

MARBLEHEAD MUNICIPAL LIGHT DEPARTMENT

To the citizens of Marblehead,

The Marblehead Municipal Light Department (MMLD) is pleased to share its 125th annual report and financial statements for the calendar year ending December 31, 2019.

Top-line Results:

In 2019 MMLD delivered 99,658 megawatt-hours (MWh) of electricity to 10,434 Marblehead customers (meters), generating revenue of \$16,905,077. The 2019 annual load is a 4.6% decline from the 2018 load of 104,440 MWh and a 3.9% decline from the prior five-year (2014-18) average of 103,750 MWh. The 2019 annual power sales revenue is a 2.8% decrease versus the 2018 revenue of \$17,390,445, yet a 3.1% increase from the prior five-year (2014-18) average of \$16,393,494. The months with the greatest year-on-year decline in power usage were January, with a 13.2% decline versus January 2018 and September with a 14.8% decline versus September 2018.

The 2019 Marblehead winter peak load of 22.5 MW occurred on January 21st at 6-7 p.m. The 2019 winter peak load was 5.7% lower than the 2018 winter peak load of 23.9 MW. The 2019 Marblehead summer peak load of 30.6 MW occurred on July 30th, at 5-6 p.m. The 2019 summer peak load was 1.0% higher than the 2018 summer peak load of 30.3 MW.

July was the only month in 2019 when our energy usage exceeded 10,000 MWh, compared to three months in 2018: January, July and August.

The ISO-NE 2019 system peak load of 24,361 MWh was on July 30th, at 5-6 p.m.

In 2019, 73% of the electric power supplied to Marblehead residents was carbon-free, compared to 70% carbon-free in 2018.

2019 Weather Conditions & Impacts on Electric Power Distribution

ISO-NE Report: New England weather remains a primary driver of electricity demand in New England. The temperatures during the 2018-2019 winter months – December, January, and February – averaged 30°F, less than a degree higher than the previous winter's average temperature. But the difference in 2019 was the region was not hit by any prolonged periods of extreme cold. The winter of 2017-18 included two weeks of bitter cold that challenged ISO power systems operations, while the winter of 2018-19 saw more moderate winter temperatures.

July was the 2019's hottest summer month. The New England average temperature during July was 76° Fahrenheit (F) an increase of one degree from the previous July. The average dew point, a measure of humidity, was 63°F in July, the same as in July 2018. There were 175 Cooling Degree Days (CDD) during July 2019, while 120 is the normal July CDD in New England. In July 2018, there were 169 CDD. (A degree day is a measure of heating or cooling, with 65 degrees F as the base temperature for calculating degree days. Each degree above a daily average temperature of 65 degrees is counted as one cooling degree day, while each degree below a day's average temperature of 65 degrees is counted as one heating degree day.)

Marblehead Specific: Marblehead experienced two extreme weather events in 2019. Each event caused significant damage and disruption throughout our town, and resulted in widespread power outages that continued for many hours, and in some extreme cases, multiple days. The first was Wednesday afternoon, July 17th, beginning around 3:30 p.m. Remnants of Hurricane Barry hit Marblehead with high winds reaching 50-60 mph and driving rain. Electrical power was knocked out in communities throughout Massachusetts. The Mass. Emergency Management Agency (MEMA) estimated that 227,000 Massachusetts customers were without power. MEMA communicated the largest concentration of outages was in Essex County, with an estimated 45,000 customers without electrical power. Marblehead received the full force of what has been described as a microburst storm...with large trees and branches falling on roadways and private property throughout town. The size and number of downed trees delayed the department's ability to access damaged utility wires and poles. In the 48 hours that followed, MMLD's outage-tracking software logged 20 distinct outages that impacted 1,670 customers...16% of our customers. The outages occurred throughout town, on 13 of the Town's 22 circuits. Given the scope of the damage, department management declared a department emergency. We triggered: (1) an immediate shift to an emergency work schedule of 16 hours on and 8 hours off until electric power was restored townwide and (2) a mutual aid request to other Massachusetts municipal electric light departments for additional linecrew assistance. Municipal electric utilities from Groton, Groveland, Middleton and Wakefield responded to our request for additional line crews. With their help and the ongoing co-operation and assistance of the Marblehead Police, Fire, Public Works and Tree Departments we were able to restore electrical service to 284 customers in the first five hours, 980 additional customers in 5-10 hours, 68 more customers in 10-20 hours, 255 more customers in 20-24 hours and the remaining 83 customers in 24-30 hours.

