Public Buildings Division Operations Assessment

TOWN OF BROOKLINE, MASSACHUSETTS

matrix consulting group

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1. INTRODUCTION AND EXECUTIVE SUMMARY

This first chapter of this report introduces the analysis – outlining principal objectives, how the analysis was conducted and presents an executive summary.

1. SCOPE AND OBJECTIVES OF THE STUDY AND ITS KEY RECOMMENDATIONS.

The Matrix Consulting Group conducted a comprehensive management and operations analysis of the Public Buildings Division's existing operations, service levels, infrastructure management, and staffing levels. The analysis was fact-based and included all aspects of services provided by the Division. The scope of the operations review was comprehensive. It included the following issues:

- **Management Practices –** The management philosophy, effectiveness of the management team, management and supervisory practices;
- **Organization –** The organizational structure and reporting relationships;
- **Staffing –** The number and allocation of staff, assigned job duties, and workforce planning;
- **Operations Management -** Operational planning, resource availability and capabilities (facilities, equipment, tools, supplies, personnel), work scheduling, work reporting, quantity and quality of work produced, efficiency, and performance measures.

The objective of this assessment was to identify opportunities for improvement in the operational effectiveness and efficiency of the Division and practical opportunities for enhancing the quality of its product and services for the future.

A summary of the key recommendations made in the report is included are provided below. A glossary of all of the recommendations made by the project team can be found in Appendix E, at the end of the report.

- The Public Buildings Division should develop a strategic plan to guide operations and decision-making over a five-year planning horizon.

- The Public Buildings Division should develop and install a preventive maintenance program for all of the Town and School buildings and building components. Total cost savings could be approximately $439,600 annually in developing and implementing the program.

- The Public Buildings Division should contract, initially, for the employment of predictive testing equipment on an annual basis. In the mid-term, the Division should selectively acquire this equipment and train its staff in its use. Short term contracting costs would be $15,000 – $20,000 per year.

- The Division should expand the utility of the SchoolDude computerized maintenance management system to include expanded reporting of performance metrics, and enhanced communications to requesters of service.

- The Public Buildings Division should work with the Selectman's Office to gain a greater level of understanding of its budget request requirements.

- The Public Buildings Division should enhance the content of its web site.

- The Division should hire nine (9) Senior Maintenance Craftspersons over a three-year period at a total cost, including fringe benefits, of $981,059, including salaries, fringe benefits and equipment costs

- The annual maintenance and repair budget for the Public Buildings Division should be increased by an additional $623,043 for contracted services. This amount should be allocated between the Town and Schools on a square footage basis, and escalated each year by the Consumer Price Index to account for increases in the rates charged by contractors.

- The Public Buildings Division should adopt a consistent philosophy regarding how outsourcing decisions are made.

- The Public Buildings Division should be authorized to hire an Energy Systems Operator at a total compensation of $93,800 including salary and benefits. The position should be classified as exempt for FLSA purposes.

- The Town should consolidate the monitoring and reporting of its building energy consumption in the Public Buildings Division.

- The Town should conduct a new space needs analysis for the Public Buildings Division at an estimated cost of $50,000.

- The Town should remove the Public Buildings Division from the Building Department and create either a stand-alone department, or transfer the Division to an existing Town department with which it has more organizational commonality

- The Division should reallocate positions to the Energy Systems Manager and the Operations Manager, and designate two existing Maintenance Craftspersons as Foremen over these units.

- The Human Resources Department should analyze the equity of the compensation level of the Public Buildings Director.

Of course, the detailed analysis leading to these recommendations can be found in the report.

2. PROJECT METHODOLOGIES

The Matrix Consulting Group utilized a fact-driven data collection and analytical process in conducting the operations review of the Public Buildings Division. The methodologies are summarized below.

- The Matrix Consulting Group conducted preliminary data collection for the operations assessment to ensure a clear understanding by the Public Buildings Division of the scope of the project, obtained the views and perspectives of Department management and staff, and obtained an initial understanding of the Public Buildings Division including goals, objectives, business processes, service level targets, performance indicators, and initial issues and opportunities for improvement.

- The Matrix Consulting Group conducted interviews of the Town Manager, the Buildings Commissioner, the Division Director, the Operations Manager, the Energy Systems Manager, Division staff, and Department directors of major Town Departments.

- The project team collected data regarding service delivery by the Division including organization of services, the structure and functions of the Department, budgets, workload data, management systems, inventory of the infrastructure, etc.

- The project team compared the practices and programs of the Public Buildings Division to various industry practices in the facilities management industry.

The following section provides examples of the strengths of the Public Buildings Division.

3. THE PUBLIC BUILDINGS DIVISION EMPLOYS A NUMBER OF BEST PRACTICES.

A management and operations analysis, by its nature, focuses on opportunities for improvement. However, there are a number of strengths in the Public Buildings Division. Examples of these strengths are portrayed below.

- During the course of the study, the project team conducted interviews with multiple Town and School Department managers and employees. The feedback from these "customers" of Public Buildings Division services was very positive regarding the services they receive from the Division, and its staff's orientation toward customer service.

- The Town has invested heavily in energy management and building automation systems in an effort to reduce energy and utility costs.

- The Town has developed a five-year facility equipment replacement plan.

- Division staff members are provided with routine training on job-related skills.

- The Division has renovated many buildings throughout the Town over a multi-year period which has reduced maintenance costs.

- The Public Buildings Division has implemented the SchoolDude computerized maintenance management system that serves as both a vehicle by which Town departments may request facilities services, as well as a system for recording work performed by the Division. The system is also currently being populated with information on all major maintenance equipment for the purpose of establishing a comprehensive preventive maintenance program.

- Maintenance Craftspersons are each equipped with tablets to which work requests can be transmitted remotely, and on which Craftspersons can record the work performed.

- The Division Director offers a 40 hour training course for internal staff as well as staff of the Schools and Library on such topics as MSDS, OSHA, asbestos awareness, fire extinguishers and fire alarm systems.

- The Town has received two Proposition 2 ½ Overrides in recent years, which has assisted the Public Buildings Division in addressing some critical facilities needs.

These strengths provide a sound basis for further enhancement of operations and represent only selected best practices that are already in place.

4. KEY THEMES IDENTIFIED IN THE REPORT.

The evaluation of the Public Buildings Division resulted in some key themes emerging that are critical to understanding the resulting recommendations:

- The Public Buildings Division has assumed the responsibility for an increasing number of buildings and maintainable square footage over a long period of time with no increases in resources.
- Although the Division has instituted a preventive maintenance program, the program should be enhanced, with a much greater percentage of the work of maintenance staff invested in preventive maintenance.
- Although the proliferation of building automation systems in the Town's facilities has resulted in energy and cost savings, these systems require intensive maintenance and programming that is stretching the ability of a single Energy Systems Manager to oversee.

A major theme throughout the report is the insufficiency of both internal staffing and contracted resources to adequately maintain the Town's 82 buildings. Although the Town has invested heavily in building automation systems, these systems cannot, in themselves, substitute for proper maintenance and repair of the equipment that they monitor and control. And while it is true that not all buildings require the same level of maintenance and repair in any single year, any facility that is equipped with plumbing, HVAC and electrical equipment may require a substantial investment in repair and maintenance at any time.

The observations made by the project team, as well as the analysis of data and comparisons to both industry standards and to comparative towns in Massachusetts, all indicate that Brookline's investment in facilities maintenance and management are far

below levels that are necessary for proper maintenance and repair. The report builds the case for increases in both internal staff as well as contracted repairs. The required investment is substantial, however the costs of continuing to under-invest in testing, repair and maintenance are even greater in terms of potential increases in the incidence of structural, equipment and system failures. The Public Buildings Division's current staffing levels are insufficient to implement a fully-functional preventive maintenance program. The lack of such a program has resulted in the inability of the Division's staff to address any but the most critical needs, as is reflected in its completion of only 54% of all work requests within three days. Further, only about 5% of work orders are for preventive maintenance activities, and only 17% of these were completed within three days of assignment.

In summary, continuing on the current course will result in a continued inability of the Public Buildings Division to adequately maintain the Town's facilities which, in time, will result in structural, equipment and system failures. The project team has made recommendations to address these potential failures, and with adequate resources, the Division will be equipped to properly, and proactively, maintain the facility assets of the Town for many years to come.

2. ANALYSIS OF MANAGEMENT

This chapter evaluates the management practices within the Public Buildings Division. This includes strategic planning; goals, objectives, and performance measures; and policies and procedures.

1. THE PUBLIC BUILDINGS DIVISION SHOULD DEVELOP AND ADOPT A STRATEGIC PLAN FOR OPERATION AND MAINTENANCE OF TOWN FACILITIES.

The *American Public Works Association's Public Works Management Practices Manual* is a tool that public works organizations, including those that specifically provide facilities management services, can use to develop or improve existing practices, enhance performance, increase productivity. Management Practice 1.6 states "the agency has developed and implemented a strategic plan." The strategic plan should include levels of service, planning goals and objectives, plan monitoring, plan documentation, goals and objectives, etc.[1]

A strategic plan differs from a capital plan or a business plan. The strategic plan is the result of a planning process that is meant to guide decisions about the future. Therefore, the strategic plan informs and guides decisions related to capital planning, staffing, insourcing and outsourcing, and other elements of future operations by making critical assessments of the strengths, weaknesses, opportunities and threats (SWOT) to the organization. Strategic planning also requires a well-thought out plan for how to properly allocate time, human capital and financial resources. By following a strategic

[1] American Public Works Association, Management Practices Manual, 8th edition.

planning process, an organizations can improve business outcomes and avoid taking on unanticipated risks due to lack of foresight.

The Public Buildings Division's managers are focused on immediate issues (e.g., the next work order, the next call from a department head) and, as a result, lose sight of their ultimate goals. In the world of facilities management, many activities fall under the facilities manager's responsibility that cause lapses into a reactive mode in order to respond to all the service requests, orders, regulations, deadlines and demands of the organization. The Public Buildings Division's managers know that the need to become more proactive and strategic is important, yet with the volume of work requests it handles, it is difficult to find the time to think strategically.

In addition, the Division faces a number of long-term challenges such as the following:

- Increasing enrollment in the school system that has created the need for additional space, even as facilities maintenance budgets have remained stagnant.
- The proliferation of energy management systems throughout Town buildings that has placed increasing demands on the Division to maintain them.
- More effective utilization of *SchoolDude* as a maintenance management system and not merely as a work order system.

Effective facilities management strategic plans and strategies focus on decisions and actions to control and preserve facility property and equipment. These include (1) actions focused on scheduling, procedures, work and systems control and optimization; and (2) performance of routine, preventive, predictive, scheduled and unscheduled actions aimed at preventing equipment failure or decline with the goal of increasing efficiency, reliability, and safety.

An effective facilities management strategic plan and strategy can have important benefits for an organization. For example, effective operations and maintenance strategies targeting energy efficiency can save 5% to 20% on energy bills without a significant capital investment.[2] Beyond the potential for significant cost and energy resource savings, effective operations and maintenance strategies have other important implications such as those noted below.

- A well-functioning facilities operations and maintenance program is safe. Equipment is maintained properly mitigating any potential hazard arising from deferred maintenance.

- In most buildings, the facilities management and maintenance staff are responsible for not only the comfort, but also the health and safety of the occupants, which is the case in Brookline as well. An increasing concern is the indoor air quality within these buildings. Proper operations and maintenance reduce the risks associated with the development of dangerous and costly indoor air quality situations.

- Properly performed operations and maintenance ensures that the design life expectancy of equipment will be achieved, and in some cases exceeded. Conversely, the costs associated with early equipment failure are usually not budgeted for and often come at the expense of other planned operations and maintenance activities.

- A well functioning operations and maintenance program means that the Division is not always answering complaints, but rather it is proactive in its response and corrects situations before they become problems. This model minimizes callbacks and keeps occupants satisfied, while allowing more time for scheduled maintenance.

The facilities management strategic plan should include five distinct segments: operations, maintenance, facility engineering, professional development, and administration. Possible goals for the operation and maintenance strategic plan are presented below.

- **Effectively manage the maintenance and repair of Brookline facilities**. The Public Buildings Division will establish and ensure effective implementation of

[2] PECI. 1999. *Operations and Maintenance Assessments.* Portland Energy Conservation, Inc.

policies and the planning and administration of facilities management, and will formulate and utilize formal management objectives to improve performance. The Division should monitor and assess its work activities using *SchoolDude* to improve all aspects of performance. It should ensure that positions are filled with highly qualified individuals, and that it will achieve a high degree of personnel and public safety. Further, the Division should monitor and report its performance using metrics and *SchoolDude*.

- **Effectively maintain and repair Brookline facility assets**. The Public Buildings Division will manage the performance of maintenance and repair in an efficient and safe manner such that economical, safe, and reliable facility operation is optimized. The Division will conduct maintenance in a safe and efficient manner, and will plan and conduct effective preventive and predictive testing and inspection programs to contribute to optimum performance and reliability of facilities systems and equipment. The Division will insource the core facilities maintenance and repair activities, and outsource non-core activities, peak workload, or work for which it lacks the required specialized knowledge.

- **Foster the professional development of the Division's staff**. The Public Buildings Division will ensure effective implementation and management of training activities, and will ensure that its staff have a basic understanding of their responsibilities and safe work practices and have the knowledge and practical abilities necessary to maintain, repair, and operate the Town's facilities safely and reliably. The Division will develop and improve the knowledge and skills necessary to perform assigned job functions.

- **Achieve a high level of customer satisfaction**. The Public Buildings Division will determine and monitor the level of customer satisfaction with the services provided by its maintenance and administrative staff. The Division will identify and implement improvements that will increase the level of customer satisfaction.

- **Maximize efficiency using *SchoolDude***. The Public Buildings Division will create a common vision for *SchoolDude* and its implementation. The Division will use *SchoolDude* to efficiently maintain, repair, and operate Town facilities, and will manage the deployment of *SchoolDude* to fulfill its needs and those of its customers.

- **Keep a life cycle asset management perspective**. The Public Buildings Division will make decisions regarding the operation, maintenance, and repair of Town facilities with consideration of the impact on the overall life cycle of building equipment and systems to generate the most cost-effective actions. The Division will keep a life-cycle perspective throughout the planning, construction, operation, and maintenance, repair, and replacement of building equipment and systems.

The strategic plan for the Public Buildings Division should be designed to set the direction for its operations over the next five years, and build a framework for its

decisions regarding the operation, maintenance and repair of Town facilities. The Public Buildings Division should utilize the recommendations contained within this report to develop the strategic plan.

Recommendation #1: The Public Buildings Division should develop a strategic plan to guide operations and decision-making over a five-year planning horizon.

2. THE PUBLIC BUILDINGS DIVISION SHOULD ENHANCE ITS PREVENTIVE MAINTENANCE PROGRAM.

Although the Public Buildings Division has begun to implement a preventive maintenance program, its full implementation has been impeded by both the relative lack of staff, as well as the fact that not all major maintenance equipment has been entered into the *SchoolDude* computerized maintenance management system. This section of the report describes the elements of a successful preventive maintenance program, and the need to make the eventual transition to a reliability-centered maintenance plan.

(1) A Comprehensive Preventive Maintenance Program Should Be Developed and Deployed for All of the Town's Buildings

Many building industry and facilities management groups, including the American Public Works Association, the Building Owners and Managers Association (BOMA) International, the Association of Physical Plant Administrators (now named the Association of Higher Education Facilities Officers), and the Association of School Business Officers agree on the benefits of well-planned preventive maintenance.

These professional associations cite preventive maintenance for its effects on improving equipment's operating efficiency, preventing premature replacement of components, and avoiding interruptions for building occupants. Preventive maintenance is widely thought to reduce long-term costs by maximizing the operating capacities of

equipment, minimizing downtime, and avoiding breakdowns that would otherwise lead to higher repair costs later. Studies within individual companies show savings in energy costs and repair costs, as well as reductions in equipment breakdowns, due to preventive maintenance. Some studies have shown that the investment of time and financial resources into preventive maintenance returns $2 in savings for every $1 invested.[3]

The Division should enhance its preventive maintenance program for the heating, ventilating, and air conditioning, electrical and plumbing components for all of the Town's and Schools' buildings. The Division has not yet entered all of the major maintenance equipment into the SchoolDude management information system, which is a critical step in developing maintenance schedules, and reporting on results. The Division should enhance and implement a comprehensive preventive maintenance program, and enter these elements into SchoolDude along with the elements of maintenance, and the frequencies with which the maintenance should occur. The elements of this preventive maintenance program are presented below.

- **Establish levels of service necessary to preventively maintain the facilities**. In establishing levels of service, the Division should document what maintenance activities are needed to ensure that a particular system or component meets or exceeds its life expectancy. Manufacturer's literature and the experience of Public Buildings staff are some ways to determine both acceptable life-cycles and what preventive maintenance work would result in achieving those life expectancies in the most efficient manner.

- **Prepare an annual work program for preventive maintenance of buildings and building components**. Once the levels of service have been established, setting the tasks into a work plan is the next step. The list of tasks to be performed should be described in detail, and the frequency and nature of the work should be clearly stated. The supplies and materials to be used are specified in considerable depth and the manner in which the work is to be accomplished should be expressed in simple language.

[3] "From Preventive to Proactive", Public Works Magazine, November, 2007.

- **Develop a formal work planning and scheduling system for preventive maintenance of buildings and building components.** The core of any preventive maintenance program is in the scheduling and assignment of specific preventive maintenance tasks. This is almost always done using a work order system. This element of the preventive maintenance program takes the work items developed for each facility component, such as the quarterly inspection of a rooftop HVAC unit, and assigns them to Division staff according to the established structure and schedule.

