



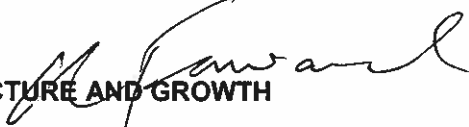
**TO:** GENERAL COMMITTEE


**SUBJECT:** STREET LIGHT CONVERSION TO LED

**WARD:** ALL

**PREPARED BY AND KEY CONTACT:** B. THOMPSON, C.E.T., C.E.M.,  
MANAGER OF ENERGY EXT. 4557 

**SUBMITTED BY:** K. BRADLEY, MLA, BA,  
DIRECTOR OF FACILITIES AND TRANSIT 

**GENERAL MANAGER APPROVAL** R. FORWARD, MBA, MSC, P. ENG,  
GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH  
MANAGEMENT 

**CHIEF ADMINISTRATIVE OFFICER APPROVAL:** C. LADD, CHIEF ADMINISTRATIVE OFFICER 

**RECOMMENDED MOTION**

1. That the pre-approval of the incentive payment of \$1,119,708 from the Ontario Power Authority through the SaveONenergy program be received for input into the business case as outlined in the financial section of Staff Report FCT002-15.
2. That the Mayor and City Clerk be authorized to sign a Letter of Intent with RealTerm Energy (see Appendix A), the Local Authority Services (LAS) project partner, for an Investment Grade Audit related to a Light Emitting Diode (LED) street light conversion project for the City of Barrie, such document to be in a form satisfactory to the Director of Legal Services and based on the following general terms and conditions:
  - a) That RealTerm Energy be paid \$137,000 for the completion of the Investment Grade Audit including the provision of a GIS data base of all existing street lights, new LED lighting design based on the Provincial lighting standards and an estimated cost for the completion of the LED replacement project.
3. That, should the Investment Grade Audit results support the implementation of the conversion street light project in accordance with the initial business case, the RealTerm Energy fee for the Audit be waived and that LAS and their partner, RealTerm Energy be retained to provide the following Project Management Services with a contract value of \$3,307,568:
  - i) Assistance in the development of specifications associated with the procurement of qualified street lighting installation companies;
  - ii) Provision of training to street light installation companies to ensure that the Audit results are achieved;
  - iii) Provision of the LED street lights required by the design plan; and

- iv) Management of the removal and disposal of the existing street lights and the installation of the LED street lights, to be completed by December 31, 2015.
4. That the Light Emitting Diode (LED) street light conversion project with an initial financial investment of \$5,000,000 be pre-approved as part of the 2015 Capital Plan, to be funded through the issuance of debentures with an anticipated benefit to the Corporation of \$11,300,000 in cost avoidance over the next ten years in energy and maintenance costs.
5. That the Director of Finance be authorized to issue a 5-year debenture for the LED Street light conversion project in 2016 for up to \$5,000,000.
6. That the Mayor and Clerk be authorized to execute a contract with LAS for the delivery of the Project Management Services identified in paragraph 3.
7. That staff be authorized to amend the City of Barrie street light standards to require LED technology only for street lights in the future.

## **PURPOSE & BACKGROUND**

### Report Overview

8. The purpose of this staff report is to provide Council with a business case to:
  - a) seek Council authorization to execute a Letter of Intent to conduct an Investment Grade Audit with RealTerm Energy, the project partner of Local Authority Services (LAS),
  - b) to seek pre-approval for the project to be included in the 2015 Business Plan, and
  - c) seek authorization to sign a project management contract with LAS for the full conversion of the City's streetlights to LED if the results of the Investment Grade Audit are acceptable and meet the financial limits set out in this Staff Report. The Investment Grade Audit will include the following items:
    - GPS study of complete street light system
    - GIS data base and map of complete street light system based on GPS study
    - Complete street by street lighting design to City of Barrie standards.
9. On September 10, 2012 Council adopted Motion 12-G-233

*"That staff in the Engineering Department, together with the Environmental Officer, investigate the potential of replicating the Town of Welland's LED streetlight replacement program in Barrie, which is projected to result in more than \$2.4M in savings to the municipality, through reduced energy use and reduced replacement costs, and report back to General Committee."*
10. In 2013, an Expression of Interest (EOI) for the supply of LED street lights to replace existing High Pressure sodium street lights was conducted with Purchasing to develop a potential business case for the project. Eight submissions were received and a business case, based on energy savings and costs for bulbs received in the EOI along with estimations for project management and installation, were used to develop the business case.