On Thursday, October 17th at 2:30 a.m., a weather pattern described as a "bomb cyclone" hit eastern Massachusetts, bringing high winds and driving rain. (Some

residents will also remember this day as the one-year anniversary of the October 17, 2018 microburst that took down two poles in the Gerry School area of Elm St. and left 133 customers without power.) Given the severity of this storm and the late night arrival, this damage from this storm was even more extensive than the July 31st storm. MEMA estimated 217,000 customers without power, with the highest concentrations in Essex and Plymouth Counties. Five towns were reported to be completely without power. MMLD's outage tracking software logged 64 distinct outages due to the storm, impacting 2,124 customers. The storm hit fast and hard, with the first 37 outages logged in a short 15-minute time period from 2:30 to 2:45 a.m. The outage count increased to 47 by 7:00 a.m. sunrise. (For comparison, during the FEMA declared storms of March 2018, we logged a total of 11 outage events, involving 265 customers. In all of March 2018 we saw 13 outages, which was the highest number of outage events in a single month that year.) The severity of the storm made travel around town next to impossible for the several hours. With the morning sun, the full extent of the damage was more clearly understood...1,400 customers without power. As the day continued, that number rose to 2,124 customers, representing 20% of all MMLD customers. Outages were widespread...logged on 14 of the town's 22 circuits. At 2:30 a.m. MMLD declared a department emergency. We triggered: (1) an immediate shift of all MMLD line and substation crew to a staggered 16 hour on/8 hour off work schedule until power was restored townwide, and (3) office staff to a staggered, extended-day schedule until power was restored townwide, and (3) a Mutual Aid request to municipal electric utilities for available line crews ASAP. Given the large size and number of trees and branches on the ground and against power lines, the initial pace of restoration was slow. Working with the Marblehead Police, Fire, Public Works and Tree Departments, and supported by municipal electric utility line crews from Georgetown, Groveland, Littleton and Sterling, and multiple private tree companies, we were able to restore power to 950 customers in the first 5 hours, 150 additional customers in 5-10 hours, 560 more customers in 10-24 hours, 375 more customers in 24-36 hours, 60 more customers in 36-48 hours, and 18 remaining customers in 48-72 hours. Fortunately no injuries were reported. However too many Marblehead residents needlessly exposed themselves to serious personal injury or death by walking on Marblehead's local streets while live high voltage utility lines lay on the ground or tangled in fallen trees and branches.

2019 The Changing Fuel Mix of our Power Supply

With the growing awareness and concern regarding climate change, MMLD: (1) closely monitors where we source our wholesale electricity, and (2) continues to evaluate new options for increasing the percentage of our power supply generated by carbon-free generation. MMLD is pleased to report that 73% of the 99,658 megawatt-hours of electrical power we sold to our Marblehead customers in 2019 is carbon-free. Our carbon-free power sources include nuclear: 45%, hydro: 16%, wind: 8%, solar: 1%, and other renewables: 3%. 47% of our power was supplied via pre-existing power purchase agreements, and the remaining 53% was purchased in open ISO-NE energy markets. In 2018 our carbon-free percentage was 70%. For additional details on how we calculate this number, please visit our website at marbleheadelectric.com

2019 Accomplishments and Major Activities

- In January, MMLD signed an agreement with the National Renewable Energy Lab (NREL), a US Dept. of Energy national research lab located in Golden, Colorado, to undertake a technical and economic feasibility analysis of installing renewable energy assets, with a primary focus on community-scale solar PV arrays, to generate carbon-free electricity within the MMLD service area. The potential solar PV evaluation sites were selected from a list consisting of all 320 tax-exempt parcels located within Marblehead town limits, and two Marblehead Water and Sewer Commission-owned parcels in Salem. This town-wide study utilizes the NREL REopt renewable energy integration and optimization software. The output of the study will include a prioritized list of potential sites for solar PV arrays, based on the estimated power capacity and total cost of ownership at each site. For details see <https://reopt.nrel.gov/>
- In March, the Mass DEP notified MMLD that our additional sound dampening measures had resolved their concerns regarding noise levels at the 5 MW Wilkins Plant in Marblehead, and gave us formal approval to resume normal operations in the ISO-NE forward capacity market.
- In March, MMLD coordinated the filing of eight applications with the Mass DEP EVIP Program, to receive 50% grant reimbursement for the purchase and