- **Report actual versus planned results of preventive maintenance.** Effective preventive maintenance programs depend on feedback from Public Buildings staff using the work orders and a reporting/tracking system of costs associated with the work order. This information is used to maintain the proper balance between preventive maintenance and renewal and replacement efforts.

- **Establish a reporting system.** Through a combination of informal evaluations and formal audits, a reporting system could be established to analyze the Division's maintenance system to assure cost-effective maintenance.

Although there will be some initial costs and time consumed in setting up the preventive maintenance program, the benefits will be apparent within 18 to 24 months. As was noted above, for every dollar expended in preventive maintenance, the Town may see two dollars of costs avoided. Later in this report, the project team makes recommendations to hire nine (9) additional Maintenance Craftspersons, as the current level of staffing is insufficient to properly maintain the Town's facilities. The total cost over a three-year period is estimated to be $732,659. Best practices in building maintenance suggest that 30% of all time expended by staff should be in preventive maintenance activities.[4] If 30% of the time expended by these nine employees is spent on preventive maintenance efforts, the total cost avoidance would potentially equate to $439,600 annually (30% of $732,659 X 2).

Recommendation #2: The Public Buildings Division should develop and install a preventive maintenance program for all of the Town and School buildings and building components. Total cost savings could be approximately $439,600

[4] CFM&D Magazine, "How to Start a Preventive Maintenance Program," June 27, 2014.

annually if significant time and effort is expended in developing and implementing the program.

(2) Develop and Install a Reliability-Centered Program for Facility Components.

Once the Division establishes a functional preventive maintenance program, it should evolve into a Reliability-centered program. Reliability-centered maintenance (RCM) employs predictive testing and inspection approaches to determine preventive maintenance requirements and frequency. RCM recognizes that equipment design and operation differ and that different equipment will experience varying probabilities of failure from different degradation mechanisms. It also structures a maintenance program recognizing that the Division does not have access to unlimited personnel and funding resources, and therefore it is an approach to evaluate a facility's equipment and resources to best mate the two, and, in theory, results in a higher degree of facility reliability and cost-effectiveness.

Reliability centered maintenance places great emphasis on improving equipment reliability, principally through the feedback of equipment condition data using primarily non-intrusive testing techniques, visual inspection, and performance data to assess machinery condition. For example, vibration analysis of a generator might be the basis for either accelerating or deferring a scheduled major overhaul, or infrared testing of a roof might indicate the need for small repairs now and avert a major repair project in the future.

The use of predictive testing equipment should be utilized on an ongoing basis to include the techniques enumerated below.

- Vibration analysis should be used to detect, identify, and isolate specific component degradation and its causes prior to serious damage or actual failure.

Vibration monitoring helps to determine the condition of rotating equipment, a system's structural stability, and sources of airborne noise.

- Oil analysis should be used to determine the condition of a given oil, fuel, or grease sample by testing for viscosity; particle, fuel, and water contaminants; acidity/alkalinity (pH); breakdown of additives; and oxidation.

- Temperature monitoring devices should be used to detect temperature variances in machines, electrical systems, heat transfer surfaces, and structures and the relative magnitude of those temperature variances. Large changes in temperature often precede equipment failure. Infrared thermography, in particular, is a reliable technique for finding roof leaks and determining the thermal efficiency of heat exchangers, boilers, building envelopes, etc.

The project team recommends that the Division, at least initially, contract for the predictive testing equipment and services until such time that equipment can be purchased, and that sufficient training can be acquired in their use. One of the pitfalls in the implementation of RCM, and the use of highly-specialized equipment, is that staff are improperly trained in its use, and the equipment is under-utilized, and the Public Buildings Division would be advised to ensure that it takes the time to both obtain the testing equipment that is most suited to its uses, and that it obtains sufficient training from the manufacturer. The probable cost of the contracted service, in the interim, is estimated at $15,000 to $20,000 per year.

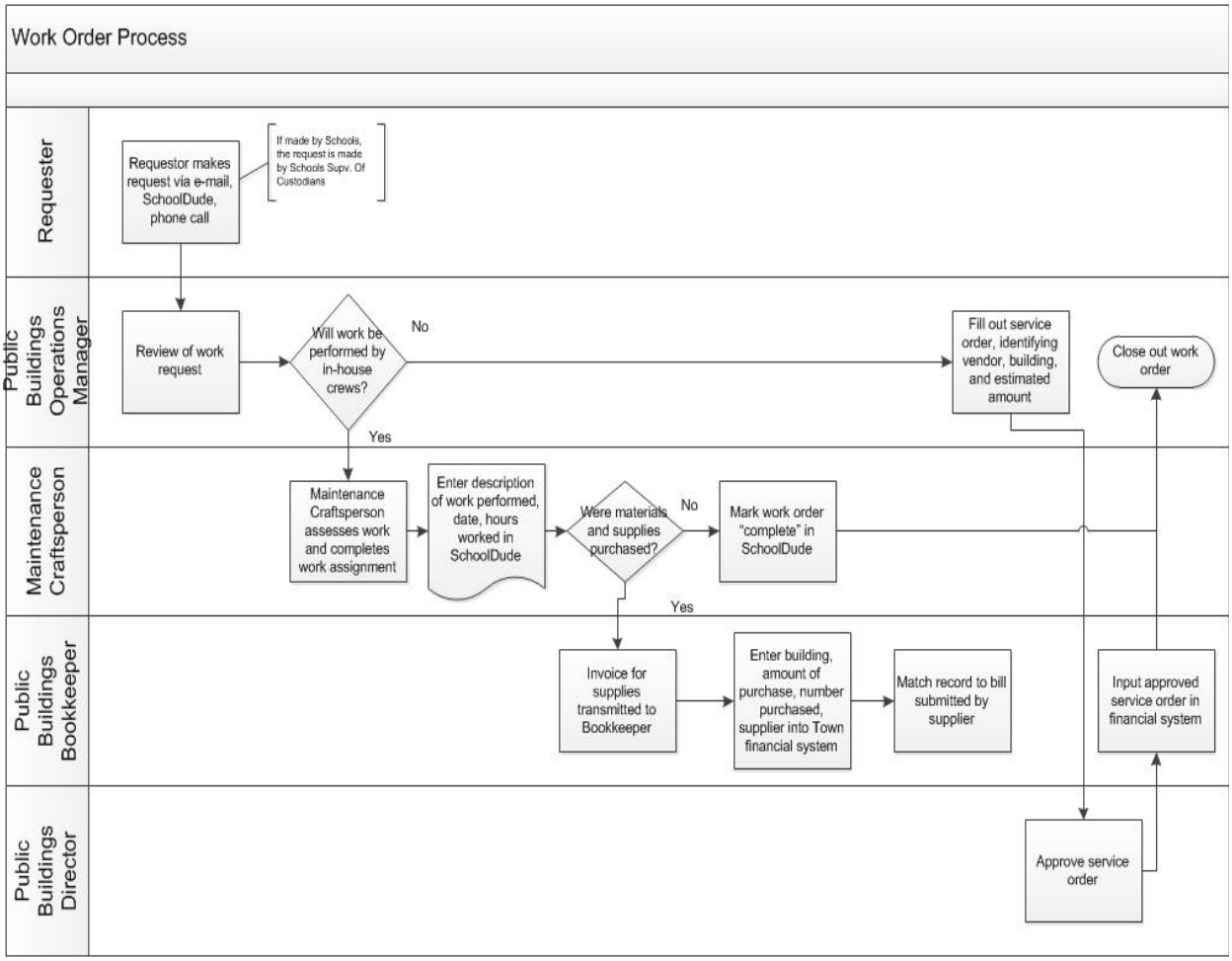
Recommendation #3: The Public Buildings Division should contract, initially, for the employment of this predictive testing equipment on an annual basis. In the mid-term, Facilities Maintenance should selectively acquire this equipment and train its staff in its use.

3. THE PUBLIC BUILDINGS DIVISION SHOULD ENHANCE THE UTILITY OF ITS SCHOOLDUDE MANAGEMENT INFORMATION SYSTEM.

The Public Buildings Division utilizes SchoolDude as its computerized maintenance management system (CMMS). The system is used by customer departments to make work requests, and for the Public Buildings Division to assign

work to Tradesmen and to record the work as it is completed. Although the implementation of the system represents a great improvement over previous years, the Division should expand the utility of the system to realize its full benefits.

The following workflow diagram portrays the method by which work orders are accomplished, and the role that the SchoolDude CMMS plays in facilitating the process.



It should be noted that although requesters can make facilities maintenance and repair requests in a variety of ways, Town employees typically either call or e-mail the Public Buildings Division. The Schools, however, have made better use of *SchoolDude* as the preferred method of making these requests. This use of *SchoolDude* eliminates

the double-entry of work requests by the Public Buildings Division's staff, and also minimizes the potential for error in re-entry.

The project team's review of several of the submittals by the Schools indicates that they frequently contain an entry in the "Priority" section of the form, and they are almost uniformly entered as "High" priority. The Division should instruct the Schools to leave this area of the form blank, instead filling it in based on an assessment of the criticality of the nature of the work described by the requester. Another potential improvement in the process is for the Division to contact the requester via *SchoolDude*, indicating the probable time by which a Maintenance Technician will arrive on site to assess the work. Currently, this is not done for any work request, whether made by the Schools or the Town. This is likely due to the relative lack of staff to enable the Operations Manager to know with any degree of certainty when a task can be completed. However, this should be done as a matter of good business practice, even if the times are somewhat more lengthy than would be the case if staffing levels were greater.

Note also in the flowchart that when the Operations Manager assigns a particular work order to a Maintenance Technician, there is no assignment of the amount of time the work order is expected to take. Given the number of completed work orders in the *SchoolDude* system, the Division should now have a sufficient understanding of reasonable ranges of time within which specific work orders can be completed. Failing to provide time estimates for work orders risks that the work may expand into the time available to accomplish it, and also fails to hold both Manager and Maintenance

Technician accountable for the amount of time spent. *SchooldDude* can accommodate this time estimate, and the Division should begin utilizing it immediately.

Although not depicted in the workflow diagram above, the Public Buildings Division is not yet utilizing *SchooldDude* as an effective management reporting tool once the work orders are completed. As the diagram shows, completed work is being entered into the system, however there are no routine reports being produced and analyzed by managers in the Division. During the course of the study, the project team requested certain basic information relating to the numbers of work orders completed within specified time ranges (e.g., numbers and percentages of work requests completed within three days, one week, 30 days, etc.), and the Division was able to produce some of these, however they were reportedly produced by the manufacturer of the system rather than by internal Division staff. The *SchoolDude* management information system can produce these, and many other, types of reports, and the Division's administrative staff should obtain more training from the manufacturer to be able to produce them internally. These reports should contain the following:

- Numbers of work orders completed within three days, one week, 30 days, 60 days and 90 days. These should be compared to established metrics of performance.
- Time and total cost by task, by employee.
- Time and total cost by building.
- Cost of contracted work by trade. This should be routinely compared to internal costs for the same task types, when applicable.
- Incidence of rework by Maintenance Technician. Rework may be defined in various ways, and the Division may use whatever metric is deemed appropriate, however a typical definition would be any work that must be redone on the same equipment or component within 10 working days.

- Cost (and/or hours) per square foot of maintainable space.
- Cost of maintenance and repairs as a percentage of total building replacement value.

In summary, the Division has made strides in the implementation of the SchooldDude computerized maintenance management system. This is especially true in using the system as a vehicle to receive and assign work orders, and in capturing the time and cost of individual work orders. What is needed is a more robust use of the system as a management reporting tool, to enable managers to make decisions about training needs, replacement decisions, as well as others. The Division may need to obtain more training to be able to produce these reports, but this reporting is an essential element of productive management. The project team recommends that the Division contact the vendor for this training, which should be of a nominal cost.

Recommendation #4: The Division should expand the utility of the SchoolDude computerized maintenance management system to include expanded reporting of performance metrics, and enhanced communications to requesters of service.

4. THE PUBLIC BUILDINGS DIVISION SHOULD ENHANCE SUBSTANTIATION FOR ITS BUDGET REQUESTS.

During the course of the study, the project team reviewed the Public Buildings Division's current and historical budgets and actual expenditures for a variety of purposes including the establishment of trends in personnel costs, contracted services, requests for capital, and others. This analysis also included a review of the budgetary request documents for various line items such as for repair and maintenance, overtime requests, summer staff, cleaning services, as well as many others.

In conducting the review of the Division's budgetary requests, it was apparent that there is an uneven level of detail provided. For example, in its request for a $10,000 increase in its overtime budget, the Division provided the following:

DESCRIPTION OF EXPANSION REQUEST
Increase overtime for tradesmen There is a great amount of work in the schools. There are many emergency calls or projects that need to be done after hours. The account has been under funded for sometime. Alternative is to use outside contractors but that cost would be 2-3 times more.

The above request provides at least a brief problem statement ("There is a great amount of work in the schools. There are many emergency calls or projects that need to be done after hours"), however, there is no statement of the "drivers" of the need for the overtime beyond a simple statement that there is a great amount of work in the schools. The budget request does provide some estimate of the impact of not increasing the overtime budget ("Alternative is to use outside contractors but that cost would be 2-3 times more"), but does not substantiate this with actual data.

Another illustrative example of a budget request by the Public Buildings Division for a $15,000 increase in summer staffing simply stated, "Increase summer staff amounts." This particular request does not state the need for the staff, what the staff would be used for, what the impact of not hiring the staff would be, the numbers of staff that would be hired, nor the justification of $15,000 rather than another amount.

The Public Buildings Division has sufficient data in most cases to provide more accurate and informative budget requests. For example, in the example, above, of the request for an increase in overtime, this request should include a historical trend in the

use of overtime, broken down by its use in schools and other Town buildings. To further substantiate this request, the Division should include the actual expenditures against the amount budgeted in order to validate the statement that the line item had been "underfunded for some time." Finally, this particular request should include a recent average hourly rate for contracted services for plumbing, HVAC, carpentry, electrical, etc.

The Selectman's Office should issue guidelines for the requests for line item budgets. The project team did not review other Town departments' requests, so it is possible that there is a greater degree of substantiation in these other requests. However, given the relative lack of substantiation in the Public Buildings Division's requests, the project team advises that some greater level of instruction be provided in what is needed. These budget requests should, at a minimum, provide the following:

- A statement of the background of the issue. In the case of the overtime request, above, the budget request should reproduce the actual use of overtime against the budgeted amounts over three to five year period.

- A statement of the need for increase in the budget. Typically, this will include a problem statement related to either a short term need (e.g., a service needed one time, such as mold mitigation), or a long-term need (e.g., an increase in the number of buildings, building floor space, equipment, etc.).

- A statement of the impact of the problem. This may take the form of stating what consequences would occur if the budget line item request were denied, or the impact of an alternative solution. In the case of the above request for overtime, the budget request did state that contractors would need to be hired at "2-3 times more", however this was not substantiated. Another consequence of the request for overtime being denied may also be that deferred maintenance may increase, or the completion rate for routine work requests would increase by an estimated percentage.

The Division should work with the Selectman's Office to gain a better understanding of what is needed in order to better substantiate its budget requests. As

was sated above, other Town departments may be provided greater detail, however it is clear that the Public Buildings Division's requests do not meet minimal criteria for enabling the Town to determine whether the budget requests are valid. As will be discussed in later sections of this report, the Public Buildings Division lacks sufficient staff to complete even the routine requests for service, and it is therefore likely that its requests for specific increases in its budget (e.g., overtime), are valid, but in the absence of the provision of a greater level of detail, it is not possible for an uninformed reader to be aware of these needs.

Recommendation #5: The Public Buildings Division should work with the Selectman's Office to gain a greater level of understanding of its budget request requirements.

5. THE PUBLIC BUILDINGS DIVISION SHOULD ENHANCE THE UTILITY OF ITS WEB SITE.

In the recent past, the simple provision of a web site of any description for a facilities management organization was considered a progressive and customer-oriented feature of government. Today, however, it is expected that the web site will be informative, interactive, and easily navigated. In fact, "web surfers" throughout the country and the world scan websites for information, and a well-designed website says much about a town, just as does a poorly-designed one.

The Public Buildings Division provides services primarily to Town employees, however residents, business owners and others also have interests in the maintenance of current buildings, energy consumption, uses of capital funds for construction and renovation, as well as many other topics. Currently, however, the Public Buildings Division does not post any information on its web site.

The project team recommends that the Division enhance its web site with the following additions:

- A statement of the Division's mission. For example, "The mission of the Public Buildings Division is to provide safe and fiscally responsible facilities and facility-related services to Town residents, visitors and employees of the Town of Brookline.
- A listing of the services provided by the Division.
- Photographs of exemplary facilities of the Town.
- A listing of capital projects that are under construction, as well as a schedule of completion.
- A description of the energy management efforts by the Division. This may include data that show current and historic energy consumption in each of the Town's major facilities.
- An organization chart that shows the number of staff and their reporting relationships.
- Tips for energy reduction in Town facilities as well as in Town businesses and residences.

The Building Department's web site does provide a brief description of the services provided by the Public Buildings Division, however the Public Buildings Division's section of the web site is blank. The Building Department does have many more interactions with external customers than the Public Buildings Division, and it is understandable that there would be more content on that page. However, the project team recommends that the Public Buildings Division enhance its web site to include at least those points made above in order to provide Town employees, residents, businesses and other visitors with an understanding of the functions and services provided.

Recommendation #6: The Public Buildings Division should enhance the content of its web site.

2. ANALYSIS OF STAFFING AND OPERATIONS

This chapter of the report provides an analysis of the staffing levels and operations of the Public Buildings Division.

