



# Proposal to the Municipality of Temagami

## LED Streetlighting Conversion

April 3rd, 2019

O-1647

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# TABLE OF CONTENTS

<b>1.</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>2.</b>	<b>PRELIMINARY LED ANALYSIS .....</b>	<b>5</b>
2.1.	Current Inventory and Proposed LED Replacements .....	5
2.2.	Expected Savings .....	6
2.3.	Project Financing: Capital Purchase .....	7
2.4.	Project Costs and Payback Period .....	7
2.5.	Calculation Assumptions .....	8
2.6.	Opportunity Cost .....	9
2.7.	Greenhouse Gas Reduction .....	9
<b>3.</b>	<b>APPROACH .....</b>	<b>10</b>
3.1.	GIS Inventory Survey .....	12
3.2.	Photometric Design .....	13
3.3.	Investment Grade Audit Report .....	14
3.4.	Product Procurement.....	14
3.5.	Installation .....	14
3.6.	Closeout .....	16
<b>4.</b>	<b>CONCLUSION AND NEXT STEPS .....</b>	<b>17</b>
<b>5.</b>	<b>COMPANY PROFILE .....</b>	<b>18</b>
5.1.	RealTerm Energy .....	18
5.2.	Company Mission.....	19
5.3.	Partnership with LAS .....	19
5.4.	Other Partnerships.....	19
<b>APPENDIX A:</b>	<b>LUMINAIRE SPEC SHEETS .....</b>	<b>20</b>
<b>DISCLAIMER .....</b>		<b>21</b>

April 3<sup>rd</sup>, 2019

The Municipality of Temagami  
P.O. Box 220  
Temagami, ON P0H 2H0

Thank you for your interest in upgrading your streetlighting network with RealTerm Energy and LAS. Our team at RealTerm Energy brings energy experts, financial analysts, lighting designers and boots-on-the-ground lighting technicians, working together to achieve smart solutions that will deliver approximately 73% cost savings to your streetlight energy bill in the first year. We are passionate about helping communities immediately realize the savings that LED lights can provide and we're proud to offer this service to the Municipality of Temagami.

You will find included a preliminary LED life-cycle cost analysis based upon data provided by the Municipality. This analysis is only a starting point, and demonstrates the energy savings that are possible using LED streetlight technology while deploying industry standard roadway practices.

Our turn-key service offering includes:

- An initial assessment of your existing streetlight network
- A comprehensive Investment Grade Audit
- Complete photometric designs to optimize energy efficiency and minimize costs
- New LED installation and recycling of old fixtures
- Transfer of all inventory files and data
- Transfer of all warranties at commissioning

We manage our conversion projects in a transparent fashion. We will keep the Municipality of Temagami informed of all progress during each phase of the project. Fiscal monitoring of this project, on the Municipality's part, will be an easy process facilitated by regular meetings and continually accessible reports.

The RealTerm Energy team appreciates this opportunity to present our proposal. We look forward to the prospect of working with the Municipality of Temagami to design and install your new, highly-efficient LED streetlighting system. We are passionate about what we do and want you to feel the same way about this project's results.



Sean Neely, President  
[sneely@realtermenergy.com](mailto:sneely@realtermenergy.com)

## 1. EXECUTIVE SUMMARY

<b>Technical/ Environmental Assessment</b>	Title	Municipality of Temagami Street Lights
	Baseline	74 HID Cobrahead fixtures, 9 HID decorative fixtures Total demand: 16.0 kW Annual energy consumption: 69,163 kWh Annual operating hours: 4,320
	Technology Employed	Smart ready LED Fixtures
	Technology Provider(s)	Cree & Acuity Brands
	Technical Specifications	7-PIN, Smart ready fixtures Color temp: 3000K or 4000K Average life ≥ 100,000 hours CRI ≥ 65, IP ≥ IP 65
	Fixture Warranty	10 years
	Annual Energy Savings	50,160 kWh (73%)
<b>Financial Assessment (Capital Purchase)</b>	Financing Scheme	Financed by Temagami
	Project Cost	\$73,655
	Incentive from IESO	\$4,006
	Net Project Cost	\$69,648
	Project Reference Period	23 Years
	Payback Period	5.2 Years
<b>Organizational Assessment</b>	Time Schedule	TBD

## 2. PRELIMINARY LED ANALYSIS

Our team has constructed an initial LED assessment for illustrative purposes, based upon a basic one-for-one replacement technique. We have selected Cree & Acuity Brands LED fixtures with comparative light outputs for all existing HPS fixtures recorded in the Municipality of Temagami's most up to date inventory. This analysis is only a starting point, and demonstrates the energy savings that are possible using LED technology while deploying industry standard roadway practices.

Please note that these estimates are conservative. Once our IGA report and photometric analysis are completed, our team has typically been able to improve the efficiency levels and project costs associated with the LED upgrade by as much as 10%.

