



{ Jenness Beach District  
Streetlight Project



Town Of Rye

## 2012/2013 Municipal Energy Report

By  
*Michele Sopher*  
Co-chair, Rye Energy Committee  
September 26, 2013



Town Of Rye

## 2011 Municipal Energy Report

Compiled by  
*Michele Sopher, Rye Energy Committee*  
May 17, 2012



# JB Streetlights— Identified as a High Priority Energy Project

# Reasons for Project

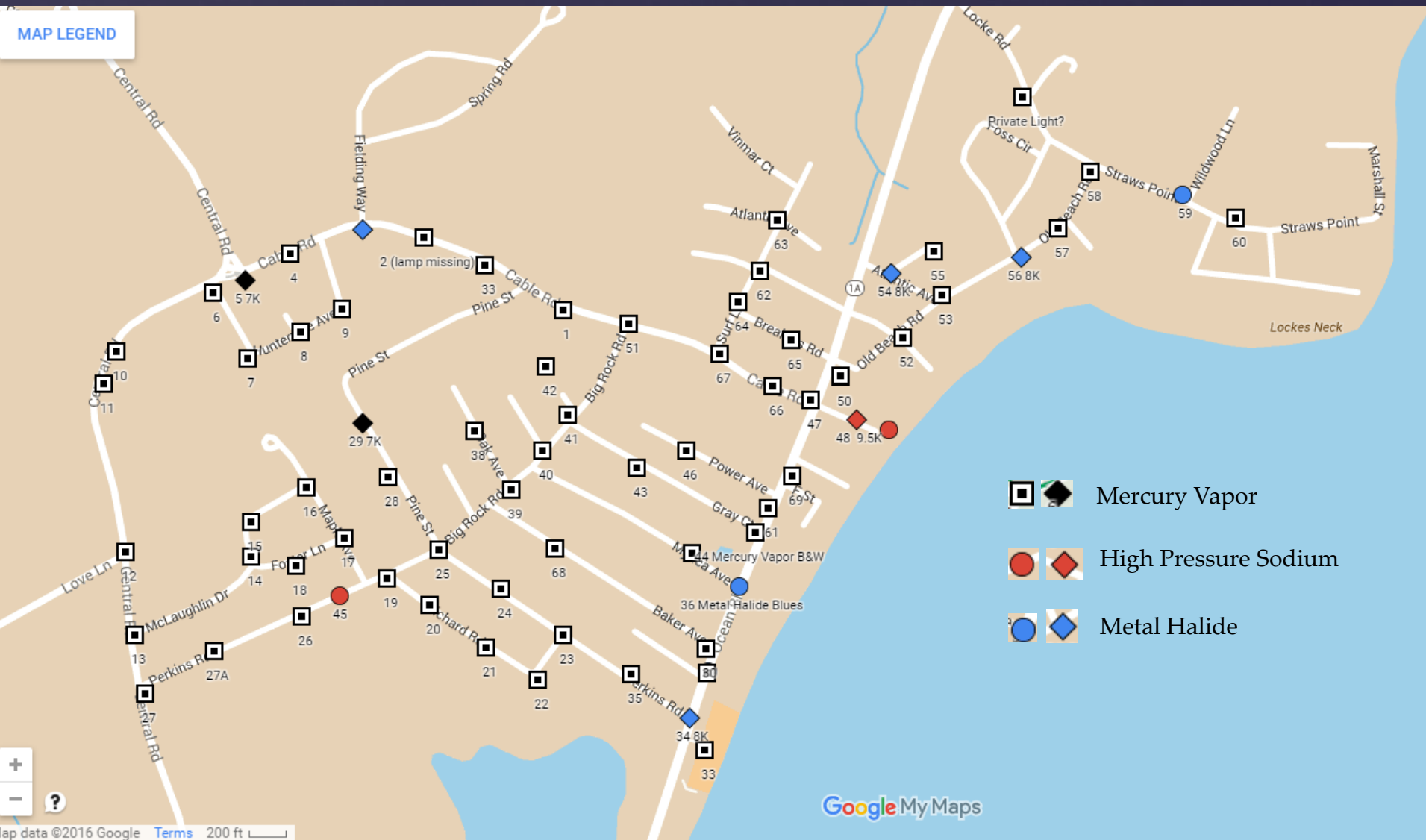


- High Density of Installed Lights
- High Electricity Cost: 2-3 times
- 85% Inefficient Type
- Mercury Vapor hazardous waste
- Frequent Lamp Burnout
- Poor Light Quality
- Light Pollution

A white-outlined cloud graphic is located in the bottom right corner of the slide.