1. THE PUBLIC BUILDINGS DIVISION IS UNDER-STAFFED TO PROVIDE A SUFFICIENT LEVEL OF MAINTENANCE SERVICES FOR THE TOWN'S FACILITIES.

The Public Buildings Division has a total staffing complement of 20 full time employees. These full time employees are supplemented by several part time and temporary workers. The total Division staffing is provided in the table below.

Position	Number
Director of Public Buildings	1
Administrative Head Clerk	1
Bookkeeper/Accountant I	1
Operations Manager	1
Energy Systems Manager	1
Senior Maintenance Craftsperson	12
Senior Custodian	3
Pest Control Technician	0.48
Houseworker	0.4
Summer Worker	0.8
Temporary Worker	2
Total	**23.68**

The table shows that there are 12 Senior Maintenance Craftspersons who are primarily responsible for the maintenance and repair of the Town's buildings.[5] These 12 Craftspersons are responsible for 2,306,367 square feet of maintainable space.[6] The full list of buildings and maintainable space is provided in Appendix C.

[5] During the time period of the study, two of these 12 positions were vacant.
[6] This figure differs by 9,956 square feet from the total physical space, as the area of the underground parking garage at Town Hall was subtracted from the total.

In addition to the complement of 12 Maintenance Craftspersons, the Public Buildings Division contracts for certain maintenance and repair services in the facilities for which it has responsibility. These contracted services include those for electrical, HVAC, building automation systems, ceilings, shades, carpentry, generators, boilers, roofing, elevators, alarms, masonry, glazing, window washing and oil tank maintenance. In total, for Town and School buildings, these contracted services were budgeted at $1,638,040 in the current fiscal year. Therefore, in addition to the 12 internal staff resources, the Public Buildings Division is supplemented by contractors who provide a substantial contribution to the overall maintenance and repair of the Town's facilities.

(1) The Public Buildings Division's Staffing Levels Are Low Compared to Industry Standards.

In addition to its 12 internal staff members, the Public Buildings Division supplements this staff with maintenance and repair work performed by contractors. In order to enable a comparison of the adequacy of the Division's overall staffing contingent to best practices and industry standards, the contributions made by contractors must be valued, and added to those made by the 12 internal staff members. To accomplish this, the project team made certain key assumptions. These are:

- It is assumed that the labor provided by these contractors represents 50% of the total cost of their services, with the other 50% being supplies and materials expended in the maintenance efforts plus profit.
- The labor rate for contractors averages $100 per hour.
- The average maintenance staff person in the Division is available for 1,650 hours each year. This is net of all types of leave (e.g., vacation, sick, personal leave, bereavement, etc.), training, administrative time.

Given these assumptions, the table below provides the calculation of the total staffing equivalency that contractors make to the overall maintenance and repair efforts in Town facilities.

Description	Number
A. Total Contracted Service Budgeted Amount	$1,638,040
B. Labor Portion of Contracted Services Budget (50% * A)	$819,020
C. Estimated Labor Rate for Contractors	$100/hour
D. Hours of Service Provided by Contracted Labor (B/C)	8,190.2
E. Average Time Available per FTE for Charges to Work Orders	1,650
F. Estimated Staffing Equivalency of Contractors (D/E)	**5.0**

As the table shows, contractors provide an estimated 5.0 FTE to the overall maintenance and repair services in Town buildings. Adding this to the 12 full time Maintenance Craftspersons in the Public Buildings Division results in an equivalent total of 17 FTE.

Given that there are 2,306,367 maintainable square feet of space in Town buildings, the 17 equivalent maintenance workers are each responsible for an average of approximately 135,669 square feet of space. In 2005, the International Facility Management Association (IFMA) administered a survey to over 650 members of its industry group and determined that the average space maintained by building mechanics was between 45,000 and 50,000[7], which is well below the experience in Brookline. If the upper end of this range were used as a gauge of the appropriate level of staffing in the Town of Brookline, a total of 46 Maintenance Craftspersons would be necessary, which is 29 equivalent staff members more than are currently allocated to the Division of Public Buildings.

[7] IFMA, Operations and Maintenance Benchmark Survey", 2005.

(2) The Division's Staffing Levels Are Lower Than Its Peer Communities.

To gauge where Brookline's staffing levels stand in comparison to its peer communities in Massachusetts, the project team distributed a comparative survey to 17 different cities and towns, as well as the Boston Public Schools. (The full results of the survey may be found in Appendix D of this report.) Of these, the project team received nine (9) responses, seven (7) of which provided sufficient information to calculate the average number of maintainable square feet per trades worker. These results are provided in the table below.

Maintainable Square Feet per Trades Staff Member			
Town	**Area (sq ft)**	**Trades Staff**	**Sq ft per Trades Staff**
Boxford[8]	60,000	0.75	80,000
Acton	162,000	3	54,000
Bedford	705,000	7	100,714
Wilmington	775,000	6.5	119,231
Milton	950,000	6	158,333
Wellesley	1,086,525	10	108,853
Lexington	1,400,000	11	127,273
Average	**734,075**	**6.3**	**116,125**
Brookline	**2,306,367**	**12**	**192,197**

As the table shows, Brookline's Public Buildings Division is responsible for a relatively large area as compared to its peer towns, but it is also responsible for a greater area per staff member than its peers as well. This is true of its comparison to the average in the survey (i.e., 192,197 vs. 116,125), but beyond its comparison to the average, Brookline's 192,197 square feet per Trades Worker is significantly above every town in the survey.

[8] Boxford's facilities maintenance function is primarily performed by on-call trades workers and full time DPW Equipment Operators who perform certain light duty maintenance. The Director estimates that the facilities maintenance activities equate to about ¾ of one FTE

(3) Staffing Levels Are Contributing to the Relatively Long Completion Times for Work Orders.

As was noted in a previous section of the report, the Public Buildings Division employs contractors for a substantial portion of the Town's facilities maintenance and repair work. The project team estimated that this is equivalent to approximately five (5) FTEs, which is about 29% of the total equivalent staffing level of 17. Contracting for maintenance services can be an effective way to supplement internal staff resources, particularly for cases in which current staff do not possess specific expertise, or in cases of peak, and excessive, workloads. However, even with this level of outsourced maintenance work, the Public Buildings Division is completing only about 54% of its work orders within three days. The following table provides a breakdown of the numbers, and percentages, of the 6,395 work orders that were completed within certain specified periods of time in FY 2015.

Time Period	Number of Work Orders Completed in Time Period	Percentage Completed in Time Period
Within 3 days	2,171	54%
Within 30 days	4,517	71%
Within 90 days	5,189	81%

Although the data in the table do not provide an indication of the complexity of the work orders in the sample, if it can be assumed that they are comprised of a typical mix of routine and complex work assignments, the Division should be completing over 70% of work order within three days, and should have no more than a small percentage, 5% or less, of work orders that are over 90 days old. The Public Buildings Division is completing less than half of the number of work orders that it should be completing within three days, and combined with the approximately 19% of work orders over 90

days old, this suggests that the Division is under-staffed to accomplish the required level of service of Town building maintenance.

Another factor that is likely contributing to the relatively long turnaround times for completed work orders is the amount of time the Division staff are expending in smaller construction and renovation projects. The bulk of these projects occur during the summer months in the schools, and include such tasks as carpeting; painting; renovating bathrooms, ceilings, etc.; installing overhead doors, installing new lockers, etc. These projects are being managed primarily by the Public Buildings Director and conducted by the Division's maintenance staff who would otherwise be engaged in repair and maintenance activities while they are performing these construction projects, thereby delaying completion. The Schools have recently created a new position of Director of Operations who should take a larger role in the completion of these projects that are conducted in the school facilities.

(4) The Combination of Metrics, Performance Data and Comparison to Peers Suggests That the Public Buildings Division Should Add Maintenance Staff to Address Deficiencies.

The previous discussion has provided evidence that the Public Buildings Division is under-staffed to effectively accomplish its mission of maintaining safe and comfortable building environments for staff and visitors to Town buildings. This discussion can be summarized as follows:

- Maintenance Craftspersons are each responsible for the maintenance of an average of about 135,669 square feet. This compares to the benchmark average of 45,000 to 50,000 in the IFMA survey.

- Disregarding contracted maintenance expenditures, Brookline's Public Buildings Division's maintenance staff are each maintaining an average of 192,217 square feet. This compares to the average of 116,125 of the participants in the survey of similar cities and towns in Massachusetts.

- The Division is completing only about 54% of all work orders within three days. This is less than half of the percentage that it should be achieving.

In addition to the large spatial area for which the Public Buildings Division is responsible, the space is contained in 82 buildings throughout the 6.8 square miles in the Town, creating the need for a substantial amount of travel that reduces the amount of productive time that can be spent in the maintenance and repair of these structures.

Having determined that the Public Buildings Division is under-staffed, the issues are as follows:

- How should the increase in staffing levels be phased, and over what period of time?
- What is the proper mix of trades for any additional staff?
- What role should contractors play in the overall provision of repair and maintenance services in the Town's facilities?

The following section addresses each of these questions.

2. THE PUBLIC BUILDINGS DIVISION SHOULD INCREASE THE RESOURCES UTILIZED IN BUILDING MAINTENANCE IN THE NEXT FISCAL YEAR, AND PHASE IN ADDITONAL RESOURCES OVER THE FOLLOWING TWO YEAR PERIOD.

As the previous section of the report demonstrated, the Public Buildings Division is under-staffed to be able to provide sufficient and appropriate levels of preventive and reactive maintenance to the 82 structures for which it is responsible. The issue, then, is not whether the Division should add maintenance resources, but rather how many additional resources are necessary, and over what period of time should they be added.

To determine the most critical deficits in maintenance, the project team analyzed recent work order assignments to each of the trades represented in the Division. The

following table provides these data from the period of July 1, 2105 through October 22, 2015, a period that represents 80 work days.

Trade	Work Orders Assigned	Work Orders per Day
Carpenters	602	7.5
Electricians	514	6.4
Plumbers	641	8.0
Total	**1,757**	**21.9**

As the table shows, work orders are roughly evenly-distributed among the trades of carpentry, electrical and plumbing, with plumbing work orders occurring at a somewhat greater frequency than those of carpentry and electrical. However, it should also be noted that the work order figures shown in the table are reflective only of those that were assigned to internal staff. Therefore, given that the Division's two HVAC Technician positions are currently vacant, these are not shown in the table.

The relatively even distribution of work orders mitigates in favor of adding additional staff resources in roughly even proportions. However, given that failures in electrical, heating and ventilation and plumbing fixtures present greater risks than do those associated with those addressed by Carpenters (e.g., flooring, wall coverings, shelving, masonry, etc.), the project team recommends that the Division first focus on the addition of the former trades categories.

Adding building maintenance staff that would be sufficient to meet IFMA standards would require the addition of an equivalent of 29 staff members (internal Division staff in combination with contracted maintenance equivalent employees). This is not feasible either in the short or the longer-term, and in any case this number of staff would exceed the level of staffing of its peer organizations in Massachusetts, both in absolute terms as well as on a the basis of the amount of maintainable staff per maintenance technician. Therefore, the project team does not recommend adding what

would be the equivalent of 170% to current staffing levels, but rather that the Public Buildings Division should take a more measured approach in reaching at least the staffing levels in the general range of its peers. However, a more reasonable approach to adding staff in the Public Buildings Division is to phase in these additions to attain a level of staffing that would equate to 80,000 to 85,000 square feet of maintainable space per trades worker, which is a more likely range when making reasonable assumptions of the comparative towns' use of contractors. With 2,306,367 square feet of maintainable space, this equates to the need for between 27 and 29 equivalent employees, or 10 to 12 more than is currently the case in the Division. The questions, then, are how to achieve this staffing level, and what ratios of in-house and contracted maintenance are appropriate.

The proper "mix" of in-house and contracted maintenance is necessarily a function of several variables. These include the availability of contractors, the skill levels and expertise of internal staff, the frequency with which specific maintenance tasks are likely to be performed, the relative costs of contracted repairs and in-house personnel, as well as others. Therefore, there is no simple ratio that can be applied to the decision regarding the proper mix, however, it is possible to look to the experience of other organizations of similar size to determine reasonable ranges for the decision. The IFMA, in 2009, published *Research Report #32, "Operations and Maintenance Benchmarks"* that contained results of a survey of public and private facilities maintenance organizations in North America. In all, 1,445 surveys were returned and assimilated by IFMA. One of the questions asked of survey participants was the percentage of contracted maintenance and in-house maintenance for each of the

maintenance trades performed in their organizations. These percentages varied somewhat depending upon the area (i.e., square footage) under management, however the results for organizations with between 2,000,001 and 3,000,000 square feet (into which category the Town of Brookline falls) are presented in the table below.

Trade	Number of FTEs	Pct. In-House	Pct. Contracted
Electrical	5.75	77%	23%
Plumbing	5.50	83%	17%
HVAC and Central Plant Operation	14.63	80%	20%
Carpentry	3.56	57%	43%
Generalist	7.00	61%	39%
Painting	3.32	66%	34%

As the table shows, for the primary functions performed by the Brookline Public Buildings Division, the percentage of maintenance performed by in-house staff ranged from a low of 57% for carpentry to a high of 83% for plumbing maintenance. In all, the weighted average (weighted according to the total staffing levels) is about 73% of all maintenance being performed by in-house staff. This is very similar to Brookline's current allocation of about 71% being performed by in-house staff (i.e., 12 of the total 17 staffing equivalents). Therefore, if, as calculated above, the targeted level of staffing required to achieve the midpoint of the ratio of between 80,000 and 85,000 square feet per maintenance technician is 28 staff members (the calculation was between 27 and 29), the number of in-house technicians should be 20.4, or 21 (i.e., 73% of 28). Given that there are 12 current authorized technical positions in the Brookline Public Buildings Division, this equates to the need for an additional nine (9) positions.

The hiring of nine Maintenance Craftspersons in a single year is not only infeasible financially, but it would present assimilation issues for the management of the Division, as a considerable amount of time is required to train employees in logistical and administrative tasks, as well as in assuring that the new employees are performing

work in accordance with Town standards and expectations of quality. Therefore, the project team recommends phasing in the hiring of nine Maintenance Craftspersons over a period of three years. In the first year, the priority should be the filling of the two currently-vacant HVAC Technician positions, as well as three other Maintenance Craftsperson positions.

As was noted earlier in this report, the balance of work orders is occurring at relatively even rates among trades in the Public Buildings Division (although it is true that the HVAC trade was under-represented due to the lack of staff to perform needed repairs in this area). However, the need for additional HVAC Technicians is a greater need in the Division than other trades. This observation is based not only on the experience of other similar organizations in the IFMA survey (see the table above), but also on the proliferation of energy management systems in Brookline over the past several years. Therefore, the recommended staffing additions, phased in over a three-year period, are shown in the table below.

Trade	Current Internal Staff	Recommended in FY17	Recommended in FY18	Recommended in FY19	Total
Electrician	3	0	1	0	4
Plumber	3	0	1	0	4
HVAC Tech.	2	2	2	1	7
Carpenter	3	0	0	1	4
Painter	1	0	0	1	2
Total	**12**	**2**	**4**	**3**	**21**

The annual direct compensation of a Senior Maintenance Craftsperson is, at the midpoint of the salary range, about $57,000 in the current fiscal year. Therefore, three such positions would be compensated at $171,000. Assuming a fringe benefits rate of 40% of salaries, this equates to a total compensation of $239,400 in the first of the three years. The labor agreement with AFSCME, the bargaining unit that covers these positions, has included a wage escalation factor of 2% for the previous three years. If it

can be assumed that this 2% increase will be projected out of the following two years, the direct costs associated with three additional Senior Maintenance Craftspersons in FY 17 and FY will be $174,420 and $177,908, respectively, and the total compensation, including fringe benefits in these two fiscal years will be $244,188 and $249,071, respectively.

In addition to the compensation for these nine new employees, each will require equipment to perform their duties. This equipment includes the following, along with estimated costs:

- Vehicle - $25,000
- Tablet - $500
- Phone - $50 per month ($600 annually)
- Uniform - $500
- Tools - $1,000
- **TOTAL - $27,600**

One of the above costs elements, that of cell phone charges, is a recurring annual cost, however each of the others recurs only periodically. The $27,600 cost should be viewed as an additional cost in the first year of employment for each of the nine total Maintenance Craftspersons hired in the three-year period.

A potential alternative to the hiring of internal staff is to increase the level of contracted repairs over and above the current 71% which, as the analysis showed, is in the typical range for organizations maintaining the same amount of maintainable space as in Brookline. The increase in the expenditure for contracted repairs would allow for the reduction in the numbers of internal staff hired, and this may be a viable alternative

for the Town. It is also true that the Division has reported difficulty in attracting new employees. Candidates for positions in the Division have reported that the pay levels offered have not been sufficient to accept employment, and have accepted positions in other organizations. Although the survey that the project team conducted of similar municipalities indicated that the midpoints of the salaries offered by Brookline are in line with others, the reality has been that prospective employees did not consider starting pay to be sufficient. This phenomenon further mitigates in favor of utilizing contractors to a greater degree, or in the Town's Human Resources Department analyzing the jobs of the Public Buildings Division to ensure the internal and external equity of their compensation levels.

There are advantages and disadvantages to the increase in contracted repairs, and the project team has provided in a later section of this report a set of criteria by which to evaluate the outsourcing of services. In summary, however, the use contractors can be a cost-effective means to complete specialized repairs, and to complete repairs during peak workloads of internal staff. Contractors can, however, be somewhat more expensive than internal staff, and their response times are not always predictable. The project team recommends the continuation of the current ratio of internal staff and contracted repairs, however the Public Buildings Division should, as is recommended later in this report, conduct an analysis of the feasibility of insourcing and outsourcing its maintenance and repair work.