### 2.1. Current Inventory and Proposed LED Replacements

COBRAHEAD FIXTURES								
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
Cobrahead HPS-100W	130	2	0.3	35W_XSPSM-D-HT-2ME-8L-40K7-UL-SV-N-Q1	35	2	0.1	73%
Cobrahead HPS-150W	190	69	13.1	49W_XSPSM-D-HT-2ME-8L-40K7-UL-SV-N-Q4	49	69	3.4	74%
Cobrahead HPS-250W	310	3	0.9	103W_XSPLG-D-HT-2ME-24L-40K7-UL-SV-N-Q2	103	3	0.3	67%
<b>Total (Cobras)</b>	-	<b>74</b>	<b>14.3</b>			<b>74</b>	<b>3.8</b>	<b>74%</b>

FLOOD & DECORATIVE FIXTURES								
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
Floodlight HPS-150W	190	9	1.7	71W_KAD LED 40C 530 30K R4 MVOLT RPD04 PER7 DDBXD	71	9	0.6	63%
<b>Total (Decos)</b>		<b>9</b>	<b>1.7</b>			<b>9</b>	<b>0.6</b>	<b>63%</b>
<b>Total (Cobras+Decos)</b>		<b>83</b>	<b>16.0</b>			<b>83</b>	<b>4.4</b>	<b>65%</b>

## Limitations of One-for-One Replacement Recommendations

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

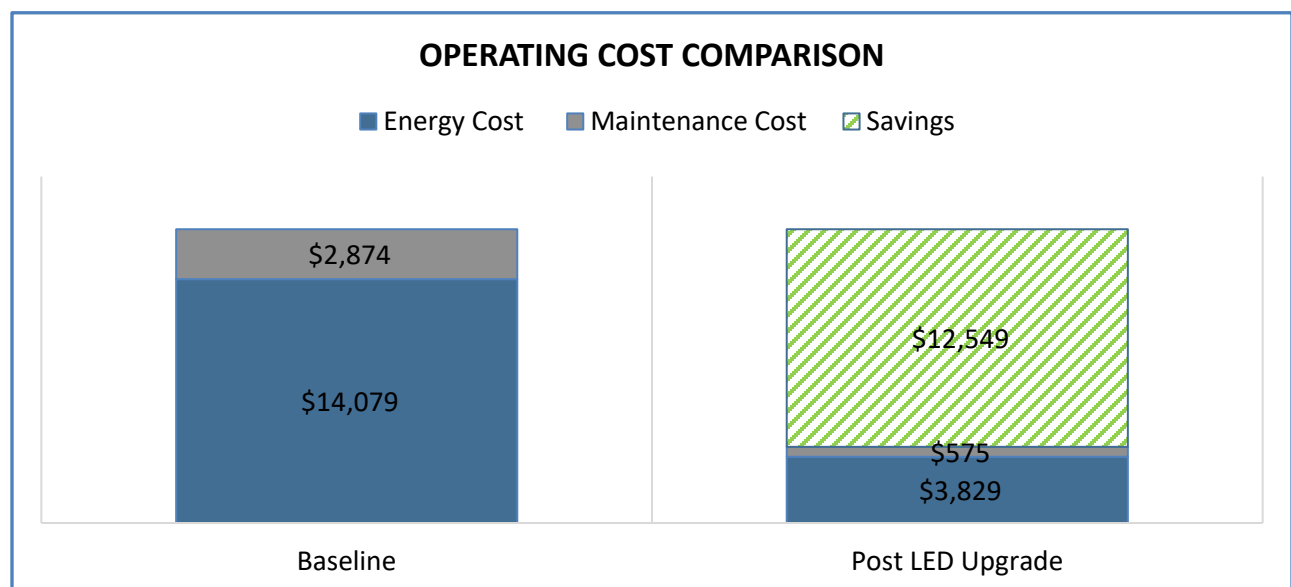
- It is limited to existing inventory records that are often outdated and/or inaccurate
- It can only prescribe the LED replacement wattage according to the wattage that is recorded in the most up to date inventory
- No consideration is made for a proper lighting design and updated for current roadway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

That is why we undertake a great deal of effort in our GIS mapping and design stages to ensure the right lighting levels for each unique street. Section 4 explains these processes and the many benefits in terms of enhanced energy savings, less glare and wasted light, and greater community acceptance.

