

REPORT OF THE FACILITIES MAINTENANCE DEPARTMENT

The Town of Wellesley Facilities Maintenance Department (FMD) was created by Town Meeting vote in March 2012 and officially began operations on July 1, 2012. On June 30, 2015, the third full year of successful operations was completed. Overseen by the Town's Executive Director of Government Services, the department falls under the jurisdiction of the Board of Selectmen, and has a mission of treating municipal department heads and school principals as highly valued customers. The FMD is responsible for the operation and maintenance of all schools and most municipal buildings in the Town. The Municipal Light Plant and Department of Public Works currently manage their own buildings.

The FMD is responsible for custodial service, maintenance, energy management and capital projects in all twenty buildings, which total over one million square feet, with a staff of 64 and an FY15 operational budget of \$6.7M and a cash-capital budget of \$1.5M. The FMD was again able to provide a high level of service to all of its customers in FY15 and finish the year under budget by about \$327,000, or approximately 5% below the established budget. FMD employees working in schools are AFSCME union members, staff working in the Library buildings belong to a separate library union and the remaining FMD staff are non-union. Current contracts were negotiated and executed in 2013, and extend until June 30, 2017.

The Facilities Director leads a group of professional managers who oversee four core business areas: custodial, maintenance, energy and capital projects. Preventive maintenance practices are a focus of the department, as are custodial procedures which incorporate "green cleaning" techniques. In FY15 maintenance and custodial staff again performed a significant number of tasks and projects "in-house" rather than outsourcing, and as a result were able to respond more quickly and at lower costs. Capital projects are identified during planning through a collaborative approach with department managers and school principals. Design and construction is managed within the Department and also through outside design professionals, and for certain projects by the Town's Permanent Building Committee (PBC). The FMD's Energy Manager is charged with managing and reducing energy consumption, with an eye towards sustainability issues.

Energy

Energy Management was another successful area for the FMD in FY15, as we completed a large number of significant energy projects and continued to reduce energy use by another 2%, such that our total reduction has been 10% from FY12 to FY15.

Building and Energy Facts: FMD manages twenty (20) buildings for the Town of Wellesley including eleven (11) school and nine (9) town buildings. The total gross square footage (GSF) of our buildings is 1,086,588. The school buildings comprise 81% (881,983 GSF) of the total space and the town buildings 19% (204,605 GSF). For FY15, the total energy budget was \$1,857,000. However, the actual cost of energy was only \$1,663,000. Therefore, the FY15 cost of energy is \$194,000 under budget. The school buildings used 80% (\$1,326,000) of the total energy and the

town buildings used 20% (\$337,000). From an energy-use perspective, the total energy used in units was 86,087,000 kBtu. The school buildings used 83% (71,081,000 kBtus) of the total energy and the town buildings used 17% (15,006,000 kBtu). The total Energy Use Index (EUI) was 79 kBtu/GSF (\$1.35/GSF). The EUI was 81 kBtu/GSF (\$1.58/GSF) for the school buildings and 73 kBtu/GSF (\$1.11/GSF) for the town buildings.

Energy Management Overview: FMD's energy management cycle consists of analyzing energy use data, identifying energy use anomalies, proposing energy conservation measure (ECM) solutions, implementing the ECMs, optimizing the performance of the ECMs, and then performing preventive maintenance on the ECMs. As a result, energy management activities consist of project management (50%), building controls management (25%), data evaluation and analysis (20%), and budgeting (5%). FMD's Energy Manager performs significantly more capital project management than others in that position, because of his skill set and experience.

The project management work consists of proposing cost-effective ECMs, preparing project manuals (in compliance with MGL 25A, 30B, 149, etc.), soliciting bids, executing contracts, preparing schedules, kicking-off projects, monitoring daily work progress, administering budgets, approving invoices, preparing punchlists, and closing-out projects (See ECM projects list below). Once the ECMs have been installed, detailed and comprehensive preventive maintenance procedures must be created and implemented to maintain the optimal performance of the HVAC, controls, and ECM systems.

Building controls (HVAC) management work is a significant responsibility for the Energy Manager and, consists of monitoring the school and town Metasys systems including: setting-up access privileges, examining space- and system-specific operating setpoints (i.e., space/zone temperatures, OA damper min. positions, SF/EF commands, etc.), examining operating conditions (i.e., alarms, space/zone temperatures, OA/SA/RA CFMs, damper/valve positions, etc.), examining data trends and identifying operating anomalies, creating new application-specific trends, querying reports, performing global/object searches, and taking corrective action as is necessary to ensure the optimal operation of the systems.

