STAFF REPORT: INFRASTRUCTURE AND PUBLIC WORKS

REPORT TO:	**Committee of The Whole**
MEETING DATE:	**April 8, 2015**
REPORT NO.:	**CSPW.15.003**
SUBJECT:	**LAS/RealTerm Energy LED Streetlight Proposal**
PREPARED BY:	**Jeffery Fletcher, Manager of Solid Waste and Environmental Initiatives**

A. Recommendations

THAT Council Receive Staff Report CSPW.15.011 "LAS/RealTerm Energy light emitting diode (LED) Streetlight Proposal".

AND THAT Council accept the procurement process undertaken by the Association of Municipalities of Ontario's Local Authority Services for the selection of a light emitting diode streetlight upgrade turn-key service, it being noted that RealTerm Energy and Cree Canada are the vendors selected by the Association of Municipalities of Ontario and Local Authority Services, and service and equipment pricing is being extended to member municipalities.

AND THAT Council authorize the Mayor and Clerk to execute a Letter of Intent with Local Authority Services' partner RealTerm Energy for the design, installation and transfer of light emitting diode streetlights as detailed in their proposal upon the recommendation of the Town's solicitor, Director of Infrastructure and Public Works, Chief Administrative Officer and Director of Finance.

B. Background

Local Authority Services (LAS), a wholly owned subsidiary of the Association of Municipalities of Ontario (AMO), offers a turn-key LED streetlight program to the municipal market as LAS is confident that the technology is reliable, superior, and now very cost effective.

By upgrading the Town's existing inventory of streetlights to LED technology the Town will be able to reduce related energy consumption by 68% ($46,800 in year one) and reduce maintenance costs by 80% ($27,000 in year one).

Part of the project includes a GIS/GPS mapping and design process that will update the Town's data base. The lighting design, once implemented, will provide an improved quality of lighting. LED lights minimize light trespass compared to existing streetlights, have improved dispersion patterns, have adjustable lighting levels, have better light colour and are dark sky approved. Also, LED's come on with full brightness. In the event of inadvertent power loss the re-start would be instant – improving safety for the road and sidewalk travelling public.
LED lamps offer multiple energy and environmental improvements over conventional gas-filled lamps. LED's have much lower power consumption, do not contain mercury,

and have a long and predictable lifetime. They are less likely to fail than conventional lamps thus reducing the frequency of service or replacement.

Installation

This retro-fit project will involve complete head replacement for all cobra style lights. During this replacement the light will be refused. Fuse failure can be a leading cause of service calls, updating this component will reduce maintenance. The project costs also provide for 5% arm replacement. In LAS's experience some arms will require replacement due to metal fatigue.

Any decorative (non-cobra) style light that is 10 years or newer will be left in-place. All decoratives older than 10 years will be replaced with a new decorative lantern style head. This age of head makes the retrofit to LED beneficial and cost effective. Street lights installed less than 10 years ago will be left in-place. Over time the Town will update these heads with LED technology.

RealTerm will supervise local contactors performing the installations and RealTerm will collect GPS information on the entire installation for the Town's asset management system.

Newer Light Updates

This project will coincide with another Town program to re-lamp the coach style lamps throughout Thornbury. The more recent installation of these lamps and the expense of the coach lamp head make them less ideal for full head replacement under the LAS program. The Roads and Drainage Division has identified a product that allows LED re-lamping of the coach lamps without changing the entire head fixture. This method will save the cost of head replacement but allow for reduced energy use with LED bulbs.

This method of re-lamping or bulb replacement is not effective, not recommended and unproven for cobra style lights. Re-lamping of cobra heads can cause problems with photometric design, thermal management and ingress (water) protection. Cobra re-lamps will often have only a 5 year or no warranty.

Use of LAS Purchasing Process

The Town's Purchasing Policy POL.COR.07.05 as amended, allows for Co-operative Purchasing as stated in clause 9 "*The Manager of Purchasing and Department Head(s) are hereby authorized to participate in co-operative purchasing arrangements with other municipalities, counties/regions, associations, local boards and public agencies within the Province*". Town Staff is recommending that the Town use the purchasing process conducted by LAS. The Blue Mountains is a member municipality with AMO and has taken advantage of other procurement processes lead by LAS and AMO in the past. The Town is currently enrolled in LAS' natural gas and electricity procurement programs.

This LAS LED streetlight program will provide the Town with a unique opportunity to obtain service and improve Town infrastructure. Using LAS' turnkey approach will relieve Town Staff from preparing and reviewing RFP's for design, supply and installation of new fixtures. LAS will also complete funding applications to the Ontario Power Authority. Available funding is anticipated to be in the range of $24,000 to $61,000.