installation of commercial Level 2 Electric Vehicle (EV) chargers. MMLD proposed ChargePoint commercial Level 2 EV chargers, to enable EV charging at an average of 25 miles of driving range per hour charged. The proposed town-owned EV charger sites include the Mary Alley Building, the Community Center, Roundhouse Road, and Devereux Beach.

- In March the MMLD Board voted to make a \$330,000 payment in lieu of taxes (pilot payment) to the Town of Marblehead.
- From 2018 through September 2019, MMLD employees Matt Barrett, Colin Coleman, Didi Rubano and Cheryl Stone coordinated the detailed reporting of MMLD expenses incurred in the March 2018, for eventual FEMA reimbursement. Eligible expenses totaled over \$200,000.
- In May, voters in Marblehead re-elected Board member Mike Hull to his third three-year term, and re-elected Board member Walter Homan to his fifth three-year term.
- In May, MMLD publicly announced our participation in a new Mass. Dept. of Energy Resources (DOER) Solar PV rebate program for residential customers living in municipal electric utility communities. The new program offers rebates of up to 50% on the purchase and installation of solar PV arrays, to maximum of 5 kW at \$1.20/watt. Program restrictions do apply. For full details visit <https://www.marbleheadelectric.com/>
- In May, members of the National Renewable Energy Lab's REopt team, MMLD, and the Mass Municipal Wholesale Electric Company (MMWEC), our power supply management and financing partner, formally kicked-off the Marblehead REopt Project to identify the optimal sites for future solar PV arrays in Marblehead.
- In July, MMLD's long-held minority ownership in the Wyman 4 Plant, a 610 MW oil-fired power generator in Yarmouth, Maine was sold to majority owner NextEra. MMWEC negotiated the sale on behalf of MMLD and 11 other municipal electric utilities. The 12 MMWEC participants together owned 3.7%, equal to ~22 MW in capacity. When Wyman first came online in 1976 it was base-load generation unit. The MMLD Board agreed with MMWEC's press release statement, that the sale reflects, "changes in wholesale electric markets and the evolving power supply strategies and policies that create a need for a different power supply mix."
- In July, the final debt service payments were made on the MMWEC-issued bonds that funded MMLD's ownership position in the Seabrook and Millstone nuclear power plants...43 years after they were issued.
- In July, MMLD line crews, with support from a Tree Dept. crew, began a Saturday tree-trimming program along the Town's railroad right-of-ways that

carry our main electrical supply lines from Salem. The program will continue through 2019 and into 2020, weather permitting.

- In November, Berkshire Wind Phase 2 successfully completed final testing to become recognized as commercially available by ISO-NE. With Phase 2 online, MMLD's total Berkshire Wind nameplate capacity ownership increased to 1.62 MW.
- In November a commercial-grade, two-car EV charger was installed in the MMLD main office parking lot at 80 Commercial St. It is configured for public use, with an electric power price of \$ 0.20 per kWh, a rate based on MMLD's standard residential electric rate plus a credit card service charge. (To discourage extended-stay parking an additional charge of \$5.00/hour is added after four hours.) We estimate our EV charging price is around half the price of gasoline. *We note that there are now more public EV chargers than gas stations in Marblehead!*
- In December Mass DEP informed MMLD they approved our EV Charger grants applications for seven locations in Marblehead.
- MMLD distribution system preventive maintenance and troubleshooting by MMLD line crews is a year-round responsibility. In 2019, 68 new utility poles were set, a significant increase from 23 set in 2018. 50 new poles were preventive maintenance replacements, 16 were storm-damaged replacements, and 2 set at new pole locations.
- In 2019 50 MMLD customers with solar panels on their home or business sold their excess renewable energy to MMLD. The 50 solar PV customers are an increase from 48 customers in 2018. The combined nameplate capacity of the 50 installations is .425 MW. The 2019 power purchased from these customers was 192 MWh, a 3.8% increase from 185 MWh in 2018
- In 2019 eight Marblehead EV owners received a FREE residential ChargePoint Level 2 charger from MMLD by enrolling in our Smart Charging Program. The eight 2019 participants represents an increase from five in 2018 and three in 2017, for a total enrollment of 16. However 16 is low compared to the 94 Marblehead EV owners registered in the Mass MOR-EV program. If you are a Marblehead EV owner, learn how you can get a free ChargePoint Level 2 charger. Visit <https://www.marbleheadelectric.com/ev-vehicles-chargers.html>
- Under the guidance of Lead Customer Services Rep. Megan Milan, MMLD participates in the MMWEC-sponsored Home Energy Loss Prevention Services (HELPS) Program. In 2019, 47 homeowners received free HELPS home energy efficiency audits. HELPS also provides Marblehead residents with cash rebates of up to \$500 on the purchase of a variety of energy efficient appliances, heat pumps, smart thermostats and home efficiency upgrades. For details visit: <https://www.marbleheadelectric.com/rebates-incentives.html>

