



Proposal to the Town of Niagara-on-the-Lake

Revision #1

Energy Performance Contract - Financing Option

January 17th, 2020

O-1609

Primary Contact

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REALTERM
ENERGY

January 17th, 2020

Rob Andrea
Supervisor
The Town of Niagara-on-the-Lake
1593 Four Mile Creek Road,
PO Box 100, Virgil, ON L0S 1T0

Dear Mr. Andrea

We are pleased to present our Energy Performance Contract (EPC) financing option for the Town of Niagara-on-the-Lake's streetlight network.

An EPC financing option consists of RealTerm Energy covering a portion of the up-front capital associated with the project and sharing the benefits with the municipality over the next several years. This increases the flexibility for municipalities to move forward with projects today and begin to see infrastructure and savings benefits.

In this revised proposal we have included three options:

- **Option 1** consists on a project scenario with LED fixtures that would keep the current aesthetics (same brands) as those found in Niagara-on-the-Lake.
- **Option 2** consists of a project scenario with LED fixtures of similar aesthetics, this option was explored as an alternative to option 1 to present a lower cost option.
- **Option 3** consist of a project scenario with LED retro fit kits that would allow to keep the current aesthetics by using removing the existing HID lamps and installing the new LED kits. This option would come in at a lower cost than options 1 & 2. Final compatibility of the kits with all existing fixture types is subject to confirmation based on field measurements/verification.

We look forward to moving your project to the next phase. We will arrange for a conference call to discuss the contents of the proposal report and this financing option in the next few days, but until then please feel free to contact us should you have any questions.

Yours truly,



Angelos Vlasopoulos, Chief Executive Officer
avlasopoulos@realtermenergy.com

1. PRELIMINARY LED ANALYSIS

Our team has constructed an initial LED assessment for illustrative purposes, based upon a basic one-for-one replacement technique, to give a reasonable estimate of the potential energy savings prior to performing the actual lighting designs. We have selected Philips, Acuity Brands & King for Option 1 and Acuity Brands for Option 2 with comparative light outputs for all existing HPS fixtures recorded in the Town of Niagara-on-the-Lake's most up to date inventory. This analysis is only a starting point to demonstrate the energy savings that are possible using LED technology while deploying industry standard roadway practices.


Current Inventory and Proposed LED Replacements

OPTION 1 – Upgrade Scenario								
HID Fixture type	HID System Wattage	HID QTY	Total HID Demand (kW)	LED Fixture type	LED System Wattage	LED QTY	Total LED Demand (kW)	Savings
70W_HID Philips Lumec XL10 Series	95	102	9.7	37W_XL10-35W32LED3K-G2-ACDR-LE2F-120-DMG-PHXL-FN1-BKTX	37	102	3.8	61%
100W_HID AEL American Revolution LED Series 247L	128	282	36.1	39W_247L P40 AS 3K R3 AY P7 PCLL NL1X1	39	282	11.0	70%
100W_HID King Luminaire K601 Series	128	108	13.8	40W_K601D P P4AC II 40 SSL 7030 120V PR7 3K BK	40	108	4.3	69%
100W_HID King Luminaire K56 Series	128	101	12.9	40W_KCK56-P4FL-III-40(SSL)-7030-120-PR7-3K-BK c/w KPL21PR7	40	101	4.0	69%
Total	-	593	72.5	-	-	593	23.1	68%

OPTION 2 – Upgrade Scenario								
HID Fixture type	HID System Wattage	HID QTY	Total HID Demand (kW)	LED Fixture type	LED System Wattage	LED QTY	Total LED Demand (kW)	Savings
70W_HID Philips Lumec XL10 Series	95	102	9.7	34W_CY18T4B	34	102	3.5	64%
100W_HID AEL American Revolution LED Series 247L	128	282	36.1	39W_247L P40 AS 3K R3 AY P7 PCLL NL1X1	39	282	11.0	70%
100W_HID King Luminaire K601 Series	128	108	13.8	40W_Pendant mount 4-sided Coach lantern	40	108	4.3	69%
100W_HID King Luminaire K56 Series	128	101	12.9	40W_CM019T4A	40	101	4.0	69%
Total	-	593	72.5	-	-	593	22.8	69%

