

MUNICIPAL LIGHT DEPARTMENT

To the citizens of the Town of Marblehead:

The Marblehead Municipal Light Department is pleased to provide its 117th annual report and financial statements for the calendar year ending December 31, 2011.

For the second year in a row weather extremes significantly impacted light department operations as 2011 rolled in with a punch. Following on the heels of a post-Christmas blizzard in 2010 we seemed to be experiencing a snow storm every week, creating many challenges for our work crews. And the weather problems did not end there.

From the extreme heat in late July, to hurricane Irene in August, the significant flooding in early October, followed by a major Halloween nor'easter, our work crews and support staff were tested time and time again. While customers in many surrounding communities were without power for days during these extreme weather events, customers that may have lost power in Marblehead were restored in just a matter of hours, demonstrating the benefits of a municipal light department.

With the exception of two weeks in July, the summer of 2011 didn't seem all that hot, but the Town did set a new all-time record for energy demand this year. On July 22nd at 4:00 PM with temperatures nearing 100 degrees, the energy demand in Town reached 31,185 kW surpassing the 2010 peak demand of 28,028 kW. Total energy consumption in 2011 increased slightly to 106,093,208 kilowatt-hours compared to 105,826,130 kilowatt-hours consumed in 2010.

The vision of the Berkshire Wind Power Project as a leader in clean, green, and renewable energy has finally come to fruition. The 10-turbine, 15-megawatt wind farm atop Brodie Mountain in Hancock, Massachusetts started commercial operation on May 28, 2011. The project is owned and operated by the Berkshire Wind Power Cooperative (BWPC), a non-profit entity that consists of the Marblehead Municipal Light Department and 13 other municipal light plants, together with our joint action agency the Massachusetts Municipal Wholesale Electric Company.

The purpose of this project was to create a renewable energy addition to Marblehead's overall power supply portfolio, reduce dependence on fossil fuels, and curb greenhouse gas emissions. Over the life of the turbines, the operation of

the Berkshire Wind Power Project will offset over 612,000 metric tons of carbon dioxide (CO₂) production and the use of 1.7 million barrels of oil. Marblehead's share of the project is 6.7 percent or just over 1 megawatt. Berkshire Wind is a unique public power initiative that embodies the energy, environmental and economic benefits of renewable energy development.

Massachusetts Governor Deval Patrick joined members of the BWPCC, including representatives from Marblehead, on May 5, 2011 in dedicating the project, the state's largest wind farm to date. Governor Patrick said the BWPCC exemplifies the innovation and initiative required to be successful in developing the Commonwealth's renewable energy resources. "This project marks a new era of renewable energy development in Massachusetts," Governor Patrick said. "Creating scores of jobs in its construction, helping to create relief from the price volatility and pollution of imported fossil fuels, and advancing Massachusetts' nation-leading goals to reduce greenhouse gas emissions and increase the use of renewable energy, Berkshire Wind is a beacon of our clean energy future," he said.

While we continue to pursue new sources of renewable energy, the fact remains that greater than 50% of New England's electricity production is from fossil fuels. Any changes in the cost of fuel, either up or down, will impact the wholesale cost of electricity in the region. The good news is that the continued low cost of natural gas throughout 2011 has provided much stability to our wholesale power supply costs. As a result of the stability of natural gas prices, the overall cost charged to our customers has remained stable throughout 2011. Favorable fuel price forecasts in 2011 have also allowed us to make forward purchases well into 2015 to help stabilize overall future power supply costs for our customers.

Although new sources of generation supply are required to meet the needs of our customers, we also recognize the importance of energy efficiency and demand side management programs within our community. Our programs provide various rebates when customers buy certain appliances or programmable thermostats, and also include a substantial rebate on home insulation and the installation of photovoltaic systems. The total rebate amount to our customers in 2011 was \$113,065 saving 106,810 kWh and 364 MBtu. In the last five years alone MMLD has provided \$407,430 in rebates to our customers. For further information on the light department's energy and conservation programs please visit our website at www.marbleheadelectric.com.