## 2.2. Expected Savings

CURRENT STATUS	BASELINE	POST UPGRADE	VARIANCE	PERCENT
<b>Number of Fixtures</b>	<b>83</b>	<b>83</b>		
<b>Annual Electricity Consumption (kWh)</b>	<b>69,163</b>	<b>19,004</b>	<b>50,160</b>	<b>73%</b>
Annual Electricity Costs	\$14,079	\$3,829	\$10,250	73%
Annual Maintenance Cost (5 yr. avg.) <sup>(1)</sup>	\$2,874	\$575	\$2,299	80%
<b>Total Street Lights Expenditures</b>	<b>\$16,953</b>	<b>\$4,404</b>	<b>\$12,549</b>	<b>74%</b>
Average Annual Cost per Fixture	\$204	\$53	\$151	74%

(1) Estimated post-upgrade maintenance cost includes only the warranty maintenance cost of the fixtures and photocells.



## 2.3. Project Financing: Capital Purchase

### Design, Upgrade, and Transfer (DUT)

The Capital Purchase, or Design, Upgrade and Transfer (DUT) option provides the same services as in the other options but is self-financed through reserves, levies, or some other local source. In this option, the Municipality provides its own financing, and purchases from RealTerm Energy a fully-designed and upgraded system, with ownership being transferred immediately upon final payment.

#### Advantages of DUT

- RealTerm Energy delivers a full turn-key program to manage the entire project, including design, procurement, installation and final commissioning
- Easy to administer, no need for third-party involvement unless desired
- Turnkey services greatly minimize staff time over the life of the project
- No creation of debt
- Able to enjoy 100% of the savings from project completion

## 2.4. Project Costs and Payback Period

PROJECT COSTS	
<b>Number of Fixtures</b>	<b>83</b>
Total Project Cost	\$73,655
Incentive	(\$4,006)
<b>Net Project Costs</b>	<b>\$69,648</b>

### Investment Return

The payback period of the project, before including any financing costs is **5.2 years**.

The following table shows an example of financing based on an approximate interest rate of (2.94%) from Infrastructure Ontario:

CAPITAL COST	TERM (YEARS)	INTEREST RATE	ANNUAL PAYMENT	COST OF BORROWING
\$69,648	10	2.94%	\$8,140	\$11,751

#### Annual Savings over 10-year Period for a 10-year loan period with 2.94% interest rate

Year	1	2	3	4	5	6	7	8	9	10
Annual Savings	\$12,549	\$12,902	\$13,266	\$13,640	\$14,025	\$14,420	\$14,828	\$15,247	\$15,678	\$16,121
<b>Loan Repayment</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>	<b>\$8,140</b>
Cash Flow	\$4,409	\$4,762	\$5,126	\$5,500	\$5,885	\$6,280	\$6,688	\$7,107	\$7,538	\$7,981
Cumulative Cash Flow	\$4,409	\$9,171	\$14,297	\$19,797	\$25,682	\$31,962	\$38,650	\$45,757	\$53,296	\$61,277



## 2.5. Calculation Assumptions

1. The electricity cost savings were calculated based on Hydro One current rates valid at the date of the preparation of this Proposal. This information can be obtained online on the Ontario Energy Board website<sup>1</sup>. The annual energy savings of the new LED streetlighting system were calculated based on the data provided by the Municipality. Any modifications in the data below will change the energy consumption savings and the energy cost savings.
2. The Total project cost includes the following costs:
  - Refusing                                      Each new LED fixture to include a new fuse
  - Fuse Holder Replacement              100% of Inventory to include a new fuse holder
  - Rewiring                                      15% of Inventory to require rewiring
  - Disposal                                      Included at no additional cost
  - Arm Replacement                        2% of the davit arms
3. The total project cost does not include any of the following costs:
  - Modification of fixture mounting
  - Relocation of fixture
  - The replacement of the fixtures near high voltage situations or located in the restricted zone
4. Electricity rates reflect the wholesale electricity price. The variations of the wholesale electricity prices are reflected by the Monthly Average Hourly Price and the Global Adjustment. In our calculation for Monthly Average Hourly Price, we used \$0.02431/kWh and for Global Adjustment we used \$0.09347/kWh. These prices reflect the average prices over the last 12 months. The current and the historic Monthly Average Hourly Prices and Global adjustment prices are available on the IESO website<sup>2</sup>.
5. Specified LED fixtures have a 10-year warranty and include a Long Life Photo control with a 12-year warranty. Specified LED fixtures come with Dimmable Drivers and 7-pin NEMA Photocell Receptacle.
6. HST is not included in our calculations.

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<sup>1</sup> Ontario Energy Board. Electricity Distribution Rate Applications. Retrieved from <http://www.ontarioenergyboard.ca/OEB/Industry/Regulatory+Proceedings/Applications+Before+the+Board/Electricity+Distribution+Rates>

<sup>2</sup> Independent Electricity System Operator. Price Overview - Monthly Average Hourly Prices, By Year. Retrieved from <http://www.ieso.ca/Pages/Power-Data/price.aspx>



## 2.6. Opportunity Cost

Postponing the decision to buy something today is sometimes rewarded by a lower price tomorrow.