MMLD Employee Recognition

MMLD's most important asset is our highly skilled workforce. The focus and dedication of our employees is essential to our mission...

We deliver reliable, cost competitive and environmentally responsible electric power to Marblehead customers, while ensuring a safe and healthy work environment for employees and customers alike.

We're pleased to recognize the following MMLD employees in 2019:

- We congratulate two employees who received promotions: Greg Chane was promoted to Working Foreman from Lead Lineman, Kirk Blaisdell was promoted to Lead Lineman from First Class Lineman.
- We welcome three new employees hired in 2019: Second Class Lineman Adam Bernard, Second Class Lineman Shane Hogan, and Customer Service Representative Lori Whalen.
- We recognize three employees who celebrated a work anniversary in 2019: Working Foreman Paul Camarda celebrated his 20 year anniversary at MMLD; Kyle Larson, First Class Lineman, and Colin Coleman, Technical Services Manager, celebrated their 5 year anniversary at MMLD.
- We honor Distribution Manager Bill Jackson, the 2019 recipient of the Francis "Skip" Wiley Individual Achievement Award, presented by the New England Public Power Association (NEPPA). NEPPA is New England's largest municipal utility association, with 80 utility members from six New England states. Bill's award, presented at the NEPPA Annual Convention, is given to a New England utility employee who best demonstrates a professional commitment to public power through personal development and participation in NEPPA's educational programs and other association activities. Congratulations to Bill.
- We say goodbye to Working Foreman Joe Walker who retired in 2019, after 15 years as an MMLD employee. We wish him well in his retirement.

Respectfully submitted,

Joseph T. Kowalik, General Manager
Michael A. Hull, Commission Chairman
Walter E. Homan, Commissioner
Michael A. Tumulty, Commissioner
Michael J. Maccario, Commissioner
Karl A. Johnson, Commissioner

MUNICIPAL LIGHT DEPARTMENT

STATEMENT OF INCOME

For the year ending December 31, 2019

Operating Revenue		17,019,763.50
Less Expenses:		
Operating	13,403,925.16	
Maintenance	1,410,976.84	
Depreciation	<u>1,175,178.05</u>	
Total Expenses		<u>15,990,080.05</u>
Operating Income		1,029,683.45
Interest Income		73,998.38
Other Income		<u>0.00</u>
Less Interest on Long Term Debt		<u>160,063.63</u>
Net Income Transferred to Surplus		<u>943,618.20</u>

STATEMENT OF SURPLUS

For the year ending December 31, 2019

Balance December 31, 2018	31,844,756.94
Add: Credit balance transferred from income	943,618.20
Adjustment to transfer prior years	
Power Refunds to surplus	<u>0.00</u>
Subtotal	32,788,375.14
Deduct: Amount transferred to Town Treasurer to reduce the Tax Levy	(330,000.00)
In Lieu Of Tax Payment to City Of Salem	(4,054.38)
adjusting entries for year ended December 2018	<u>(17,523,424.76)</u>
Balance December 31, 2019	<u>14,930,896.00</u>