11. Based on the business case developed, the project had been proposed as a capital project in 2014 and was not approved at the staff level due to other competing City capital priorities.
12. The Ontario Power Authority (OPA) is responsible for developing incentive programs to lower the payback on energy reduction projects. In late summer 2014, the OPA introduced a new incentive program specific to LED exterior lighting. The program offers prescribed dollar amounts for conversion to LED bulbs based on the wattage of the LED bulbs.
13. City staff in the Energy Management Branch of the Facilities and Transit Department applied for the incentive on December 16, 2014 and received pre-approval (attached Appendix B) on December 19, 2014 for an incentive in the amount of \$1,119,708.
14. There are terms and conditions to the OPA incentive, with the key condition being that all work must be completed by December 31, 2015 in order to receive the full incentive (application Appendix C).
15. During 2015 budget deliberations it was suggested that Facilities and Transit investigate alternate forms of financing the street light conversion and that AMO subsidiary LAS offered a program that should be investigated.
16. LAS was created in 1992 by the Association of Municipalities of Ontario (AMO) as a wholly owned subsidiary company. LAS is incorporated as a not-for-profit organization under the laws of Canada and is mandated to work with Ontario municipalities, as well as organizations from the broader public sector, to help realize lower costs, higher revenues, and enhanced staff capacity, through co-operative procurement efforts and innovative training, programs, and services. The City of Barrie is currently a member of AMO.
17. LAS is currently offering a street light program for municipalities. There are two paths municipalities can choose from:
  - a) A turnkey approach known as an Energy Performance Contract, where LAS and their partner RealTerm Energy provide funding, project management, LED lights, installation and maintenance for a ten year period, during which energy and maintenance savings are shared by LAS and RealTerm energy and the municipality typically for ten years.
  - b) LAS Design, Upgrade and Transfer, which includes;
    - i) A streetlight design for every street to the Provincial Standard for streetlight illumination levels RP-8.
    - ii) Conduct a GPS survey of the street light system that contains all pertinent asset data for the pole and fixture;
    - iii) Supply and purchase of the LED fixtures (through an RFP process done by LAS)
    - iv) Manage the installation of the lights (through an RFQ process by either the customer or LAS).

This work is done for a contracted price. At the conclusion of the installation all data used to design the streetlight system is turned over to the municipality and the municipality keeps 100% of any energy and maintenance savings and is responsible for maintenance of the LED system.

18. LAS/RealTerm energy provided a preliminary budget of \$3,307,568 (not including installation) and estimated savings to complete the street light conversion in Barrie using their two options.
19. A financial analysis was conducted by City Performance Analysts of four different options (do nothing, two LAS program options, and a phased approach using tax capital funding) and found that the LAS Design, Upgrade and Transfer Program would result in a net benefit of \$11.3 million versus a do nothing state, and was approximately \$4 million higher than the net benefit of the Energy Performance Contract (Turn Key approach), the next best option.
20. It was determined there would be no cost difference if the City of Barrie led the RFQ for installation of the street light system versus using LAS to help establish the technical specifications and providing full field and project management services. By pre-qualifying installers while the Investment Grade Audit is underway, the installation RFQ can then be released to the market immediately to a short-list of contractors when/if a contract is signed with LAS and the timelines required to complete the project by December 31, 2015 still be met.
21. A single source request was approved to retain LAS/RealTerm Energy based on Sole or Single source request form 2015-S001 on January 9, 2015 in accordance with Procurement By-law 2013-073.

#### **ANALYSIS**

22. LED street lights are projected to reduce energy use by 67%, and maintenance costs by 80% per year (LED lights come with a ten year warranty). Projected costs of the various options reviewed are:
  - a) The cost to operate and maintain the street light system with expected inflation over ten years if we do nothing is \$26,417,399
  - b) The cost to operate and maintain the street light system with expected inflation over ten years under the LAS Energy Performance Contract (Turn Key) is \$19,442,138.
  - c) The recommended solution the LAS Design, Upgrade and Transfer program has a cost to operate the streetlight system with expected inflation over ten years of \$15,101,793
23. If the project is completed by December 31, 2015, the City of Barrie will be eligible for an incentive from the OPA of \$1,119,708 (pre-approval granted December 19, 2015). This incentive, if received, will be used to offset the total cost of borrowing. (preapproval email Appendix B). If the project is not complete by December 31, 2015 staff will apply for an incentive for the percentage of the conversion that is complete.
24. The additional cost to maintain the present system from lost maintenance and energy savings of delaying the conversion is \$770,000 per year including a hypothetical price reduction of 10% per year in LED luminaires.
25. Staff are seeking pre-approval for this project as the project planning by the City and LAS illustrates that starting the project any later than February creates significant risk that the project could not be completed fully in 2015. Extending past year-end would put the full incentive and opportunity savings from energy and maintenance cost reductions at risk.

