

MERRIMAC MUNICIPAL LIGHT DEPARTMENT



ANNUAL REPORT OF THE YEAR ENDING DECEMBER 31, 2017

The Board of Light Commissioners and General Manager are pleased to submit the Annual Report of the Merrimac Municipal Light Department (“MMLD” or “Department”) for the year 2017.

MMLD MISSION STATEMENT

“The Merrimac Municipal Light Department (“MMLD”) exists to provide its owner, the Town of Merrimac’s ratepayers, safe and reliable electricity at a reasonable and competitive rate that sustains the healthy operations of the department, and the maintenance, expansion and modernization of the electrical distribution system. This mission will be accomplished by a staff of responsible, dedicated and customer-oriented employees with superior work ethics, skills, and professionalism.”

NEW SERVICES

During 2017 there were a total of 20 new electrical services added to the MMLD's electric distribution system. The total number of electric meters in service at year's end was 2,942.

SYSTEM RELIABILITY

The MMLD is committed to providing the best electric service to the Town of Merrimac residents. The MMLD strives to provide safe and reliable power by continuing capital improvements of the system, in turn, reducing the major industry accepted indexes used to track the reliability of electric systems.

During 2017, the MMLD’s system experienced a total of 28 power outages, which affected a total of 4,615 customers. Quick response to these outages by the MMLD’s crews, resulted in 67% of the total number of customers interrupted being restored in less than 60 minutes, 30% restored between 61 and 120 minutes and only 3% restored in more than 2 hours. During 2017, there were a lot of weather events, including two major storms, one in March and another one in October which were big contributors to the time it took to restore power. Even with those challenges, the Department was able to restore power faster than surrounding communities. Weather and animal-related issues accounted for 87% of the total number of customers affected by a power interruption and 71% of the total number of outages. These two types of events are hard to prevent, but the Department continues to work on ways to reduce their impact.

The System Average Interruption Duration Index (SAIDI) measures the number of minutes, on average, a Merrimac customer is without power. The System Average Frequency Index (SAIFI) measures the average frequency of interruptions for a Merrimac customer. The Customer Average Interruption Duration Index (CAIDI) identifies the average length of time, in minutes, that a customer who is interrupted can expect that interruption to last. All the indexes results, for both the combination of equipment and non-equipment related outages, are found in Table 1 below.

SAIDI	SAIFI	CAIDI	TOTAL NUMBER OF OUTAGES
121.5	1.62	75	28

Table 1

CAPITAL PROJECTS

During 2017, the Municipal Light Department worked on a number of capital projects focusing on improving the distribution system reliability, incremental replacement of equipment near the end of its useful life and safety-related projects. In an electrical distribution system, targeting these projects will make a significant impact on the number of damages that could be sustained in major weather events such as those events we have

experienced in past years. Storms can cause significant damages to the electrical distribution infrastructure, but systems that focus on on-going system improvements have less of an impact and are able to restore power much faster than other systems where this is not a priority.

The following are some of the capital projects the Department worked on during 2017:

Merrimac Street Area Conversion

The objective of this project was to upgrade and convert the electrical infrastructure on Merrimac Street. The electrical wire in that location was purchased used a lot of years ago and was not rated for higher voltage. There was a step up system of overhead transformers stepping up the voltage from 4.16kV to 13.8kV feeding the Little Pond area, which if damaged was going to take a long time to repair. As part of this conversion, that system was eliminated and that area, including Mythical Street and Valley Street, has all been converted to 13.8 kV. This conversion went from the corner of Merrimac Street and River Road all the way down to the border of Merrimac and Haverhill.

River Road Area Conversion

This project targeted the upgrade and conversion of the electrical infrastructure from the corner of Locust Street and River Road to the end of River Road at the border of Merrimac and Haverhill. Part of the electrical infrastructure was old, and as part of the future Burnside Street Substation upgrade, it needed to be converted to 13.8 kV. New poles, wire, capacitors, and transformers were installed in order to complete upgrade and conversion.

