

City Council Workshop

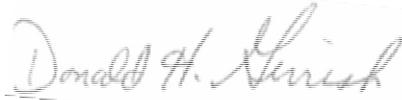
Agenda Item #4

October 12, 2016

LED Street Lights

This item is being brought before the City Council to begin a discussion on the possible replacement of approximately 1,600 high pressure sodium and metal halide street lights in the City with energy efficient LED lights and fixtures. The City currently leases its Street Lights from Central Maine Power, and the Council will be asked to consider the benefits of transitioning to owning its own fixtures.

Attached is a detailed memo from Planning Director Tex Haeuser outlining this proposal. He will be at Wednesday's meeting to answer any questions.

A handwritten signature in cursive script, reading "Donald H. Hirsch", is centered on the page. The signature is written in dark ink on a light-colored background.

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Interim City Manager

**To:** Don Gerrish, Interim City Manager  
**From:** Tex Haeuser, Planning Director  
Greg L'Heureux, Finance Director  
**Cc:** Joshua Reny, Assistant City Manager and Economic Development Director  
**Date:** October 7, 2016  
**Re:** **Conversion of Street Lights to LED Fixtures**

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### **Project Purpose**

This project is to replace the approximately 1,600 high pressure sodium and metal halide street lights that the City leases from Central Maine Power (CMP) with LED fixtures (and, if necessary, new mast arms) that the City would own and maintain. Doing so will save the taxpayers a significant amount of money and also will greatly decrease the City's carbon footprint by reducing the amount of electricity used.

### **Historical Background**

It has taken four attempts to change State law to enable municipalities to own street lights that are attached to utility-owned poles. The Municipal Street Lighting Group (MSLG), consisting of Falmouth, Rockland, and South Portland, got together for the last two efforts and eventually succeeded in getting a section on street lights included in the 2013 Omnibus Energy Bill. These statutory provisions were somewhat general, however, so it has taken all the time since then to negotiate with CMP and Emera Maine through a PUC rule-making process on the details. That process was completed when the PUC Commissioners made their final ruling on September 13<sup>th</sup> of this year.

### **Key Legislative and PUC Documents**

There are several key documents that together create the framework for how municipalities can own street lights on utility-owned poles. In addition to being hyper-linked, these may be found at <http://www.southportland.org/departments/planning-and-development/street-lights/> and are summarized as follows:

- **Street Light Law**—These are the enabling provisions that were created under Title 35-A: Public Utilities, Chapter 25: Regulation of Faculties in the Public Way. They lay out the three ownership and maintenance options available for municipalities:
  - The transmission and distribution (TND) utility leases the street lighting components to the municipality and maintains them; or,
  - The TND utility installs street lighting components purchased and owned and maintained by the municipality; or,

- The municipality installs, owns, and maintains the street lighting components.

The law also directed the PUC to establish criteria for locating street lights on poles, for safety criteria related to installing street lights, establishing delivery rates, and determining a fair cost for cases where the municipality wants to purchase the existing street lights.

- [PUC Findings 9-22-14](#)—These findings relate to several points of discussion between the parties (MSLG, CMP, Emera Maine), including requiring municipalities to purchase liability insurance and indemnify the utility, only allowing the utility to disconnect existing street lights and cut in fuses, and limits on phasing of municipal purchases of existing street lights.
- [PUC Order 10-17-15](#)—This order included areas of agreement between the parties, including:
  - A Standard Form Agreement will need to be developed for municipalities to use to enter into agreements with the TND utilities for owning their own street lights.
  - Power connections can only be done by the utility.
  - Fusing is required so that street lights can be worked on without requiring power disconnects by the utility (except initially to install the fuse).
  - Notification to the utility is required except for routine maintenance.
  - Utility has to approve equipment being installed.
  - Street light usage will be based on the utilities' street light profiles (as opposed to being metered).
  - Each street light has to be labeled with a label visible from the ground.
  - Street lights have to be set in the "fail off" mode.
  - Utilities are allowed to enter into municipal maintenance agreements.
  - No access or pole attachment fee can be charged by the utility. [A significant win for the MSLG]
  - Utilities may conduct field audits of the municipality's street lighting equipment at the utility's expense. But, if they find discrepancies with what the municipality says they have for street lights, a full audit commences at the municipality's expense.
  - No charge for protective covers over electrical lines to protect municipal employees or contractors.
  - Municipal employees or contractors working on street lights have to be licensed Maine electricians and have to meet training certifications.

- There will be an ongoing working group among the parties.
- Purchase of existing lights can be phased in over three years.
- No charge to the municipality for the removal of any street lighting equipment at least 15 years old.
- Purchase is based on Net Book Value (NBV).

