

Planning For Street Lights



By Nathan Poore, Town Manager
Falmouth, Maine

Historical Background

Enabling Legislation and Regulation

2002 - The Beginning

- CMP notified the Town of Kennebunkport that it would no longer supply low wattage bulbs for its older fixtures.
- The local Street Lighting Committee objected and the Town requested PUC intervention to require the utility to continue supplying low wattage fixtures. The utility prevailed.
- The town valued low wattage fixtures based on its policy to limit lighting levels.

Historical Background

Enabling Legislation and Regulation

2003 – First Attempt to Change State Law

- Based on recent law changes in Massachusetts, a law was introduced to allow towns to own and maintain street lights attached to utility owned poles.
- Intent of legislation was to allow more choices for energy efficient fixtures and to eliminate tariffs (rent) to municipalities for street lights located on utility owned poles.
- Financial analysis to support such legislation included dramatic savings to towns. Savings were calculated by comparing costs of ownership versus leasing.
- Municipalities stated that a pole location fee should not be mandated because the cost of maintaining a pole was already incorporated into the transmission and delivery charge. Furthermore, towns argued that there was no fee to have the pole located in a publicly owned right of way.
- Legislation was not acted on but the PUC was requested to work with municipalities and the utilities to find mutually acceptable resolutions.

2005 – Second Attempt to Change State Law

- The first attempt to change the law and work with the PUC did not have positive results. The second attempt to change the law also failed.

Historical Background

Enabling Legislation and Regulation

2011 – Third Attempt to Change State Law

- The basis for the change in law did not change from the original intent.
- Municipal interest grew and those municipal stakeholders taking the lead, formed a partnership – Municipal Street Lighting Group (MSLG).
- The group included the Falmouth Town Manager, South Portland Community Development Director and Rockland City Councilor. A technical consultant, George Woodbury, was hired to assist the MSLG. Mr. Woodbury lead the effort to create a similar law change in MA.
- The law did not pass

Historical Background

Enabling Legislation and Regulation

2013 – Fourth Attempt to Change State Law

- The law passed as a subset of the 2013 Energy Omnibus Bill.
- The specific implementation details were “watered down” with the intent to have the PUC work with the MSLG and utilities to resolve all remaining differences of opinion.

Historical Background

Enabling Legislation and Regulation

2013 – 2016 PUC Process

- The MSLG worked tirelessly for three years to ensure the best possible outcome for municipalities.
- Overall, municipalities achieved results that were fair with some concessions.
- The most significant concessions included: insurance requirements and technical installation requirements.

Why Should a Town Own and Maintain Streetlights?

- Energy savings
- More options for fixture selection and photometric design
- Significant cost savings (lease > own)
- Advanced control options
- Greater flexibility with placement and removal

Do your Homework Without Knowledge – Risk of Higher Costs

- Read the law
- Read the PUC ruling
- Read the PUC approved terms and conditions for utility standard form contracts and understand the utility fee structure
- Consider whether to hire help – at the initial phase and/or at implementation

Preparation for New Streetlights

The Playbook

- Understand the law
- Understand the PUC rulings
- Understand the standard form contract with the utility
- Develop an RFQ for professional services – audit of existing system; GIS mapping; design of new system (each light); selection of fixture; procurement; public process; and installation/construction management. Four towns collaborated to put out the RFQ together (Falmouth, Biddeford, South Portland and Rockland)
- RFQ Response from five companies. RealTerm was unanimously selected by three of the participating communities. Rockland was unable to participate in interviews but is aware of the process used by the other communities.
- Develop contract - Falmouth, Biddeford and South Portland reached consensus on a draft agreement with RealTerm. Each community may opt-in, opt-out, or proceed independently. Participating communities will attempt to work collaboratively on timing to issue bids for fixtures together resulting in better pricing.
- Conduct an updated financial analysis or ROI – savings likely at 30% to 40% of annual cost resulting in a 6 to 10 year pay back on initial investment of \$250K to \$350K.
- This process and all supporting documentation will be available on a special web page (Town of Falmouth website) along with this presentation for other towns to use as a resource.

More on RealTerm Energy

- RealTerm Energy is a division of RealTerm Global. RealTerm Global is an international airport real estate operator and leader in real asset and infrastructure strategies.
- RealTerm Energy is headquartered in Annapolis MD, with offices in New York City, Chicago and Montreal.
- RealTerm Energy has partnered with George Woodbury

More on RealTerm Energy (cont.)