26. A single source agreement with LAS is felt to have the best chance of having the streetlight conversion project completed by December 31, 2015 and therefore maximizing the opportunity cost and taking full advantage of the incentive.
27. Based on financial analysis, the most cost effective approach is to use the LAS Design, Upgrade, Transfer option (see Appendix D). The steps that will be undertaken by LAS to complete this are:
- Complete GPS/GIS mapping of City of Barrie streetlight system,
  - Assist the City in developing technical specifications for a pre-qualification of installers,
  - Using the mapping data to complete a lighting design to provincial standard RP-8 for every street in Barrie,
  - Based on this design, provide a proposal to the City of Barrie on the actual costs and savings of the streetlight conversion,
  - If the actual savings are within 10% of projected savings the City must pay the cost for the GPS/GIS mapping and design if we choose to not go ahead.
  - If the City chooses to sign a contract, this cost is rolled into the final contract cost and LAS will order the LED lights from CREE lighting
  - Assist the City in an RFQ for the pre-qualified installation contractors
  - Project manage field installation of streetlight conversion
28. The steps the City will undertake if given council approval:
- Develop a pre-qualification RFP for the installation of the street light conversion
  - Review LAS Investment Grade Audit
- If the business case as presented by LAS is acceptable:
- Short list the pre-qualification to all acceptable installers
  - Develop an RFQ for the installation of the LED lights, for all prequalified bidders
  - Award the RFQ to the low qualified bidder
  - Work with PowerStream to have street light billing altered as installation progresses
  - Work with PowerStream to ensure all information is provided for the OPA incentive.
- If Investment Grade Audit business case is not acceptable:
- Using the GPS/GIS information gathered through the investment Grade Audit staff will Develop a new conversion strategy and return to Council for approval

29. Based on the proposal from LAS, it is expected that the agreement with LAS will result in the project being completed within one year. Completing the project using public procurement at all stages contains more risk to the schedule, the LED bulb delivery, as well as price risk for LED bulbs. It is the opinion of staff that there is zero possibility the project will be completed if done internally in eleven months.
30. LAS has been actively involved in the LED street light conversion program for two years and presently there are eighty three municipalities in various stages of completion in their program.
31. LAS has gone through an RFP process to choose both the Program Manager (RealTerm Energy) and the LED lights manufacturer/supplier. The LED supplier contract was awarded December 1, 2014 with five international lighting manufacturers participating in the procurement process. The evaluation committee included industry experts and municipal representatives from Brampton, North Bay and Ottawa. CREE Canada was the successful bidder.
32. LAS benefits from economies of scale in LED bulb purchases versus the City of Barrie purchasing on our own.
33. The LED lights (CREE) chosen by LAS meet the technical specifications of the proposed new City of Barrie Street light standards.
34. A communication plan will be implemented to inform the public of the progress associated with the street light conversion project.
35. No additional staff resources will be required to implement the recommendation.

#### **ENVIRONMENTAL MATTERS**

36. The following environmental matters have been considered in the development of the recommendation:
  - a) A reduction of an estimated 5,413,464 kWh which is equivalent to a reduction in GHG emissions of 542 metric tonnes.

#### **ALTERNATIVES**

37. The following alternatives are available for consideration by General Committee:

**Alternative #1**

General Committee could choose to not authorize staff to sign an agreement with LAS and complete the project through a public procurement process

This alternative is not recommended as the City will not be able to finish the project in the prescribed timelines to qualify for the full incentive from the OPA and would be giving up opportunity savings in maintenance and electrical costs by delaying the project

**Alternative #2**

General Committee could alter the proposed recommendation by asking staff to investigate alternative providers to LAS and conduct an RFP to choose a project manager.

This alternative is not recommended as it would increase the risk that tasks would not be complete in the timelines available for the full incentive and would be giving up opportunity savings in maintenance and electrical costs by delaying the project.