Postponing your streetlight conversion doesn't just mean waiting, it also means continuing to operate the existing inefficient system and missing out on material energy and maintenance savings while waiting for the prices to drop. In other words, if you're waiting, you're wasting energy and money.

Energy experts and our LED production partners have determined that the big gains that have been realized in LED manufacturing, and that the major price reductions or efficiency advances that we've seen in the past 5 years aren't likely to be seen again.

The table below represents a ten percent (10%) reduction in the price of the LED fixtures over the next year.

OPPORTUNITY COST	
Foregone Energy/Maintenance Savings (1 Year)	\$12,549
LED Luminaire Cost (today)	\$34,846
Projected Price Reduction (10%)	\$3,485
Opportunity Cost of Waiting (12 months)	\$9,064

Postponing a decision to upgrade costs the Municipality each year in foregone savings and wasted money spent on maintaining an inefficient and costly system.

## 2.7. Greenhouse Gas Reduction

ESTIMATED GREEN HOUSE GAS REDUCTION	
Current Annual Energy Consumption (kWh)	69,163
Projected LED Annual Energy Consumption (kWh)	19,004
Annual kWh Savings	50,160
Estimated Annual GHG Reduction (metric tonnes)	2
GHG Reduction over Luminaire Life of 100,000 hours (metric tonnes)	50

### 3. APPROACH

RealTerm Energy uses a proven six-step turn-key approach to achieve the most efficient LED conversion with the highest degree of energy savings and the greatest assurance of safe light levels. We tailor our work to the context and needs of Temagami, relying on the input of your knowledgeable staff.



1. GIS Inventory	2. Photometric Design	3. Investment Grade Audit Report
<ul style="list-style-type: none"> <li>Conduct comprehensive geospatial streetlight inventory</li> <li>Identify any discrepancies in previous streetlight inventory</li> <li>Develop base for an interactive, geospatial streetlight map</li> </ul>	<ul style="list-style-type: none"> <li>Create photometric designs based on updated streetlight inventory and selected LED luminaires</li> <li>Maximize energy savings and roadway / pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>Complete analysis of your current streetlight infrastructure's performance</li> <li>Comparison of the Municipality's current energy consumption with the post-conversion LED system</li> </ul>



4. Fixture Procurement	5. Fixture Installation	6. Project Close-Out
<ul style="list-style-type: none"> <li>RTE has secured competitive pricing through the program with LAS from Cree Canada</li> <li>Complete all administrative and logistical tasks relating to the procurement of the fixtures</li> </ul>	<ul style="list-style-type: none"> <li>Complete installation of new LED street lights</li> <li>Real-time installation tracking</li> <li>Recycling / disposal of old fixtures</li> <li>Community outreach</li> </ul>	<ul style="list-style-type: none"> <li>Transfer of commissioning binder</li> <li>Finalize incentive and/or rebate application(s)</li> <li>Assist with billing changes</li> <li>Transfer of finalized geospatial streetlight map</li> </ul>