- RealTerm has completed or partially completed 149 street lighting conversion projects that include 157,437 streetlights.
- They are a preferred provider in Ontario, CT through municipal associations. They were recently awarded a bid to convert streetlights in Brockton, MA. The project cost in this community will be \$3.7M and include converting 8,761 lights.
- Michael Miller (RealTerm Senior Project Manager) – Mr. Miller’s knowledge about street light conversion projects was considered important to the project by the communities participating in the RFQ process.
- George Woodbury (partner with RealTerm Energy) has worked with Falmouth as a technical consultant since 2010. He is a Professional Engineer, former public works director, retired US Army Officer, and a respected expert with all facets relating to street lights.
 - He has helped lead 85 projects in New England (mostly MA and RI)
 - He serves on the ANSI board

First Step - Inventory Installed Lighting Plant

- What to include: pole numbers, wattage, mast arm type, decorative, stand alone lights, etc.
- A detailed inventory will form the basis of ongoing utility contracts and/or management by the municipality
- Inventory needs to be in GIS and coordinated with the utility

Second Step – Design

Photometric Analysis - Some or all areas?

- Consider the value of correctly targeting and appropriate sizing (in terms of lumen output and direction of light)
- Are there areas where you add or reduce the number of fixtures?
- Are there locations where accident data (especially pedestrian/car accidents) or where crime data suggests light levels should be reviewed?
- Are there community questions/concerns that may need to be addressed (public input process)?
- Experts will understand the difference in calculating lumens and the various nuances associated with different types of lights when compared to new LED

Considerations in the design process

Color temperature (Kelvin Scale)

- Street and area lighting is available in color temperatures from 2700 Kelvin up to 5700 Kelvin
- There are good technical reasons for choosing a specific temperature (typically lower values around 3000). And there are good reasons for choosing a higher value in other areas.

Coordinate with other projects

- Is the town or MaineDOT planning a project that could or will include lighting?
- Are there public or private projects that will include lighting that could be coordinated with the project?

Finalize Lighting Replacement Fixture Schedule

- Answering the preceding questions should help a municipality with all aspects of the project including fixture selection and location
- The project should include all types of lighting – building, parks, parking lots, street lights, decorative, specialty, etc.
- But, the biggest change will be with fixtures on utility owned poles that are not metered.

Third Step – Installation and Transition Process

- Does the town intend to acquire all existing lighting and request the utility install fusing, and then transition later to new lighting (in phases)?
- Does the town want the utility to remove existing lighting and install fusing with a town contractor following the utility crews to install new lighting?
- Does the town want the utility to remove existing lighting, install fusing and install new lighting concurrently?

