

Staffing and Organizational Assessment of the Public Works Department of the Town of Watertown, MA

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Edward J. Collins, Jr. Center for Public Management

MCCORMACK GRADUATE SCHOOL OF POLICY AND GLOBAL STUDIES



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INTRODUCTION AND EXECUTIVE SUMMARY

This report presents the results of the management assessment of the Watertown Public Works Department (the “Department”) conducted by the Edward J. Collins, Jr. Center for Public Management in the McCormack Graduate School of Policy and Global Studies at the University of Massachusetts Boston (“the Center”). This first section introduces the analysis, outlining principal objectives and how the analysis was conducted, and it offers a summary of the recommendations described in detail later in the document.

Scope and Objectives

The project team conducted a comprehensive organizational and management analysis of the Department’s existing operations, service levels, infrastructure management, organizational structure, and staffing levels. The analysis included all aspects of service provision by the Department, but paid particular attention to:

- Organizational structure, including the division of labor, manager/supervisor spans of control, and potential for consolidation of currently-separate functions;
- Effectiveness of staffing levels, including, but not be limited to, staff assignments, workload, training, and cost-effectiveness of service levels and service delivery; and
- Benchmarks and other objective indicators of program effectiveness.

The steps the project team took in meeting this scope included:

- Developing an understanding of the key issues impacting the Public Works Department. The Center conducted interviews with Public Works Department management and staff. Interviews focused on goals and objectives, management systems, the use of technology, the levels of service provided by the Department, the resources available to provide those services, etc.
- Developing a descriptive profile of the Public Works Department. The Center conducted interviews with division supervisors and staff to document the current organization of services, the structure and functions of the Department, budgets, workload data, management systems, inventory of the infrastructure, etc.
- Comparing Department programs and practices to “best management practices.” The best management practices included the American Public Works Association’s *Public Works Management Practices Manual*, standards developed by the American Water Works Association, and the experience of the project team. The project team also conducted a survey of services in other cities and towns to compare the Watertown’s programs and practices to these municipalities.

- Evaluating the staffing, organization structure, and service levels in the Public Works Department. This included interviews with key staff to develop an understanding of the current service delivery model, evaluation of the adequacy of current service levels, work practices, work planning and scheduling systems, productivity and staffing levels, the plan of organization, and asset management.

The objective of this assessment was to identify opportunities for improvement in the operational, and organizational practices, as well as the economic efficiency of the Department and practicable opportunities for enhancing the quality of its services.

Overview

1. The Public Works Department employs a number of best practices.

An organizational and management analysis by its nature focuses on opportunities for improvement. However, it is important to recognize the existing strengths of the Public Works Department. Examples of these strengths are portrayed below.

- The Department gets high marks from its constituents for its rapid and comprehensive response to snow and ice events.
- The Department's rapid response to emergencies, such as water main breaks, is appreciated by customers.
- The Department's Water Division has received numerous awards for water quality from the Commonwealth of Massachusetts and MWRA.
- The Department implemented a Light Emitting Diode (LED) street light replacement program.
- The Department has implemented a gate valve exercising program that utilizes a hydraulic valve turning mechanism mounted on a truck. This represents a relatively sophisticated method to ensure that gate valves are operable in emergencies.
- The Department provides online access to cemetery information through its website.
- The Department successfully implemented and oversaw the new single-stream recycling program and the automated trash collection program.
- The Department generally does a good job of leveraging the use of contractors to allow in-house staff to focus on its repetitive, non-specialized work.

These strengths provide a sound basis for further enhancements.

3. There are significant opportunities for improvement within the Department going forward.

Reducing staffing levels has been a common theme in local governments generally, and certainly in public works departments specifically, during this time period, however, the Watertown Public Works Department has been fortunate to have been largely spared from these reductions. However, it is equally true that staffing levels have remained constant as infrastructure and infrastructure maintenance requirements have increased. Further, regulations, such as the recently-adopted stormwater ordinance, have increased over a period of time, and each carries with it new compliance requirements. The soon-to-be-issued National Pollutant Discharge Elimination System (NPDES) permit is also likely to have staffing and resource implications for the Public Works Department.

Although the mantra in local government has been to “do more with less” for some time now, this would have been an expected result of the cumulative effect of implementing new technologies and a more prudent use of contractors for specialized services in any case. Therefore, while it is tempting on the part of Public Works personnel to assume that increases in staff would solve most operational issues, the reality is that there are limits on local government’s ability to fund increases in permanent staff. For that reason, it is incumbent on public works leaders to implement operational practices that enhance the utilization of current resources, implement force multipliers where possible, and ensure that current personnel are as knowledgeable and widely trained as is practicable.

With these considerations in mind, the project team has, in the following pages, made recommendations to enhance the operations of the Watertown Public Works Department. Although some of these recommendations do, in fact, address current staffing shortages where applicable, the over-arching themes for enhanced operations fall into the following categories:

- a) Enhanced management and planning efforts
- b) Meeting customer expectations
- c) Enhanced use of information systems and technologies
- d) Enhanced preventive maintenance of Town infrastructure

a) Enhanced Management and Planning Efforts

In order to translate policy into action, managers need to have plans in place. These plans are products of leadership, technical expertise and experience, awareness of customer needs, knowledge of infrastructure (in terms of location as well as maintenance requirements), staff capabilities, and other factors.

Underlying these plans should be policies and procedures that ensure standardized expectations for quality service delivery. The Public Works Department currently has no such guiding structure in place. In some respects, this is understandable, as the Department has many long-tenured employees who are familiar with departmental routine. However, this lack of focus on, and adherence to, formal policies and procedures has the effect over time of instilling existing practices which may not reflect optimum performance or incorporate new technologies.

The Department also lacks any asset management plan that comprehensively identifies the infrastructure the Department is responsible for managing, its worth, its maintenance requirements, and the service levels and staffing resources required to maintain it.

Another element of management and planning efforts that should be a part of a well-functioning department is the establishment of performance measures, as well as a reporting structure to ensure the accountability for the attainment of agreed-upon levels of service. This is absent in the Watertown Public Works Department. The Department does issue an annual report that reflects certain workload metrics such as the numbers of trees removed by the Forestry Division, numbers of acres of cemetery grounds maintained, etc. However, the objective of performance measurement should be to regularly report on the efficient and effective use of the resources utilized in attaining service level goals, and to make modifications and improvements based upon the data reported. This element of management and planning in the Department of Public Works is currently lacking.

b) Meeting Customer Expectations

Management, planning, and reporting are critical elements of a successful organization, and they will be crucial for the Watertown Public Works Department going forward. However, few operational elements are as critical to the public's perception of a successful organization as its focus on customer service. This focus must not only be clearly evident to the customer, it is also vital that employees genuinely view the customer as the focus of all of their activities. Without this orientation, customer service will not be viewed as a genuine objective of the Department.

During the course of the study, the project team heard experiences from various members of the public that indicate that customer service and responsiveness to requests are not major areas of focus for the Public Works Department. Further, even many requests for data made by the Center's project team were delayed without explanation, and sometimes without response. Taken together, these are indications that responsiveness to stakeholder needs and requests have fallen in priority for the Department.

In the pages that follow, the project team makes recommendations for enhanced customer service training, commitment to targeted turnaround times for such activities as plan review and permit issuance, and reporting of all activities. Yet the commitment must come from the top management of the organization, and without this commitment, customer service will continue to be a relatively low priority.

c) Enhanced Use of Information Systems and Technology

Public works departments across the country are characterized by their focus on performing the immediate tasks at hand. This is true of the Watertown Public Works Department as much as any other in the project team's experience. However, well-managed organizations, in order to plan, manage, control and adjust to changing environments, need to analyze their activities and to report to their constituencies on the efficiency of use of the resources that are allocated to them.