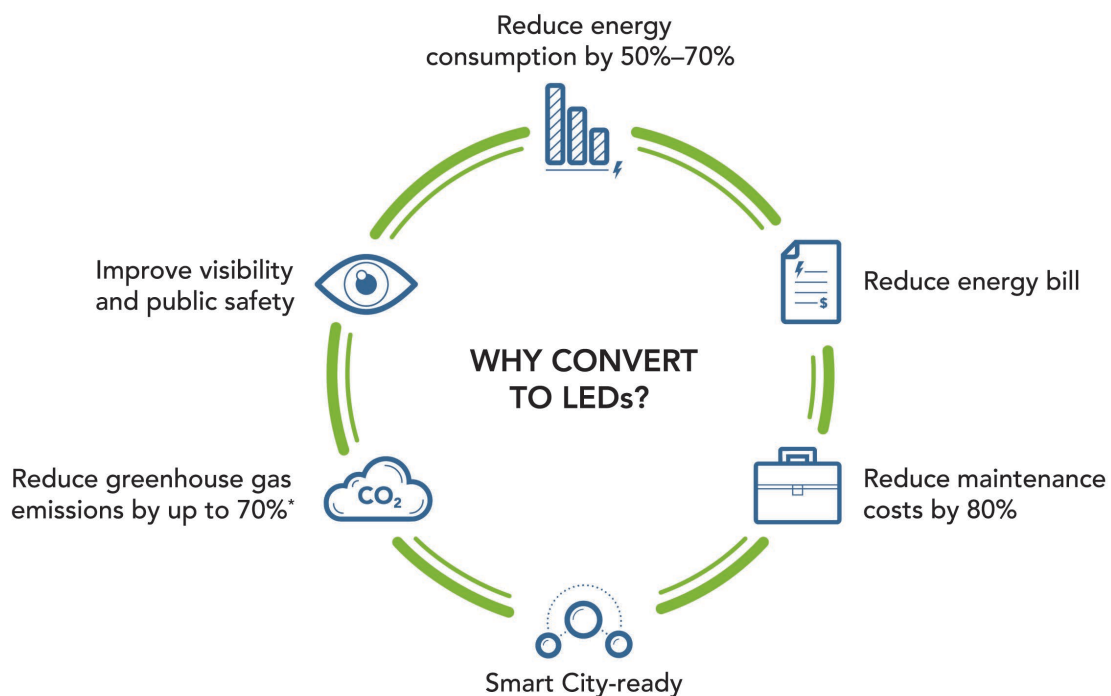
## Project Management Experience

RealTerm Energy's conversion projects have ranged from 13 fixtures to over 12,000 fixtures in urban, suburban and rural municipalities. Our project management team has demonstrated its ability to effectively manage and complete numerous turn-key LED conversion projects simultaneously for multiple municipalities in wide-spread locations. We adapt our approach according to each municipalities' unique needs and streetlight infrastructure requirements. During a recent quarter, our project management team was overseeing 64 installation subcontractors on 35 separate projects. All projects were completed on time and within budget.

### Single Point of Contact (SPOC) Management

We will assign a project manager as the single point of contact for the duration of the project. This enhances overall efficiency and increases project transparency. Our team recommends that the Municipality also assign a SPOC as this will provide a clear management structure to communicate all project information.

## RealTerm Energy Can Help You:



## 3.1. GIS Inventory Survey

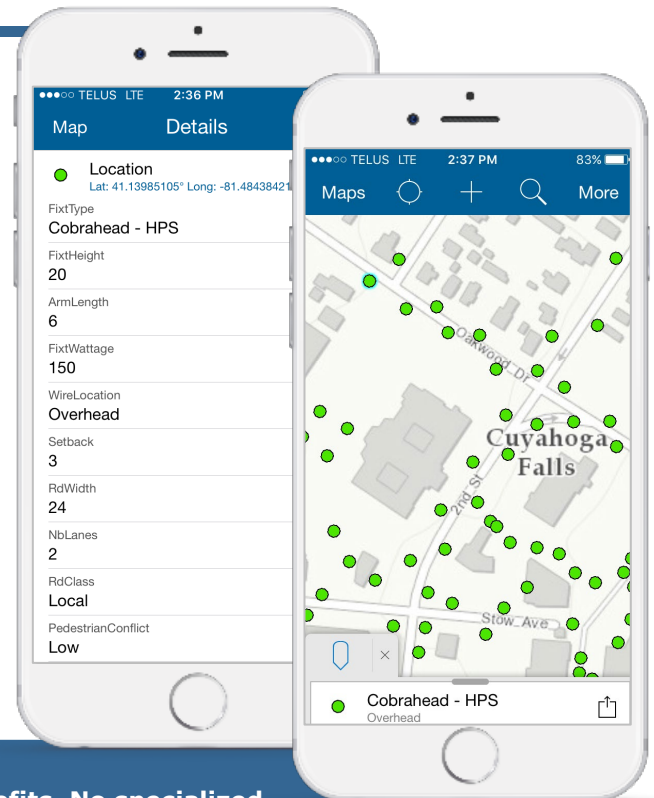
The GIS inventory is a critical component of our approach. Our project team collects all the baseline geospatial streetlight data required to develop a comprehensive photometric design plan of your new LED street lighting network. Your staff will find that asset management is now easy. They will be able to identify each individual light in the system and view its history and characteristics.



RealTerm Energy uses a customized ESRI application to capture and record detailed streetlight data and measurements.

The GIS-based application records and verifies the following characteristics:

- Exact pole location (longitude, latitude)
- Unique ID number (when present)
- Offset/setback of pole
- Pole material (steel, aluminum, wood)
- Decorative data (pole color, photocell)
- Arm length
- Fixture type, wattage and mounting height
- Connection/wire location (overhead or ground)
- Road width, classification and traffic lanes
- Pedestrian conflict
- Problems (tree trimming, high reach, wiring etc.)



**Our mobile street lighting app offers significant benefits. No specialized equipment or expensive software licenses are required for the Town's authorized users to access the survey data online and all data can be easily exported to MS-Excel.**

Access the link below to view a work product sample of RealTerm Energy's street light map:

[LINK TO SAMPLE INVENTORY MAP](#)