The data evaluation and analysis work consists of tracking, trending, and analyzing building-specific electricity and natural gas energy-use data including normalizing energy use to weather, preparing comprehensive energy use and performance metrics, identifying energy use anomalies, proposing cost-effective ECM solutions, managing the implementation of the ECMs, measuring/verifying the success of the implemented ECMs, and updating the energy-use and performance metrics.

The budgeting work consists of monitoring the futures natural gas market, negotiating and securing competitively-priced contracts, administering the contracts, reconciling energy-use costs with budgets, summarizing energy-use data for preparing annual utility budgets, preparing ECM project budgets and estimated energy savings, calculating simple/LCCA paybacks, and summarizing ECM project data for preparing annual cash capital budgets.

Energy Use Performance: FMD has reduced our normalized FY12 energy use by 10% as of June 2015. Specifically, electricity use has been reduced by 4% and

natural gas use by 13%. This reduction translates into a \$145,000 annual savings or cost-avoidance. As part of our energy conservation plan, we anticipate reducing energy use by an additional 10% to 15%. Successful implementation of ECM projects will help us achieve this. Overall, our goal is to reduce our normalized FY12 energy use by 25% (~\$350,000/year) by FY17. Once accomplished, it will then be critical to implement a comprehensive preventive maintenance program that maintains the optimal operation of our ECMs so that the Town continues to benefit from the \$350,000/year savings.

Energy Conservation Measures: FMD has successfully completed the installation of \$641,000 of cost-effective ECMs over the past two years as part of our five-year plan to reduce energy use by 25%. To date, these projects have included a \$321,000 recommissioning project in nine (9) school buildings, \$69,000 LED project in two (2) school buildings, \$111,000 FY15 exterior LED project in four (4) school buildings, \$35,000 FY15 Mechanical Engineering Study in four (4) school/town buildings, and a \$10,000 FY15 Metasys Equipment Audit in nine (9) school/town buildings. We are also just completing a \$95,000 FY15 LED project in three (3) school/town buildings. In addition, we've prepared drafts of the project manuals to complete \$633,000 of ECMs in FY16 including a \$383,000 recommissioning project in five (5) school/town buildings and \$250,000 Metasys project in ten (10) school/town buildings. We will solicit bids for these projects in August 2015 and begin construction in November 2015.

Cost Avoidance: FMD began negotiations with Tradition Energy on 7/9/14 to procure our FY16 natural gas (NGS) contract. At that time, Tradition explained that the futures price of NGS was unexpectedly high because of a volatile basis market. They further explained that the futures price of NGS was currently in the \$13.00/DTH range (69% more than our FY15 price of \$7.670/DTH). As a result, they advised us to closely track the market and be prepared to secure a contract as soon as it stabilized. As advised, we tracked and trended the market. The market prices of NGS futures fluctuated as follows: \$10.71/DTH on 9/15/14; \$9.35/DTH on 11/5/14; \$7.450/DTH on 1/13/15; and \$7.280 on 1/29/15. On 1/29/15, we directed Tradition to secure a contract with Spark Energy for 58,512 DTH of NGS at \$7.280/DTH (5% less than our FY15 price). By purchasing our NGS in January 2015 rather than September 2015, our avoided energy cost was \$201k (\$627k - \$426k = \$201k).

Rebates: FMD contacted the State Department of Energy Resources (DOER) in November 2014 and requested clarification on whether the Town of Wellesley qualified to participate in MassSave's rebate programs. Prior to that time, we had understood that we did not qualify because we have our own Municipal Light Plant. However, the DOER concluded that we did indeed qualify to participate in MassSave's "natural gas" rebate program but not the "electricity" rebate program. As a result, we contacted NGrid (our NGS distributor) and negotiated a Strategic Energy Management Program (SEMP) MOU. The program provides cash incentives for reducing natural gas use by installing approved energy conservation measures. Based on our five-year ECM plan, we estimate that we will reduce our natural gas use by approximately 118,000 therms (~20%). As outlined in the MOU, NGrid will potentially provide the Town of Wellesley with \$110,000 in cash rebates if the ECMs are installed

Outreach: FMD has worked closely with Wellesley's residents, elected officials, voluntary committees, students, teachers, and others to better educate our community about FMD's commitment to reduce energy use in our school and town buildings. For example, on 11/12/14, we provided the BOS/Town with a comprehensive presentation entitled "FY16 Capital Budget" that analyzed our YTD energy use data, summarized our completed and pending ECM projects, and proposed our FY16 ECM projects. Other presentations were also made to the DOER on 11/18/14 and the BOS on 2/23/15. FMD worked with Olin College students by providing them with energy use data/metrics for their use in preparing a proposed "green" curriculum for WPS. FMD also worked with MLP by providing them with lighting photometrics for a proposed street light project on Squirrel Road and by providing them with a comprehensive regression analysis of town-wide normalized energy use for their evaluation and analysis. FMD has also attended numerous meetings by invitation with the SEC and WPS to provide updates on our data, progress, and plans. Our Energy Manager continues to attend SEC meetings and be a frequent contributor.