The inclination of public works managers is to focus on the accomplishment of work. However, this has also historically meant that the work that is accomplished is not monitored or reported, as documentation is often at the bottom of the priority list. This lack of routine and periodic workload reporting characterizes the Watertown Public Works Department, which lacks not only the orientation toward workload reporting, but also the information systems and technology to do so. The Department does utilize a work order system that creates an open work order for requested work, but this system is

not utilized for any meaningful management purpose. The Department also lacks access to geographical information systems (GIS), handheld reference and reporting tools in the field, permit and plan review tracking software, and other management tools that define progressive public works operations.

d) Enhanced Preventive Maintenance of Infrastructure

Watertown taxpayers have a significant investment in buildings, parks equipment, streets, sidewalks, parking lots, traffic signals, water distribution systems, sewer systems, as well as stormwater collection systems. Preserving these assets prolongs their useful lives and reduces the long-term rehabilitation and replacement costs. This is the primary objective of preventive maintenance.

The Public Works Department is not preventively maintaining this infrastructure in a consistent and systematic manner. The Department should pursue a comprehensive effort to ensure the efficient and effective preventive maintenance of those assets assigned to its respective divisions. This includes such efforts as developing and implementing strategies to preventively maintain the Town's buildings, and investigating opportunities to outsource certain maintenance functions and activities that may be more cost-effectively provided by private contractors.

Preventive maintenance improves an asset's operating efficiency, prevents premature replacement, and avoids interruptions in service for residents. Preventive maintenance reduces long-term costs by maximizing the operating capacities of an asset, minimizing downtime, and avoiding breakdowns that would otherwise lead to higher repair costs later.

The effective preventive maintenance of these assets must be an essential goal of the Public Works Department – one that is utilized to judge the effectiveness of the Department's management.

Summary of Recommendations

The Center has prepared the following summary table of the recommendations contained in the report and their fiscal impacts.

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SUMMARY OF RECOMMENDATIONS

Staffing & Operational Assessment of the Watertown Public Works Department

Page	Recommendation	Time Frame	Revenue Increase	Cost Increase	Cost Reduction	Capital Outlay
13	Management Systems and Accountability					
13	1. The Department should commit to the development of an asset inventory.	12-18 months	NA	NA	NA	NA
16	2. The Department should invest in a new computerized maintenance management system to develop an annual work program and scheduling plan.	12-18 months	NA	NA	NA	\$15,000 to \$30,000
19	3. The Department should develop a comprehensive set of work activities performed by each division in the Public Works Department.	12-18 months	NA	NA	NA	NA
19	4. The Department, in conjunction with the Town Manager and Council, should define the service levels that are appropriate to be accomplished.	12-18 months	NA	NA	NA	NA
20	5. The Department should define performance standards which outline, for each major activity, the methods of accomplishment, crew sizes, levels of service, the probable materials needed, and the expected average daily production levels to be achieved.	January – July 2014	NA	NA	NA	NA
23	6. The Department should develop a formal work planning and scheduling system. This formal work system should be standard across each division of the Department.	January – July 2014	NA	NA	NA	NA
26	7. The Department should generate a monthly performance report comparing planned versus actual performance and costs.	Begin FY15	NA	NA	NA	NA
26	8. The Department should establish a policies and procedures committee, consisting of five to seven supervisors and staff from all divisions to identify the appropriate topics for coverage in a policies and procedures manual. Then, the committee should develop standard policies and procedures for these topics.	July 2014 – July 2015	NA	NA	NA	NA
29	Organizational Structure					
29	1. The project team makes no recommended changes in the support staffing levels in the Department currently.	NA	NA	NA	NA	NA

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Page	Recommendation	Time Frame	Revenue Increase	Cost Increase	Cost Reduction	Capital Outlay
30	2. The Town should create the position of Director of Administration and Finance in the Department of Public Works. This position will be responsible for assigning clerical and administrative duties to the staff, and for allocating the work based on workload demands.	Oct 2013 Recruit and hire by December 2013	NA	NA (Position is currently funded)	NA	NA
32	3. The Department should identify the training needed by support staff and should seek out opportunities for these employees to obtain this training.	Immediate and ongoing	NA	There may be small costs for some classes, however there are many provided at no cost	NA	NA
33	4. The Department should fill the vacant position of Town Engineer.	December 2013	NA	NA (Position is currently funded)	NA	NA
35	5. The Department should enhance its use of the Town's GIS to enable analysis of work performed on infrastructure, trends in calls for service, and many other facets of work. The Town Engineer should take a lead role in updating and managing the information in the GIS from a Public Works perspective.	Begin after hiring of Town Engineer	NA	NA	NA	NA
36	6. The Department should develop a plan to enhance customer service.	Begin after hiring Admin. & Finance Director	NA	NA	NA	NA
39	7. The Town and the Public Schools should further investigate the feasibility of full consolidation of their currently-separate facilities maintenance organizations.	FY15	NA	NA	NA	NA

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Staffing & Operational Assessment of the Watertown Public Works Department

Page	Recommendation	Time Frame	Revenue Increase	Cost Increase	Cost Reduction	Capital Outlay
41	8. The Town should transfer the Sealer of Weights and Measures out of Public Works and into the Community Development and Planning Department, within which a more appropriate skills match exists.	Immediate	NA	NA	NA	NA
43	Operations					
43	1. The Town should continue the recent focus on vehicle and equipment replacement that is indicated in its capital improvement plan over the next three years. However, given the current age of the fleet, it is clear that the Town has not allocated sufficient funding for this purpose in the past.	NA	NA	NA	NA	NA
47	2. The Department should transfer responsibility for its automated fuel dispensing system from the Property and Buildings Division to the Central Motors Division. The Central Motors Supervisor should produce routine reports on fuel consumption and efficiency, as well as utilization of each unit in the fleet, making specific recommendations for removal or replacement.	October 2013	NA	NA	NA	NA
48	3. Staffing in the Central Motors Division should be reduced by 1 FTE. This can be accomplished by holding an internal recruitment. Once complete, the prior position of the selected candidate would not be backfilled. Even after the reduced staffing arrangement is implemented, the project team recommends that the Town consider the feasibility of consolidating all fleet maintenance and repair services under a single organization.	December 2013	NA	NA	NA	NA
50	4. The Central Motors Division should restrict access to the parts room to no more than two employees. This move will allow for greater accountability for parts issued from stock.	Immediate	NA	NA	NA	NA
51	5. The Department should immediately fill the two vacant positions in the Highway Division.	Immediate	NA	NA	NA	NA

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Page	Recommendation	Time Frame	Revenue Increase	Cost Increase	Cost Reduction	Capital Outlay
53	6. The Town should begin the cultivation of future managers in the Public Works Department, and the empowerment of current line staff, by embarking on a system of routine professional and technical training for supervisors and departmental leaders.	Immediate and ongoing	NA	NA	NA	NA
54	7. The Department should critically evaluate the continued deployment of the two employees on Truck 60 to determine the efficacy of dedicating these resources to emergencies and service calls.	Immediate and ongoing	NA	NA	NA	NA
55	8. The Department should convert the position of Water Supervisor to a working position in the field. The project team recommends both the conversion of the position and the transfer to the Highway Division in order to contribute toward the creation of a three-person crew that should be cross-trained in sidewalk inspection and repair, and urban forestry in order to address critical needs in these areas.	October 2013	NA	NA	NA	NA
57	9. The Department should re-evaluate its current contracts with grounds maintenance service providers in view of the skills of the newly-hired Supervisor.	January 2014 – July 2014	NA	NA	NA	NA
58	10. The new Town Engineer should be tasked with organizing and providing public input sessions on all major capital projects.	Spring 2014	NA	NA	NA	NA
59	11. The Town should enhance its CIP document to include more information for the reader regarding project description, justification, location, and impacts on operations.	FY15	NA	NA	NA	NA
60	12. The Department should significantly enhance the rules and regulations as they relate to pricing, burial procedures, allowable vegetation and decorations, monuments, and many other pertinent details of the Town's cemeteries.	Spring/ Summer 2014	NA	NA	NA	NA