**FINANCIAL**

38. Projected discounted cumulative cost avoidance for the LED conversion project over ten years is projected to be substantial (see appendix c):
- a) Self-Financed (debenture) option is projected to result in \$11.3M cost avoidance
  - b) Energy Performance Contract option is projected to result in \$7M cost avoidance
39. Based on anticipated capital cost of the project of \$4.83 million dollars the project will generate cost avoidance of \$6,911,947 in five years.
40. 2014 debt charges are 8.76% of total revenue. 2015 approved debt (2014 current debt and 2015 approved debt from capital plan) as a % of total revenue is 8.5%. To be conservative, assuming the OPA rebate is not received and the full \$4.83 million (the current recommended budget number including costs for LAS and for installation) is debentured in 2016, debt charges as a % of total revenue would increase from 8.5% up to 8.84%. Terms used in calculations: 3% interest rate, semi-annual payments, 5 year term.

**LINKAGE TO 2010-2014 COUNCIL STRATEGIC PLAN**

41. The recommendation(s) included in this Staff Report support the following goals identified in the 2010-2014 City Council Strategic Plan:
- Manage Growth and Protect the Environment
  - Strengthen Barrie's Financial Condition

42. As stated in the report, energy savings are estimated at 5,423,256 kWh per year, this represents a cost avoidance of \$11,300,000 over ten years (\$26,417,399 -\$15,101,793). LED street lights have an estimated twenty year life time and come with a ten year warranty which should significantly reduce maintenance costs for the streetlight system. The incentive of \$1,119,708 will be used to offset the borrowing costs of this project and represent the largest incentive ever approved by PowerStream.



## Appendix A



January 8, 2015

Kevin Bradley  
Director, Facilities & Transit  
City of Barrie, Ontario  
70 Collier Street  
Barrie, Ontario  
L4M 4T5

**Subject: Design, Upgrade and Transfer Agreement – Binding Letter of Intent  
RealTerm Energy Corp.  
The City of Barrie (“the Customer”)**

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Dear Mr. Bradley:

Pursuant to your recent discussions with Local Authority Services (“LAS”), RealTerm Energy Corp. (the “Company”) is pleased to enter into this binding letter of intent (“LOI”) with the Customer with respect to the proposed upgrade of your existing street lighting system to LED fixtures (“the Project”).

**INVESTMENT  
GRADE AUDIT:**

Within 150 days of the date of execution of this LOI by the Customer, the Company shall complete an Investment Grade Audit. Such audit shall verify the size, location and type of the Customer’s existing street lights, energy invoices, maintenance invoices, and other detailed aspects of the Customer’s street light system.

If the results of the Investment Grade Audit confirms annual energy savings of 67.7% (+/- 10%), the Company shall notify the Customer that the Project is viable (the “Proceed Notice”) and the parties shall proceed with the negotiation of the Agreement as provided below. If the Customer does not proceed with such good faith negotiations with the Company, the Customer shall reimburse the Company for such reasonable costs and expenses incurred in performing the Investment Grade Audit and negotiating this LOI, to a maximum of \$137,000 within 30 days of receiving an invoice from the Company for such costs and expenses.

If, based upon valid information provided by the Customer to the Company, the results of the Investment Grade Audit (i) do not meet the Savings and/or (ii) demonstrate that the anticipated design of the Company cannot be utilized; the Customer and the Company shall enter into good faith negotiations to amend the Contract Price. If the parties have not been able to settle on an amended Contract Price and execute the Agreement prior to termination of this LOI pursuant to (ii) of the Termination section below, the Customer shall within 15 days of such termination reimburse the Company for 50% of the Company’s



reasonable costs and expenses in performing the Investment Grade Audit and negotiating this LOI to a maximum of \$68,500 and, in return, the Company shall furnish all work materials related to the Investment Grade Audit to the Customer including a full GIS/GPS audit of the Customer's street lighting system. If, in the Company's opinion, acting reasonably, the Customer did not provide the Company with valid information, the Customer shall reimburse the Company for 100% of the Company's reasonable costs and expenses in performing the Investment Grade Audit and negotiating this LOI to a maximum of \$137,000 within 15 days of receiving an invoice from the Company for such costs and expenses.