Capital Projects

At its inception, the FMD developed the first comprehensive five-year capital plan for all 20 buildings. This plan is updated annually and is relied upon to identify capital projects that will be presented at Town Meeting, including cash-capital projects to be executed by the FMD, and costlier projects that will ultimately fall under the Permanent Building Committee's (PBC) jurisdiction.

Plans are collaboratively developed with school principals, municipal department heads and the FMD's managers and maintenance/custodial staff. The *School Feasibility Study and Conditions Assessment*, an FY12 capital project also managed by the FMD, was the genesis for many of the major school projects currently being planned, designed or in construction, including the Schofield/Fiske Renovations and the Middle School Window Replacement projects.

By Town charter, building projects costing over \$100,000 are managed and overseen by the PBC; however the FMD works closely with its customers to identify the need for these projects at the earliest stages and then incorporate them into the capital plan. The FMD advocates for the projects through the capital budgeting process via presentations to various Town boards and committees, and ultimately turns these projects over to PBC at Town Meeting. During design and construction the FMD's Senior Project Manager will coordinate between the PBC and the FMD's customers, providing services including: design review, site access/information, continuity of operations, inspections, training coordination, punch list preparation, close-out support and startup feedback.

In FY15, the FMD planned, designed, bid, managed and completed construction on the vast majority of the forty-eight (48) cash-capital projects that were approved at TM. This ambitious slate of projects was completed in a timely manner by effective project management and a thoughtful balance of outsourced procurement and use of in-house maintenance staff. The FMD managers were able to prepare public bid packages for many of these projects saving significant budget in outsourced design fees, while expediting the project schedules. The FMD's approach to capital projects has been effective in moving them from the planning stage to construction.

Nine (9) major construction projects first identified in the FMD's capital plan, and subsequently managed by the PBC, were completed in FY15:

- Sprague Slate Roof Replacement and Oak Street Plaza Repair
- Middle School Auditorium Seating Replacement and Donizetti Entrance Renovation
- Hunnewell Roof Repairs
- Fire Headquarters Floor and HVAC Replacements
- Police Station HVAC Replacement
- Warren Building Renovations

Three (3) major projects began construction in FY15, and one (Security) began design.

- Schofield and Fiske School Renovations
- Middle School Window Replacement
- School Security Project

The FMD has an experienced professional staff of managers; however feasibility studies prepared by outside consultants are sometimes needed to supplement this expertise. In FY15 the FMD managed two major studies: the Hardy, Hunnewell, Upham Master Planning Study and the Middle School Engineering Study – both of which also fall under the oversight of the School Facilities Committee (SFC).

In addition to the energy conservation capital projects, other FMD projects completed in FY15 include:

In-House Projects: The FMD's maintenance staff performed numerous cash-capital projects including the following:

- Middle School IT Server Room: Installation of central air-conditioning system.
- Hardy & Upham MODS: HVAC and electrical work on MODS renovations.
- PAWS: Security improvements.
- Bates: Main Office upgrades.
- School Superintendent's Conference Room: Upgrades

Hardy and Upham Modular Classrooms: \$155,000 projects included removal and replacement of siding, trim, insulation, gutters and lighting for five modular classrooms, with a goal of increasing service life by 7 years.

Hardy and Upham Door Replacement: As part of an on-going plan to replace exterior doors in all schools, two projects totaling \$133,000 were completed over the summer of 2014 on schedule and under budget.

Fire Headquarters Entrance: As part of a \$98,000 project to complete many building improvements, a new door and barrier-free access ramp were completed at the main entrance.

Police Station Fingerprint Project: This \$95,000 project provided for building modifications to provide improved, safer public access to the WPD's finger print station.

School Flooring: As part of an on-going plan to replace carpeting and vinyl tile in all schools, four projects totaling \$51,200 were completed over the summer of 2014 on schedule and under budget.