OPTION 3 – Upgrade Scenario								
HID Fixture type	HID System Wattage	HID QTY	Total HID Demand (kW)	LED Fixture type	LED System Wattage	LED QTY	Total LED Demand (kW)	Savings
70W_HID Philips Lumec XL10 Series	95	102	9.7	30W_D4A-30G-30K-T5M-NA-F##D-DIM-PR7 (Retro fit Kit)	30	102	3.1	68%
100W_HID AEL American Revolution LED Series 247L	128	282	36.1	40W_D4-S40-40K-T5M-CUNV1-DIM-PR7 (Retro Fit Kit)	40	282	11.3	69%
100W_HID King Luminaire K601 Series	128	108	13.8	40W_D4-S40-40K-T5M-CADJ1-DIM-PR7 (Retro fit Kit)	40	108	4.3	69%
100W_HID King Luminaire K56 Series	128	101	12.9	40W_D4A-40G-30K-T5M-NA-CLAND-DIM-PR7-H10 (Retro fit Kit)	40	101	4.0	69%
Total	-	593	72.5	-	-	593	22.7	69%

Expected Fixture Replacements

Type	Qty.	Option 1	Option 2	Option 3
70W_HID Philips Lumec XL10 Series	102	Philips XL10 	Acuity Brands CY18T4B 	Vega D4 Retro Fit Kit 
100W_HID AEL American Revolution LED Series 247L	282	Acuity Brands 247 	Acuity Brands 247 	Vega D4 Retro Fit Kit 
100W_HID King Luminaire K601 Series	108	King Luminaire K601D 	Acuity Brands 4-side Coach Lantern 	Vega D4 Retro Fit Kit 
100W_HID King Luminaire K56 Series	101	King Luminaire KCK56 	Acuity Brands CM019T4A 	Vega D4 Retro Fit Kit 

Note: The above images are for illustration purposes only.

Limitations of One-for-One Replacement Recommendations

Relying solely on a “one-for-one” replacement technique has limitations:

- It is limited to existing inventory records that are often outdated and/or inaccurate.
- It can only prescribe the LED replacement wattage according to the wattage that is recorded in the most up to date inventory.
- No consideration is made for a proper lighting design and updated for current roadway conditions.
- Without lighting designs, over-lit or under-lit streets today will continue to be so, even with LEDs.

That is why during the Investment Grade Audit (IGA), we undertake a great deal of effort in our GIS mapping and design stages to ensure the right lighting levels for each unique street.

2. OVERVIEW OF AN ENERGY PERFORMANCE CONTRACT

A growing number of municipalities across North America are achieving performance efficiencies without increasing capital expenses and/or tax payer burden through EPCs. RealTerm Energy has successfully negotiated, installed and is now operating dozens of EPCs across North America.

Advantages of an EPC

RealTerm Energy:

- Finances a portion of the up-front capital investment by the Town with an agreement to provide a fixed repayment structure, based on the calculated energy savings.
- Guarantees the LED upgrade will yield a specified reduction in energy over a contracted term.
- Ensures the guaranteed savings generated will be sufficient to finance a portion of the project without pursuing complete capital funding.
- Includes streetlight maintenance costs in the monthly payment for a period of 10 years.
- Transfers any operating risks from the Town to itself.
- Ensures that at contract completion, the Town retains the full value of the energy and maintenance savings.

With an EPC, the Town can immediately take advantage of energy-efficient LED technology without having to add stress to its ratepayer base or borrow project funds. This frees up municipal resources that can then be assigned to other uses deemed important by the Town.

3. ENERGY PERFORMANCE CONTRACT BY THE NUMBERS

With an accurate inventory, as well as a breakdown of the energy bills and the utility rate structure, we have established a baseline, which gives an accurate statement of cost associated with operating the Town's existing streetlight network (subject to changes by the utility).