Recommendation #7: Hire three Senior Maintenance Craftspersons in the coming fiscal year at a total cost of $239,400. Hire three additional Senior Maintenance Craftspersons in FY17 and FY18 at a total compensation of $244,188 and $249,071, respectively. In addition to the personal compensation of these nine employees, the project team also estimates a first-year cost of approximately $27,600 for each, or $82,800 per year for the three-year period during which these

nine employees are hired. As an alternative to the hiring of nine staff members over the three-year period, the Town may also consider increasing its use of contractors, which will allow it to reduce the number of internal staff hired. The decision should be based on a critical assessment of the feasibility of insourcing versus outsourcing maintenance and repair work.

Although the project team has recommended additional staff and resources above, and elsewhere in this report, these recommendations are intended to address the maintenance and repair needs of the Town's current facilities. As the number of facilities grows, and the existing facilities expand, the Town should continually assess the maintenance requirements associated with this growth. For example, the Devotion School is currently undergoing renovations that will add maintainable space to the inventory currently maintained by the Public Buildings Division by 2018. At that time, the Town should assess any additional needs created by this addition.

3. THE DIVISION SHOULD INCREASE THE AMOUNT BUDGETED FOR CONTRACTED REPAIRS.

As was noted in the previous section, the Public Buildings Division is contracting for a similar amount, at least on a percentage basis, as other similarly-sized facilities maintenance organizations that responded to the 2009 IFMA survey. The Division currently contracts for about 29% of all repair and maintenance expenditures, and the IFMA survey indicated that the average for participants was about 27%. However, it was also noted that staffing levels, and thus total expenditures, were well below those of comparable agencies.

The project team recommended that to attain an average ratio of between 80,000 and 85,000 square feet of maintainable space per maintenance technician, the Division would require a total of between 27 and 29 total FTE, with the midpoint of this range being 28. The project team recommended the addition of nine (9) Senior Maintenance

Craftspersons over the next three years in addition to the 12 that the Division is currently authorized. This will add approximately $732,659 to the Divisional budget over a three-year period.

The IFMA survey referenced above also surveyed respondents regarding their maintenance budgets and compared these expenditures to the current replacement value (CRV) of the facilities maintained by these agencies. In the 2009 survey, at the 50th percentile of the responding organizations, maintenance and repair expenditures equated to about 0.94% of the CRV. The CRV in Brookline is reportedly $524,722,485. At 0.94% of this amount, the average maintenance and repair expenditure for the Brookline Public Buildings Division would equate to $4,932,391. Given that the Public Buildings Division's FY15 maintenance and repair budget is $3,139,979[9], this results in a deficit of $1,792,412. However, the project team has recommended an increase of $718,200 in FY16 dollars for additional in-house staff (the increases in FY17 and FY18 are discounted back to FY16 dollars), which results in a deficit of $1,074,212. This figure should be viewed as the total dollar value of repair and maintenance expenditures necessary for Brookline to achieve the 50th percentile of all respondents in the IFMA survey, which represents a substantial increase over the current budgeted amount for FY16.

However, recall from above that the IFMA survey respondents average one (1) Maintenance Technician per 45,000 to 50,000 square feet of maintainable space (midpoint of 47,500), and the project team recommended adjusting this figure to be more in line with the average of the respondents to the survey of similar Massachusetts

[9] These are FY15 figures. The Division began receiving an additional $200,000 annually for the School and Town buildings in FY16.

cities and towns, which was one (1) Maintenance Technician per 82,500 square feet, or about 58% of the IFMA survey. If the same percentage can be applied to the calculated deficit in total repair and maintenance expenditures of $874,212, the recommended additional total additional expenditures for Brookline's Public Buildings Division would be approximately $623,043. This figure should be utilized for repair and maintenance of both Town and School facilities, and should be allocated to each based on the total square footage in each of the two entities' facilities. Further, the amount should be escalated each year by the consumer price index, or some reasonable alternative in order to account for the escalation in rates charged by the Town's contract service providers.

Recommendation #8: The annual maintenance and repair budget for the Public Buildings Division should be increased by an additional $623,043 for contracted services. The allocation between Town and Schools should be on their respective proportions of square footage of maintainable space. This amount should be escalated by the consumer price index, or reasonable alternative.

4. THE PUBLIC BUILDINGS DIVISION SHOULD DEVELOP AND IMPLEMENT A CONSISTENT PHILOSOPHY REGARDING OUTSOURCING DECISIONS.

The Public Buildings Division currently has contracts for specific services with private providers. These cover the following services.

Electrical	Boilers
Ceilings	Elevators
Shades	Burglar Alarms/Security
Carpentry	Fire Alarms/Sprinklers
Generators	Masonry
Roofing	Glazing
Window Washing	Oil Tanks

Note that many of these services duplicate those that are performed by internal staff (e.g., electrical, carpentry, boilers, etc.), and some (e.g., elevators, glazing, etc.) are performed only by contractors, as internal staff do not have the specific expertise to

perform them. The Division outsources many of the above services in cases in which staff do not have sufficient time to perform the required service in a timely manner. This is a legitimate reason to outsource services, and the Division will continue to use contractors in this manner even with the addition of staff, although on a less frequent basis than has been the case in previous years.

There are, however, other legitimate reasons for outsourcing services, and these relate to such factors as the following:

Factor	Comment
The number, and availability, of contractors providing the service	Fewer available contractors may result in either higher costs or less responsiveness on the part of the contractor. If few contractors exist, the Division should take steps to ensure that sufficient staffing levels, and expertise, exist to minimize the reliance on potentially unresponsive and costly contract service providers.
The relative cost of the service	Cost is generally an important factor in any outsourcing decision. However, the comparison of internal cost to those of contractors for any specific work order should not be the sole method by which this decision should be made. Contractors will typically have a higher cost structure than the Public Buildings Division, but if a specific contracted repair costs, for example, $300 compared to $100 if performed internally, it may be a false cost savings to perform this repair with in-house staff if the internal staff member is diverted from higher priority work to perform it. When making the cost comparison, the Division should not only take into account these factors, but also the cost of administering the contract, and of performing quality assurance on the contractors work.
The frequency with which the service is required	Routinely-performed services, regardless of complexity, should be performed with internal staff unless they occur during peak workloads. Preventive maintenance and other services that occur repetitively should be performed internally to the greatest possible extent.
The cost of acquiring internal expertise sufficient to perform the service	It is rarely cost-effective to acquire sufficient internal expertise to perform complex repairs that require specialized expertise. Therefore, the Division should generally outsource these services.

Factor	Comment
Previous experience with specific service providers.	The Division should document its experience with each contracted service, noting any exceptional service, either positive or negative in its vendor files. Simply put, the Division should discontinue contracting with any deficient service providers. This may limit the number of available contractors, which may also increase the cost of service, but services delivered poorly and unreliably are generally more costly than having performed them well the first time.
The need for special licenses or tools to perform the service	Contractors are especially useful and cost effective when they perform services for which they possess licenses and certifications which are difficult and costly to obtain.
Ability to assure the quality of service provided, and conformance to contractual specifications, by the contractor	Each service provided by a contractor should be monitored to ensure that the work was performed according to quality standards, as well as in conformance with the contract. The cost of this quality check should be factored into every cost calculation when determining the relative cost of internal and contracted service.

The above criteria should be utilized, at least conceptually, in every outsourcing decision. These criteria may even be assigned specific "weights" relating to the importance with which the Division views them, which conveys a certain objectivity to the outsourcing decision. Peak workloads can always influence the decision to perform a particular service with internal staff, however once the Division applies the above criteria to the decision to insource a service, this should generally be one of the only factors that should alter the decision.

The Public Buildings Division has, in recent years, made the determination that it is cost-effective to insource its pest control service. This service meets certain criteria for using in-house staff, as it is a service that is performed repetitively, and contract service providers have proven to be both more costly and, at times, more unreliable. However, the Division has also had difficulty in finding, and hiring, qualified employees to perform the service internally. This difficulty, if it continues for a protracted amount of time, should also be viewed as an additional cost of the service, as it may divert the

attention of management to the ineffective use of time in attempting to recruit for a difficult position to fill. This is an example of how the strict application of the criteria in the table may not always initially result in a clear outsourcing decision, but rather should be modified based on unusual circumstances.

Recommendation #9: The Public Buildings Division should adopt a consistent philosophy regarding how outsourcing decisions are made.

5. THE PROLIFERATION OF BUILDING AUTOMATION SYSTEMS OVER AN EXTENDED PERIOD OF TIME REQUIRES THAT THE DIVISION ADD A POSITION TO MONITOR AND CONTROL THESE SYSTEMS.

The Town of Brookline has placed a very high value on reducing energy consumption, and has invested heavily in building automation and energy management systems to achieve energy-reduction objectives in its 82 buildings. According to the Town's 2011 Energy Reduction Plan, there were a total of $1,603,048 in estimated annual savings attributable to such initiatives as the installation of HVAC occupancy sensors, lighting upgrades, carbon dioxide sensors, window replacements, bulb replacements, and others.

These energy savings have not come without a significant proliferation in the systems that achieve and monitor them. In 1996, Town buildings were equipped with 16 building controllers, 39 field equipment controllers, 281 temperature sensors and approximately 360 controlled devices (e.g., boilers, pumps, air conditioners, control valves, etc.). Today, there are 42 building controllers, 1,449 field controllers, 3,091 temperature sensors, and 3,883 controlled devices. The programming and monitoring of these systems has been managed by a single Energy Systems Manager throughout the entire 19-year period.

The project team conducted a survey of other municipalities in Massachusetts and found that only five of nine respondents employed dedicated energy management staff, and only two of these (Acton and Boston Schools) employed more than one in their building maintenance organizations. However, it is also true that most respondents have not invested as heavily in building automation systems as Brookline, and only Boston Schools has more maintainable space under its management.

In addition to the increases in workload volumes associated with the oversight of an expanding number of building automation systems, the Energy Systems Manager is also responsible for the oversight of the Energy Management Improvement budget, the management of energy budgets for 15 Town buildings, the preparation of public bid documents, the design and management of building equipment maintenance programs, the design and maintenance of some smaller HVAC installation projects, and other administrative and operational functions. The project team recommends that the Public Buildings Division be authorized to add the position of Energy Systems Operator to assist the Energy Systems Manager in many important technical functions of the Division. These duties would include the programming of energy control systems that control the timing of building warm-ups, optimizing run times of ventilation equipment, monitoring of carbon dioxide levels, and others. These duties are expected to consume approximately half of the employee's time. The other half of the employee's duties would include assessing the costs, and cost trends, in Town structures, and recommending ways to improve energy consumption. The individual selected should be proficient in analyzing energy consumption data, and in using a variety of ways to communicate energy reduction tips to employees in Town buildings. The position will

be required to be on call during non-working hours, and will also periodically direct the activities of HVAC Technicians, and as such, the position is recommended to be placed in the Town's management classification.

Recommendation #10: The Public Buildings Division should be authorized to hire an Energy Systems Operator, and should designate it as an exempt position. Although the position does not currently exist in the Town's classification system, the direct salary for this position is assumed to be $67,000. Adding 40% for fringe benefits results in a total compensation of $93,800.

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6. THE TOWN SHOULD CONSOLIDATE THE RESPONSIBILITY FOR THE REPORTING OF ENERGY CONSUMPTION UNDER THE PUBLIC BUILDINGS DIVISION.

Currently, the reporting of energy consumption in Town buildings is fragmented between two Town departments. The Public Buildings Division monitors and reports on energy consumption in the Schools, Town Hall, the Carpentry Shop and the Electrician's Shop. The Town Manager's Office monitors and reports on energy consumption in the Council on Aging building, Fire stations, the Health building, the Public Safety building, Public Works, Parks, Recreation and the Library. In addition, the Planning Department monitors the Green Communities Grant.

There are several reasons to consolidate the energy monitoring and reporting function in the Town. These include the following:

- A central monitoring organization can observe changes in energy consumption in relation to all other Town facilities, and make necessary adjustments centrally.
- The Green Communities Grant's Criterion 3 requires that the Town make a commitment to a reduction of 20% energy reduction commitment. The fragmentation of energy monitoring in the Town complicates the calculation and reporting of this reduction on a Town-wide basis.
- Changes in energy consumption in one building may not be recognized as being a result of factors such as equipment obsolescence, impending component failures, or other factors. This is especially true if the monitoring organization lacks the technical expertise to recognize these factors.

The Public Buildings Division's mission includes the monitoring and reporting of energy consumption, and the overall direction of the Town's energy reduction initiative. This is unrelated to the Town Manager's Office's mission and objective, and should be consolidated within the Public Buildings Division. The project team has recommended that the Public Buildings Division be authorized to hire an Energy Management Technician to assist the Energy Systems Manager in many important technical functions of the Division, such as the programming of energy control systems that control the timing of building warm-ups, optimizing run times of ventilation equipment, monitoring of carbon dioxide levels, and others. These duties should also include the monitoring of energy consumption in Town buildings, as well as the assumption of responsibility for monitoring and reporting on the Green Communities Grant, which is currently performed by the Planning Department.

Recommendation #11: The Town should consolidate the monitoring and reporting of its building energy consumption in the Public Buildings Division. The Division should also assume responsibility for the monitoring and reporting duties associated with the Green Communities Grant.

7. THE PUBLIC BUILDINGS DIVISION REQUIRES ADDITIONAL AND MORE FUNCTIONAL SPACE.

The Public Buildings Division currently occupies space on the third floor of Town Hall, where its administrative offices are housed, as well as at 13 Newton Street and at 15 Newton Street, where its Electrician's and Carpentry shops, respectively, are located. These latter two buildings serve as work space, storage and office space for the 12 Maintenance Craftspersons in the Division. Although the Electrician's Shop is exclusive to the Electricians in the Division, the Carpentry Shop, which is the larger of

the two buildings, accommodates supplies, storage and work space for Plumbers, HVAC Technicians and Painters.

The project team toured both of these facilities, and determined that they are comprised of the following areas.

Building/Function	Area (sq. ft.)
Electrician's Shop (13 Newton Street)	
Garage/Storage Area	400
Office Space	400
Total Electrician's Shop Area	**800**
Carpentry Shop	
Office	308
Paint Shop/Storage	480
Machine Shop/Storage	368
Main Shop Area	1,860
Break Area	160
Total Carpentry Shop Area	**3,176**
TOTAL AVAILABLE SPACE	**3,976**

As is shown in the table, the combined space for the two buildings is 3,976 square feet. There are several limitations to the efficient operations of the Public Buildings Division with the current space configuration. These include the following:

- The existence of two buildings results in the duplication of certain common areas such as office space, toilets and break areas.
- There are no secure storage areas for HazMat, plumbing, electrical and painting supplies.
- Neither building is large enough, nor sufficiently configured, to accommodate the Operations Manager or the Energy Systems Manager, both of whom require frequent interactions with the Maintenance Craftspersons.

In 2012, the Town commissioned a space needs analysis for the Parks, Public Works and Building departments. This analysis concluded that the Public Buildings Division required 14,037 square feet of space that included the following elements.

Function	Area (sq. ft.)
Operations Manager	320
Executive Assistant	234
Bookkeeper	234
Energy Systems Manager	234

Function	Area (sq. ft.)
Shared Foremen Office	210
Admin/Toilet	210
Subtotal	1442
Area Grossing Factor (at 15%)	216.3
Circulation (at 20%)	331.66
Total Administrative Area	**1,989.96**
HAZMAT Storage	100
Electrical Workshop	460
Paint Workshop	460
Carpentry Workshop	1800
Electrical Storage	100
Plumbing Storage	100
Carpentry Storage	100
Painting Storage	100
Secure Electrical Storage	100
Secure Plumbing Storage	100
Secure Painting Storage	100
Emergency Secure Storage	100
Hand Tool Secure Storage	100
Waste Paint Secure Storage	100
Subtotal	3820
Area Grossing Factor (at 10%)	382
Circulation (at 10%)	420.2
Total Operational Area	**4,622.2**
Vehicle and Equipment Storage	**7,425**
Total Space Requirements	**14,037**

As the table shows, the independent space needs analysis commissioned in 2012 indicated that the total requirements for the Public Buildings Division were 14,037 square feet. However, it should be noted that this figure includes space for functions that are not directly comparable to the operational space in the previous table. Specifically, the latter table includes space requirements for vehicle and equipment storage, as well as for administrative space for employees currently located at Town Hall. The current space occupied at the Carpentry and Electrician's shops on Newton Street is 3,976 square feet, and the 2012 study indicated that there was a need for 4,622.2 square feet, resulting in a deficit of 1,646.2 square feet. However, it should be further noted that the 2012 study developed space requirements for the organization and staffing of the Public Buildings Division as it was constituted that year. The project

team has made recommendations to add nine (9) Trades Technicians, and one (1) Energy Systems Technician over the next three years, which will result in the need for an even greater amount of space than was projected in 2012.

The scope of this project did not include a detailed space needs analysis, however it is clear that the current space and space configuration are inadequate now, and will be more so in the future. The Public Buildings Division currently has a total of 12 Maintenance Craftsmen, and the project team has recommended that the Division be allocated a total of 21 trades positions in three years, or about 75% more staff than is currently the case. Given that the 2012 independent space needs analysis projected a need for 4,622.2 square feet of operational space for the 12 staff members, it is not unreasonable to project a need for 75% more space for 21 staff members, which would equate to the need for about 8,090 square feet in three years.