Site Work: FMD also completed \$43,000 in site-related projects, some of which included the assistance of our partners at the DPW: Hardy transformer fence replacement, Bates pavement crack sealing, Schofield shed and new lawn area at the High School.

Maintenance

The Maintenance /Operations Manager oversees a staff of seven technicians including: 2 licensed electricians, 2 licensed plumbers, 1 licensed HVAC technician, 1 licensed maintenance craftsman and 1 maintenance mechanic. Utilizing a computerized maintenance management system (CMMS) for both routine and preventative maintenance, the maintenance staff responded to almost 1,400 work order requests in FY15, about a 9% decrease from FY14. Every effort is made to accomplish work order requests with in-house staff so that significant savings from labor and parts/supplies can be realized and prompter service can be provided to the FMD customers. Certain maintenance work is outsourced to qualified vendors such as specialty items (elevators) or if the magnitude of the work and deadlines require outside assistance. School maintenance expense budgets were increased by about 50% when FMD began operations in FY13 to reflect the higher level of maintenance needs in these buildings as recognized by the AdHoc Facilities Maintenance Committee when recommending the establishment of the new department.

The maintenance staff now is of sufficient size and expertise to complete many construction projects that would have previously been outsourced – again saving time and money. Savings are realized from in-house labor rates which can be less than half of prevailing wage rates required to be paid on public construction projects, and also from purchase of equipment and supplies using State bid prices versus paying mark-ups from outside vendors. Schedule efficiencies gained from avoiding public bid requirements and improved quality control resulting from the “ownership” of the work by staff are other benefits. As indicated above, a substantial number of capital projects were completed by the maintenance staff in FY15, and we plan to continue using this approach for FY16 projects.

The FMD's maintenance staff also responded to and resolved numerous emergencies in FY15 related to an extraordinarily difficult winter with numerous ice

dams and excessive rooftop snow loadings at many buildings. The Police Station was hardest hit by ice dams and leakage, where FMD spent almost \$15,000 addressing roof repairs and interior cleanup and repairs. Costly roof repairs, including gutters and shingle replacement, were also required at the Library buildings. Maintenance also responded to a major steam leak at the Middle School on Easter Sunday morning and a fallen tree that damaged part of the Schofield MODS roof and siding in late May.

Custodial

The FMD has a total of 49.3 FTE custodians, including 43.3 FTE union staff working in schools and the libraries and 6 non-union staff working in municipal building. A Custodial Service Manager oversees all aspects of custodial operations. 5.5 FTE new school custodial positions were created as part of the new department in FY13. Custodial equipment and supplies budgets for schools were also increased by about 50% in FY13.

Custodial highlights for FY15 were related to improvements in custodial operations and service at municipal buildings and specialty training in key custodial area received during numerous professional training classes as well as hands on training.

Municipal Improvements: By reorganizing custodial work schedules/staffing and hiring of excellent new staff in the municipal buildings FMD was able to drive improvements in service and cleanliness at these facilities. The new Head Custodian at the Warren Building and the revamped work schedules resulted in measureable improvements. The shift changes jointly considered staff at both Town Hall and Warren to allow for coverage of Saturday programs in the Warren and uniform morning coverage at Town Hall. By hiring excellent new staff at the Main Library, we've been able to firmly establish a solid, stable, and knowledgeable custodial staff led by Facility Supervisor. The Wellesley Police Department has also strengthened its custodial staff through a new hire, training on new techniques and purchase of new equipment to improve the overall look of the facility. The Town Hall staff is also being trained in a similar fashion and will be completing some major detail cleaning project work on the Fridays throughout the summer, such as deep cleaning of the restrooms, tile restoration and exterior window cleaning. The efforts of the Library, Police and Town Hall custodial staff has been recognized by unsolicited feedback from staff and guest clients.

Training: FMD held four professional development courses throughout the year which addressed topics including: Integrated Pest Management, Right to Know, Bloodborne Pathogens, emergency/disaster preparation and AHERA (asbestos regulations). The Human Resources Department also provided an informative session on the Employee Assistance Program, Retirement Benefits, and FMLA and Long Term Disability Benefits, along with the Health Insurance Benefit Update, which served as a pilot for presentations to other Town departments.

FMD's Custodial Manager also provided expert, hands-on-training for specialty floor restoration at the Police Station in preparation for the annual Open House, for rubber and VCT flooring surfaces. He demonstrated to staff how to rejuvenate 20 year old flooring with proper equipment, techniques and products. We also had a

vendor demonstrate a three-step ceramic tile restoration procedure which our staff was then able to perform ourselves on several of the Town Hall bathroom floors.