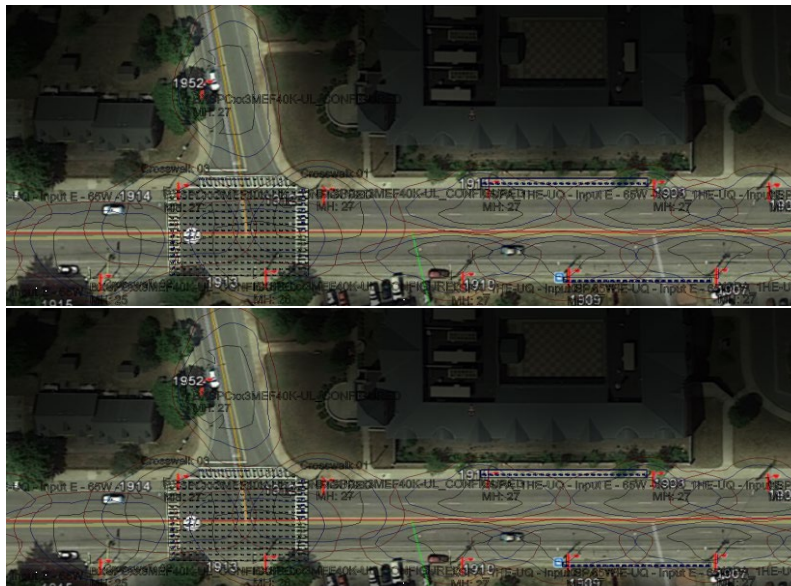
## 3.2. Photometric Design

RealTerm Energy's in-house design team uses GIS-based inventory data to create photometric design plans that optimize lighting quality, safety levels and energy savings.



- All designs follow the RP-8-2014 Roadway Lighting recommendation produced by the IES when possible.
- Each design reduces back-light and up-light while delivering the required light to the targeted area.
- Light trespass and Dark Sky considerations are incorporated to avoid light pollution.

Our team delivers the most efficient design methodology to achieve standardized designs that meet the RP-8-2014 guidelines wherever possible, thereby reducing the number of over- or under-lit roadways. Concerns specific to the Municipality will be addressed by the design team (such as adding or reducing light levels where desired by the Municipality). Unique regional characteristics such as neighborhoods, schools, hospitals and areas with higher levels of street crime, accidents and/or vehicle-bicycle-pedestrian conflicts, are included.



"Many municipalities seemed to be going with a one-for-one replacement. We liked the GIS mapping, and the design process brought additional value to the project."

Barry Thompson, Manager of  
Energy Management, City of  
Barrie, ON

Figure 1: The sample graphic above is a digital rendering of RealTerm's photometric calculations, taking into account the GIS inventory survey data and the lighting recommendations for the given street, intersection, sidewalks and pedestrian crosswalks.

### 3.3. Investment Grade Audit Report

RealTerm will produce an Investment Grade Audit (IGA) Report based on this detailed photometric design of your new LED street lighting system. The IGA will provide the Municipality with 1) a complete analysis of your current streetlight infrastructure's performance and 2) a comparison of the status quo energy consumption with the post-conversion LED system, using highly accurate data from the custom photometric designs.



This bankable report is based on precise, fixture-by-fixture inventory and design, and provides the optimal fixture types, wattages, light distributions and quantities for approval by the Municipality and for procurement.

### 3.4. Product Procurement

The RealTerm Energy team has directly handled the procurement of approximately 150,000 streetlight fixtures in the last 3 years working with the major LED streetlight manufacturers. For the Municipality, we will take advantage of the results of LAS's arrangements with Cree Canada for the luminaires.



Municipalities we've worked with know that we will only design LED streetlight systems using products from reputable manufacturers. These manufacturers must be financially solid, certified, proven and supply the highest quality luminaires accompanied by appropriate warranties. Various fixture characteristics are reviewed during the selection process such as color temperature, color rendition index, distribution pattern, efficacy, etc., and the impacts of each. We also run a lifecycle cost and saving analysis on product offerings.

### 3.5. Installation

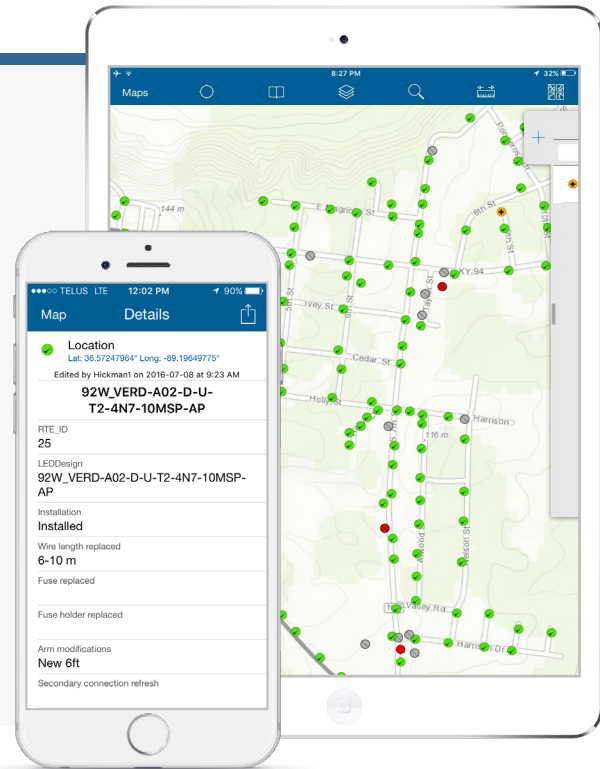


#### **Oversight of Installation**

Our project manager and field installation supervisor outline installation protocol and provide all necessary training for each team of installers. This ensures that all work is done to the highest standards and is fully documented. Procedures are worked out in advance to ensure a safe working environment and to establish guidelines for handling exceptions and reporting problems.