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Page	Recommendation	Time Frame	Revenue Increase	Cost Increase	Cost Reduction	Capital Outlay
62	13. Each of the divisions of the Department of Public Works should enhance their webpages to provide more meaningful information.	Spring 2014	NA	NA	NA	NA
65	14. The Department should routinely monitor overtime expenses and the causes for the overtime. At the same time, staff should take affirmative steps to reduce the number of emergency repairs, which often trigger overtime use, through implementation of a preventative maintenance program of Town assets.	Immediate				
66	15. If the Town and School System elect not to consolidate facilities maintenance services, the Town should hire an HVAC Technician to supplement the facilities maintenance activities of the Supervisor/Carpenter and the Chief Electrician. Further, the Property & Buildings Division should transfer the signage function to the Highway Division to allow a greater focus on building maintenance, and because signage issues typically occur in areas for which the Highway Division is already responsible.	December 2013	NA	NA	NA	NA
67	16. The Department should take steps to minimize the incidence of sick leave by establishing a policy that attendance is both expected and required for the accomplishment of the Department's work. The Department should establish a threshold of absences over which a written medical note must be submitted.	Fall 2013	NA	NA	NA	NA
68	17. The Department should institute a structured approach to the evaluation of the feasibility of outsourcing.	Immediate	NA	NA	NA	NA
69	18. The Public Works Department should establish goals, objectives, and performance measures for its employee safety program.	Fall 2013	NA	NA	NA	NA

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MANAGEMENT SYSTEMS AND ACCOUNTABILITY

Management accountability is the expectation that managers are responsible for the quality and timeliness of program performance, for increasing productivity, controlling costs, mitigating adverse aspects of agency operations, and assuring that programs are managed with integrity and in compliance with applicable laws.

The Public Works Department is responsible for the maintenance and repair of infrastructure in which the Town has made a significant investment. Although the Watertown Public Works Department has been largely spared from operational and capital funding decrease over the past several years, staffing levels have remained relatively stable as infrastructure, infrastructure maintenance requirements and compliance efforts have increased.

With few prospects that the levels of funding seen in prior years will increase in the immediate future, the Department is faced with making decisions regarding the optimum manner in which to maintain the Town's streets, sidewalks, plant and equipment, facilities, grounds, distribution and collection systems, fleet, and other assets. Options are to either decrease services and service levels, or to enhance the efficiency and effectiveness of current operations. There are merits to both, and they are not mutually exclusive. However, regardless of what the Town decides about service levels, the Department should consider the enhancement of the efficiency and effectiveness of existing operations, including the improvement of activity reporting and data accumulation, and the establishment of an asset management plan and performance measures that will define and report the progress, and improvement, of crews against definable objectives.

Increasing fees for service to help fund needed activities is typically a viable option, especially in instances in which fee levels have not been adjusted for some time, or are substantially lower than in other comparable municipalities. However, in the current environment, even this may be difficult. Further, given that non-enterprise fees currently represent only a small fraction of the total revenues available to the Department, even a substantial increase in fee levels would have a negligible impact on total revenues.

This section evaluates the management accountability practices within the Department, as well as the management system infrastructure required to ensure that managers can monitor and report their status and progress against accepted measures of accountability. This includes goals, objectives, and performance reporting.

1. THE PUBLIC WORKS DEPARTMENT SHOULD ESTABLISH AN ASSET MANAGEMENT PLAN.

Asset management focuses on the Town's infrastructure assets, their performance, their preservation, and their anticipated longevity. Effective asset management is important for at least two reasons, including:

- The Town has aging infrastructure, which generates potentially costly risks and liabilities;

- Insufficient funding for asset renewal and replacement and rehabilitation, as described above, requires that available funds be invested in projects with the maximum benefit.

Effective asset management relies upon accurate information to facilitate decision-making regarding the condition and performance of those assets with a long-term view of their preservation and renewal and replacement.

Given the significant replacement cost of these assets, it is imperative that the Public Works Department maximize the useful life of the assets for which it has responsibility. The actions that should be taken by the Department include:

- Update the long-term plan for the water distribution and sewer collection systems. The Town should be replacing or rehabilitating an average of 1% to 2% of this infrastructure each year, but has replaced only 1.23 miles of its water mains in the past two years, and only 0.67 miles of sewer line in this period, equating to about 0.7% of the total infrastructure.
- Develop a long-term rehabilitation and replacement plan for the street system. The Town has recently engaged in a comprehensive effort to develop an inventory of its paved surfaces, but this effort revealed that the average road surface rating (RSR) was only about 53 (of a possible 100). This indicates a lack of consistent resurfacing, rehabilitation, and reconstruction efforts in the recent past.
- Establish a five-year replacement plan for the Town's vehicles and equipment. It is clear from the age of the fleet that there has either been a deferral of expenditures on this important element of operations, or there are significant numbers of under- and non-utilized units in the fleet.

The Department needs to address these challenges in the replacement and rehabilitation of the Town's assets. It can do so in part by enhancing the effective deployment of its staff on maintenance activities and not relying solely on capital improvement program funding.

The framework for an asset management plan can be described in terms of seven questions.

1. What do we have and where is it? (Inventory)
2. What is it worth? (Costs/replacement rates)
3. What is its condition and expected remaining service life? (Condition and capability analysis)
4. What is the level of service expectation, and what needs to be done? (Capital and operating plans)
5. When do we need to do it? (Capital and operating plans)
6. How much will it cost and what is the acceptable level of risk(s)? (Short- and long-term financial plan)

7. How do we ensure long-term affordability? (Short- and long-term financial plan)

The Department should develop formal, written policies and procedures regarding asset management that are related to clear goals, objectives, and measures of performance. These should include defined organizational roles and responsibilities for implementation. The specific aspects of this policy and procedure are presented below.

- Goals and objectives reflect a comprehensive, long-term view of asset management.
- Policy goals and objectives are comprehensive, and integrated with other Town policy objectives, and supported by quantitative and measurable criteria or performance measures.
- Principles of good asset management are articulated in the policy and procedures, and are clearly recognized as the driving force for resource allocation and utilization.
- The goals and objectives support the preservation of existing infrastructure assets.
- Goals and objectives embody the perspective of life-cycle economic analyses of asset performance and cost, and encourage strategies with long-term benefits.
- The goals and objectives recognize the importance of reliable information on asset inventory and condition.
- The policies encourage the development and updating of long-range asset management plans (e.g., water and sewer master plans) to provide clear and specific guidance for the capital program development process.
- The policies include criteria for allocating resources, setting program priorities, and selecting projects consistent with stated policy goals and objectives and defined performance measures.
- The policies require the regular, ongoing collection of information on the condition of assets.
- The policies require the use of information on changes in asset condition over time to develop and improve forecasts of asset life and deterioration.

The Public Works Department should first develop a comprehensive inventory of its assets. To do this, managers and supervisors should identify who will collect the data and how it will be obtained. Further, there must be recognition on the part of the staff of the usefulness of the data, and that it will be used to aid managers and supervisors in their work. The data should initially be used to develop a preventive maintenance program, which the divisions of the Department have not performed, for the most part, for several years. Interviews indicate that staff believe that corrective repairs consume almost all available time; however, the Department should begin to focus more attention on preventive maintenance activities, since these will decrease the time allocated to corrective actions over time.

Many public works organizations in the Commonwealth and across the country are in worse situations than the Watertown Department of Public Works in terms of staffing levels, as recent economic conditions have forced many departments to leave vacant positions unfilled, and even to eliminate staff.