Newer technology  
superior - LED

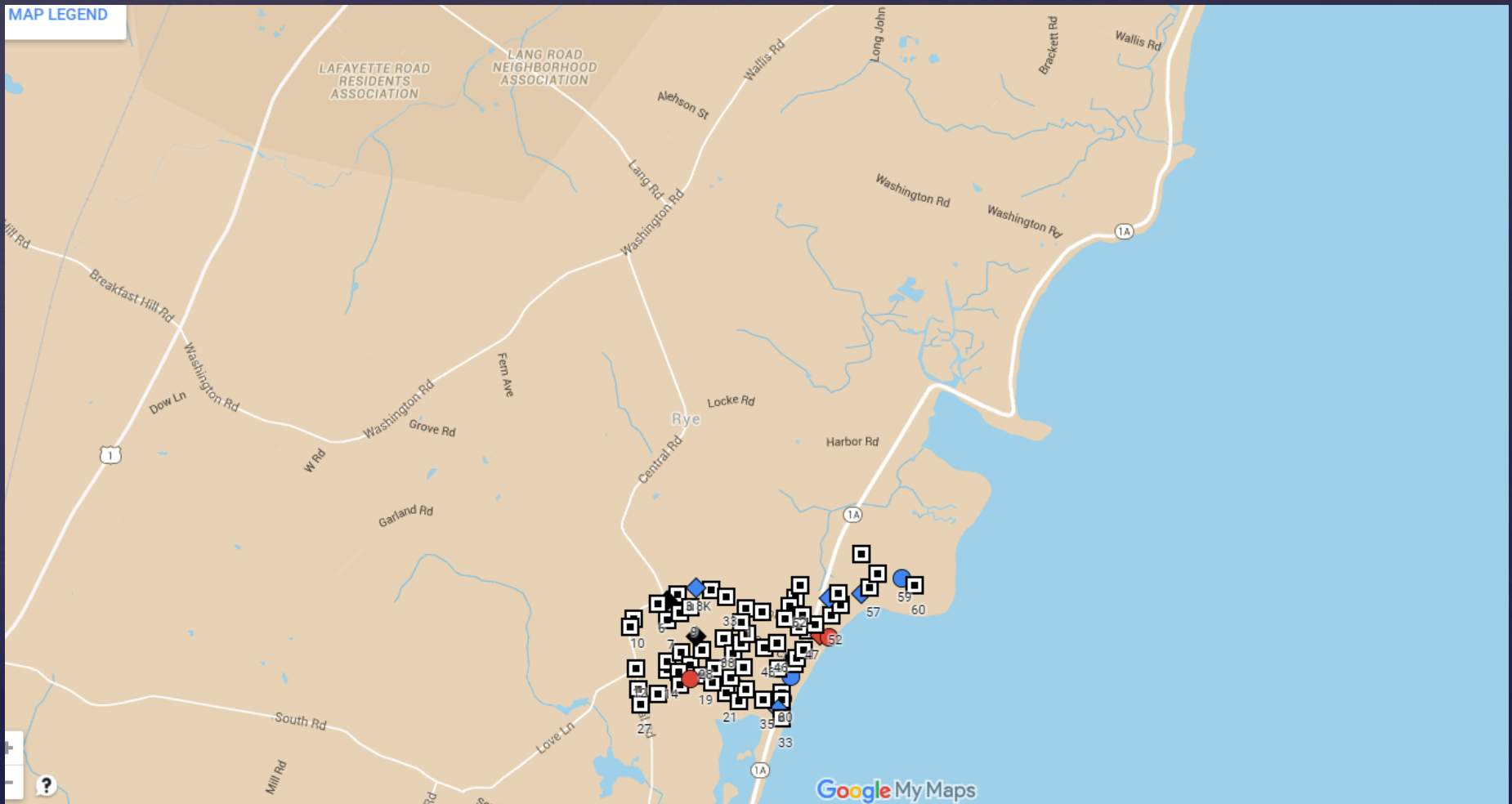
# Jenness Beach Streetlights – GPS Mapping



Courtesy of Sam Winebaum


69 Streetlights in small area of Jenness Beach District

9 Streetlights in the rest of Rye + about 10 area lights



Lamp Type	Lumens	Qty.	Watts	OL Cost Each
Mercury Vapor	3500	57	100	\$220
Mercury Vapor	7000	2	175	\$293
HPS	4000	2	50	\$217
HPS	9500	1	100	\$310
Metal Halide	5000	3	70	\$239
Metal Halide	8000	4	100	\$326

# Current Streetlights

- Annual Electricity Cost - \$16,500
    - 20% of JB budget
  - Streetlights are “leased”
  - Rate is based on:
    - type of fixture
    - wattage
    - hours on for each month
  - OL vs. EOL Rate
  - OL includes maintenance, EOL does not
- 

# Streetlighting Costs



## { 50 Years Ago

- ❑ Low energy costs
- ❑ Utility encouraged streetlighting to balance their loads
- ❑ Tendency to overlight
  - Poor light quality
  - Cheap energy