Recommendation #12: Conduct a new space needs analysis for the Public Buildings Division. The 2012 independent space needs analysis projected the need for additional space for the Division, however that projection was based on static staffing levels. This updated space needs analysis is estimated to cost approximately $50,000.

3. ANALYSIS OF ORGANIZATION

This chapter of the report analyzes the organizational structure of the Public Buildings Division.

1. THE TOWN SHOULD ALTER THE ORGANIZATIONAL PLACEMENT OF THE PUBLIC BUILDINGS DIVISION.

When evaluating any organizational structure, the purpose is to address questions regarding lines of authority, responsibility and accountability. Well-managed organizations are designed to deliver services to customers, maximize management control over service delivery, and provide for accountability of managers and staff through the provision of clarity of lines of reporting. The following principles frame the discussion relating to the future structure of the Public Buildings function of the Town.

- **A Department should be organized on a form-follows-function basis with a clear, distinct and comprehensive sense of purpose or mission for each division.** Functions are grouped consistent with their periodic interaction, management systems, delivery of services, and are linked in some way, resulting in functional cohesion.

- **The organizational structure should foster accountability.** The organizational structure fosters accountability among management, supervisory staff and staff.

- **The plan of organization should enhance communication and coordination**. The number of handoffs/exchanges required among different divisions providing service to the public is minimized. The structure enhances shared knowledge and understanding among divisions with similar mission goals and objectives. The channels of communication are clear and consistent.

- **Staff resources should be utilized efficiently.** The plan of organization minimizes administrative overhead. Workload can be distributed and shared to maximize the productivity of staff through peaks and valleys and offer cross-utilization capabilities. Processes can be fully standardized to enhance the efficiency and customer responsiveness of services.

- **The potential of human capital should be maximized.** The plan of organization enhances career development opportunities, training, recruitment

and retention.

- **The spans of control of managers are appropriate.** Appropriate spans of control are functions of several factors, including the skills of staff, the autonomy of staff over the conduct of work assignments, geographical dispersion of staff, and the degree to which managers are engaged in the provision of direct work assignments

- **The number of layers of management should not result in a tall, narrow configuration for the organization.** Organizations with many layers of supervision are associated with vertical decision-making that is becoming less common due to the need to rapidly effectuate change. Flatter organizations facilitate decentralized decision-making, as more authority for making decisions is given to the front line employees.

Using these criteria as the bases for designing the most efficient organizational structure, there are some that weigh in favor of altering the current organizational structure of the Public Buildings Division. These are summarized below.

Organizational Design Criterion	Discussion
Form-follows-function with clear purpose and mission for each division.	The Public Buildings Division is a part of the Building Department, which is broadly responsible for functions relating to building permitting and inspections, plans review, facility construction design and management and building maintenance. Each of these functions has clear and definable missions, however there are relatively few instances in which communications are necessary between the Public Buildings Division management and staff with the personnel engaged in permitting and inspections, and relatively little with personnel who design and manage construction and remodeling efforts.

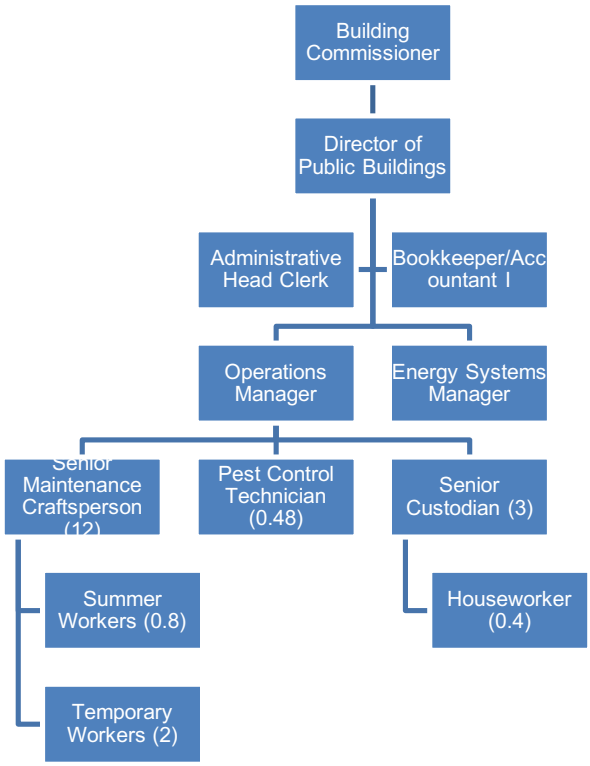
Organizational Design Criterion	Discussion
Enhanced accountability	Each of the functions of the Building Department are accountable for their respective areas, however it is also true that there are few overlaps in service provision that would inhibit accountability for the work performed in each. In the case of the Public Buildings Division, there are no areas of service that it provides that would cause ambiguity in determining which of the Building Department's component divisions was responsible for, for example, the repair of building equipment or the cleanliness of facilities. Therefore, although it is clear which functional area of the Building Department is responsible for the performance of specific areas of work, and are held accountable for doing so, the organizational structure is not the primary means by which this is accomplished.
Efficient communication and coordination	During the course of the study, it was clear that there is a high degree of communication and coordination between the Building Commissioner and the Public Buildings Director. This communication, however, is primarily of an informative nature (i.e., to apprise the Director of work performed, work to be accomplished, and any issues and impediments to accomplishing it), rather than a coordinating nature (i.e, to ensure proper allocation of personnel and equipment resources among the functions and divisions of the Building Department), as there are few overlapping functions in the Department with those of the Public Buildings Division.
Efficient utilization of resources	As there are no common functions performed between the Public Buildings Division and those of the Building Department generally, there are no potential areas of personnel resource sharing.
Span of control	There are no issues related to the span of control as they relate to the Building Department either currently or in the even that the Public Buildings Division is established as a stand-alone department.
Appropriate number of layers of management	The project team's scope of work did not include an analysis of the organizational structure of the entire Building Department. However, the Public Buildings Division effectively has a narrow organizational structure, with two managerial positions reporting to the Director of the Division, and all staff reporting to only one of these managers. This particular issue will be analyzed in a subsequent section of the report.

The project team recommends that, based on the organizational design criteria outlined above, the Public Buildings Division should be removed from the Building Department. This organizational change may be effected either by creating a stand-alone department, or by transferring the Division to an existing department within the Town's organizational structure, such as the Department of Public Works.

Recommendation #13: The Town should remove the Public Buildings Division from the Building Department and create either a stand-alone department, or transfer the Division to an existing Town department with which it has more organizational commonality.

2. THE PUBLIC BUILDINGS DIVISION SHOULD REALLOCATE STAFF AMONG ITS TWO CURRENT MANAGERS.

The Public Buildings Division currently has an Operations Manager and an Energy Systems Manager, both reporting to the Public Buildings Director. Each of the operational positions in the organization reports to the Operations Manager, with none reporting to the Energy Systems Manager. The current organizational structure of the Division is shown in the chart below.



As is shown in the organizational chart above, there are 12 Senior Maintenance Craftspersons, 0.8 Summer Workers, two (2) Temporary Workers, a part time Pest Control Technician, three (3) Senior Custodians and several Houseworkers who report either directly or indirectly to the Operations Manager, with none reporting to the Energy Systems Manager.

Although from a structural standpoint, the three (3) Senior Maintenance Craftspersons positions report to the Operations Manager, they receive some of their work assignments from the Energy Systems Manager.

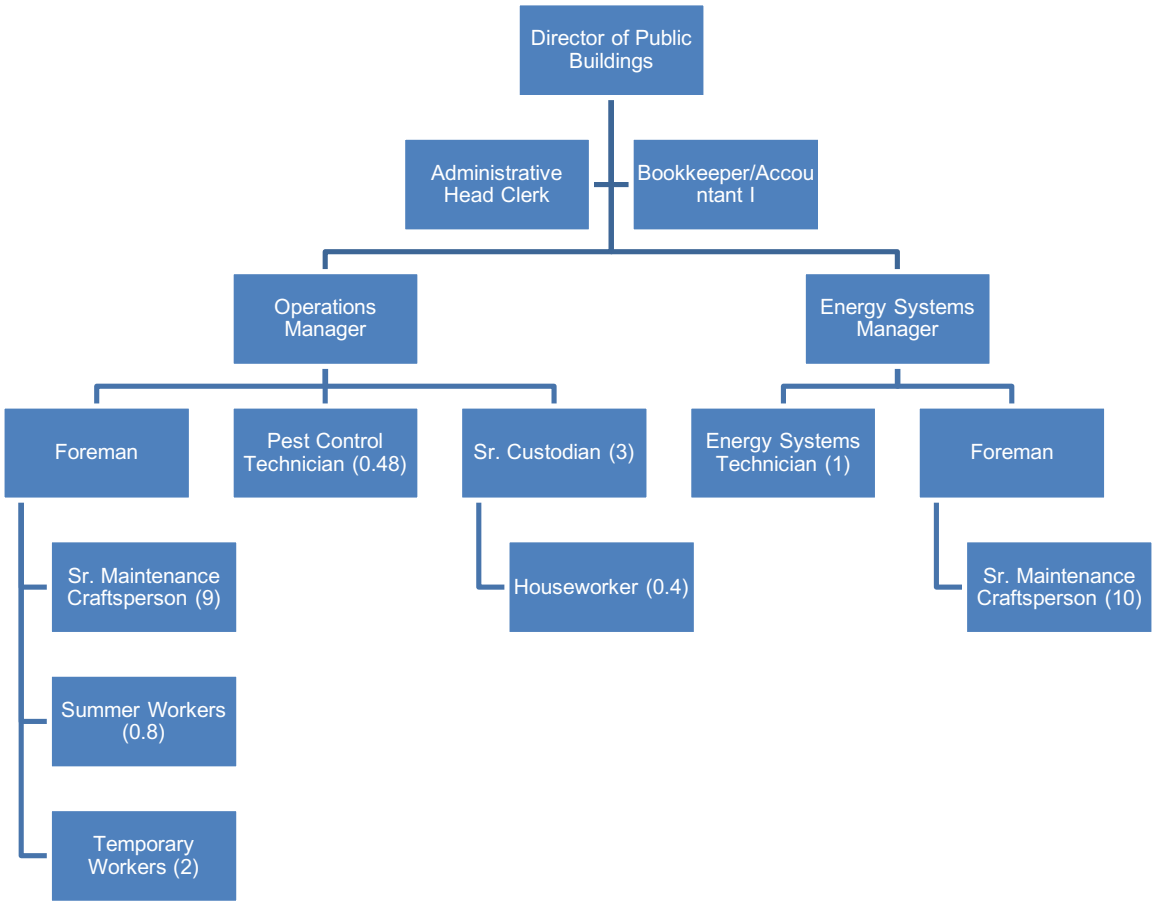
As has been described in an earlier section of this report, the project team has recommended the hiring of an additional ten (10) employees over the next three years. These recommended staff positions are recapitulated in the chart below.

Trade	Current Internal Staff	Recommended in FY17	Recommended in FY18	Recommended in FY19	Total
Electrician	3	0	1	0	4
Plumber	3	0	1	0	4
HVAC Tech.	2	2	2	1	7
Carpenter	3	0	0	1	4
Painter	1	0	0	1	2
Energy Systems Tech.	0	1	0	0	1
Total	**12**	**3**	**4**	**3**	**22**

The project team recommends that the Division place the current and future HVAC Technicians and Electricians under the direction of the Energy Systems Manager, and the current and future Plumbers, Painters, Carpenters and Custodial staff under the direction of the Operations Manager. This reorganization has the effect of both balancing the spans of control of the two managerial positions, and functionally aligning the staff with the manager directing their work assignments.

With the hiring of ten additional staff members, the project team also recommends that the Division designate two existing Maintenance Craftspersons as Foremen within their respective units. Therefore, there should be one Foreman over the HVAC Technicians and Electricians, and one over the Plumbers, Painters and Carpenters. This would likely result in some additional compensation for assuming a lead role in the Division, and the Town's Human Resources Department should be consulted in the determination of the appropriate amount. However, the project team estimates that this would equate to approximately $2,500 for each of the two Foreman positions. For the same reason, the allocation of a greater number of staff to the Energy Systems Manager will also increase the responsibility level of that position, and it is recommended that the Human Resources Department analyze this impact on compensation for the position.

The following chart shows the organizational structure of the Public Buildings Division after the hiring of the additional staff, and the creation of the two Foreman positions.



Recommendation #14: The Division should reallocate positions to the Energy Systems Manager and the Operations Manager, and designate two existing Maintenance Craftspersons as Foremen over these units.

4. THE TOWN'S HUMAN RESOURCES DEPARTMENT SHOULD ANALYZE THE DUTIES AND RESPONSIBILITIES OF THE POSITION OF DIRECTOR OF THE PUBLIC BUILDINGS DIVISION FOR COMPENSATION EQUITY.

In this report, the project team has made several recommendations for new staff, as well as alterations in the responsibilities of existing staff. Throughout the report, the project team has recommended that the Human Resources Department analyze the

content of the jobs to determine the impact of these changes on the internal and external equity of their respective compensation levels. These recommendations are reiterated here.

In addition to these recommended position audits, however, the project team also recommends that the Human Resources Department analyze the pay level of the Public Buildings Director. Over time, the duties and responsibilities associated with the numbers of buildings and automated systems has grown, and pay levels should be periodically analyzed to ensure the equity of the total compensation level for all staff as these phenomena occur. During the course of the project, the project team conducted a survey of similar towns in Massachusetts that solicited a variety of operational, organizational and budgetary characteristics from the survey participants. One of these was the pay levels of the Directors of these organizations. Another was the square footage of maintainable space in each town. The following table provides a summary of the results of these two characteristics, in descending order of Director's salary

Town	Superintendent/Director Salary	Maintainable Space
Acton	$79,000	162,000
Wilmington	$100,000	775,000
Boxford	$103,000	60,000
Milton	$110,000	950,000
Brookline	**$114,000**	**2,306,367**
Franklin	$115,000	1,200,000
Bedford	$117,000	705,000
Lexington	$135,000	1,400,000
Wellesley	$138,000	1,086,525

As the table shows, the Director's salary in Brookline is in the mid-range of the towns in the survey, however the maintainable space is much higher than any other.

The project team recognizes that there are many other factors that influence the equitable compensation range for a position. These relate to the difficulty, complexity and responsibility of a position, and these may mitigate in favor of a higher or lower

salary, or even one that stays the same. However, the project team recommends that the Human Resources Department critically assess the content of this position, as well as others within the Division, to ensure both internal and external equity in their compensation levels.

Recommendation #15: The project team recommends that the Town's Human Resources Department analyze the equity of the compensation level of the Public Buildings Director.

APPENDIX A – DESCRIPTIVE PROFILE OF THE BROOKLINE PUBLIC BUILDINGS DIVISION

The purpose of the descriptive profile is to document the project team's understanding of the Brookline Division of Public Buildings (DPB). The profile includes a summary of the roles and responsibilities for the Division, organizational structure, allocation of staff by function, the principal assigned responsibilities of staff, budgets, and workload data. Data contained in the profile were developed based on work conducted by the project team, including:

- Interviews with Brookline DPB staff to discuss roles and responsibilities, services provided, existing policies and procedures guiding work activities, communication and coordination, technology utilized, etc.
- Interviews with Department managers who are customers of the DPB
- Collection and review of various data describing organization and staffing, work processes, workload and service levels as well as costs.

The structure of this descriptive profile for the Brookline DPB is as follows:

- Introduction
- Organizational chart for the Division.
- Divisional budgets, including FY14 actuals, FY15 budget, and FY16 Request.
- Summary descriptions of key roles and responsibilities of Division.
- Infrastructure maintained by the Division and summary workloads of the staff.

The descriptions of responsibilities provided in the "Summary of Key Roles and Responsibilities" section summarize the team's understanding of the major programs and service activities to which staff in the DPB are assigned. These descriptions are not intended to provide the level of detail of a typical job description. Rather, the

descriptions provide the basic responsibilities and reporting relationships within the Division.

1. DIVISION OF PUBLIC BUILDINGS

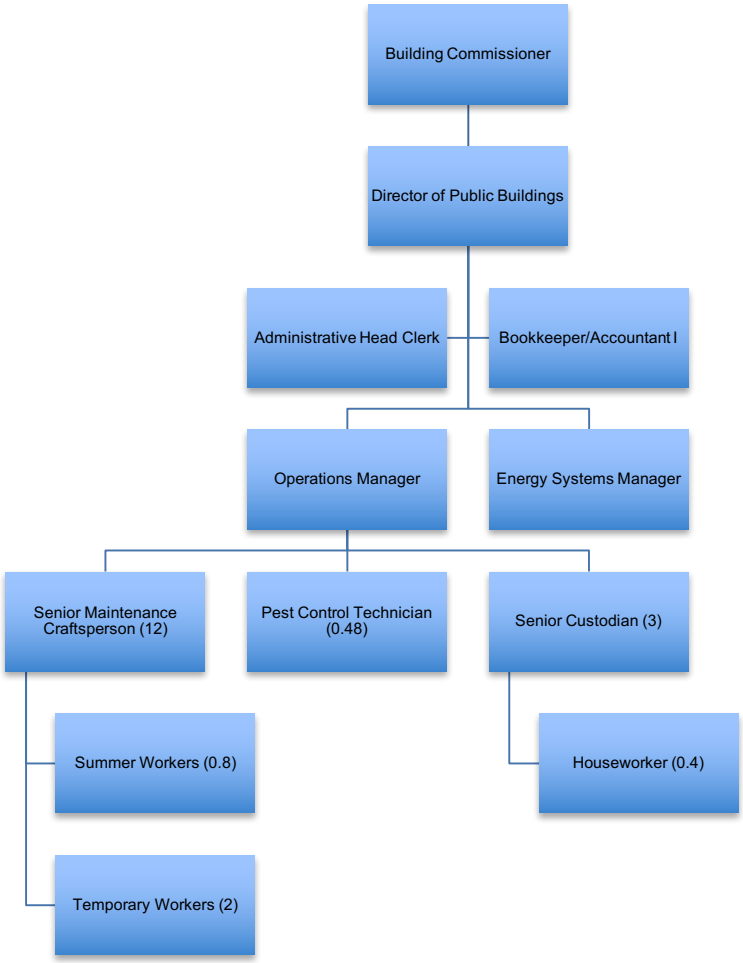
The Division of Public Buildings provides facility maintenance and repair services to all Town departments and the Schools. The service area covers 82 facilities that include 2,306,367 square feet of maintainable space. The Division also provides custodial services at Town Hall, the Public Safety Building and the Health Department which cover 123,409 square feet of space.