Although Watertown's Public Works Department does, in fact, have staffing deficits in some areas, these shortages are not as acute as in some other smaller departments with more limited abilities to transfer staff between divisions. Therefore, staffing levels are not the primary issue when determining whether to make the commitment to documenting asset locations, developing a preventive maintenance program for these assets, and documenting the maintenance that has been performed. The real impetus for this change must come from managers and supervisors who must themselves recognize the managerial and planning benefits of such a system, and must make a commitment to instituting the proper rigor and discipline among field staff members to effectuate it. This commitment should precede the purchase and installation of any computerized maintenance management system (CMMS), as the accuracy and usefulness of any data entered into such a system are direct reflections of the commitment of the personnel involved in their application.

An asset management policy is the starting point for unifying asset management practices across the Department. Without this, alignment and consistent management control are not possible. The Department should develop formal, written policies and procedures regarding asset management that are related to clear goals, objectives, and measures of performance. These should define organizational roles and responsibilities in the implementation of the asset management policy and procedure.

Before beginning the initial asset inventory, the DPW should install and familiarize all personnel who will be involved in data entry with the software and hardware tools, the required data, and data collection and entry procedures. Training should be provided to all team members. Since the initial inventory will involve manual data collection, the Department should develop electronic forms to gather the information in the field.

Further, the DPW should conduct a pilot program to ensure the asset inventory data collection meets needs and expectations. The assets selected for the pilot program should be limited in number. Once pilot program data are in the system, both the data and the process could be reviewed and quality controlled. Based upon the findings of the pilot project, the Department could revisit the timeframe for collecting the asset inventory data.

Recommendation: Commit to the development of an asset inventory. The recently-completed pavement inventory and sign and signals inventory are excellent starts. However, the asset inventory should define the asset, its value, its location, its maintenance frequency, its maintenance services, and the individual or division that is responsible and accountable for its maintenance and repair. Further, this inventory system should be accompanied by a system of policies and procedures that define not only the maintenance processes involved in ensuring that its optimum life cycle is achieved, but the labor, materials, and equipment required for accomplishing each maintenance task.

2. THE PUBLIC WORKS DEPARTMENT SHOULD INVEST IN A NEW COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM (CMMS).

The Public Works Department utilizes an electronic work tracking system in which the support staff receive and enter work requests from the public, and sometimes from internal sources, to note the type of work requested, the date, the general location, and the division to which the work was forwarded (e.g., Highway, Sewer, Forestry, etc.). The support staff then print out the work order and place it in the relevant division supervisor's mailbox to be addressed; the supervisor is expected to respond in writing when the work order has been addressed. Although this system does track work requests, it is not

designed to collect other important information related to the call or the work performed. Further, the work request is not consistently closed out when completed, and given the relatively little and non-specific information included in the tracking system, there is a possibility of recording the same work request multiple times.¹ In short, the existing system is functioning as a work tracking system, but it falls short of functioning as a computerized maintenance management system that facilitates analysis of the work performed.

There are many benefits of a CMMS. These include not just the obvious benefit of tracking and justifying the dates, employees, locations, and descriptions of work performed, but they also can be used to define appropriate service levels that are achievable with a given number of labor hours, and at a defined level of productivity. The benefits of increased productivity are that the same work levels may be accomplished at less cost, or more work will be accomplished for the same cost, with work quality remaining constant.

The benefits of effective service-level control are not so obvious. Maintenance managers typically think in terms of increased performance, without considering the impacts on the quantities of work accomplished. For example, if the Department's productivity related to asphalt patching is doubled, should twice as much asphalt patching be performed, or should the resources be utilized to accomplish other required services? In other words, increased productivity is less meaningful if the effort has not been made to identify how much work needs to be performed, and to control that level of service.

The Public Works Department should utilize a CMMS to enable the identification of the services provided (e.g., gate valve exercising), the levels of service (e.g., gates are exercised biannually), the outputs of each of these services (e.g., the number of gate valves exercised and the percentage of the total system that this represents), and the cost of those services in terms of the total cost and the cost per unit of output.

This maintenance management system should be a standard one, and one that is utilized within each division of the Department that is responsible for maintaining infrastructure. The components of a successful maintenance management system include the following:

- The number and type of maintenance features (physical assets), and the condition of these features, should be documented. These are major factors in determining the types and amounts of work needed.
- Maintenance management is based upon work activities. Work activities should be defined for the significant maintenance work that is performed. Definitions should include an activity code, title, description, work unit, and inventory unit. Such complete descriptions of activities are referred to as Activity Guidelines and provide standards of performance for individuals and crews by setting forth the quality and quantity of results anticipated from each activity.

¹ The project team noted that one work request made on 3/26/12 contained a note that the caller indicated that he had made the same work request "3-4 weeks ago on this," and the support staff made the note that there was "no other work order in the system." In fact, the same request was made on 2/17/12.

- An annual work program and budget should be prepared. The activity-based work program and budget represent the products of the planning process and summarize the kinds and amounts of work planned, the productivity of the work force, and the costs of the planned work. It also provides the basis for managing the annual work effort.
- An annual work calendar should be prepared showing the monthly distribution of planned maintenance activities. Labor, equipment, and material resource requirements needed to accomplish the planned workload should also be identified.
- Work scheduling procedures should be developed. The preparation of annual, seasonal, and short-term schedules, as well as daily plans, can provide guidance in achieving annual work program goals, and can make scheduling more efficient.
- Reports that will show work accomplishment and cost data, and a comparison of planned and actual work program accomplishment, should be prepared. These should comprise a primary piece of the monthly work report provided by the Department Superintendent to the Town Manager.
- Linking a database and geographic information systems (GIS) provides more options to analyze asset information.
 - A GIS can display asset symbols on a map with links to their corresponding database records. The GIS provides the ability to analyze data based on geographic information, allowing patterns to emerge on a map that may not be as obvious in rows and columns of data.
 - Asset information can be shared in a visual format that is often better understood by others, including the Town Council and the public.
 - Finding an asset’s location is faster and easier with the help of a map.

The steps that need to be accomplished before the automated maintenance management system can be effectively utilized are described in the following sub-sections.

Recommendation: The Department should invest in a new computerized maintenance management system to develop an annual work program and scheduling plan. This CMMS should be the primary vehicle by which the Department reports on work activity and the productivity of the resources utilized in accomplishing work in accordance with the work plan. An added benefit of the system would be its compatibility with the Town’s payroll system, which will, in the future, potentially allow for the direct entry of tasks and labor hours directly into the system in order to monitor and report the tasks in which the Department is expending its time. The purchase price for a new CMMS will vary depending upon the desired attributes of the system, however obtaining a minimally-functional CMMS should cost the Department between \$15,000 and \$30,000.

3. THE DEPARTMENT SHOULD DEVELOP AN INVENTORY OF WORK ACTIVITIES IT PERFORMS IN THE MAINTENANCE OF ITS INFRASTRUCTURE.

The Superintendent and the division supervisors in the Public Works Department should define the work activities performed by their crews, including those that consume the majority of staff work hours and all forms of leave. In other words, all staff hours for each employee's year of work should be included within the system. The work activities need to be carefully defined to assure that the same terminology is used for the work performed by staff, so that the same activity is recorded the same way, and in the same category, each time it is performed. Each of these work activities should define the unit of measure. Examples of work activities and units of measure are provided below.

Work Activity	Unit of Measure
Pothole patching	Tons of asphalt
Base repair	Square yards
Catch basin cleaning	Number of catch basins
Sewer televising	Linear feet
Vehicle Maintenance	Preventive labor hours, unscheduled labor hours

Some divisions of the Department currently at least capture the fundamental elements of a particular task in manually-completed work sheets. However, the project team recommends going another set of steps in these divisions to ensure that the work activities used are comprehensive and meaningful for management decision-making. Further, the data collected on these manual sheets should be entered into a CMMS.

Recommendation: Develop a comprehensive set of work activities performed by each division in the Public Works Department.

