d) That bylaw 17-040 be passed to debenture finance the LED streetlight retrofit project.

Budget and Financial Implications

The commitment of funding (\$4,986,000 after HST rebate) allows the City to begin installation of LED fixtures in 2017 thereby saving on energy costs and maintenance as soon as possible. This debenture will be repaid with energy and maintenance savings with an expected payback of approximately 7 years. Borrowing these funds will leave a non-tax supported debt capacity of approximately \$38M.

The City has also secured an Independent Electricity System Operator incentive/rebate in the amount of \$683,428 through the Save on Energy program. This incentive was secured prior to June 20, 2016 through notification and aid from Realterm Energy and Local Authority Services (LAS). Starting the conversion now will also secure the incentive program funding to its fullest prior to any unforeseen changes to the program.

The total project costs (net of the HST rebate) including contingency allowance, rebates and engineering overhead costs for project management are as follows;

Line	Description	Amount
1	Estimated Project Cost	\$4,500,000
2	Provisional Work	\$ 400,000
3	Design and Construction Sub-total	\$4,900,000
4	HST Payable by the City	\$ 86,240
5	Project Management and Contract Administration	\$ 250,000
6	Project Subtotal	\$5,236,240
7	Independent Electricity System Operator Incentive Grant	\$ 683,428
8	Total Estimated Project Cost (Net of HST rebate)	\$4,552,812

Background

A large percentage of the existing streetlight infrastructure is approaching or has passed its useful life. Energy cost is the largest component of the City's streetlight operation although both energy and maintenance costs of the existing approximately 7,000 cobra style high pressure sodium (HPS) streetlight system have increased significantly over the past 10 years.

The conversion of HPS to LED technology has become commonplace over the last number of years and it is now appropriate that the City of Peterborough undertake the conversion of our streetlight system. The LED conversion will not only significantly reduce the energy consumption of the streetlight system but the maintenance costs will also be dramatically reduced.

The majority of the City streetlights are the common "cobras head" lighting style fixture. For the purpose of this project, the City intends to focus on the cobra head style fixture because it represents approximately 90% of our street lights. It is also the most economical and least complicated system to retrofit. The City will gain quick energy savings by tackling this aspect of the project first. The next stage of energy reduction would focus on decorative streetlights followed by parking lots.

Cooperative Purchasing of Design and Contract Administration Work

LAS is a wholly owned not-for-profit subsidiary company of the Association of Municipalities of Ontario (AMO). LAS helps the broader public sector "realize lower costs, higher revenues, and enhanced staff capacity, through co-operative procurement efforts and innovative training, programs, and services".

LAS has monitored developments in streetlight technology since 2008. To ensure that AMO members were getting the best value and highest quality products related to LED conversion projects, LAS launched a competitive procurement process to select a firm that could offer a complete service to municipalities contemplating a conversion to LED technology. Realterm Energy was the program partner selected. Realterm Energy offers asset management, design, project management and contract administration services.

The project team also issued a Request for Proposal (RFP) for the supply of LED streetlight luminaires ensuring the RFP met and surpassed most municipal procurement standards. The successful proponent was Cree Canada.

LAS launched the turnkey LED streetlight service to the municipal sector in March 2013 because the technology is reliable, superior and cost effective. Over 155 municipalities have upgraded their streetlight network with LAS since inception of the LED program. To keep current and competitive, LAS reviewed and evaluated the terms of the agreement with Realterm Energy in the fall of 2016. The option to extend their agreement was undertaken based on the success of the program delivery. Re-evaluation of the fixtures was also completed to remain current with technology and in 2015 Cree Canada was once again successful through the procurement process.

Compliance with City Purchasing Policies

Section 14.3 of the City Purchasing By-law 14-127, provides for the City to participate with other government agencies in co-operative purchases when it is in the best interest of the City to do so as determined by the Director of Corporate Services.

Under the by-law each participating agency is responsible for obtaining appropriate purchase approvals, preparing and executing appropriate purchase agreements, and ordering, receiving, inspecting and paying for goods and/or services it uses.