The Division provides carpentry, plumbing, electrical and HVAC services for all buildings. Although the twelve (12) maintenance technicians who perform these services are all classified as "Senior Maintenance Craftspersons", each is a licensed trades worker in a particular trade. The Division is also responsible for the maintenance and management of over 40 building automation systems in the Town's facilities.

The next section shows the organizational structure of the Division of Public Buildings.

(1) Organizational Structure of the Department

The following chart shows the current organizational structure of the Public Buildings Division.



(2) Division Budgets and Expenditures

The following chart provides the actual expenditures for FY 14, as well as the budget for FY15 and the requested FY 16 budget for the Division of Public Buildings.

Town Building Repair and Maintenance

Class of Expenditure	FY14 Actual	FY15 Budget	FY16 Request
Personnel	$281,011.00	$297,366.00	$298,731.00
Services	$785,436.00	$754,707.00	$755,720.00
Supplies	$10,839.00	$3,135.00	$4,425.00
Other	$67.00	$200.00	$200.00
Capital	$26,489.00	$5,490.00	$69,490.00
Total	**$1,103,842.00**	**$1,060,898.00**	**$1,128,566.00**

Town Hall Repair and Maintenance

Class of Expenditure	FY14 Actual	FY15 Budget	FY16 Request
Personnel	$198,558.00	$182,411.00	$182,411.00
Services	$165,402.00	$130,183.00	$131,683.00
Supplies	$598.00	$8,000.00	$11,000.00
Other	$-	$-	$-
Utilities	$185,771.00	$172,086.00	$177,817.00
Capital	$8,402.00	$6,750.00	$-
Total	**$558,731.00**	**$499,430.00**	**$502,911.00**

School Buildings Repair and Maintenance

Class of Expenditure	FY14 Actual	FY15 Budget	FY16 Request
Personnel	$817,209.00	$915,057.00	$918,819.00
Services	$1,240,849.00	$1,162,526.00	$1,207,695.00
Supplies	$6,474.00	$6,500.00	$7,425.00
Other	$488.00	$488.00	$488.00
Utilities	$2,579,195.00	$2,471,188.00	$2,497,528.00
Capital	$22,776.00	$21,026.00	$21,776.00
Total	**$4,666,991.00**	**$4,576,785.00**	**$4,653,731.00**

(3) Compensation Structure

The following table provides the salary ranges for the position titles in the Public Buildings Division.

Position Title	No. in Position Title	Compensation Range (or Actual Compensation)
Director of Public Buildings	1	$99,520 to $112,602
Operations Manager	1	$72,882 to $82,462
Energy Systems Manager	1	$70,079 to $79,291
Sr. Maintenance Craftsperson	12	$55,441 to $58,266
Sr. Building Custodian	3	$51,574 to 54,201
Administrative Head Clerk	1	$52,948 to $58,884
Bookkeeper/Accountant I	1	$48,336 to $53,690
Houseworkers	0.48	$34,743 to $36,513
Pest Control Technician	0.49	$20,773
Summer Workers	0.80	$31,644

The next section provides a summary description of staffing, roles and responsibilities of the divisions of the Division. Note that although all building

technicians are classified as Senior Maintenance Craftspersons, we have broken these positions out separately by their particular trades. Therefore, there are separate descriptions of duties for Painters, Carpenters, Electricians, HVAC Technicians and Plumbers in the responsibility matrix that follows.

(4) Summary of Key Roles and Responsibilities.

Position	Number of Staff	Responsibilities/Roles
Administration		
Public Buildings Director	1.0	• Reports to the Building Commissioner. • Provides overall guidance to the Division of Public Buildings • Interacts with the Building Commissioner on divisional matters such as budgets, capital projects, performance objectives, etc. • Develops and approves contracts with service providers. • Interacts with Town and School department managers in matters of major maintenance and repair needs, capital projects, etc. • Establishes the Division's preventive maintenance program. • Oversees the work of the Operations Manager and Energy Systems Manager, coordinating work on projects, staffing and other resource needs, energy reduction methods, and others.
Bookkeeper/Accountant I	1.0	• Reports to the Director of Public Buildings. • Reconciles purchases made by Tradespersons against vendor invoices. • Monitors the Division budget and prepares periodic budget analyses. • Issues purchase/service orders and ensures that there is proper backup. • Reviews bills submitted by vendors, suppliers, contractors for completeness and accuracy. • Ensures payment for services is made.

Position	Number of Staff	Responsibilities/Roles
Administrative Head Clerk	1.0	• Reports to Director of Public Buildings. • Assists Director in daily office functions; and schedules meetings and appointments, performs general clerical duties. • Assists staff, vendors, the public and other departments in researching and furnishing information, and resolving problems. • Dispatches tradesmen, maintenance personnel and custodians; schedules assignments and distributes work orders. • Tracks open work orders through School Dude and runs various reports on on-going and completed work. • Assists the Director with preparation of the annual capital improvement and operating budgets; maintains financial records and reports and performs related data and word processing work. • Takes minutes of monthly Building Commission meetings. • Tracks tradesmen hours of work and processes payroll. • Maintains internal control system for monitoring, ordering, distributing materials and office supplies.
Operations		
Operations Manager	1.0	• Reports to the Public Buildings Director. • Checks incoming work requests in School Dude work order system, and assigns repair and maintenance work orders to Tradespersons based on skills and availability. • Oversees the work of contractors conducting work in Town and School buildings. • Makes decisions regarding insourcing and outsourcing repair work. • Investigates certain work requests to ensure proper understanding of scope of work.
Senior Maintenance Craftsperson/ Plumber	3.0	• Performs plumbing related repair and maintenance work in town buildings. • Responsible for installation and ongoing repair and maintenance of plumbing and heating systems. • Responsible for maintenance of sprinkler systems in town buildings and properties and all landscaper sprinkler systems. • Troubleshoots equipment, piping and fixture issues. • Orders supplies and installs necessary equipment. • Coordinates jobs with other personnel and outside contractors. • Assists other department personnel performing light maintenance assignments to ensure compliance with applicable safety practices and standards. • Performs a range of other maintenance activities

Position	Number of Staff	Responsibilities/Roles
Senior Maintenance Craftsperson/Electrician	3.0	• Performs all work on electrical systems in Town and School facilities, including lights, breakers, outlets, etc., including corrective, preventive, scheduled and discretionary maintenance. • Performs skilled and semi-skilled electrical and electronic installation, repair, service, and maintenance work on a variety of electrical installations, systems and equipment within Town and School buildings. • Responds to service requests and performs semi-skilled and skilled electrical repairs, servicing, installation, inspection, troubleshooting, and maintenance on main building power distribution systems, motor control centers, and building lighting systems.
Senior Maintenance Craftsperson/ HVAC	2.0 (2 vacant)	• Performs heating, ventilation and air conditioning (HVAC) work in town buildings. • Maintains, services and installs HVAC equipment along with associated automatic temperature controller devices, facility management systems and components. • Performs testing and troubleshooting of all types of HVAC equipment. • Performs testing and troubleshooting of all software related field controllers. • Maintains software database backups. • Performs HVAC preventative maintenance on all equipment. • Maintains records on work order software application on preventative maintenance issues. • Performs basic repairs and coordinates jobs with other personnel and outside contractors. • Assists other department personnel performing light maintenance assignments to ensure compliance with applicable safety practices and standards. • Performs a range of other maintenance activities ,

Position	Number of Staff	Responsibilities/Roles
Senior Maintenance Craftsperson/ Carpenter	3.0	• Performs carpentry related repair and maintenance work in town buildings. • Repairs, replaces and installs flooring and window and ceiling systems. • Installs shelving, hangs chalkboards and bulletin boards. • Repairs wall coverings, patches and repair walls. • Responsible for painting and staining of repaired walls. • Installs kitchen and bathroom fixtures. • Performs masonry and concrete work. • Responsible for finish carpentry work. • Performs small construction build-out, including dry wall installation, framing and installing new doors and windows. • May perform asbestos removal and de-leading work. • Performs basic repairs and coordinates jobs with other personnel and outside contractors. • Assists other department personnel performing light maintenance assignments to ensure compliance with applicable safety practices and standards. • Performs a range of other maintenance activities
Senior Maintenance Craftsperson/ Painter	2.0	• Performs in-house painting for town buildings. • Assists in installation of signs • Hanging and installing pictures, bulletin boards, cork board and chalkboards • Assists in carpentry work. • Assists other department personnel performing light maintenance assignments to ensure compliance with applicable safety practices and standards. • Performs a range of other maintenance activities
Senior Building Custodian	3.0	• Cleans and maintains the interior of Town buildings by emptying trash and recycling bins, vacuuming, stripping, polishing, sweeping, wet mopping, and spot cleaning floors, cleaning and sanitizing restrooms, moving furniture as needed, dusting and cleaning furniture, windows, surfaces, and fixtures, and restocking supplies in restrooms. • Cleans and maintains the exterior of buildings by sweeping and cleaning walkways, emptying trash cans, and removing litter and debris from grounds. • During snow events, removes snow from walkways, salts and sands walkways. • Performs related duties by reporting maintenance problems, setting up equipment for special events, securing the building, reporting emergencies, checking equipment and facilities for damage, and monitoring inventory. • There are two Day Custodians. One is at Town Hall and one at the Public Safety Building. Three is one nighttime Custodian who cleans both buildings.

Position	Number of Staff	Responsibilities/Roles
Houseworkers	0.48	• There are three Houseworkers who work part time. • Performs custodial duties at Health Center and Public Safety Building.
Summer Workers	0.80	• There are typically 3 to 5 summer workers hired each year. • Duties primarily consist of painting at the Schools during summer months.
Pest Control Technician	0.49	• Applies pesticide at Town and School buildings.
Energy Management		
Energy Systems Manager	1.0	• Reports to the Public Buildings Director. • Monitors over 40 building automation systems in 40+ Town and School buildings. • Coordinates repairs and maintenance with contractors. • Monitors the heating and cooling systems of buildings and responds to School and Town employee requests for service related to energy management systems, cold or hot conditions, etc. Directs HVAC Technicians in the repair of HVAC systems. • Oversees the Energy Management Improvement budget, which is typically between $100,000 and $150,000 annually. • Designs and manages building equipment maintenance programs. • Designs smaller HVAC installation projects. • Designs and manages building automation systems expansion projects. • Produces monthly energy budgets for 15 buildings (heating oil, electricity, water, natural gas, vehicle fuel). • Diagnoses problems and makes repairs when possible. • Prepares public bid documents. • Identifies methods of reducing energy consumption within Town and School buildings.

(5) Workloads and Performance Measures

The following table summarizes the major workloads and performance measures of the Public Buildings Division.

Workload/Infrastructure	Quantity
Operations	
School Building Space Maintained	1,334,021 sq. ft.
Town Building Space Maintained	972,346 sq. ft.
Custodial Space Cleaned (Town Hall, Public Safety Building, Health Department)	172,096 sq. ft.
Total Value of Buildings	$524,722,485
Average Time to Close Work Orders (2014 date)	13.5 days
Energy Management	
Building Automation Systems	43
Field Controllers	1,449
Temperature Sensors	3,097
Occupancy Sensors	739
CO2/CO Sensors	335
Controlled Devices	3,889

APPENDIX B – BEST PRACTICES ASSESSMENT OF THE DIVISION OF PUBLIC BUILDINGS

While the Organizational Assessment is designed to provide an analysis of organizational structure and management of the Division of Public Buildings, this interim report represents an important step for the project team to report its preliminary findings and issues. In order to make the assessments of organizational, management and operational strengths and improvement opportunities, the project team developed a set of performance measures which we call “best management practices” against which to evaluate the various functions performed by the Division. These performance measures comprise the main thrust of this best practices assessment.

The measures utilized have been derived from the project team's collective experience as well as industry standards, and represent the following ways to identify divisional strengths as well as improvement opportunities:

- Statements of "effective practices" based on the study team's experience in evaluating operations in other agencies or “industry standards” from other research organizations.

- Identification of whether and how divisions meet the performance targets.

The purpose of the diagnostic assessment was to develop an overall assessment of the Division. The issues identified in the comparison of the Division’s practices against those of best management practices are discussed and analyzed within the final report.

Performance Target	Strengths	Potential Improvements
FACILITIES MANAGEMENT ADMINISTRATION		
The Public Buildings Division organization is administratively centralized to capture economies of scale.	Facilities Management is centralized in Brookline under the Public Buildings Division.	The Public Works Department maintains the fire alarm system of the Town, which has created some confusion in the past regarding which organization is responsible for certain electrical failures.
The Public Buildings Division maintains and updates a clearly written, multi-year (five years at a minimum) strategic plan to provide vision and direction		The Public Buildings Division does not maintain a strategic plan.
Goals, objectives, and performance measures have been developed to provide a guide for decision-making, linking the Division's actions to the broad goals of the Town, and defining what resources ought to be allocated to what services.	.	The Division does not have established performance measures relating to such work activities as cost per square foot of maintained space, average time of repair for work orders, average age of work orders, user satisfaction, etc.
The Public Buildings Division is organized to minimize the number of layers of management	The DPB has only two layers of management.	
The span of control for the first line supervisor to staff (non-supervisors) in the Public Buildings Division should not be lower than 1:10 or higher than 1:20	As a small organization, spans of control are limited. Spans of control are shared between the Operations Manager and the Energy Systems Manager for HVAC and Electrical positions. Neither of these Managers' spans of control is extraordinary.	

Performance Target	Strengths	Potential Improvements
The Public Buildings Division staff receives 40 hours per technician of job related training annually.	The Director has requested additional funds for training in the current year's budget.	There is no specific number of training hours for building technicians in the Division, although staff with licenses do maintain their licenses through ongoing education.
A formal skills assessment and training plan has been developed to keep Division employees current with changes in the facilities management industry.	All Maintenance Craftspersons with trades licenses are required to maintain these licenses through annual training.	
The Division requires that maintenance personnel receive periodic training on recognizing and diagnosing the cause of maintenance problems in buildings for which they are responsible.		The Section does not require that maintenance personnel receive periodic training on recognizing and diagnosing the cause of maintenance problems.
Staff receive training in the areas of energy conservation, new facility technologies, assessing building and component condition and analyzing the useful life of building components.		Staff do not receive training in these areas on any regular basis.
Policies and procedures for the Section are well documented in writing.		Policies and procedures have not been developed.
CUSTOMER SERVICE		
Customers participate in managing the facilities business through a Public Buildings Division Advisory Board.	The Division has a standing bi-weekly meeting with the Schools to discuss larger maintenance events and current and upcoming projects.	Not all customers do not participate in managing the facilities business through a Public Buildings Division Advisory Board.
Annual surveys are conducted to assess customer satisfaction.		Annual surveys are not conducted.

Performance Target	Strengths	Potential Improvements
Formal service level agreements have been negotiated by the Public Buildings Divisions with primary customer groups.		Formal service level agreements have not been negotiated by the Public Buildings Division.
FINANCIAL MANAGEMENT		
A replacement reserve or sinking fund is used to insure the timely replacement of facility assets.		A replacement reserve or sinking fund is not used. Rather, budgeting for the replacement of facility assets is accomplished on a year-by-year basis.
A five-year facility equipment replacement plan has been developed to identify future peak year funding requirements so that this can be dealt with in a planned manner.	A five-year facility equipment replacement plan has been developed.	
The five-year replacement plan outlines major deferred maintenance projects that are ranked by both severity and urgency.	A five-year facility equipment replacement plan has been developed.	
An adequate facility funding level for ongoing maintenance and repair has been established, such as a guideline of between 2 and 4 percent of current replacement value (CRV).		The project team does not have access to CRV, however the current value of the buildings in 2015 is $524,722,485. The FY16 budget for DPB is $6,285,208, which is only 1.2% of current value.
Facilities Management is operated as an internal service fund.		The Public Buildings Division is not operated as an internal service fund. All maintenance and repair costs are assumed by DPB.
ASSET MANAGEMENT		

Performance Target	Strengths	Potential Improvements
A comprehensive list of building systems and equipment is maintained with information, such as location, model type, warranty information, age and replacement parts are maintained for all buildings and mechanical systems.	The Division Director is in the process of populating the School Dude system with information relating to major maintenance equipment buildings, but the database is incomplete.	Information regarding the building automation systems and equipment has not been entered into *School Dude i*ncluding model type, warranty information, age and replacement parts are maintained for all buildings and mechanical systems.
Facility inventories are regularly updated to reflect changes in square footage, assets, etc.		The Public Buildings Division uses the Town Assessor's database of building areas, which may be inaccurate for many buildings.
Building components are inspected once very five years for condition and maintenance needs.	Boilers are inspected by a private inspector and by the insurance inspector annually. Air handlers, AC units are inspected semi-annually by an outside contractor.	The project team does not possess information on the frequency of inspection for other components.
Trained technicians use written guidelines, standardized checklists, and / or automated systems to conduct condition assessments.		Trained technicians in the Section do not use written guidelines, standardized checklists, and / or automated systems to conduct condition assessments.
The technicians conducting the buildings assessment use diagnostic tools to supplement their observations (i.e. infrared scanning equipment to detect loose electrical connections or hot spots, air leaks in the roofing system, insulation voids or damaged (wet) insulation).	The Division has budgeted for a thermal camera, and is currently in the process of obtaining prices.	The technicians that conduct the buildings assessment do not currently use diagnostic tools.
FACILITIES MAINTENANCE MANAGEMENT		
The focus of the Public Buildings Division is clearly on preventive maintenance services. At least 30% of work orders are allocated to preventive maintenance.	Although the project team can not ascertain the precise percentage of hours expended in PM, the Division has recently instituted a PM program.	