4. THE DEPARTMENT SHOULD DEFINE THE LEVELS OF SERVICE TO BE PROVIDED.

It is common in public works operations to assume that the unpredictability of work and work locations makes annual planning infeasible or, at best, a widely varying target. While the basic "unpredictability" assumption is true, it does not negate the value of planning efforts related to historically-probable events. The project team has noted the fact that activities *are* being accomplished in the field, and are generally being accomplished in a low-cost manner. However, there are at least three concerns regarding the accomplished work that the project team noted during the conduct of the study. These include the following:

- With relatively few exceptions, the activities performed the Department appear to be performed almost solely in reaction to requests for services, largely with no orientation toward proactive maintenance of the infrastructure.

- Division Supervisors have not actively sought information which would enable them to anticipate workloads, location and timing of services, and staffing needs for the various crews under their supervision.
- Division Supervisors appear to defer to the Superintendent in making decisions on routine matters

Although each of the above issues present separate problems, they are related insofar as the lack of historical workload measurement data prevents the establishment of meaningful targeted service levels for the Department. In order to define what impacts resource additions or reductions will have upon work output and service levels, it is imperative to possess the data that will facilitate the analysis.

Levels of service should vary depending on the type of infrastructure and intensity of use. For the purposes of maintenance management, service levels must be specific. Examples of specific service-level standards in parks maintenance might include the following:

- Turf area to be mowed weekly during dry season – grass height 2".
- Fertilization of the turf area should be completed with a balanced fertilizer such as 16-6-8 annually once during the summer.
- Turf aeration should be completed during the spring while the grounds are still soft from winter moisture.
- Swings and play equipment shall be inspected on a weekly basis and serviced if required.

Some judgment will be needed in applying the standards, but they should provide specific and useful guidelines in terms of what maintenance should be performed and what maintenance can be deferred. These standards are useful in determining the amount of work needed to attain desired levels of service. In some cases, these standards will also need to be expressed quantitatively as well.

Recommendation: The Department, in conjunction with the Council and the Town Manager, should define the service levels that are appropriate to be accomplished.

5. THE DEPARTMENT SHOULD DEVELOP PERFORMANCE STANDARDS.

The next step in deploying a maintenance management system is to define the work to be done. The work must be identified in terms that are measurable and that can be related to resource requirements on a consistent basis. The work activities should be identified by name (e.g., "pothole patching"). These specific work activities account for most of the annual workload – typically 85% to 90%. The remaining 10% to 15% of the workload is usually comprised of relatively minor activities that can be grouped as "miscellaneous." Examples will depend on the specific work types of the Department, but may include seldom-performed activities such as fence installation or repair, transporting items between buildings, etc.

A standard should be developed to define a level of service for each specific activity. That is, the standard is used to define the amount of work that needs to be done to provide the desired level of service. These are established largely on the basis of experience; however, best practices in the industry can be utilized as guides as well. Once established, a value can be used as a standard and may be adjusted upward or downward to raise or lower the level of service for, for example, pothole patching.

These standards are used to define the best way to accomplish each activity. The optimum crew size and equipment complements are specified, along with the major materials needed and the preferred procedure for doing the work. Also, the expected amount of work to be accomplished each day is specified, based on using the standard over a period of time under average conditions. With a total of 51 authorized employees, Watertown's Public Works Department is relatively small, and it is more the rule than the exception that the work of a specific crew is interrupted to respond to either an emergency or to an activity with a higher importance. Therefore, it may be more meaningful for the Department to express expected work outputs not on a daily basis, but on a half-day, or even hourly, basis. Whatever output basis is selected, each standard should include at least six components:

- A brief description of the specific work involved – the work that is to be performed by the crew;
- The frequency with which the work should be performed (or the level of service) and the criteria for scheduling the work;
- The crew size required for the job;
- The equipment, material, and tools needed;
- The performance expectations for each job or average daily productivity;
- The recommended procedures for completing the job; and
- A sample performance standard for crack sealing is presented in the exhibit on the following page.

Recommendation: Once all activities have been defined, the Department should define performance standards which outline, for each major activity, the methods of accomplishment, crew sizes, levels of service, the probable materials needed, and the expected average daily production levels to be achieved. A sample of such a performance standard has been provided on the next page.

EXHIBIT

SAMPLE PERFORMANCE STANDARD FOR THE HIGHWAY DIVISION

<p>Activity No.: S-001</p>	<p>Activity Name: Crack Sealing</p>
<p>Description and Purpose: Cleaning, filling and sealing cracks in paved surfaces to prevent the passage of water into the base or sub-base of the road. Not designed for use on areas of alligator cracking or where surface shows signs of base failure.</p>	
<p>Schedule: Perform work to prevent water from penetrating and damaging the roadway surface. Sand seal after application.</p>	
<p>Authorized by: Assistant Superintendent</p>	<p>Level of Service: Ensure smooth transportation over paved roads. . Performed on cracks greater than 1/4" wide. Perform when temperature is above 50 F and dry.</p>
<p>Crew Sizes: 2 MEO 1 Laborer</p> <p>Equipment: 1 Grader 1 Pickup 3 Dump Truck 1 Street Roller 1 Water Truck 1 Loader</p>	<p>Work Method:</p> <ol style="list-style-type: none"> 1. Place safety signs and devices 2. Clean cracks as necessary 3. Fill cracks with seal material 4. Cover crack filler lightly with sand 5. Remove safety signs and devices
<p>Material: 100 gallons liquid crack filler Sand</p>	<p>Average Daily Production 100-200 gallons of crack filler per day</p>

6. THE DEPARTMENT SHOULD DEVELOP A FORMAL WORK PLANNING AND SCHEDULING SYSTEM.

This task involves the development of a formal work scheduling system, the objective of which is to ensure that the planned amount of work is done. After the annual work program is approved, division supervisors must have a simple method of authorizing and scheduling work to ensure that the work program is carried out as planned. Usually, monthly schedules are prepared, using the annual work calendar as a guide. To the extent possible, the planned work should be carried out and every effort should be made to stay on schedule.

If activities such as storm damage repairs and cleanup, snow removal, etc., are greater than planned, the work program will have to be adjusted or additional funds will be requested to complete the planned work.

A sample annual work program for the Highway Division is presented in the exhibit on the following page.

The project team examined the work activity reporting forms that each of the operating divisions utilizes currently. (For illustration, the project team has provided a sample work activity form from the Water Division in Appendix D of this report.) While this sample does, in fact, capture the basic elements of the work (e.g., date, crew member, activity, location), it does not capture labor hours or materials and equipment used, and they are not input into an electronic work order reporting system to summarize the types of activities and the time expended on the various sub-elements of the jobs. Further, the activities are simply described in free-form text, leaving open the possibility that the same activity could be described differently depending upon either the day or the individual assigning the work.

In short, the data that are being recorded are sufficient only to record the completion of an event and the likely location of a specific crew member on a particular day. Each division should begin the accumulation of the major work activities performed and should begin to categorize these to facilitate analysis. The project team has provided a sample of the type of work activities performed by a highway division on the next page. This sample is not intended to be a full listing of the activities performed by the Highway Division, but rather it is provided in order to facilitate the process of determining the types of activities each division should be developing and at what level of detail.

Although the presence of a manual work tracking system such as is present in the Public Works Department currently is a helpful step in listing the types of work performed in the Department, none of the data are being used to define the desired levels of service that *should* be provided.

Recommendation: The Department of Public Works should develop a formal work planning and scheduling system. This formal work system should be standard across each division of the Department.

EXHIBIT

SAMPLE ANNUAL WORK PROGRAM FOR THE HIGHWAY DIVISION

Work Activity	Labor Days		Amount of Work		Total Cost		Productivity	
	Plan	Actual	Plan	Actual	Plan	Actual	Plan	Actual
Gravel Replacement	55	61	8,250 cubic yards	9,113 cubic yards	\$1,230,000	\$1,333,440	150 cubic yards per day	149.3 cubic yards per day
Culvert Cleaning	62	55	1,240 culverts	1,266 culverts	\$18,848	\$16,720	20 culverts per day	23 culverts per day

Note: This exhibit is only an example and is not based on actual data from the Town.