## { Now

- ❑ High Cost of Electricity
- ❑ Recognize Value of Dark-Sky-Friendly Environment
- ❑ New LED technology
  - Reduced energy use
  - Reduced energy cost
  - Reduced light pollution
  - Improved visibility
  - Long life
  - Financial Incentives

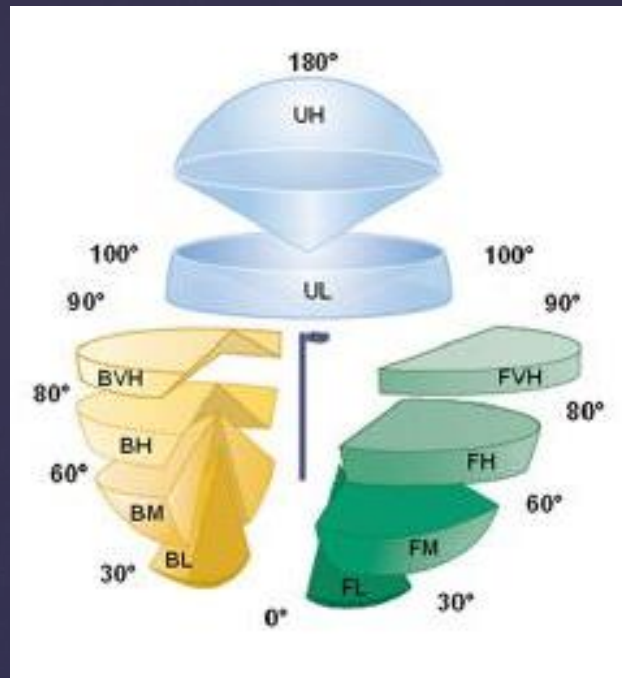
# History of Streetlighting



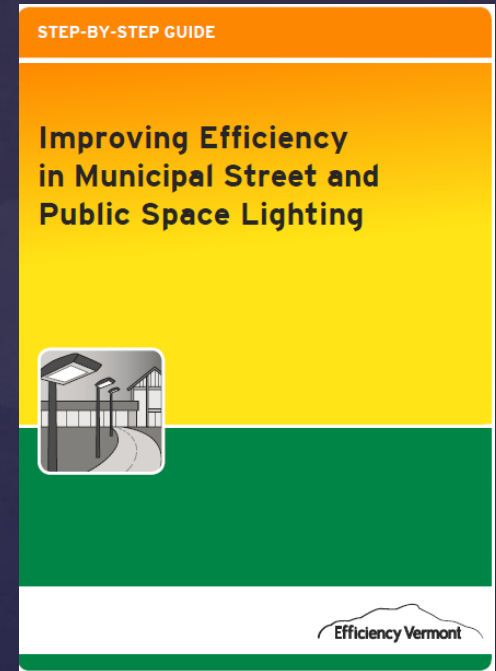
Illuminating  
Engineering Society –  
International Dark Sky  
Assn.



JOINT IDA - IES  
**MODEL  
LIGHTING  
ORDINANCE  
(MLO)**



IES TM-15-11 B-U-G



Efficiency Vermont



NHDOT Lighting Engineer

# Standards/Engineering

- Security - misconceptions
- Pedestrian **Safety**
  - Crosswalks
  - Sidewalks
  - Walking to cars – Ocean Blvd.
- Traffic **Safety**
  - High Volume Streets – not in JB District
  - Intersections
  - Sharp curves in road
- Convenience
  - Parking Meters
- Lighting Zones – JB is **Z1** (single-family residential) and **Z2** (light commercial/mixed residential)

# Criteria for Lighting

- Cree, Inc. 25-watt and 42-watt LED luminaires
- 10-year warranty
- Good B-U-G Rating
- Low wattage = low electricity cost - \$68, \$85 per year
- Good price
- Eligible for Eversource \$100 incentive/light
- Made in the USA



# Selected Streetlights

- Install sample lights
- Hold a Site Visit
- Mark lights that can be removed (up to 25)
- Comment Period for Residents
- Finalize counts and send RFP out for bid
- Field Work
  - Remove lights permanently
  - Add 3 new lights at crosswalks
  - Swap rest with LEDs
- Recycle old lights
- Switch to Eversource EOL Rate



# Plan for JB Streetlight Project

Project  
Cost

- About \$30,000

Annual  
Savings

- 55% - 80%

Payback  
Period

- 2.4 – 2.7 years

# Economics

- Randy Crapo, District Commissioner  
Jon Menes  
Sam Winebaum  
Michele Sopher, consultant



# { Jenness Beach Streetlight Committee

Sopher Energy Analysis and Design LLC  
38 Grove Road  
Rye, NH 03870

(603) 502-2120  
[sopherenergy@gmail.com](mailto:sopherenergy@gmail.com)