The Director of Corporate Services has reviewed this procurement approach and has confirmed that it is in the City interest to participate in the LAS Street Light Program and that the program is consistent with the City's approved purchasing policy.

The City has an existing working relationship with LAS on Electricity Price Hedging (Report CPFS11-047) that has been successful for years. In addition, other municipalities that used LAS for LED conversions were contacted and each reference provided positive feedback on the partnership program. Having completed the same process with over 155 municipalities of all sizes, the Realterm Energy/LAS partnership is the recommended approach for the City to complete a retrofit to LED technology for the existing streetlight network.

Extent of Conversion Program

Realterm Energy will begin by completing an investment grade audit of the City's streetlight network. This audit will collect all the pertinent information in a highly detailed manner. The information collected will not only detail the design and light level calculations but will also provide final asset information that will be rolled up into the City's asset management plan. The investment grade audit will present the expected energy saving and final costs to retrofit the City's system.

The conversion program will replace all existing HPS cobra head streetlights with LED fixtures. The existing streetlight arms will remain. In some instances, wiring will also be replaced but this will be on a case-by-case basis. Decorative lighting, trail lighting and sports field lighting will not be replaced as part of this project. After completion of the streetlight conversion project, converting these other lighting areas will be considered by Council under a separate report(s).

The conversion system also includes adaptive controls. Adaptive control allows the City to monitor the systems performance, understand when and where the system has issues or requires maintenance, and will provide for the future possibly to dim the lights in areas where over-lighting may occur. Adaptive controls can also be used to support environmentally sensitive areas, aid in the legislative maintenance requirements and provide further insight when the City has litigation matters with respect to the street lights.

Cost Considerations

Based on the City's existing energy and maintenance costs together with the number of HPS fixtures that will be converted to LED, RealTerm has provided an estimated cost of \$4,500,000 to undertake this project. On the City's behalf, LAS submitted and was successful in receiving a funding grant of \$683,428 from the Independent Electricity System Operator. Based on these costs and the savings in energy and maintenance, the payback period is approximately 7 years.

An option that Realterm offers is an Energy Performance Contract whereby they would upfront the capital costs of the project with recovery of their costs coming by sharing in the energy saving and being contracted to maintain the system for 10-years. Staff has reviewed this option and is of the opinion that with existing low interest rates, the City is better to self finance the project.

Next Steps

If the recommendations are approved, an agreement will be prepared and signed by the CAO and Clerk through their delegated authority to do so before the work commences. The project can commence as early as May 2017.

The conversion project will consist of:

- Undertake an investment grade audit;
- The preparation of public information material including a public information webpage for the City's website;
- Preparation of a detailed cost estimate;
- Preparation of lighting designs for each unique street;
- Replace the HPS cobra head street lights with LED streetlights using local electrical contractors whenever possible to complete all or portions of the field work;
- Make arrangements for all permits and inspection of work;
- Recycle the removed HPS luminaires; and
- Working with PUSI/PDI to update the utility bills on the City's behalf to reflect the field changes implemented.

It is anticipated that both daytime and night time work will be required. The night time work will be at busy intersections when traffic levels are lower resulting in less traffic control requirements, more efficiencies and less disruption to the community;

A 1-year warranty on the workmanship completed within the work area will be provided and the manufacturer's warranty of 10 years for the luminaire and 12 years for the photocell will be transferred to the City.

Summary

Cooperative purchasing is in accordance with the City's Purchasing By-law 14-127 and requires Council approval for this project. To complete this process through the Realterm/LAS partnership, the City will realize energy cost reductions quickly and gain the advantage of a successfully tested model across Ontario. LED technology is the next generation movement for street lights that the City has tested in various locations.

Submitted by,

W. H. Jackson, P. Eng.
Director Utility Services

Contact Name:
Bruno Bianco, P. Eng
Manager, Infrastructure Planning
Phone 705-742-7777 x 1756
Fax 705-876-4621
E-mail address: bbianco@peterborough.ca