LAS has created a partnership with RealTerm Energy based on a search of the market and an interview and evaluation process lead by AMO's board. LAS, with the assistance of RealTerm Energy, conducted a public bidding process to secure an LED light supplier. Through their purchasing process and technical evaluation (Attachment 1) Cree Canada was selected to be the supplier of LED streetlights.

LAS and RealTerm Energy have a leading understanding of the electricity market and the potential for savings in Ontario. Their work under this project will include negotiations with Hydro One and Collus/Powerstream to identify an updated billing rate following the LED installation which will provide significant cost savings.

Letter of Intent

Town Staff have looked at many different models (re-lamping kits, Town lead RFP/tender, local utility lead retro-fits and an energy savings agreement) for a streetlight retrofit project and have concluded that LAS' turnkey approach will be the most effective for the Town. LAS and RealTerm have provided the Town with a business case for the retrofitting of 762 streetlights. RealTerm will design and upgrade the Town's streetlights with a 5 year payback on the cost. Through a combination of the use of gas tax, self-financing and energy savings there will be no cost to taxation for this project. And, following the 5 year payback the Town will benefit from energy and maintenance savings by saving approximately $74,000 per year.

A preliminary business case has been provided to and reviewed by Town Staff. Staff have acknowledged and accepted the business case. The next step is to execute a Letter of Intent with RealTerm Energy. Following this, RealTerm would conduct an investment grade audit of the Town's streetlight network. This will include mapping, reviewing energy and maintenance records, designing and fixture selection, savings forecasts and final costing.

The Letter of Intent allows RealTerm to proceed with the audit and provides some level of cost and risk protection for the Town and RealTerm. If the audit findings are greater than +/- 10% of the kWh savings outlined in the proposal an option would exist to simply pay RealTerm 50% of the cost of conducting the audit ($11,500) and not proceed with the project. Under any circumstance the Town has the option to not proceed and with the retrofit. However, full payment of the audit cost would be required up to the specified maximum of $23,000. In return for payment the Town would be given the GIS/GPS data for its use.

If the Town moves forward with the street light upgrade the cost of the investment grade audit is included in the total contract price as outlined in the proposal.

Town Staff recommend proceeding with a Letter of Intent with RealTerm Energy under LAS' program upon recommendation of the Town's solicitor, Director of Infrastructure and Public Works, Chief Administrative Officer and Director of Finance. The Letter of Intent only commits the municipality to a maximum of $23,000 for the investment grade audit. Following the investment grade audit the findings will be presented to Council. Council will then decide to advance the installation under a contract with RealTerm.

C. The Blue Mountains' Strategic Plan

Under the goal of "addressing the Town's municipal infrastructure needs" a strategic action to undertake a comprehensive lighting plan for streets and walkways is outlined. Although this LED retrofit is not necessarily a plan for lighting, it is a project that will achieve universal lighting improvement and modernize the Town's specified street light engineering standard.

D. Environmental Impacts

As highlighted above, an LED retrofit has many environmental benefits. The new lighting reduces power consumption and greenhouse gas (GhG) production. The estimated lifetime (20 year) GhG reduction for this project is 673 tonnes of Co2. To put that reduction in perspective the Town's total (street lights, buildings, fleet, water and sewage pumping and landfilling) corporate annual GhG production is approximately 1,700 eCo2.

The project will also ensure proper recycling of steel and other components from the old fixtures and recycling of any decommissioned mercury containing lamps.

E. Financial Impact

The tables below highlight the estimated costs and savings associated with this project and the anticipated total cost, based on an initial audit. An investment grade audit will be conducted to finalize these costs. Typically, the investment grade audit is within +/- 10% of the savings identified in the initial audit.

Current Status	Before Upgrade	Post Upgrade	Variance
Annual Electricity Consumption (kWh)	428,058	135,409	292,649
Total Street Light Expenditures	$128,008	$54,127	$73,881
Average Annual cost per fixture	$168	$71	$97

Design and Installation Costs	
Total Project*	$432,600
Ontario Power Authority Incentive	($23,900)
Net Project Cost	**$408,700**
Simple Payback (years)	5.5

*Cost of project may change depending on the outcome of the audit

The above net project cost will be paid for by a combination of self-financing and Federal Gas Tax funding which is expressed in the table below.

Funding Sources	**2015**	**2016**	**2017**	**2018**	**2019**
Federal Gas Tax	$170,000				
Internal Debt	$238,700	($74,000)	($74,000)	($74,000)	($16,700)
Taxation (Cost Savings)		$74,000	$74,000	$74,000	$16,700

Once the internal debt has been fully funded from the hydro and maintenance cost savings the budget can then be reduced to reflect these cost savings.