EXHIBIT

LIST OF MAINTENANCE ACTIVITIES FOR HIGHWAY DIVISION

WORK INVENTORY

4002.100 Street Maintenance

Code	Activity Description	Unit of Work	Unit of Inventory
.111	Gravel replacement	Cubic Yards	Road mile
.112	Pothole repair	Tons	Paved road mile
.113	Crack sealing	Hours	Paved road mile
.114	Blade patching	Tons	Paved road mile
.115	Seal coating	Tons	Paved road mile
.116	Shoulder maintenance	Shoulder miles	Shoulder mile
.117	Shoulder repair	Cubic Yards	Shoulder mile

4002.200 Drainage

Code	Activity Description	Unit of Work	Unit of Inventory
.211	Ditching with grader	Ditch mile	Ditch mile
.212	Ditching with ditcher	Ditch foot	Ditch mile
.213	Culvert cleaning	Culverts	Culverts
.214	Culvert repair/replace	Linear feet	Culverts

4002.300 Structures

Code	Activity Description	Unit of Work	Unit of Inventory
.311	Bridge maintenance	Hours	Bridges
.312	Bridge repair	Hours	Bridges

4002.400 Traffic

Code	Activity Description	Unit of Work	Unit of Inventory
.411	Sidewalk maintenance	Hours	Sidewalk segments
.412	Special purpose paths	Hours	Paths
.413	Sign maintenance	Signs	Signs
.414	Guardrail maint/repair	Linear feet	Road miles
.415	Snow/ice control	Hours	Road miles

7. A MONTHLY PERFORMANCE REPORT SHOULD BE GENERATED COMPARING PLANNED VERSUS ACTUAL PERFORMANCE AND COSTS.

This last step of the planning and work programming initiative involves the development of a work reporting system. To the extent that they are being utilized to any degree, manual daily production activity reporting sheets are being used in the component divisions of the Department to track crew members, locations, and dates for maintenance activities. These log sheets should be standardized among all divisions, as there are different forms utilized currently. This will become a relatively important facet of operations as the Department makes the transition to a common CMMS, as the standardized form will facilitate input by clerical staff. The Superintendent and division supervisors should promptly review these work reports to ensure that they were completed properly and to determine if the performance standards were substantially followed, and to make a determination as to the reasonableness of the units of measure accomplished during the day. Significant variations should be followed up to determine the cause and, if necessary, take corrective action.

A system should be developed to summarize the daily work reports on a monthly basis to produce performance measurement reports. The Superintendent should be required to provide a monthly status report to the Town Manager, which should be more than a simple statement of the work that was accomplished. It should reflect not only this, but also the efficiency and effectiveness of the resources utilized, and the degree to which the actual performance met the objectives stated in the monthly plan. For example, the performance measurement data generated by this report could include:

- A comparison of planned versus actual staff hours per work activity for the previous month and year-to-date for each work activity;
- A comparison of actual versus planned work output (e.g., numbers of vehicles scheduled for preventive maintenance vs. the number entering the garage for PM within 48 hours of schedule) per month and year-to-date for each work activity;
- A unit cost analysis that compares the planned versus actual unit costs for each work activity per month and year-to-date; and
- A comparison of actual productivity (work output per staff hour) versus the expected productivity as stated in the performance standards.

Recommendation: The Public Works Department should generate a monthly performance report comparing planned versus actual performance and costs. The intent of the monthly performance report is to report actual accomplishments against the annual work plan. This report should provide the basis for the Superintendent's monthly performance reports to the Town Manager.

8. POLICIES AND PROCEDURES FOR THE DEPARTMENT SHOULD BE CLEARLY DOCUMENTED.

Although not rare for public works organizations the size of Watertown's the different divisions within the Public Works Department are operating without formal policies and procedures to guide their

supervisors in areas such as personnel rules, risk assessment, rate setting, budgetary analysis, media contact, and more. This is a problem in that the different divisions could develop different policies to address the same issue.

The Public Works Department had, prior to the beginning of this study, begun a process of documenting policies and procedures. However, the effort was only in the very earliest of stages, and the effort did not progress during the Center's on-site time. The Department should reinstate its development of a policies and procedures manual to guide its supervisors and assure uniformity in the critical processes of the Department.

In developing policies and procedures for the Department, the following approach should be utilized.

- Minimize. The policies and procedures should be kept to a minimum.
- Best Methods. Make certain the procedure represents the "best method." This means the procedure has undergone detailed analysis and is continually challenged.
- Review and Revise. All policies and procedures should be reviewed annually. This need not be a detailed review, but rather a discussion of any policies and procedures that may need to change due to improved work practices, technology or specialized equipment.
- Keep Current. The problem with many policies and procedures is that they have long ago outlived their usefulness. No one remembers why the policies and procedures were created in the first place. Sometimes they contradict each other and create even more confusion. Responsibility for updating these policies and procedures should be clear.
- Short is better than long. It is not the quantity, but the quality of information that is the essential problem of the information age.
- Be ready to change. The key to organizational effectiveness and efficiency is finding a better way. The Department must always be ready to challenge current policy or change it.
- The policies should be readily available to employees, supervisors, support staff, and supervisors.

The project team has provided below the broad general topics that should be considered in a policies and procedures manual that are based on the American Public Works Association's (APWA) Management Practices Manual. These should be adapted for applicability to the working environment in Watertown.

- Organization and Strategic Planning
- Human Resource Management
- Occupied Facilities (Security, Risk Assessment, Environmental Controls, etc.)
- Finance
- Risk Management
- Communications
- Information Technology and Telecommunications

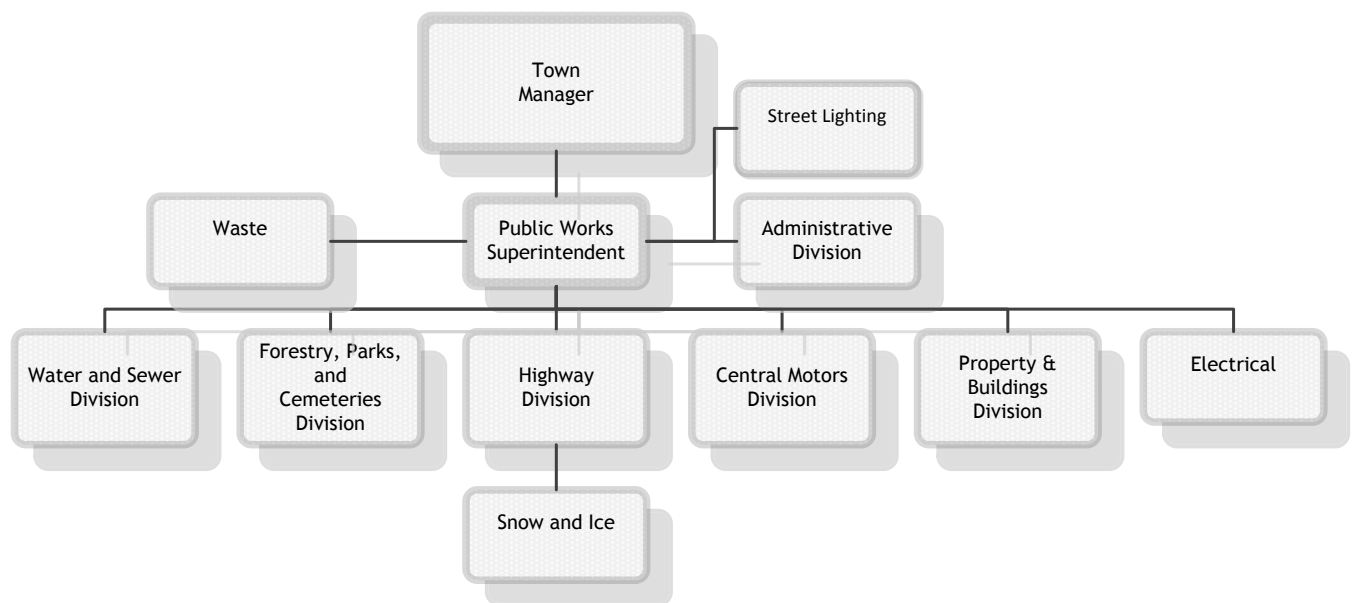
- Emergency Management
- Safety
- Planning and Development
- Engineering Design
- Bid Process
- Project Management
- Right-of-Way Management
- Utility Coordination
- Facilities Management
- Equipment and Fleet Management
- Parks, Grounds and Forestry
- Solid Waste Management
- Solid Waste Collection
- Solid Waste Recycling and Reuse
- Solid Waste Disposal
- Street Maintenance
- Street Cleaning Management
- Environmental Compliance
- Snow Removal and Ice Control
- Storm Water and Flood Management Service Levels
- Vector Control
- Potable Water
- Wastewater Collection and Conveyance
- Traffic Operations
- Parking
- Cemeteries