All installation personnel will use RealTerm Energy's customized GIS streetlight app, which builds on the GIS survey and design data. Use of this app is extremely important as it tells the installation crew what LED luminaire to install at each individual location and confirms what has been installed and removed. Team members and any municipal stakeholders can review project progress in real-time.

The installation team can also use the app to view and/or record any streetlight infrastructure that requires a return trip for unexpected repairs and/or new wiring.



## Installation Protocols

We have established highly efficient installation protocols that are aimed at:

- Minimizing disruption to traffic, pedestrians and residents
- Minimizing the installation timeline
- Maximizing safety standards
- Maximizing installation hours

## We Think Local

Our goal is to identify and contract with qualified local electrical contractors for the conversion of your streetlights. We train them in best practices and the use of the latest technology. This technology allows them to know exactly which streetlight to install in each location, and provides detailed documentation to the Municipality that the correct equipment was installed.

## Media and Community Outreach

Our team has established a strong communication protocol that provides the Municipality with all information relating to the project and to ensure it is easily understood and quickly made available.



## Quality Control and Spot-Checks

Quality control verifications are initiated as soon as the installation begins, to verify that all standards are being met. We ensure that fixtures are mounted level, that all connections are secure, and that proper safety equipment is in place both for the workers as well as the site. We remain in constant communication with the Municipality 's staff and respond to any issues raised by community members throughout the installation process.

## Billing Changes

The tremendous benefit of your energy savings won't be realized until the energy bills from your utility are adjusted to reflect the new lower kW consumption of the new LED street lights. Revised billing usually begins the very next billing cycle after installation is completed. Our proven experience with over 40 utilities to date reveals that billing changes have never been refused nor delayed due to our accurate data and efficient procedures.

## Environmental Management Plan (EMP)

RealTerm Energy will develop an Environmental Management Plan (EMP) together with the installation contractors to respect the requirements for the identifying, handling, storing, and shipping of fixtures, and of the hazardous materials resulting from the removal and recycling of the existing luminaires. The Municipality will be provided recycling certificates for all former fixtures and our team will maintain organized disposal records for reference as needed.

## 3.6. Closeout

RealTerm Energy transfers a Commissioning Binder (on paper and on a USB key) to the Municipality upon project completion. This ensures that you and your team have all the necessary and complete information going forward. This will include but is not limited to:



Closing and Contractor letters	Disposal approvals
Luminaire and photocell warranties	Lighting designs
Cost outline	Customer Care information
All collected metadata on the street lights and their LED replacements	Final installed mapping (ESRI, KMZ and Excel Spreadsheet Format)
Insurance	Emergency contact details of our key staff
Final incentive and/or rebate application documentation	Billing change confirmation from the utility

## 4. CONCLUSION AND NEXT STEPS

We are available to meet with the municipal staff either in person or by video conference to review this proposal, to answer any questions you may have, and gain a more thorough understanding of your lighting needs and objectives.

The next steps to start the implementation of this new technology and start seeing energy and maintenance savings are as follows:

1. **Recommendation from Staff to Council to Proceed** (RealTerm Energy personnel are available to make a presentation to Council on the contents of this proposal)
2. Letter of Engagement (LOE)
3. RealTerm Energy commences our Investment Grade Audit of your Streetlight network
4. Data Collection (GIS/GPS mapping and physical parameters)
5. Review of Energy and Maintenance Records
6. Photometric Analysis and Detailed Lighting Designs
7. Final Fixture Selection
8. Economic Models and Savings Forecasts
9. Preparation of Project Financing
10. Final Costing and Timetable for Completion
11. Presentation of Findings to Staff/Council
12. Approval by Council (if required)

## 5. COMPANY PROFILE

### 5.1. RealTerm Energy

RealTerm Energy is an international leader in providing energy-efficient turnkey LED street lighting conversions for cities. Over 230 municipalities have selected RealTerm Energy for such projects over the past five years.

Our group of over 40+ full-time employees is dedicated exclusively to designing and executing high-quality and cost-effective LED street light conversions for municipalities and utilities across North America.