The order also included areas of disagreement among the parties, including:

- Amount of liability insurance.
- CMP energy-only price—CMP wanted \$0.10 per kWh; we said it should be about half of that. [Eventually we won.]
- Utility worker qualifications
- Calculation of Net Book Value of equipment
- [PUC Order 9-13-16](#)—This order dealt with the last major sticking point between the parties: how to calculate the value of existing street light equipment should a municipality choose not to buy new equipment. Finance Director Greg L’Heureux argued strenuously and repeatedly that the method proposed by CMP did not fully credit municipalities for the many years of payments made on street lights long after they had been fully depreciated. The Commissioners sided with a PUC staff methodology based on Greg’s input. The order also gave CMP 60 days to file a Standard Form Customer Service Agreement (which works out to mid-October).
- [Standard Form Agreement](#)—As discussed, this is the standard agreement document that will be used by municipalities to enter into agreements with the TND utilities in order to own their street lights. Although the final version of the agreement has not yet been issued by CMP (see above), a copy of the original CMP version is hyper-linked so as to provide a general idea of what will be included in these agreements.
- [CMP Terms & Conditions for Municipal Ownership of Street Lights](#)—this document is a price list containing CMP’s fees and charges for various connection, fusing, installation, maintenance, and other activities. Given the logistics of replacing street lights, it may be difficult not to use CMP to install the replacement LED fixtures and any related equipment.

### **Implementation Firm Selection Process**

Beginning last winter, the MSLG, now joined by the City of Biddeford, began to think about how to go about doing the street light conversions once the PUC rulemaking was completed. Consistent with South Portland’s procurement procedures, and with the ongoing review and advice of Alyssa Tibbetts, Esq., of Jensen, Baird, Gardner & Henry, the four communities prepared a joint Request for Qualifications for a firm to assist in the project. We were looking

for a turn-key proposal that would include an investment grade audit of our street lights; a design analysis that fit the street systems and met industry standards as modified per municipal preference; a financial analysis to indicate return on investment (ROI); and so on.

The RFQ was sent out at the end of January, and four firms responded: Siemens, RealTerm, Pemco, and TEN (The Efficiency Network). After interviewing Siemens, RealTerm, and TEN, the four communities unanimously selected RealTerm. Copies of both the [RFQ](#) and the [RealTerm proposal](#) are attached.

### **Steps to Replace our Street Lights**

As contained in the [proposed agreement with RealTerm](#) (which will be identical to the version signed by Falmouth that is linked here), the steps that will be performed to accomplish the conversion of our street lights to LEDs include:

- **Undertaking an Investment Grade Audit (IGA)**—this will be a GIS inventory of all of our existing public street and outdoor lights that includes such attributes as:
  - Fixture Type
  - Fixture Wattage
  - Mounting Height
  - Arm Length
  - Wire Location
  - Pole Material
  - Pole Setback
  - Road Width
  - Road Classification
  - Pedestrian Conflict
  - Decorative with Photocell (if applicable)
  - Decorative Color (If applicable)
  - Utility Pole ID (When present)
  - Problems (Tree trimming, Transformer present, Primary wire, High reach, Inaccessible by vehicle)
  - General Comments
  - Collection Date
  - GPS Location (XY Coordinate)

The audit report will include:

- Recommendations on how to address identified serious deficiencies in the current street lighting network. The City will direct the Consultant on how to address these issues before the procurement of equipment and installation stages commence;

- Baseline energy use, energy cost and operations & maintenance costs;
  - Estimated retrofit energy use and operations & maintenance costs;
  - Estimated sources of funding, including rebates;
  - Calculation of estimated total conversion cost (remaining design tasks, product, and installation), energy reduction, and simple payback
- **Lighting design analysis**—the main point here is that it rarely works to simply replace existing street lights with LEDs on a one-for-one basis on exactly the same poles. An analysis has to be done to determine how desired light levels will be obtained and in which places. This will include identifying target areas that may need special consideration:
    - Pedestrian/vehicle and bicycle/vehicle crash data for the last 5 years to identify areas where light levels and/or spacing have affected public safety.
    - Important localized land uses (e.g. parks, schools, hospitals, etc.)
    - Relative volumes of pedestrian and bicycle activity
    - Unique neighborhood characteristics
- **Comprehensive financial analysis**-- The ROI will include a comparative analysis of all viable options including but not limited to the following:
    - Status quo – do not replace light fixtures and continue reliance on the utility to maintain the existing system.
    - Take ownership of all existing fixtures; install fuses; and replace fixtures at a future date to be determined.
    - Take ownership of all existing fixtures; install fuses; and replace fixtures at a specified time.
    - Require utility to remove all fixtures and install new fixtures as soon as practicably possible.
- **Public process**—RealTerm will convene and host a public process to provide citizens with an opportunity to offer input into the final design recommendations, including such aspects as:
    - Criteria for Manufacturer Selection;
    - Color Temperature Selection;
    - Business Improvement Area (BIA) Consultation for Decorative Replacement recommendations;
    - Public Education and Consultation Process;
    - Design Process;
    - Schedule and Project Milestones;
    - Post-Installation Outage Reporting Process.