**CCDC 14:**

Upon issuance of the Proceed Notice or upon determination of an amended Contract Price as provided above, the Customer and the Company shall act in good faith and use commercially reasonable efforts to conclude a CCDC 14 design-build stipulated price contract (the "Agreement"), an initial draft of which shall be provided by the Company. The parties agree that the following terms will be included in the Agreement:

**TERM:**

The Term of the Agreement shall be from the execution date of the Agreement to the Final Completion Date. The Final Completion Date shall be defined in the Agreement as the date that the Customer provides written notice to the Company that it accepts the Company's application for final completion of the work and certifies that final completion has occurred.

**SERVICES AND EQUIPMENT:**

The Company agrees to replace the Customer's existing agreed upon lighting in the city with energy efficient equipment in accordance with the schedule and specifications set out in Schedule A. The New Equipment shall remain the sole and exclusive property of the Company until substantial performance (as defined in the *Construction Lien Act* (Ontario)) has occurred, at which time the New Equipment and all related warranties will be transferred and become the sole and exclusive property of the Customer for the duration of the Term.

**CONTRACT PRICE:**

The Customer shall pay the Company the Contract Price for the design, supply and installation of the New Equipment. The Contract Price shall be as provided in Schedule B. The Customer shall make progress payments to the Company on account of the Contract Price when applied for by the Company and certified by the payment certifier.

**INSURANCE:**

In addition to the insurance the Customer shall carry which shall be specified in the Agreement, the Company shall insure the Company's interest in the energy efficient equipment and maintain public liability and property damage insurance during the Term. Such policies shall be written on a comprehensive basis with inclusive limits of not less than \$5,000,000 for bodily injury to any one or more persons or property damage, stock in trades and list the Customer as additional insured.

**MUNICIPAL FRANCHISE,  
LICENCE OR EASEMENT:**

The Customer shall grant a license, easement or right-of-way giving the Company rights of access in the streets and rights to remove and replace existing lights.

**CONFIDENTIALITY:**

The Company and the Customer agree to maintain the strict confidential nature of this LOI and the negotiations with respect to the transaction proposed herein, including forms of contract. No public or other announcement of the existence or terms and conditions of this LOI shall be made by either party except in consultation with and subject to the approval of the other. The Company and the Customer agree to use all reasonable efforts to coordinate any disclosures concerning the proposed transaction.

**TERMINATION:**

This LOI shall terminate on the earlier of (i) immediately upon execution of the Agreement and (ii) six months after execution of this LOI by the Customer.

This letter will be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable herein.

Should the above terms and conditions be acceptable to the Customer, please sign this letter in the area indicated below and return to my attention.

If you have any questions or require additional information, please do not hesitate to call me.

Thank you for allowing RealTerm Energy Corp. to address your request for an Energy Savings Proposal related to the retrofit of your existing municipal street lighting equipment.

Best regards,

**REALTERM ENERGY CORP.**



Sean Neely,  
President

**SCHEDULE A – COMPANY’S SERVICES**

**1. Scope of Services**

- System Design including a full GPS/GIS audit of the system.
- Supply Labour and Material to remove existing Customer street light fixtures.
- Disposal of existing Customer street light fixtures as per government standards including providing the Customer a “Declaration Letter” stating same.
- Supply Labour and Material to install the New Equipment.
- Inspect and repair or replace the existing wiring, fuses, or any other item other than the New Equipment as required. Cost to completely re-wire and re-fuse all fixtures along with 5% arm replacements are included. If the scope of work varies from this estimate then the work will be done on a cost recovery/returned basis.
- On a best efforts basis, work with the Local Distribution Company to modify their invoicing system to recognize the New Equipment.
- Administer the process to obtain all grants, subsidies or rebates that may be available from the Ontario Power Authority related to this Project.

**2. Existing Equipment and New Equipment (“New Equipment”) Inventory and Specifications**

OLD QTY	OLD FIXTURES	WATTS	TOTAL WATTS	NEW QTY	NEW FIXTURES	WATTS	TOTAL WATTS
300	HPS 70W	100	30,000	300	CREE - XSP-1 - 38W	38	11,400
5346	HPS 100W	130	694,980	5346	CREE - XSP-1 - 43W	43	229,878
2887	HPS 150W	196	565,852	2887	CREE - XSP-2 - 65W	65	187,655
594	HPS 200W	250	148,500	594	CREE - XSP-2 - 83W	83	49,302
1076	HPS 250W	305	328,180	1076	CREE - XSP-2 - 101W	101	108,676
266	HPS 400W	450	119,700	266	CREE - XSP-2L - 168W	168	44,688
<b>10,469</b>			<b>1,887,212</b>	<b>10,469</b>			<b>631,599</b>

**3. Schedule of Services**

Commencement Date: Within 90-days from execution of the Agreement.