In 2011 our employees began implementing a new Advanced Metering Infrastructure program which was made possible through a grant received from the

US Department of Energy's (DOE) smart grid initiative. The 50 percent matching grant totaling \$1,346,175 was awarded to MMLD on March 12, 2010.

The MMLD project involves the town-wide installation of a fully integrated advanced metering system including a pilot program to assess the effectiveness of dynamic pricing and automated load management. The project is aimed at reducing peak electricity demand, overall energy use, and operations and maintenance costs while increasing distribution system efficiency, reliability, and power quality.

During the months of June, July, and August MMLD conducted a summer test of a leading-edge pilot program we termed "EnergySense" focused on reducing electricity usage during critical peak periods. MMLD sought 500 households to voluntarily participate in the summer test. The EnergySense pilot program is among the first of its kind in the region that reflects the actual cost of electricity delivery on critical peak days and offers customers price incentives to reduce household energy usage during specific peak periods. The goal of this program is to provide our customers with pricing options and real time usage information that enables them to control their electric usage and realize energy cost savings.

Because the summer of 2011 was not all that hot, only three critical peak period (CPP) events were called, but the impact and results were very encouraging. A simple comparison of average hourly loads on the three event days indicates that the CPP loads were lower during the critical hours. The average kW reduction per customer in this simple comparison is 0.9 kW, approximately a 42% reduction. After adjusting for various factors, the end results indicate greater than a 30% reduction in kW demand. The program will run once again in the summer of 2012.

Also as part of the DOE grant program, MMLD is replacing all of its older electro-mechanical meters with new state of the art advanced meters. This will provide the ability for all of our customers to view their energy usage, if they choose, through a private web portal to better understand their electricity cost. By the end of 2011 nearly 20% of all meters were replaced, with the goal of replacing all 10,000 meters by the end of 2012.

This past year MMLD launched an exciting new online payment and e-bill service that offers customers more flexibility in paying their electric bills. The system is easy to use and allows customers the option to pay their bill utilizing a checking account or with a credit or debit card. Billing information is available online 24 hours a day 7 days a week and is accessible through our website at www.marbleheadelectric.com. There is also an option to go paperless.

As part of the light department's 5-year budget and work-plan, work crews completed several distribution projects in 2011. The Anderson circuit, which primarily serves the business and residential customers along Pleasant Street from Washington Street to School Street, had several poles and the older open wire and cross arm configuration replaced with new poles and aerial spacer cable configuration without cross arms. This project will improve reliability as well as enhance aesthetics to the area served.

The Schooner Ridge Road project replaced existing direct buried underground cable that was installed more than 30 years ago with new cable and conduit. And the Neck circuit re-conductor project, a multi-year project, will replace existing cable with a new aerial spacer cable configuration along Atlantic Avenue and Ocean Avenue.

In 1995 the actual installed cost of the electric plant in service totaled \$9,047,488. By the end of 2011 the estimated installed cost totaled \$26,825,273 demonstrating the light department's commitment to infrastructure improvement. This increased investment in electric plant has been accomplished without the need to issue debt.

Net surplus revenue that was returned to the Town to reduce the tax levy in 2011 was \$330,000. The ten-year cumulative amount through 2011 totaled \$3,690,000.

In 2011, the Light Department received a First Place Safety Award from the American Public Power Association for the year 2010. For MMLD, this is our 17th consecutive safety award and our 21st in the last 22 years, an unprecedented record of which we are extremely proud. We continue to emphasize the importance of safety in the workplace as well as through our successful school safety programs.

Appreciation is tendered to the Board of Selectmen, Town Officials, Department Heads, and to all Town employees for their support and contributions.

Respectfully Submitted,

Robert V. Jolly, Jr., General Manager

Philip W. Sweeney, Chairman
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Calvin T. Crawford, Commissioner
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