- **Procurement of the LED light fixtures**—RealTerm will work with the City to develop detailed specifications and to procure a firm through a competitive process. One of the reasons the MSLG selected RealTerm was its strong relationship with LED vendors.
- **Apply for available grants and rebates**—Efficiency Maine is not nearly as generous as they had been for street lights, but for whatever grants or rebates available, RealTerm will pursue them.
- **Perform project management including oversight of LED installations**—this also will be done by RealTerm, including overseeing the recycling or disposal of all waste material.
- **At project commissioning, RealTerm will provide to South Portland:**
  - RealTerm Energy Documents:
    - Proposal
    - Letter of Intent
    - Investment Grade Audit (IGA)
    - Contract Document
    - Supplemental Conditions
    - RealTerm Energy Insurance Certificate
    - Confirmation of Utility Billing Update,
    - Warranty Service Request System Overview
  - Installation Contractor:
    - Contractor Insurance and Workman’s Compensation Documents (as applicable),
    - Utility Inspection Certificates (as applicable)
  - Luminaires:
    - Warranty Coverage Information
    - Manufacture Warranty
    - Fixture Seal of Approval
    - Photocell Warranty
    - Recycling Certificate
  - GPS/GIS Lighting Infrastructure:
    - Installation Summary
    - Fixture Specifications
    - Lighting Designs
  - Lighting Network Metadata
  - Closing Documents:
    - Request from you: Feedback and Testimonial
    - Post Project Customer Care & Company Information

## **Schedule**

The anticipated schedule is as follows:

- September – October 2016      Meet with staff, utility and other stakeholders
- November – December 2016      Audit
- January – February 2016/17      Product and installation selection processes
- January – March 2016/17      Design and product selection
- April – June 2017      Procurement and delivery of the fixtures
- July – September 2017      Installation

## **Financial Aspects**

The overall financial goal of the Streetlight project is to reduce costs. Under the current CMP owned structure, CMP currently leases the street lights to the City. With the passage of the Street Light Law and the various PUC orders and findings, we are now able to purchase these Streetlights. Based on preliminary information provided by CMP, the purchase price will be approximately \$300,000. One option the City has available would be to remove the light head and install a new fixture on the mast arm. We will also have the option of simply having CMP remove the existing streetlights. Under this option, we would be responsible for paying for only those streetlights less than 15 years old and installing a fused connection point for all streetlights. Additionally, under this option the City would purchase all new hardware and have the new equipment installed. The IGA and ROI analysis performed by RealTerm will assist the City in determining which option to proceed with is best for the City. With our partnership with the other three communities, it provides us a measure of bulk size to have economies of scale in the purchase process. We believe this will lower our costs. The agreement with RealTerm allows us to determine what steps we wish to maintain to move forward. In summary the various preliminary phases of the agreement with RealTerm for the City's 1,600 streetlights would cost:

<u>Step</u>	<u>Cost per unit</u>	<u>Cost</u>	<u>Cumulative</u>
1. IGA	\$10.50	\$16,800	\$16,800
2. Design	\$2.50	\$4,000	\$20,800
3. Selection	\$1.81	\$2,900	\$23,700
4. Procurement	\$.68	\$1,100	\$24,800

At any point, the City would have the ability to not proceed. Thinking beyond the preliminary phase and depending on which option the City elected, the cost of the purchase of existing equipment from CMP, new hardware costs, installation costs, and a 17% margin on equipment and installation costs would be in addition to the base \$16,800. The exact project costs are not known until the preliminary phases determine which option is best for the City. In concept, the cost of replacement would be funded through an energy savings Municipal Lease Agreement, in whole or in part, (with partial funding from the unassigned fund balance as an option). The

annual savings on electrical charges would pay for the annual lease payments and ongoing maintenance costs.

It should be noted if the City purchased its light from CMP or installed new lights, it would be responsible for the ongoing maintenance and repair. The PUC orders allows this to be done through CMP (rates spelled out) or by another qualified contractor (negotiated rate).

### **Recommendation**

The staff recommendation is to develop an order, and hold a Council hearing, to authorize the Interim City Manager to execute the proposed agreement with the RealTerm consulting firm. Additionally, our recommendation would be that the City provide preliminary funding (approximately \$25,000) from an unassigned fund to pay for the initial costs analysis and ROI study.