Appendix B

Kevin –

See below. Formal pre-approval for the street lighting conversion.

**Adam McMullin, B.A, C.E.M**  
Energy & Environmental Officer  
Tel: 705-739-4220 ext. 5097

**From:** JeongWook Kim [<mailto:jeongwook.kim@powerstream.ca>]  
**Sent:** Friday, December 19, 2014 2:33 PM  
**To:** Adam McMullin  
**Cc:** Barry Thompson; [jbarten@amo.on.ca](mailto:jbarten@amo.on.ca)  
**Subject:** FW: RETROFIT Application #136829 - 70 Collier, Barrie

Good afternoon Adam,

I just want to inform you that the street lighting application has been approved and you can proceed with the project now. As we anticipated, the pre-approved incentive is \$1,119,708.00

Let me know if you have any further questions regarding this project.

Thank you,

JW

**From:** Flora Hung  
**Sent:** December-19-14 11:45 AM  
**To:** Nathalie McLaughlin; JeongWook Kim  
**Subject:** RE: RETROFIT Application #136829 - 70 Collier, Barrie

Hello,

Just to provide an update that this application is now Pre-approved for incentive \$1,119,708.00. (using new Dec 16<sup>th</sup> incentive levels)

JW: The customer can move forward with the project at any time.

Thanks,

**Flora Hung**  
Conservation and Demand Management Program Coordinator  
PowerStream Inc.  
161 Cityview Blvd. Vaughan, ON L4H 0A9  
P: 905.417.6900 Ext. 21094 · F: 905.303.4462  
[flora.hung@powerstream.ca](mailto:flora.hung@powerstream.ca)