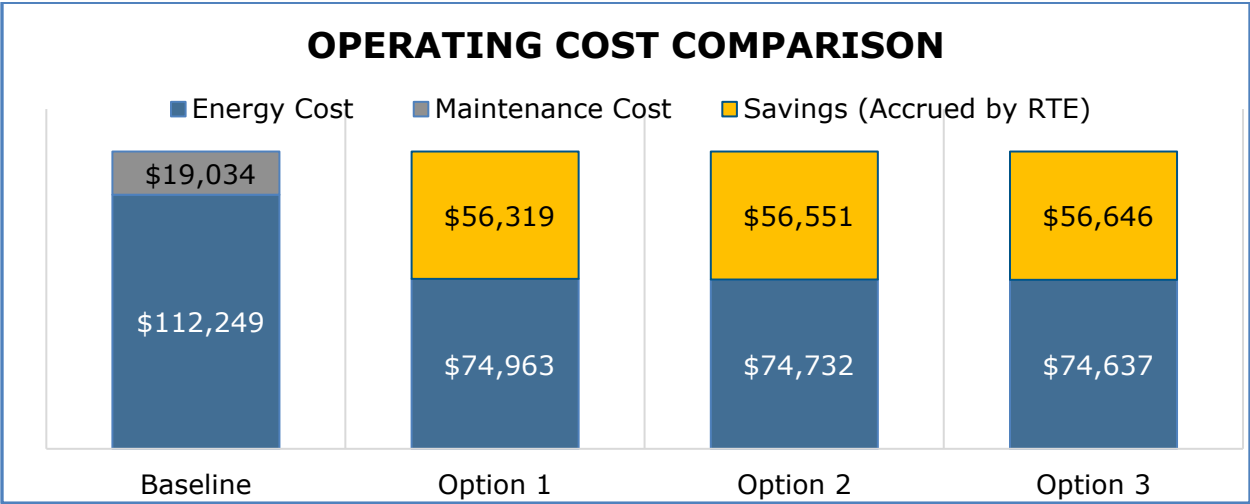
The establishment of the baseline is critical in computing the energy and cost savings that will accrue from upgrading the system to LEDs which are expected to be the financing tool of the project.

An Energy Performance Contract option would have RealTerm Energy provide a portion of the upfront capital required to complete the project as depicted below.

ENERGY PERFORMANCE CONTRACT OPTION			
Option	Option 1	Option 2	Option 3
Up-front Capital Requirement	\$510,000	\$360,000	\$250,000
Annual Energy and Maintenance Savings (to be accrued by RTE)	\$56,319	\$56,551	\$56,646
Contract Period	10 years	10 years	10 years
Annual Maintenance	Included	Included	Included

Important Notes:

- 1) The Up-front Capital Requirement to be paid by the Town was calculated considering an IESO incentive of \$14,100 (option 1 & 2), \$27,100 (option 3) which will be paid to RealTerm Energy and applied directly to reduce the initial project costs. In the event that the actual IESO approved amount changes, RealTerm Energy will be required to recalculate (increase or decrease) the Up-front Capital Requirement in order to conserve the commercial viability of the contract.
- 2) EPC scenario above based on preliminary desktop analysis that is based on cost estimates and a 1-1 LED replacement. Proposal is subject to revision following the completion of an IGA.



What is included in the Energy Performance Contract Option?

- The same deliverables included in the Design, Upgrade and Transfer Option PLUS
- RealTerm ensures that the network operates to established parameters
 - RealTerm is responsible for all maintenance over the Term
 - The Town enjoys 100% of the savings at the end of the financing Term
 - Asset Ownership rests with Town throughout

APPENDIX A: LUMINAIRE SPEC SHEETS (OPTION 1, 2 & 3)

Please refer to the zip file attached in our email to access the Luminaire Specification Sheets.