Attitash Avenue and Union Street Water Pumping Stations

As a result of a new water pumping station built on Attitash Avenue, the MMLD upgraded the electrical distribution from Single Phase (1 wire going down the road) to Three Phase (3 wires going down the road) since the new water station motors were going to need this type of power. The Department had to do some equipment relocations on East Main Street, and then run a new 3-phase circuit down on Attitash Avenue to provide power to the new water station. Additionally, the Water Department built a second pumping station at the end of Union Street and a Three Phase service had to be installed for this location as well.

Porcelain Cutout Replacement

The MMLD's distribution system still has a number of porcelain cutouts in service. These cutouts, over time, could crack and break and cause unnecessary outages to customers. The MMLD was able to continue replacing these cutouts as part of the Capital Work Plan during 2017.

Transformer Cutout Installation

In the MMLD's distribution system there are still transformers without a distribution cutout. This situation has proven to have a big impact on reliability. Entire areas and even feeders could go without power as a result of a problem involving a single distribution transformer. Additionally, distribution transformers could be significantly overloaded resulting in reduced lifespan for those units.

Individual equipment protection is normal in electrical distribution systems and in order to reduce unnecessary widespread outages, the MMLD continued to work on the installation of cutouts on transformers that are part of feeders 3 and 4. Since feeder 2 will be completely upgraded in future years, the upgrade will involve installing cutouts for each distribution transformer.

Vehicle Replacements:

Truck # 1 was a 2003 GMC C8500 truck with a Terex Telelect aerial device that was in service since 2003. The necessary maintenance and repair costs on this vehicle were understandably increasing and it was decided to replace this vehicle. The Department will look to get rid of the existing spare truck which continues to give trouble when used. Additionally, the Department replaced a 2005 GMC Sierra pickup which had a number of costly issues including engine problems. Both vehicles were replaced and the Department was able to properly dispose of the old vehicles and obtain a good offer on both of them.

POWER SUPPLY

The MMLD continues to work with Energy New England, who manages the MMLD's energy portfolio, to ensure energy contracts are in place to cover the Town's energy needs for future years. This is a challenging task especially because of the congested energy load zone that the Town of Merrimac is part of. Power congestion in Northeast Massachusetts ("NEMA") and old power plants coming offline have been driving transmission and capacity costs up. This is a problem that is affecting both the municipal and Investor-Owned electric utilities in this region. The Department has been making this information known for the last few years and in June of 2017, the MMLD started seeing the very high prices for Transmission and Capacity. These high costs are expected to be high for 2018 and 2019 but a relief is expected for some of the future years. The goal of the Department is to maintain rates stable and affordable to all of our customers. Many surrounding cities and towns have been experiencing increased electric rates as a result of this problem but customers of the MMLD have been enjoying lower rates even through this period of high power costs. Power expenses constitute close to 80% of the Municipal Light Department's Operating Expenses.

The MMLD has also partnered with Tangent Generation Resources LLC, for the installation of 1.4 MW peak shaving generator next to our facility on Federal Way. This installation will help reduce the cost of power expenses for future years. The Department has not incurred into any expenses for the construction and installation of this generator as it will be owned by a third party until the unit is fully paid through the deferred power expenses the Department would pay to the third party instead of ISO-New England. The Department will get 1.4 MW of power at a lower rate than if it was buying it from ISO-New England.

The Department has been able to have a good portion of renewable energy in its energy portfolio, which includes the local 1.5 MW solar farm, hydropower from the Miller Hydro plant, and wind power from the Spruce Mountain, and Saddleback Ridge projects. Another wind resource, Canton Mountain Wind came online later in 2017.

CREDIT PROFILE

In order for the Municipal Light Department to secure good power contracts, it needs to have a good credit rating assigned by an independent institution. In 2017, Standard & Poor's Ratings Services performed an analysis of the Municipal Light Department and assigned an "A/Stable" credit rating based on business practices and outlook.