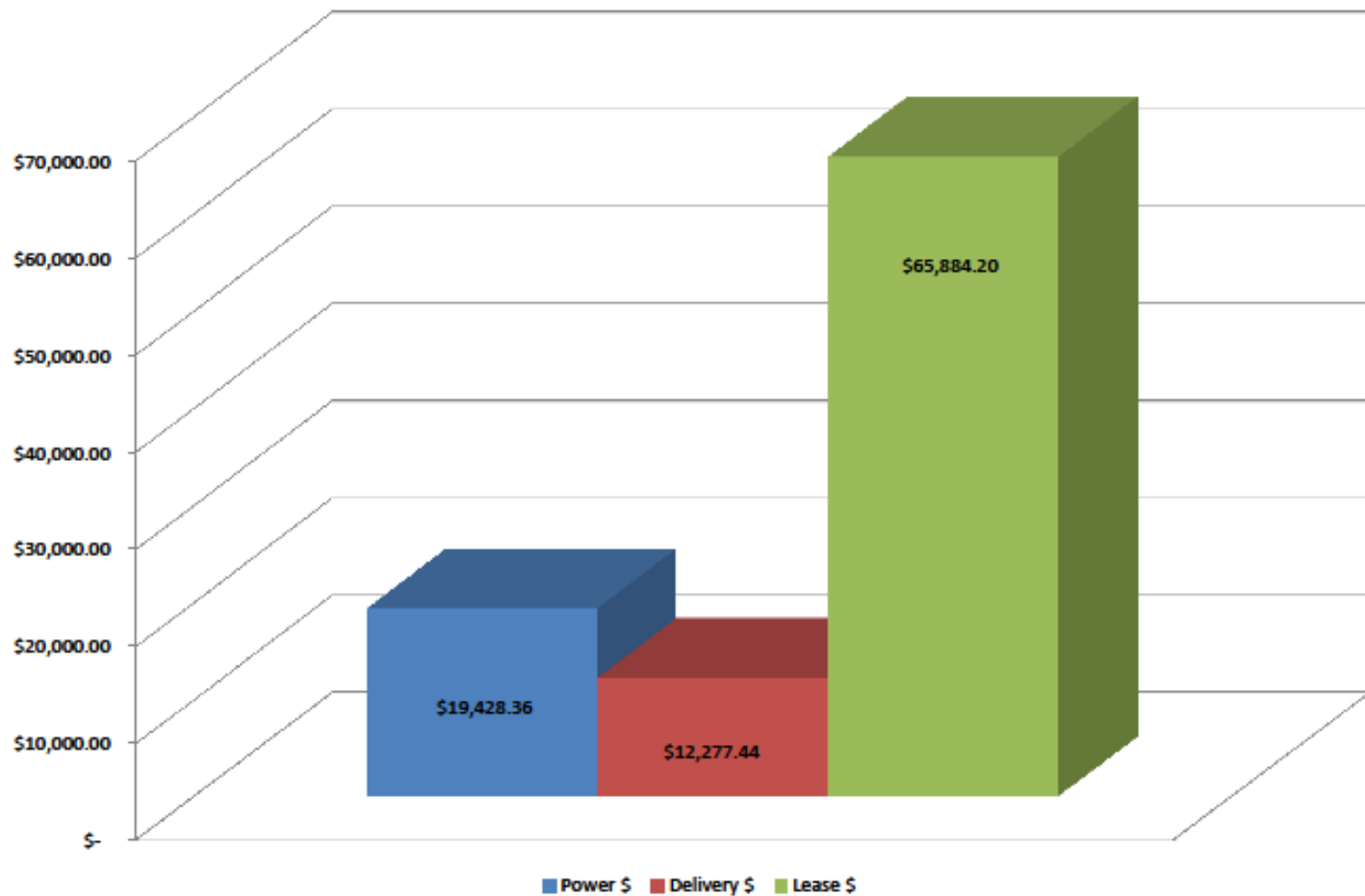
Standard Form Contract With Utilities

- Regardless of plan, this will be necessary – such as fusing mandate
- Your selected plan will dictate what level of service will be needed from the utility

Maintenance After The Transition

- Quality LED fixtures are highly reliable and last a long time, provided you select a high quality fixture- (how will you know that it is a high quality fixture?)
- Appropriately specified photocells have longer life expectancy than older technology but selecting a quality product is important.
- A small percentage of fixtures will be defective and some will be damaged by weather related events and vehicular accidents.

Annual Power, Transmission and Delivery, Plus EQ Lease Costs for 595 Lights Leased From CMP



Town of Falmouth

Purchase and Intall 595 Street Lights

Initial Cost of New Lights and Installation

Item	Units	Price	Cost
Fixture Cost	595	\$ 275.00	\$ 163,625
1st Install (20%)	59	\$ 180.09	\$ 10,625
	59	\$ 143.92	\$ 8,491
2+Install (80%)	238	\$ 156.03	\$ 37,135
	239	\$ 119.86	\$ 28,647
Audit	595	\$10.50	\$ 6,248
Design, Procurement, and Construction Management			\$ 42,249
Total Installed Price			\$ 297,020

Annual Costs (If Owned by Town)

Item	Cost
Annual Maintenance Cost	\$ 2,700
CIP Contributions - Fixture Replacements	\$ 11,156
CIP Contributions - Photo Cell Replacements	\$ 5,355
Insurance	\$ 5,000
Annual Energy Cost	\$ 20,000
Annual Cost (Fixtures Owned by Town)	\$ 44,211

Current Cost with Utility Owned Fixtures \$ 97,590

Annual Savings \$ 53,379

(Annual Town Owned Costs - Costs if Utility Owned)

Payback (Years) 5.6



Questions