Recommendation: The Public Works Department should establish a policies and procedures committee, consisting of five to seven supervisors/leaders and staff from all divisions to identify the appropriate topics for coverage in a policies and procedures manual. This committee should develop standard policies and procedures for these topics. Sample policies and procedures may be purchased through APWA or other providers. Other policies may be borrowed from other cities and towns either within or outside Massachusetts and may be modified to suit the particular operating environment in Watertown.

ORGANIZATIONAL STRUCTURE

This section of the report analyzes the organizational structure of the Department of Public Works. The section begins with a review of the current organizational structure.

The Department of Public Works is organized along the following functional lines of supervisory and reporting authority.



A more detailed organizational chart with respect to each position type is provided in the descriptive profile, in Appendix A.

1. THE ADMINISTRATION DIVISION IS ADEQUATELY STAFFED WITH SUPPORT PERSONNEL AT THE CURRENT TIME.

The Administration Division, shown above, includes three filled administrative positions, and unfilled positions of Town Engineer and Deputy Superintendent. Additionally, although another position of Principal Account Clerk resides organizationally within the Water Division, the employee is co-located with the other administration positions within the Department and functions much like the other three administrative and clerical positions.

There is no “correct” ratio of administrative support staff to technical and operational staff. These ratios are dependent upon such factors as geographical dispersion of staff supported, workload reporting requirements, public interaction, maturity of the maintenance and financial reporting systems, and others. However, in the experience of the project team, “typical” ratio of support staff to technical and

operational staff varies from 1:9 to 1:25 or more for small- to medium-sized infrastructure maintenance organizations. With four administrative and clerical staff supporting 47 authorized positions in the Department, this equates to a ratio of about 1:12, and places the Watertown Public Works Department at the lower end of the typical range. However, it is also true that the administrative and clerical staff do not utilize automated systems to any significant degree, which tends to increase the requirement for clerical personnel. The project team's observations of the work methods in the Department indicate a very high level of reliance on manual systems and processes. It is unlikely that any single one of these is, in itself, responsible for the relatively high number of clerical and administrative staff; however, the cumulative effect is, in all probability, very large. Time and attendance data are transmitted manually from the field staff, are manually totaled, and are manually transmitted to the Auditor. Further, engineering drawings are all manually filed, with no electronic scanning utilized. As has been noted above, to the extent that work activities are recorded at all, they too utilize manual systems. Even purchase requests and purchase orders are manual processes.

There has also been little training of the clerical and administrative staff in automated systems. This is an issue that will be addressed later in the report; however, it is clear from interviews within and outside the Department that the support staff has received effectively no training in even the basic elements of automated accounting systems, payroll, or purchase order processing. Further, even training in basic electronic spreadsheet creation and techniques has not been provided to the staff.

The project team has noted that the number of support staff in the Department currently is sufficient in terms of overall numbers to support the technical and field staff. The team has also noted, however, that if the Department moves forward with streamlining processes as described below, opportunity may exist to have the support staff take on additional projects or be otherwise redeployed.

Recommendation: The project team makes no recommended changes in the support staffing levels in the Department currently.

2. THE DEPARTMENT SHOULD UTILIZE THE FUNDING FROM THE VACANT DEPUTY SUPERINTENDENT POSITION TO CREATE A NEW POSITION OF DIRECTOR OF ADMINISTRATION AND FINANCE AND CONSOLIDATE CLERICAL AND ADMINISTRATIVE FUNCTIONS UNDER THAT POSITION.

With an operating budget of approximately \$20.7 million and a total of 51 authorized positions, the Watertown Department of Public Works is a substantial operation that warrants a dedicated position focused on finance and administration of the Department. Absent such a position, the direct services provided by the Department have become less efficient and effective. For example, capital construction projects were not initiated in a timely manner in the summer of 2012, positions remain vacant for months, even when the recruitment requirements are modest, and line supervisors have difficulty fielding full crews given the number of vacancies, extended illnesses, and worker's compensation cases.

The Center does not recommend that the Deputy Superintendent position be filled, nor that an Operations Manager position be created, as both of those would duplicate a portion of the responsibilities of the Superintendent. Instead, the creation of a Director of Administration & Finance (A&F Director) position would relieve the Superintendent of some of the day-to-day administrative work for which he is currently taking responsibility.

An A&F Director would support the Superintendent by taking on the following responsibilities:

- Budget preparation and management – the A&F Director would be responsible for preparing a draft of the departmental budget, including labor and operations, for review by the Superintendent, prior to submission to the Town Manager. This would include a projection of revenues to be generated by various fees the Department administers and costs for labor, supplies, contracts, etc. This position would also work with the Superintendent and the division supervisors in crafting a capital budget. The A&F Director would also monitor spending to ensure that the Department remains within budget, including regularly analyzing use of overtime, procurements, and other costs.
- Billing and cash management – the A&F Director would directly supervise the staff responsible for preparing water bills and collecting payments for permits, etc. to ensure that the bills were sent in a timely manner and all cash management practices were consistent with Town procedures;
- Personnel – the A&F Director would work with the Superintendent and the Personnel Department to ensure that positions are filled in a timely manner, position descriptions are current, and that staff maintain all required licenses and certifications and attend requisite training. The Director would also regularly monitor the use of sick leave and work with the Personnel Department, as needed, on worker’s comp cases and in addressing situations of extended medical leave.
- Risk management – the A&F Director would work with the Superintendent and the Personnel Department to determine if employee training was needed to reduce the incidents of workplace injury and to assist employees in maintaining a safe work environment. The position would take the lead in minimizing areas of potential risk to the Department and the Town.
- Performance evaluation – the A&F Director would work with the Superintendent and the Personnel Department to ensure that employee performance reviews are completed in a timely manner in accordance with the Town’s policies, procedures, and bargaining agreements.
- Procurement – the A&F Director would facilitate the issuance of contracts and purchase orders for the Department, including working with the supervisors in preparing scopes of work for contractual services, working with the Town Engineer to ensure that requests for proposals for capital projects are prepared in a timely manner, and reviewing and approving requisitions for day-to-day operating expenses.
- Information technology – the Administration and Finance Director would be responsible for the regular upgrade of the equipment, software, and training made available to Department staff and would lead the effort to enhance the use of modern day technology including enhanced use of the work order system. The Director would additionally be responsible for ensuring that the departmental website included up-to-date and useful information. While support staff have undertaken efforts to maintain the website, the site has limited information. With focused attention, the website could serve as an important tool in helping the resident and business community understand the services the Department offers and how to access those services.