Performance Target	Strengths	Potential Improvements
The preventive maintenance compliance rate by the Section is 95%. That is, 95% of all building components receive preventive maintenance within 10% of the due date in accordance with manufacturer guidelines.		The Division does not track this metric.
Preventive maintenance intervals are based on both time and use and mirror manufacturer recommendations.	The PM cycles are based on both time and usage rates.	
Work orders are used to record all maintenance activities.	All work is recorded by Tradesmen in the School Dude system. This includes labor hours, materials, a description of the service, the requestor, the date and location.	
The Public Buildings Division has a clear outsourcing strategy that focuses on core competencies and service improvements.	The Division has recently begun to perform more services with internal staff. These decisions are based on cost and quality of service.	Decisions appear to be made on an ad hoc basis rather than on a systematic and routine analysis of the relative costs of all services.
The Division's staffing levels are within the range of 45,000 to 50,000 square feet of maintainable space per Technician		The gross area of space maintained and repaired by the Public Division is 2,306,367 sq ft, covering 82 buildings. In addition to the 12 Maintenance Craftspersons on staff, the Division budgets $530,145 for contracted repairs in Town and School buildings. This equates to about five (5) additional FTE technicians (allowing for materials and supplies costs associated with contracted repairs), which totals 17 equivalent technicians. This equates to 135,669 sq ft per equivalent technician, which is well above the IFMA-recommended level of 45,000 to 50,000.

Performance Target	Strengths	Potential Improvements
Not less than 90% of corrective work orders are closed according to the planned schedule.		The Division does not provide estimates regarding the time of completion of a particular work order. Therefore, it is not possible to calculate the percentage of work orders completed within the scheduled time period. The project team obtained a report from School Dude that indicates that about 34% of work order are completed within 3 days of issuance. This report also indicated that only about 71% of work orders are completed within 30 days of issuance. Further, about 19% of all outstanding work orders were over 90 days old.
The Division has developed an annual maintenance work plan that includes a labor-needs analysis to determine the total labor hours required to maintain and repair the Town buildings, as well as time estimates for unscheduled repairs and emergency work orders.		The Division of Public Buildings has not developed an annual maintenance plan at this level of detail. Although Tradesmen are required to report labor hours expended on repair efforts, the data are not being analyzed to determine the average time expended on repair typed. This inhibits the Division's ability to make estimates of repair times when work orders are issued, and also inhibits its ability to project the number of maintenance hours needed in the upcoming year.
The Public Buildings Division has procedure manuals or checklists of tasks for employees to use when performing preventive maintenance.		The Division has not developed a procedures manual for PM or repair.

Performance Target	Strengths	Potential Improvements
The Public Buildings Division develops a formal, written weekly or bi-weekly work schedule for its staff.		The staffing levels in the Division are such that the vast majority of work that is accomplished by the maintenance technicians is in response to calls for service. Therefore, there is no weekly or b-weekly plan developed that schedules the work to be accomplished by each technician.
The Public Buildings Division has developed and installed a reliability-centered maintenance program that includes vibration analysis, thermo-imaging, etc.		The Division does not use RCM. RCM combines elements of predictive maintenance with the recognition that not all equipment is of the same importance to either the functioning of the facility or its safety. The premise of RCM is that preventive maintenance is vital, but as a program, it is primarily based on time intervals in scheduling maintenance. RCM's premise is that some preventive maintenance time is wasted since some machinery and components can go longer periods between maintenance intervals based on their performance.
Less than 10% of work orders are more than one month old.		Data from 2014 indicate that almost 30% of work orders are more than one month old.
ENERGY MANAGEMENT		
Public Buildings manages energy consumption on a Town-wide basis, tracks consumption and promotes energy-efficient building operations and conservation.	The Public Buildings Division monitors energy consumption for Town Hall, Library, Schools, the Electrical Shop and the Carpenter Shop.	Monitoring of all other buildings is fragmented between the Town Administrator's Office and the Planning and Community Development Department.
An up-to-date energy management system with a web-based remote operator interface is utilized to monitor and control energy loads.	The Division's Energy Management section maintains the energy management system, which is web-based.	

Performance Target	Strengths	Potential Improvements
Public Buildings has developed an energy management plan to control and manage costs and utilization.	The Division does have funding in the CIP to upgrade and expand existing systems, and for energy conservation work.	The Division has not developed a formal energy management plan. This plan should document the energy management objectives of the Division and the timeframes within which they are expected to be achieved. For example, the plan may outline specific energy reduction objectives for each building in the Town's inventory. The plan should also address linkages between carbon emissions and energy use, and set out greenhouse gas reduction targets. It should also explain how energy relates to broader sustainability objectives and policies of the Town.
An energy accounting system is employed by the Public Buildings Division to identify savings opportunities and to track and measure the success of energy-efficiency strategies.		The Division has access to the free Mass Energy Insight (MEI) system, which shows specific buildings that are less efficient than others, however it is not used. MEI can help analyze energy use by building, forecast energy budgets, calculate ROI on energy investments and generate reports on energy consumption.
Collected energy data is analyzed to identify problem areas, unusual changes in uses, and project future usage and costs.	The Energy Systems Manager is notified of unusual energy usage, and when building automation systems fail, and responds to these as they occur.	Monitoring of energy usage is fragmented in the Town, with the Public Buildings Division monitoring some buildings, the Planning and Community Development Department monitoring some, and the Town Administrator's office monitoring others. Although energy consumption is reported and reviewed, it is not clear that the data are being utilized to identify potential initiatives to reduce the consumption in specific buildings.

Performance Target	Strengths	Potential Improvements
Building operators have been formally trained in energy-efficient operations and maintenance activities to enable them to utilize building systems efficiently.		Training of Tradespersons in the maintenance and repair of building automation systems has not been accomplished in a comprehensive manner.
A system-wide energy audit has been conducted of Town facilities and buildings in the past five years.	The Division has utilized outside vendors, such as AECOM, which conduct free audits and make energy conservation proposals.	The Division has not conducted site specific audits of entire buildings in many years.
MANAGEMENT INFORMATION SYSTEMS		
The Public Buildings Division has deployed a fully functional computerized maintenance management system that is utilized for work order issuance, annual work program development, weekly or bi-weekly work planning and scheduling, staff resource leveling (staff available versus workload), work reporting to report actual versus planned performance, asset management, etc.	This is a particular strength of the Division, as is has instituted the School Dude system that is used to request services, as well as to record the time and materials utilized in repair.	The School Dude system is used to varying degrees by requestors of services. The Schools tend to utilize the system to a greater degree than Town employees, who generally either call or request services personally. The system is not yet used in a comprehensive manner to produce reports such as Tradesperson productivity, work order aging, etc. Further, it is not yet used to generate PM work orders, as not al major maintenance equipment has been entered into the system.
Senior management receives periodic reports of appropriate building information tailored to their needs.	The Director invites the Schools and Library, in addition to internal staff, to attend a 40 hour training course on such topics as MSDS, OSHA, asbestos awareness, use of fire extinguishers, fire alarm systems.	Some specialty training is lacking, particularly in the newer building automation systems.
A mobile computing system has been deployed in which work orders are dispatched electronically and the data from field computers is used to close out work orders in real time as work is completed.	This is a particular strength of the Division, as all Tradespersons are equipped with tablets to which work requests can be transmitted. Tradespersons may also use these tablets to input completed work into School Dude.	

Performance Target	Strengths	Potential Improvements
CUSTODIAL SERVICES		
The Facilities Management Section utilizes a custodial services inspection form is utilized to assess compliance with the scope of services.		Although Custodians have an understanding of their cleaning tasks, the Division has not developed a custodial services inspection form.
Custodial Services are provided cost-effectively.		Custodial services costs are somewhat high at $2.02 per square foot.

APPENDIX C – INVENTORY OF BUILDINGS AND MAINTAINABLE AREAS

School Department	Location	Gross Building Area (sq ft)
Baker School	205 Beverly Rd.	114,838
Baldwin School	490 Heath Street	11,808
Devotion School	345 Harvard St.	152,092
Driscoll School	64 Westbourne Ter.	95,935
Heath School	100 Eliot St.	84,379
Lawrence School	27 Francis St.	106,420
Lynch Recreation Center	599 Brookline Ave.	10,972
New Lincoln School	25 Kennard Rd.	87,500
Old Lincoln School	194 Boylston St.	87,380
Pierce Primary	32 Pierce St.	
Pierce School	50 School St.	270,110
Runkle School	50 Druce St.	107,468
High School	115 Greenough St.	343,676
Physical Education Building	66 Tappan St.	80,000
Unified Arts Building	46 Tappan St.	43,000
Fire Station No. 1	140 Washington St.	19,663
Fire Station No. 4	827 Boylston St.	11,407
Fire Station No. 5	49 Babcock St.	10,505
Fire Station No. 6	962 Hammond St.	11,982
Fire Station No. 7	665 Washington St.	10,215
Fire Department Training Tower	962A Hammond St.	300
Fire Department Training Bld No. 1	962B Hammond St.	500
Fire Department Training Bld No. 2	962C Hammond St.	200
Eliot Rec. Center	133 Eliot St.	6,338
Putterham Golf Club	1281 W. Roxbury Pk.	8,366
Putterham Golf Club - pro shop	1279 W Roxbury Pk.	1,666
Soule Gym	650 Hammond St.	7,218
Soule Rec. Center	652 Hammond St.	12,513
Gardener's Shed	654 Hammond St.	810
Swimming Pool	60 Tappan St.	36,550
Incinerator - Soccer - Toilets	809 Newton St	368
Incinerator - Soccer - Pavilion	807 Newton St.	
Warren Park Cabin	135 Eliot St	
Putterham Golf - Maintenance Bldg	1281B W Roxbury Pk	5,000
Putterham Golf - Maintenance Bldg	1281A W Roxbury Pk	4,000
Amory Field House	15 Amory St.	546
Harry Downs Field	24 Highland Rd	1,584
L.A. Refrigeration	27 Newton St.	1,560
L.A. Refrigeration - Shed	27A Newton St.	
Larz Anderson Toilets	350 Godard Ave.	858
Larz Anderson Pavilion	353 Godard Ave.	1,701
Larz Anderson Skate Pavilion	11 Newton St	2,130

School Department	Location	Gross Building Area (sq ft)
Park and Forestry	19 Newton St.	5,000
Park and Forestry	25 Newton St.	7,800
Park and Forestry - Storage	25A Newton St	
Waldstein Field House	26 Clinton Path	1,155
Cemetery House	96 Grove St.	2,653
Cemetery Building Office	96A Grove St.	760
Cemetery Vault	92 Grove St.	896
Cemetery Maintenance	90 Grove St.	1,080
Skyline Park-restrooms	806 Newton St.	368
Reservoir Pump House	0 Lee St.	132
Fisher Hill Meter	Fisher	1,000
Fisher Hill Comfort Station	Fisher	1,500
New Municipal Garage	870 Hammond St.	75,000
Salt Shed	870A Hammond St.	3,840
Phone Building	870B Hammond St.	1,320
Incinerator House	815 Newton St.	35,499
Metering Station	0 Single Tree Rd.	408
Transfer Station	813 Newton St.	7,752
Water Department Garage	44 Netherlands Rd.	17,854
Wood Hog Building	817 Newton St.	3,264
Coolidge Corner Library	31 Pleasant St.	24,634
Main Library	361 Washington St.	81,910
Putterham Branch Library	959 W. Roxbury Pk.	10,104
Senior Center	93 Winchester St.	21,599
Brookline Arts Center	86 Momouth St.	2,722
Devotion House	347 Harvard St.	3,757
Putterham School	17 Newton St.	698
Widow Harris House	21 Newton St.	2,151
Sportsmen's Club	1 Warren St.	2,340
Health Center	11 Pierce St.	16,014
Town Hall	333 Washington St.	101,832
Public Safety Bldg	350 Washington St.	55,000
Larz-Electrician Shop	13 Newton St.	1,500
Larz-Carpenter Shop	15 Newton St.	2,892
Museum of Transportation	15 Newton St.	38,960
Town House	9 Newton St.	2,820
Town House	55 Newton St.	4,880
Town House	27 Ackers Ave.	1,368
Town House	29 Avon St.	4,219
Music School	19 Kennard Rd.	8,128
Total		**2,306,367**

Notes:

1. Pierce Primary School maintainable space is included in that of Pierce School.

2. The Gross Building Area of 101,832 square feet for Town Hall is net of 9,956 square feet of space in the underground parking garage.

APPENDIX D – ANALYSIS OF COMPARATIVE FACILITIES MAINTENANCE OPERATIONS AND STAFFING SURVEY

The Matrix Consulting Group was retained to perform an operational assessment of the Town of Brookline's Public Buildings Division. As part of this study, the project team conducted a comparative survey of other building and facilities departments/divisions in comparable organizations in eastern Massachusetts. The following document details the survey methodology utilized by the project team, describes the results received from responding organizations, and provides some analysis of common trends in the responses.

The comparative survey was conducted over the course of three weeks, beginning in mid-October. With the help of Brookline staff, the project team identified 17 public building and facilities management organizations to be used as comparable entities:

Acton	Concord	Natick
Algonquin Regional HS	Framingham	Somerville
Bedford	Franklin	Wellesley
Blue Hills RVTHS	Hudson	Wilmington
Boston Public Schools	Lexington	Woburn
Boxford	Milton	

The project team reached out to building and facilities management departments/divisions via phone and email to identify the appropriate point of contact and request that they complete the survey. The project team also made multiple follow-up contacts to ensure the greatest possible volume of responses. The two-page survey was divided into three sections: 1) operations and workload, 2) finances, and 3)

organization and staffing. It was distributed by email to department staff following contact with them. A total of nine (9) comparable organizations responded: Acton, Boxford, Bedford, Boston Public Schools, Franklin, Lexington, Milton, Wellesley, and Wilmington. The responses are summarized below, divided by topic.

1. EXECUTIVE SUMMARY

Of the nine responding organizations, two (Boxford and Acton) were very small, and one (Boston Public Schools) was much larger than Brookline. The remaining organizations, while smaller than Brookline, serve as the best comparison points because they serve both town and school buildings.

Some of the key themes that emerged from the comparisons include the following:

- Brookline's operating budget and utilities spending, like the square footage maintained by their staff, exceed the average of comparable municipalities. However, Brookline's spending per square foot is significantly less than the average of comparable municipalities.
- Brookline's staffing mix is similar to that of comparable municipalities, although its working staff comprise a larger percentage of their total staff. The salaries in Brookline are also similar, with some small differences.
- The number of square feet maintained per working staff member is greater in Brookline than in the average of peer municipalities.

In general, the results of the comparative survey indicate that Brookline is maintaining more buildings and square footage than most of its peer organizations with a working staff that is similar in size to those organizations. As a result, Brookline maintains more area per maintenance staff person and spends less per square foot than its peers.

2. OPERATIONS AND WORKLOAD COMPARISON

The first section of the comparative survey addressed operational practices and workload of comparable building and facilities management organizations. The following sections focus on the volume and type of square footage maintained by staff, the areas of responsibility for each comparable organization, and the means of soliciting customer feedback for each organization.

(1) Brookline is Typical among Its Peers in That It Provides Facilities Maintenance Services to Both Town and School Buildings.

The following table shows which comparable organizations provide building and facilities maintenance services to town buildings only, school buildings only, or both. It also shows which organizations gather customer satisfaction feedback.

CUSTOMER INTERACTION		
Peer Organization	**Town or School**	**Customer Satisfaction**
Wellesley	Both	None
Milton	Both	Informal
Wilmington	Both	None
Boxford	Town	None
Bedford	Both	None
Acton	Town	None
Franklin	Both	None
Lexington	Both	None
Boston Schools	School	Surveys
Brookline	**Both**	**None**

As the table shows, Brookline is similar to 6 of 9 peer organizations in providing building and facilities maintenance services to both school and town buildings.

(2) Brookline Maintains More Buildings and Total Square Footage Than Most of the Responding Peer Organizations. About Half of Responding Agencies Are Similar to Brookline in Taking Responsibility for Custodial Care of Only a Portion of Their Buildings.