The compliment of this in-house team includes a:

- GIS department
- Design department
- Estimation and energy efficiency department
- Project management department
- Client services department
- Financing and accounting department, and
- Research department

Municipalities we've worked with quickly recognize that RealTerm Energy lives and breathes its business. Our team's innovative technical and operational processes ensure we accomplish what we set out to do – in short, what we promise at the onset of a project. This approach results in municipalities finding we are tenacious when it comes to making things right.

#### Realterm (Parent Company)

Realterm is a privately-held international on-airport real estate operator and leader in infrastructure and logistics strategies, with installations in North America, Europe, and Asia. Since its inception in 1991, Realterm has grown steadily, currently managing over \$3 billion in assets.

*"The LED streetlight conversion project went very smoothly. RealTerm Energy developed an installation protocol that allowed them to work rapidly, while doing the job right. The RealTerm team converted 10,622 High Pressure Sodium lights to LED in three months (57 working days). We had very few complaints on any aspect of the project, especially considering this change impacted virtually every resident in Barrie."*

Barry Thompson, Manager of  
Energy Management  
City of Barrie, ON

## 5.2. Company Mission

RealTerm Energy's mission is to save energy we can't afford to waste. This means delivering best-in-class technological, financial and managerial solutions for efficient energy-related projects communities to reduce energy costs, improve the quality of life of citizens, and protect the environment.

## 5.3. Partnership with LAS

Local Authority Services (LAS), the not-for-profit service arm of the Association of Municipalities of Ontario (AMO), is a preferred provider of competitively-priced and sustainable business services for Ontario municipalities and the broader public sector. LAS helps its customers "save money, make money, and build capacity."

LAS selected Cree Canada to be its manufacturing partner after an exhaustive RFP process in the fall of 2014. LAS identified both RealTerm and Cree as offering the best value and the highest quality of services available to offer its members an alternative to engaging in a lengthy and expensive RFP process.

More than 170 Ontario municipalities have chosen the LAS/RealTerm Energy/Cree partnership to upgrade their streetlight networks. For more information, contact Jeff Barten, Energy and Asset Services Manager, Local Authority Services.

## 5.4. Other Partnerships

RealTerm Energy has also been selected as a preferred provider of LED street lighting services for the Connecticut Conference of Municipalities (CCM), the Metropolitan Area Planning Commission (MAPC) of Massachusetts, and the Ohio Municipal League (OML).



**WORLD BANK GROUP**

### **Proud to be recognized by the World Bank.**

RealTerm Energy's "remarkable" partnership in the joint-procurement model developed with LAS and the Association of Municipalities of Ontario has been recognized by the World Bank as being among the most efficient and successful delivery models in the world.

The World Bank Group estimates that 20% of global electricity is consumed by lighting and it projects that widespread adoption of LED lighting can reduce that to 7%. We are proud to join the World Bank's efforts to increase energy efficiency and lower greenhouse gas emissions as we continue to expand to new jurisdictions. Access our homepage to view the complete case study:

<http://www.realtermenergy.com/>

## APPENDIX A: LUMINAIRE SPEC SHEETS

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

## DISCLAIMER

This Proposal is confidential and is being provided to the Municipality of Temagami for the sole purpose of demonstrating project scenarios for the Municipality to consider regarding the design and upgrade of its street lighting network to LED technology. The Proposal, including evaluating any possible shared energy savings partnership, is not to be used for any other purpose or made available to any other party without the prior written consent of RealTerm Energy.

This Proposal contains select information about the Project and the LED Street Lighting market, but does not contain all the necessary information to evaluate the exact cost and energy savings potential of the Project. The financial projections contained herein are for general reference only and are based on assumptions relating to overall market dynamics, historical data and project-specific preliminary information pertaining, but not limited to: ownership, inventory breakdown and operating costs. Accordingly, actual results may vary from our preliminary projections and can only be confirmed following a GPS mapping and data collection of all streetlight assets and further analysis during the development of an Investment Grade Audit (IGA) Report. In addition, any changes to the scope of work established within the preliminary analysis will impact the cost and savings projections.

While the information contained in this Proposal and any other Evaluation Material is believed to be reliable, RealTerm Energy cannot guarantee its accuracy or completeness. Prospective clients or other parties authorized by the prospective client are to use such material solely to facilitate the prospective client's investigation and are advised to make their own independent investigations, projections and conclusions regarding the financials and savings potential of the Project without reliance on this Proposal or any other Evaluation Material. Although additional Evaluation Material, which may include engineering, system design or other reports, may be provided to qualified parties as the evaluation period proceeds, prospective clients should seek advice from their own attorneys, accountants, engineers and street lighting experts as deemed appropriate.

RealTerm Energy expressly reserves the right, at its sole discretion, to reject any offer to partner or to terminate any negotiations with any party at any time upon written notice to the client. RealTerm Energy shall have no legal commitments or obligations to any prospective client unless and until a written term sheet has been fully executed, delivered and approved by RealTerm Energy.

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