CONTRIBUTIONS TO THE TOWN

Based on preliminary results of the year 2017, and as approved by the Municipal Light Board of Commissioners, the MMLD will be providing the Town with the following contributions for Payment in Lieu of Taxes:

Cash Payment:	\$10,000.00
Unbilled Streetlight Usage:	<u>\$23,026.98*</u>
Total PILOT Payment	\$33,026.98

* The MMLD has a reduced streetlight rate of \$0.103/kWh; however per the Department of Public Utilities, this rate could be more close to \$0.1742/kWh. This would make the Unbilled Streetlight Usage about \$38,944.66. The resulting PILOT based on DPU rate calculations for streetlights would be **\$48,944.66**.

OTHER CONTRIBUTIONS TO THE TOWN

The Municipal Light Department offers a reduced electric rate for all of the municipal buildings in Town. Those buildings include the schools, water and sewer plants, and all the other buildings used by the multiple Town departments. Annually, this is a saving close to \$59,183 compared to other commercial customers in town. In addition, the MMLD contributes \$3,000 annually for the Town's Code Red System. Total In Lieu of Tax contributions to the Town:

Cash Payment:	\$10,000.00
Reduced Electric Rate:	\$56,216.69
DPU-Based Unbilled Streetlight Usage:	\$48,944.66
Code Red System:	<u>\$3,000.00</u>
Recalculated Total PILOT Payment	\$118,161.35

COMMUNITY

The Merrimac Municipal Light Department is a Public Utility, which means it is owned by its ratepayers and not by a board of directors like the investor-owned utilities. This means that when people call or come into the office they get to talk to a person, someone who will help them with questions that they may have about billing or electric services. The Municipal Light Department is here to serve the community.

During 2017, the MMLD conducted an indoor electrical safety meeting and an outdoor session with an MMLD's bucket truck and safety equipment at the Helen R. Donaghue School. This program was conducted by the MMLD's Public Safety Coordinator consultant. The objective of this program is to teach the young population in our community about the possible electric hazards at home or outside, and how to stay safe and make others safe when dangerous electrical situations are encountered. The Municipal Light Department and its Board of Commissioners believe that investing in the safety of the children of the community is a priority.

The MMLD continues to work in collaboration with other Town departments especially during storms and major events to restore power to customers and maintain public safety.

In December of 2017, the MMLD assisted the Santa Committee hanging wreaths at the Town Hall building and strung the lights for the annual Christmas Tree Lighting event at Kimball Park, which has become a family tradition well enjoyed and attended by hundreds in the community. In 2017, some of the MMLD linemen decorated our vehicles and participated in the Santa Parade as well.

GENERAL MANAGER, STAFF AND COMMISSIONERS

Both the MMLD's staff and Commissioners continue to be dedicated to having a municipal light department that provides safe and reliable electricity to the Town while managing to maintain rates stable in an energy market where costs are continually changing.

During 2017, one of the Department's linemen took a position at another municipality after 20 years of full-time service. A new but experienced lineman, Matthew Shwom, was hired and successfully passed the 6-month probationary period. Matthew has been a great addition to the MMLD team, bringing a lot of enthusiasm, a positive attitude, and a lot of fresh ideas to the Department.

In 2017, the job of the part-time superintendent, which the Department filled in 2016, came to an end. This position was temporary, but what was accomplished by creating it exceeded all of the Department's expectations. Tom O'Connor was able to help the Department move to a higher level and change the team dynamic in a very positive way.

The MMLD's General Manager, Francisco A. Frias, together with the staff and under the direction of the Municipal Light Board, continues to work towards making the Department's Mission Statement a reality in every aspect of the day to day operations.

Respectfully submitted,

Francisco A. Frias, General Manager

Board of Light Commissioners

Norman Denault	Term Expires 2020
Larry Fisher	Term Expires 2019
Paula Hamel	Term Expires 2018