Approval of this staff report will only commit the Town to the cost of the investment grade audit, a maximum of $23,000. Once Council has the benefit of the audit findings and final project costs they will have the opportunity to make a decision on the total project cost which is anticipated to be approximately $432,600.

F. In Consultation With

Sam Dinsmore, Financial Analyst
Serena, Manager of Purchasing and Risk Management
John Metras, Town's Solicitor

G. Attached

Attachment 1 - LAS 2014 RFP for LED Streetlight Supply Process and Outcome

Respectfully submitted,

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Attachment # 1
CSPW.15.003

2014 RFP for LED Streetlight Supply Process and Outcome

Since its launch in March 2013, the LAS Streetlight Program has become the leading LED Streetlight replacement program in Canada due largely to its unique turnkey approach that brings together all of the services municipalities require to roll out the new technology and start reaping the benefits quickly. LAS, AMO's not-for-profit organization, helps its customers "save money, make money, and build capacity" through co-operative procurement efforts and innovative training, programs, and services. Through our partnership with RealTerm Energy we offer a complete turn-key solution that includes complete asset inventory and assessment including GIS/GPS mapping; lighting design and comprehensive financial analysis; incentive applications; procurement and project management; installation and recycling; plus financing options.

As LED streetlights increase in popularity, it is important to keep up to date on the technology and its advancements. Various manufacturers and their representatives constantly make claims about improvements in product efficiency, effectiveness and durability. LAS continues to monitor the marketplace to ensure the products provided meet strict quality, regulatory and budgetary needs on behalf of our members for this reason.

In August 2014, LAS put out a Request for Proposal (RFP) for the Supply of Streetlight Luminaires to ensure its members were still getting the value and high quality products they have come to expect from us. LAS was careful to ensure that the RFP met and surpassed municipal procurement standards supporting a competitive search for suppliers offering quality products at an affordable price while remaining unbiased and open in its wording. In order to develop the RFP document, a number of Specification Guides, pilot studies, protocols, standards, and tender documents were referenced including the following:

- Lightsavers Model Technical Specifications
- MSSLC Model National Specification
- U.S Department of Energy (DOE)
- Design Lights Consortium's Product Qualified Products List (DLC QPL)
- Canadian Standards Association (CSA)
- Electrical Safety Authority (ESA)
- Illuminating Engineering Society of North America (IESNA)
- International Dark-Sky Association (IDSA)
- Public Works & Government Services Canada

- The City of Markham
- The City of Hamilton
- BC Shared Services
- The City of Calgary
- The City of Edmonton
- The City of Detroit
- The City of Los Angeles
- The City of New York
- Municipality of the District of Digby (NS)
- The Town of Hantsport (NS)
- IOWA Association of Municipal Utilities

The RFP document and subsequent submissions were reviewed by an Evaluation Committee comprised of ten (10) experts from Los Angeles, British Columbia (DMD & Associates), Montreal, and Ontario (including staff from Brampton, North Bay, Ottawa), as well as two LAS and two RTE staff members.

Independent third-party analysis (Welch LLP) was conducted on the financial background of the proponents, and photometric design (Éclairage TECHNO) comparison for those fixtures submitted.

As a result of the RFP process we received strong submissions from five (5) internationally recognized brands. The committee evaluated these submissions in two distinct phases based on the following factors:

Company Experience & Qualifications	Ability of the company to produce fixtures and meet goals of the LAS LED Streetlight program. Ability to support the program and our municipalities moving forward Reference checks to verify experience and performance of the company on past similar projects Experience and longevity of the company
Financial Background	Comparison of the company financial rations to industry average over last 5 years Projections for the upcoming fiscal year
Fixture Quality	Life expectancy ratings Quality Control processes Packaging and shipping processes Warranties
Fixture Performance	Ability to meet 22 key specifications and standards from ANSI/IESNA/NEMA/FCC/etc. Independent third party photometric comparisons
Value added components	Extended warranties Fixture innovation & product selections Ability to combine with future adaptive controls
Overall Proposal Completeness, Clarity and Organization	

Those submissions which met the minimum 75% scoring under the above criteria were then evaluated based on the individual fixture and alternate component price submissions.

Further, an overall economic evaluation of the fixtures based on six (6) standard municipalities was completed for the top two scoring submissions.

After a careful and thorough analysis of the submissions, the Evaluation Committee decided to award the supply contract to Cree Canada as they represent the best overall value for our members.