## APPENDIX "C"



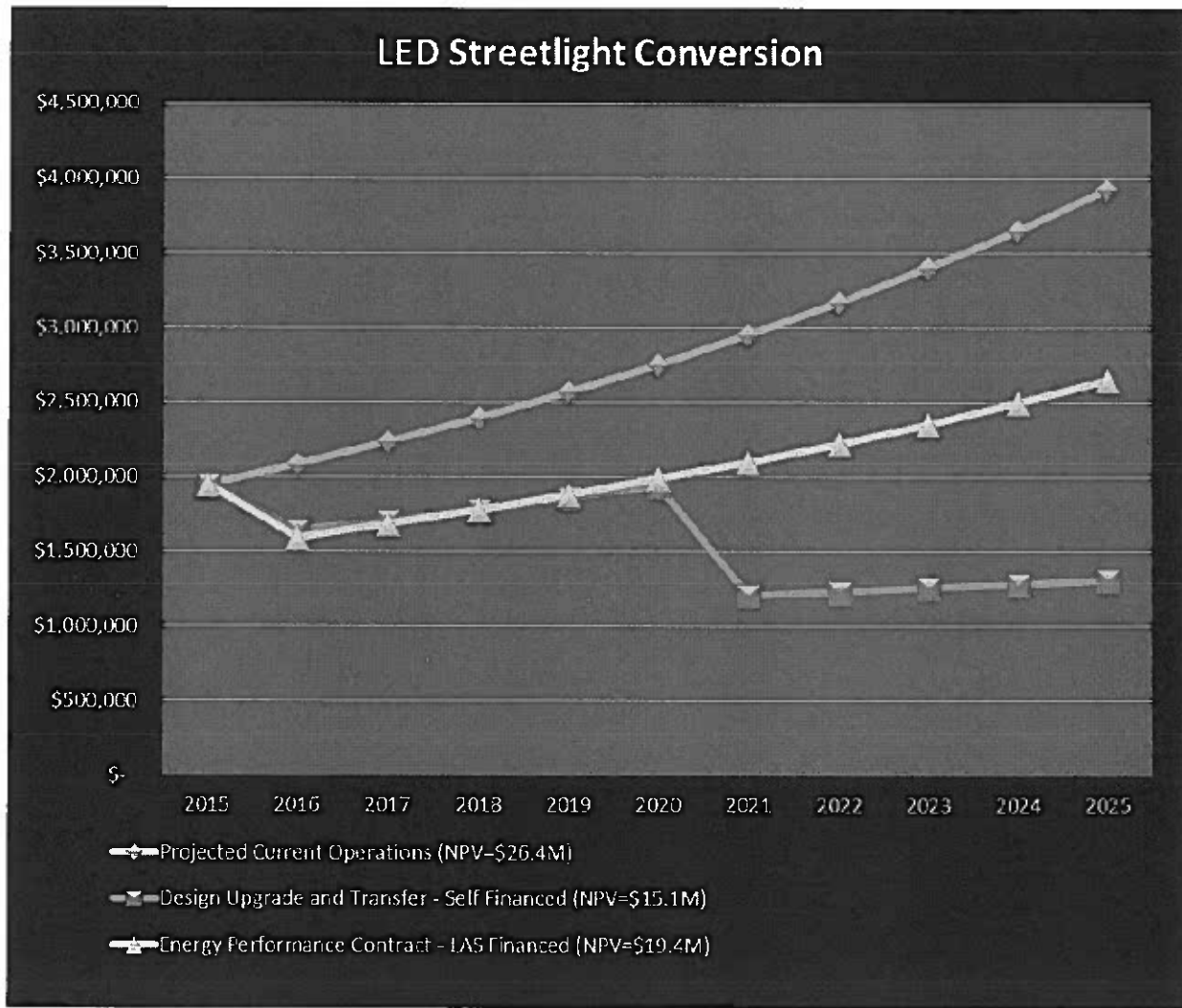
### Participant Agreement

The Participant (being the "Applicant" in the Application) has applied for Participant Incentives, in respect of Eligible Costs, pursuant to the Application submitted to the LDC under the Equipment Replacement Incentive Initiative (the "Initiative"). All capitalized terms not defined herein will have the meanings in Schedule 1.

- 1) **PARTICIPANT INCENTIVE:** The LDC will, subject to the terms and conditions of this Participant Agreement and the Application, pay to the Participant a Participant Incentive for the implementation of each Project described in the approved Application. In addition to the other provisions hereof, payment of the Participant Incentive is subject to and conditional upon the following terms and conditions:
  - a) the Participant will implement each of the Projects described in the Application by each Project's project completion date provided in the Application and in no event after December 31, 2015;
  - b) the Participant will provide the LDC with evidence of the implementation and completion of each Project and verification of each Project's Eligible Costs, in the form of accounting records and contractor invoices, and any other evidence that the LDC may require, including visual inspections by the LDC;
  - c) the LDC will have the right in its absolute discretion to decide whether or not to accept or approve the evidence provided pursuant to Section 1(b); and
  - d) the Participant will provide an invoice to the LDC for the Participant Incentive no later than 150 days following project completion.
  
- 2) **AMOUNT AND FORM OF PARTICIPANT INCENTIVE:** The Participant acknowledges that the total amount of the estimated Participant Incentives set forth in the Application is based upon estimated demand savings, estimated electricity savings and estimated Eligible Costs based on the Application and, subject to the following, will be the maximum amount payable hereunder. Upon the completion and verification of each Project, the LDC will recalculate the amount of the Participant Incentive based upon the best available information at such time subject, however to the limitation that the recalculated Participant Incentive may not be more than 10% greater than the estimated Participant Incentive in the Application. A Participant may however submit an Application to amend the scope of a Project prior to the completion of that Project, where such change in Project will result in a greater than 10% increase to the Participant Incentive. The total amount of the Participant Incentives determined by the LDC will be paid by the LDC as a lump sum payment, on the later of:
  - a) for Projects that do not require the completion and approval of a Final Evaluation and Incentive Report (as defined in Section 9(c)), within 90 days after the completion of the last of such Projects, and any post-project site visits and inspections required in respect thereof, is completed; and
  - b) for Projects that require the completion and approval of a Final Evaluation and Incentive Report, within 90 days of the completion of the last of such Projects and of the last of such Final Evaluation and Incentive Reports being finalized;

APPENDIX "D"

Utility Maintenance and Debt Charges comparison



Discounted savings over 10 years:

Self-Financed is \$11.3M (26M - 15.1M)

Energy Performance Contract is \$7M (26.4M - 19.4M)

**Assumptions:**

- 8% increase per annum in hydro costs
- 3% increase per annum in maintenance costs
- Debt Terms: 5 years, 3% semi-annual interest payment
- 100% replacement of street light bulbs to LED lights by December 31 2015