MUNICIPAL LIGHT DEPARTMENT

OPERATING EXPENSES

For the year ending December 31, 2019

Power Generation Expenses:		
Fuel	1,357.74	
Generating Expense - Lubricants	0.00	
Misc. Other Power Generating Expense	4,506.85	
Maint. of Other Power Generation	<u>106,525.91</u>	
Total Power Generation Expense		112,390.50
Power Supply Expenses:		
Electric Energy Purchased	7,668,119.18	
Misc. Purchased Power Expense	<u>2,289,178.79</u>	
Total Power Supply Expenses		9,957,297.97
Transmission Expense:		
Maintenance of Overhead Lines		0.00
Distribution Expenses:		
Station Expense - Labor & Other	13,305.50	
Station Expense - Heat & Electricity	56,207.52	
Street Lighting	7,721.62	
Meter Expense - Inspection, Testing, Removing, Resetting	81,477.08	
Customer Installation Expense	36,619.06	
Misc. Distribution Expense	212,750.09	
Maintenance of Structures	0.00	
Maintenance of Station Equipment	87,981.02	
Maint. of Overhead & Underground Lines	1,084,268.06	
Maintenance of Line Transformers	25,140.90	
Maintenance of Meters	<u>16,155.76</u>	
Total Distribution Expenses		1,621,626.61
Customer Account Expenses:		
Supervision of Customer Accounting	108,444.22	
Meter Reading - Labor & Expenses	36,619.06	
Customer Records & Collections	231,268.56	
Uncollectible Accounts	53,438.18	
Interest Paid on Consumer Deposits	<u>4,523.47</u>	
Total Customer Account Expenses		434,293.49
Advertising, Conservation, Energy Audits		114,661.11
Administrative & General Expenses:		
Administrative Salaries	181,935.25	
Office Supplies & Expenses	252,909.93	
Outside Services Employed	186,228.07	
Property Insurance	37,646.86	
Injuries & Damages	1,384.23	
Rents	5,793.88	
Employee's Pensions & Benefits	1,764,745.18	
Maintenance of General Plant	26,217.39	
Transportation	64,687.80	
Miscellaneous General Expense	<u>53,083.73</u>	
Total Administrative & Gen. Expenses		<u>2,574,632.32</u>
Total Operating Expenses less power costs		4,745,213.53
Total Operating & Maintenance Expenses		<u>14,814,902.00</u>

MUNICIPAL LIGHT DEPARTMENT

BALANCE SHEET

For the year ending December 31, 2019

Assets

Plant Investments		19,235,632.80
Current Assets:		
Cash - Operating	4,259,046.62	
Petty Cash	500.00	
Construction	18,908.88	
Accounts Receivable	2,777,296.31	
Interest Receivable	0.00	
Materials & Supplies	<u>133,583.20</u>	
Total Current Assets		7,189,335.01
Depreciation Fund		6,671,639.15
Insurance Escrow Account		990,524.74
Hydro Savings Reserve		42,108.77
MMWEC - NEPEX Reserve Trust		530,735.88
Rate Stabilization Reserve		900,000.00
Consumer Deposits		205,244.50
Prepayments		1,465,644.09
Pooled Financing Reserve-MMWEC		553,505.85
MMWEC 2015A Peabody Project		373,538.01
Deferred Outflows-Pensions		1,482,411.00
Deferred Outflows-Opeb		509,392.00
Total Assets		<u>40,149,711.80</u>

Liabilities And Surplus

Accounts Payable:		
Depreciation	37,826.50	
Operating	1,619,781.23	
Construction	0.00	
Consumer Deposits	4,200.00	
Total Accounts Payable		1,661,807.73
Consumer Deposits		201,044.50
Bonds Payable		4,855,394.69
Accumulated Provision For Rate Stabilization		900,000.00
Reserve-MMWEC Reserve Trust		530,735.88
Net Pension Liability		7,092,308.00
Deferred Inflows-Pensions		461,101.00
Deferred Inflows-Opeb		341,547.00
Reserve for Uncollectible Accounts		320,481.60
Reserve for Future Compensated Absences		74,628.62
Opeb Liability		8,575,873.00
Contribution In Aid For Construction		203,893.78
Unappropriated Earned Surplus		14,930,896.00
Total Liabilities And Surplus		<u>40,149,711.80</u>