The following table shows the total number of square feet maintained by each comparable entity, the number of buildings maintained, and the average age of those

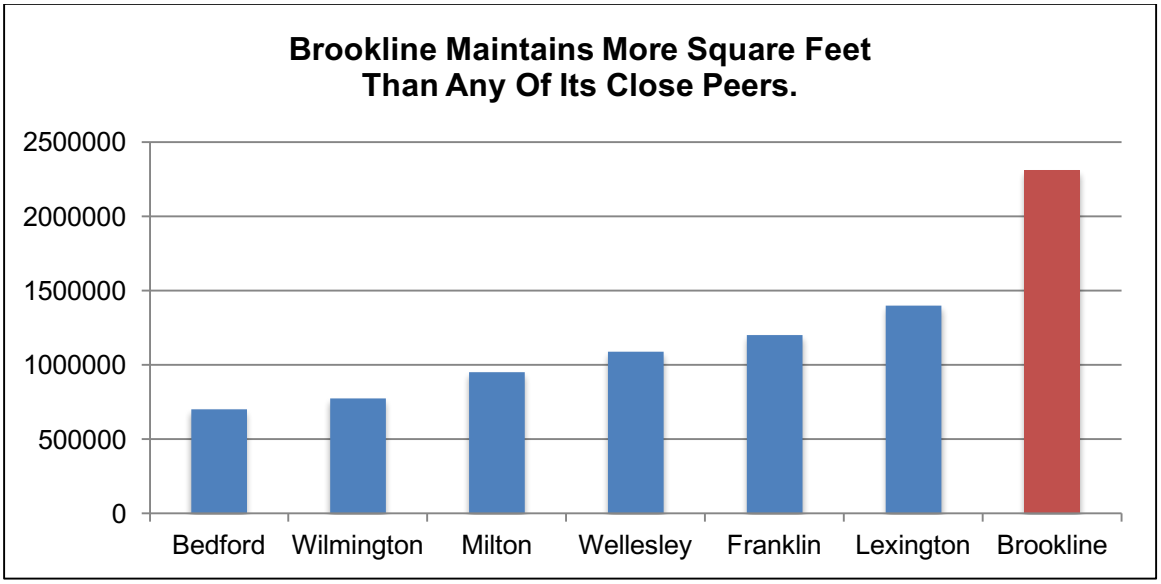
buildings. For organizations that only provide custodial service for portions of their square footage, responses are broken down by areas that they maintain fully and those for which they only do custodial work. Organizations that provide building and facilities maintenance services to both town and school buildings, as noted above, are denoted by an asterisk.

SQUARE FOOOTAGE AND BUILDINGS						
	Repair & Maintain			Custodial Only		
Peer Organization	Total SqFt	Total Buildings	Building Age	Total SqFt	Total Buildings	Building Age
Boxford	60,000	9	50	0	0	0
Acton	162,000	15		132	8	
Bedford*	705,000	13	12.5	648,000	12	12.5
Wilmington*	775,000	30	50	475,000	12	50
Milton*	950,000	23	40	680	6	10
Wellesley*	1,086,525		80	0	0	0
Franklin*	1,200,000	19	20	0	0	0
Lexington*	1,400,000	24	40	0	0	0
Boston Schools	11,000,000	128	77	0	0	0
Brookline*	**2,306,367**	**82**		**123,409**	**3**	
Average	**1,929,281**	**33**	**46**			
Average of *	**1,023,588**	**22**	**40**			

*Peer organizations providing service to both town and school buildings.

As the table shows, Brookline maintains more square footage and more buildings than any responding peer organization except for Boston Public Schools. Brookline's 82 buildings and 2.3 million square feet are greater than the volume of the responding peer organizations that provide facilities maintenance services to both town and school buildings. The project team has not calculated averages for the right-hand side because the small number of organizations providing solely custodial services to a portion of their square footage, combined with the widely varying amount of square footage maintained and the fact that none of the peer organizations provide custodial service to a square footage similar to Brookline, eliminates the usefulness of that comparison.

The chart below shows how Brookline compares to these more similar peers in terms of total square footage:



The organizations shown in the chart above maintain both town and school buildings. Although smaller than Brookline, they provide a better comparison than Boston Public, Boxford, or Acton in terms of size and service areas.

(3) Brookline's Staff Duties Are Similar to Those of Other Municipalities in Some Areas, and Different In Others.

The following table shows which peer building and facilities management organizations regularly perform a number of common tasks with in-house staff.

COMPARISON OF DUTIES PERFORMED															
Organization	**Prev Maint HVAC**	**Prev Maint Electric**	**Repair HVAC**	**Repair Electric**	**Remodel Offices**	**Painting**	**Locksmith**	**Custodial Maint**	**Repair Plumbing**	**Repair Pools**	**Pest Control**	**Room Setup for Events**	**Repair Furniture**	**Install Flooring**	**Carpentry**
Wellesley	✓	✓	✓	✓			✓	✓	✓			✓	✓		✓
Milton	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
Wilmington	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
Boxford					✓							✓	✓		
Acton	✓				✓			✓	✓		✓	✓	✓	✓	✓
Bedford	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
Franklin		✓		✓	✓		✓	✓	✓			✓	✓		
Lexington	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Boston Schools								✓				✓			
Brookline	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

As the table shows, the maintenance staff in Brookline perform a wide variety of tasks to repair and maintain town and school buildings. Many of the duties performed by Brookline staff, such as plumbing repairs, furniture repairs, and preventive maintenance of HVAC and electric, are similar to those of staff in comparable municipalities. In other areas, such as painting, pool repair, and pest control, Brookline's staff are assigned tasks that staff in comparable municipalities do not perform.

3. FINANCIAL COMPARISON

The second section of the survey asked responding organizations about their annual operating expenses, capital budgets, and utilities costs.

(1) Brookline's Public Buildings Budget is Greater Than the Average of Its Peers, and Like Peer Organizations, It Is Not an ISF and Does Not Directly Charge Customers for Services.

The following table displays budgetary figures for each responding organization. It also shows whether each organization operates as an internal service fund, and whether they charge their customers for services provided.

BUDGET AND SPENDING					
Peer Organization	**Operating Budget***	**Capital Budget**	**Utilities Budget**	**ISF**	**User Charges**
Boxford	$150,000	$50k - $200k	$165,000	No	No
Acton	$1,556,000		$484,000	No	No
Milton*	$2,800,000	$200,000	$3,000,000	No	No
Bedford*	$4,193,000	$1,705,000	$1,750,000		
Wilmington*	$4,500,000	$150,000	$310,000	No	No
Franklin*	$6,500,000	$200,000	$2,242,000	Yes	No
Wellesley*	$6,887,561	$1,500,000	$2,250,000	No	No
Lexington*	$7,361,977	$1,200,000	$2,900,000		
Boston Schools	$41,266,583	$54,408,124	$20,888,600	Yes	No
Brookline	**$8,532,723**	**$116,000**	**$2,683,949**	**No**	**No**
Average of All	**$8,357,236**	**$8,480,446**	**$3,776,622**		
Average of **	**$5,373,756**	**$825,833**	**$2,075,333**		

* Figures include personal services and operational costs for all personnel in the departments, including technical as well as administrative employees.
** Peer organizations providing service to both town and school buildings.

As the table shows, Brookline's operating budget is greater than all responding peer organizations except for Boston Public Schools, and larger than the average of peers that serve both town and school buildings. This is to be expected because the number of buildings and square feet maintained is greater in Brookline than in those organizations. Utilities spending in Brookline is less than the overall average, but when Boston Public Schools is eliminated, Brookline's utilities spending exceeds the average of organizations serving both town and school buildings.

Brookline is similar to most of its peers in that it does not operate the Building and Facilities Maintenance Department as an Internal Service Fund (only 2 peer organizations do), and that it does not charge its customers for services performed.

(2) Brookline Spends Less per Square Foot Than Any of Its Peers, and Significantly Less Than Its Close Peers.

The following table shows the spending per square foot (operations and utilities) for each comparable organization.

SPENDING PER SQUARE FOOT			
Peer Organization	**Square Feet**	**Operating + Utilities Spending**	**Spend per Square Foot**
Boxford	60,000	$315,000	$5.25
Acton	162,000	$2,040,000	$12.59
Milton*	950,000	$5,800,000	$6.11
Bedford*	705,000	$5,943,000	$8.43
Wilmington*	775,000	$4,810,000	$6.21
Franklin*	1,200,000	$8,742,000	$7.29
Wellesley*	1,086,525	$9,137,561	$8.41
Lexington*	1,400,000	$10,261,977	$7.33
Boston Schools	11,000,000	$62,155,183	$5.65
Brookline	**2,306,367**	**$11,216,672**	**$4.86**
Average of All	**1,926,502**	**$12,133,858**	**$6.30**
Average of *	**1,019,421**	**$7,449,090**	**$7.31**

*Peer organizations providing service to both town and school buildings.

As the table shows, Brookline spends less per square foot in operating budget and utilities than any responding peer organization. On average, Brookline spends less by $1.44 per square foot. The difference is more pronounced when comparing Brookline to only those organizations that serve both town and school buildings – Brookline spends less than those organizations by an average of $2.45 per square foot.

4. ORGANIZATION AND STAFFING COMPARISON

The final section of the survey focused on peer organizations' staffing for various position types and compensation levels. The following sections summarize the information provided by respondents on this topic and make a comparison to the Town of Brookline.

(1) Brookline's Working Staff Comprise a Slightly Higher Percentage of Total Staff Than Most of Its Peer Organizations.

The following table shows the number of staff in various position types and authority levels for each responding peer organization. While each respondent provided the particular position titles for employees in their organizations, this table represents

the project team's effort to standardize positions by type in order to provide a relevant comparison.

STAFFING COMPARISON							
Peer Organization	Superintendent/ Director	Asst. Director	Manager	Supervisor	Maintenance Line Staff	Clerical/Admin	Custodian
Milton	1	1	1		6	1	
Wilmington	1	1	1			1	
Wellesley	1	1	4	3	7	3	47
Boxford	1				7	1	
Bedford	1	1			7	2	18
Acton	1			1	2		
Franklin	1		1			3	49
Lexington	1	1	1	4	11	4	57
Brookline	**1**		**2**		**12**	**2**	**3**

Brookline's staffing mix differs from many of its peers in terms of the titles and position types utilized. As the table shows, Brookline has 12 maintenance line staff, which is 71% of its total non-custodial staffing. This is on the high end of responding peer organizations, only one of which (Boxford) has a higher percentage of maintenance line staff.

(2) Brookline's Compensation Levels Are Approximately Equivalent to Those of Responding Peer Organizations, with Slight Differences.

The following table shows the compensation levels reported by peer organizations for staff in each position type or level of supervisory authority. The comparison is limited to positions for which Brookline has provided compensation information. Some peer organizations reported actual salary numbers, and some reported ranges. When ranges were reported, the midpoint salary is used here. When multiple different salaries are reported for staff in the same position type, a midpoint between the maximum and minimum is used here. Additionally, some position titles and

compensation levels have been consolidated to match the job titles provided by Brookline.

SALARY COMPARISON						
Peer Organization	**Superintendent/ Director**	**Manager**	**Maintenance Line Staff**	**Administrative Supervisor**	**Clerical/Admin**	**Custodian**
Milton	$110,000	$86,000	$46,500		$63,300	
Wilmington	$100,000	$68,000			$60,000	
Wellesley	$138,000	$80,000		$62,400	$55,000	$43,000
Boxford	$103,000		$24/hr	$52,500		
Bedford	$117,500				$42,500	
Acton	$79,000		$45,000			
Franklin	$115,000	$85,000			$44,000	$45,760
Lexington	$135,000	$102,000	$22/hr		$50,000	
Brookline	**$106,000**	**$76,000**	**$57,000**	**$56,000**	**$53,500**	**$53,000**
Average	**$112,188**	**$84,200**	**$46,795**	**$57,450**	**$52,467**	**$44,380**

As the table shows, Brookline's compensation levels are approximately equivalent with the average of responding peer organizations for the positions of Director, Administrative Supervisor, and Clerical/Administrative staff. Managers in Brookline earn slightly less than the average of responding peers, while custodians earn slightly more. Line staff earn slightly more than the average of responding peers.

(3) Brookline's Single Energy Management Employee Is Comparable to Most of Its Peer Organizations.

The following table shows the number of energy management staff in each responding peer organization.

ENERGY MANAGEMENT STAFF	
Peer Organization	**Number of Energy Management Staff**
Wellesley	1
Milton	0
Wilmington	1
Boxford	1
Acton	2
Franklin	1
Lexington	1
Boston Schools	4
Bedford	0
Brookline	**1**

As the table shows, Brookline's single energy management employee is similar to most responding peer organizations. Five of nine respondents have a single energy management employee.

(4) The Square Footage Maintained by Brookline's Working Staff Is Greater Than That of Peer Organizations.

The following table shows the number of square feet maintained per working staff member for each comparable town. Working staff members are defined as those who are listed as supervisors (not managers), trade specialists, line staff, and custodians.

SQUARE FOOTAGE PER WORKER			
Town	**SqFt**	**Working Staff**	**SqFt/Staff**
Boxford[10]	60,000	0.75	80,000
Acton	162,000	3	54,000
Bedford*	705,000	7	100,714
Wilmington*	775,000	6.5	119,231
Milton*	950,000	6	158,333
Wellesley*	1,086,525	10	108,653
Lexington*	1,400,000	11	127,273
Brookline	**2,306,367**	**12**	**192,197**
Average	**734,075**	**6.3**	**116,125**
Average of *	**983,305**	**8.1**	**121,396**

*Peer organizations providing service to both town and school buildings.

[10] Boxford's facilities maintenance function is primarily performed by on-call trades workers and full time DPW Equipment Operators who perform certain light duty maintenance. The Director estimates that the facilities maintenance activities equate to about ¾ of one FTE

As the table shows, Brookline's maintenance staff are responsible for more square footage than the average of all responding peer organizations. When compared to the more closely comparable organizations, Brookline's maintenance staff still maintain more than the average.

APPENDIX E – SUMMARY OF RECOMMENDATIONS

The table on the following pages summarizes the improvement opportunities identified and recommended by the Matrix Consulting Group in the management and operations study of the Public Buildings Division. The chapters within the report should be read, however, for a detailed discussion and analysis of each recommendation. Additional minor adjustments in operations, or minor improvement opportunities, are also contained in the detailed best practices assessment that is attached as Appendix B. For each recommendation listed below, a priority and recommended timeframe for initiating the effort has been provided.

Summary of Recommendations

Rec. No.	Recommendation	Priority	Timeframe
Chapter 2 – Analysis of Management			
1.	The Public Buildings Division should develop a strategic plan to guide operations and decision-making over a five-year planning horizon.	Medium	FY 2017
2.	The Public Buildings Division should develop and install an enhanced preventive maintenance program for all of the Town and School buildings and building components. Total cost savings could be approximately $439,600 annually in developing and implementing the program.	High	Fall 2016
3	The Public Buildings Division should contract, initially, for the employment of predictive testing equipment on an annual basis. In the mid-term, the Division should selectively acquire this equipment and train its staff in its use. Short term contracting costs would be $15,000 – $20,000 per year, which should be expended from the recommended increase in the budgetary amount for contracted services.	Medium	Summer 2016
4.	The Division should expand the utility of the SchoolDude computerized maintenance management system to include expanded reporting of performance metrics, and enhanced communications to requesters of service.	High	FY 2017 and ongoing

Rec. No.	Recommendation	Priority	Timeframe
5.	The Public Buildings Division should work with the Selectman's Office to gain a greater level of understanding of its budget request requirements.	Medium	Prior to FY 2017 Budget
6.	The Public Buildings Division should enhance the content of its web site.	Low	FY 2017
Chapter 3 - Analysis of Staffing and Operations			
7.	Hire three Senior Maintenance Craftspersons in the coming fiscal year at a total cost of $239,400. Hire three additional Senior Maintenance Craftspersons in FY17 and FY18 at a total compensation of $244,188 and $249,071, respectively. In addition to the personal compensation of these nine employees, the project team also estimates a first-year cost of approximately $27,600 for each, or $82,800 per year for the three-year period during which these nine employees are hired. As an alternative to the hiring of internal staff, the Town may elect to contract for a greater amount of maintenance and repair services.	High	Immediate and ongoing through FY 2018
8.	The annual maintenance and repair budget for the Public Buildings Division should be increased by an additional $623,043 for contracted services. The allocation between Town and Schools should be on their respective proportions of square footage of maintainable space. This amount should be escalated each year by the consumer price index.	High	FY 2017
9.	The Public Buildings Division should adopt a consistent philosophy regarding how outsourcing decisions are made.	High	Immediate and ongoing
10.	The Public Buildings Division should be authorized to hire an Energy Systems Operator, and should designate it as an exempt position. Although the position does not currently exist in the Town's classification system, the direct salary for this position is assumed to be $67,000. Adding 40% for fringe benefits results in a total compensation of $93,800.	Medium	FY 2017
11.	The Town should consolidate the monitoring and reporting of its building energy consumption in the Public Buildings Division. The Division should also assume responsibility for the monitoring and reporting duties associated with the Green Communities Grant.	Low	Winter 2016
12.	Conduct a new space needs analysis for the Public Buildings Division. The 2012 independent space needs analysis projected the need for additional space for the Division, however that projection was based on static staffing levels. As this report makes recommendations for additional staffing, the space requirements should be revisited. This updated assessment is estimated to cost approximately $50,000.	Medium	FY 2018

Rec. No.	Recommendation	Priority	Timeframe
Chapter 4. – Analysis of Organization			
13.	The Town should remove the Public Buildings Division from the Building Department and create either a stand-alone department, or transfer the Division to an existing Town department with which it has more organizational commonality.	Low	FY 2018
14.	The Division should reallocate positions to the Energy Systems Manager and the Operations Manager, and designate two existing Maintenance Craftspersons as Foremen over these units.	Medium	Fall 2016
15.	The project team recommends that the Town's Human Resources Department analyze the equity of the compensation level of the Public Buildings Director.	Medium	FY 2017