Over time, the Department could be brought into an electronic permitting system. The A&F Director would also work with the Superintendent and the IT office to increase email or telephone notification of public works projects, instead of distributing paper flyers as is the practice today.

- Records management – among the complaints from the public is the frequent loss of paperwork and plans. The A&F Director would be responsible for establishing a records management system and process to retain records in accordance with State and local policy, and could work with the division supervisors in establishing protocols within their units for collecting and maintaining records. A project to scan existing paper records should be strongly considered as this would ensure they cannot get lost, and appropriate documents could be posted on the Town website for ease of access by the public. Even if resources are not available to scan historic documents, new documents/records should be kept in an electronic format².
- Liaison to other departments and committees – the A&F Director could serve as the Department’s primary liaison to other administrative departments (e.g., procurement, personnel, assessor, auditor, etc.), and could also assist the Superintendent by serving as a liaison to various committees, including, but not limited to, the Committee on Budget and Fiscal Oversight. (Other important committees such as the recycling advisory committee, the environment and energy efficiency committee, the bicycle and pedestrian committee, stormwater advisory committee, etc. could be divided between the A&F Director and the Town Engineer.)

A preferred candidate for Administration and Finance Director would have education and professional experience in administrative work, optimally in a municipal setting; the incumbent need not have any subject matter expertise in the area of public works prior to taking on the position, although this experience would be of some benefit. Although administrative support functions are largely hidden from customers and policy makers, absent a strong administrative support function, no municipal department can perform at its highest capacity. By creating this new position, the Superintendent will be able to focus more clearly on managing the direct service operations of the Department.

Recommendation: Create the position of Administration and Finance Director in the Department of Public Works. This position will be responsible for assigning clerical and administrative duties to the staff, and for allocating the work based on workload demands.

3. SUPPORT STAFF SHOULD BE PROVIDED TRAINING IN SEVERAL FUNCTIONAL AREAS.

Interviews with the support staff indicate that although they would likely be allowed to attend training courses if they requested to do so, there has been little, if any, training received by the staff in many years.

The Town has a centralized Human Resources Department, and it should be relied upon for surveying

² Currently, certain records must be kept in hard copy per State records management requirements. However, this does not preclude keeping an electronic copy, as well.

training opportunities that would benefit specific employees, and for tracking and reporting the accomplishment of trainings.

Department staff require, and should seek out opportunities for, specific training in such areas as the use of the Town's financial software, principles of customer service, and the creation, use, and maintenance of electronic spreadsheets. There are undoubtedly other areas for training, and these should be identified by the Superintendent and the new Administration and Finance Director, and should also be solicited from the employees themselves.

Recommendation: The Department should identify the training needed by support staff and should seek out opportunities for these employees to obtain this training. The project team has identified several specific areas of noted deficiencies; however, it is also recommended that the Department take the initiative to identify others as well.

4. THE DEPARTMENT SHOULD FILL THE VACANT POSITION OF TOWN ENGINEER.

For several reasons, the project team recommends that the position description for Town Engineer be updated to meet current work demands and that the position be filled expeditiously to enhance the technical expertise within the Department and strengthen its ability to meet service demands. First, in recent years, the Town has undertaken several important studies to inventory and evaluate its infrastructure, including a street tree inventory, the pavement inventory, and signs and signals inventories. These are important tools that can ultimately move the Town toward a system of proactive maintenance and repair of its valuable infrastructure components, as opposed to a reactive approach which is in place today. The Town has also invested in a comprehensive Geographic Information System (GIS) that includes considerable information relative to the infrastructure under the management of the Department of Public Works that can be used for detailed data analysis, but which also must be regularly kept up-to-date, so that it does not become obsolete. Unfortunately, existing staff in the Department do not have the capacity, in terms of time, expertise, or training, to fully utilize the resources made available to them.

In addition, in recent years even during the economic downturn, the Town has been found to be a desirable location for new construction. It is not uncommon for newer development projects to include 100-200 or more housing units, projects which are subject to plan review and require multiple permits from the Department. Some developers and others have voiced complaints related to the length of time needed for permit review within the Department, as compared to other towns and cities, and other departments within Watertown itself. Complaints included the loss of plans and applications, poor communication, and a lack of consistency and clarity relative to Department policies, procedures, and expectations. There is a sense that the developers are just expected to know what the processes are, since there is no manual that explains all of the different permits and how to secure them.³ In an interview, one representative of the development community stated that "the hardest thing in town is

³ The Project Team obtained copies of several sets of regulations relating to Sanitary Sewer and Storm Drains, Water Regulations, and street excavations, etc. which were detailed and useful, but not accessible on the Town's website. Further, they are not the types of user-friendly documents that could comprehensively outline valuable permitting requirements.

to get a DPW signature.” At the same time, interviewees recognized the fact that current staff were undertaking multiple roles and attempting to accomplish them all.

Filling the Town Engineer position could address multiple needs of the Department including, but not limited to:

- Plan Review – a Town Engineer would be responsible for review of project plans for compliance with Town codes and standards, and could provide pre-application input in coordination with the Community Development and Planning Director which will help ensure that plans are submitted in better compliance than they otherwise would be. This role would need to be performed in coordination with the division supervisors so that their insights and input could be incorporated in the plan review.
- Permit Issuance - the Town Engineer would be responsible for the issuance of associated permits, such as street opening, curb cuts, land disturbance, etc. The position would also be responsible for facilitating the issuance of street addresses for new development, a process that is partially performed by the Property & Buildings Supervisor, at present. Again, collaboration with the division supervisors will be needed to ensure that permits being issued do not conflict with other departmental efforts, such as allowing a street opening permit shortly after a street has been repaved.
- Capital Planning – the Town Engineer would contribute to the identification of proposed projects to be considered by the Town Manager, the Town Council, and Committee on Budget and Fiscal Oversight, and would be the lead staff member responsible for implementation, a role that is now being handled by the Superintendent, among the incumbent’s many other duties. Specifically, the Town Engineer would either prepare design specifications for inclusion in a request for proposals (RFP) personally, or would oversee the work of an outside engineering firm tasked with doing so. The Town Engineer would also participate in the review of proposals submitted in response to the RFP, in coordination with the Superintendent and the Procurement Office. Lastly, the position would be tasked with monitoring the work being performed to ensure that it is on time, within budget, and to a quality expected by the Town.
- Inspections – the Town could perform inspections of development projects and capital projects, although this responsibility could be shared with the field Supervisors and hired contractors, as well.
- Policies, Procedures, and Specifications – the Town Engineer would be responsible for updating those policies and specifications that exist today and developing new ones, as needed. Having a clear set of specifications, particularly for private developers who will be tapping into or otherwise building public infrastructure as part of their conditions of approval, will save time for all involved.
- Technical Assistance – although the Town has access to several engineering firms, the Town Engineer could provide responses to relatively minor technical issues at a more cost effective price than the private sector, and more timely as the Town Engineer will be onsite during the business week where private contractors will be located in their own offices.

- Technology – the Town Engineer would be responsible for updating the layers of the GIS system related to public works and would be charged with using the system to meet the Department’s data needs. Since the work of the Department is inherently geographic in nature, GIS data could be invaluable in streamlining work efforts, analyzing the patterns of complaints and needed repairs, and starting the process of preparing a proactive maintenance plan for Town infrastructure. The Engineer would work with staff in the Community Development Division and the Information Technology Department to make sure that all contributors to the GIS were clear on their roles and responsibilities, and to make sure their efforts were not duplicated.
- Asset Management – in collaboration with the Superintendent and the division supervisors, the Town Engineer would be responsible for drafting a proactive asset management plan that would ensure that the Town maximizes the utility and lifespan of its infrastructure.
- Facilities Management – should the Town and Schools consolidate their currently-separate facilities maintenance and management functions, the Town Engineer should be responsible for coordinating facilities-related issues with the Schools.

The current position description for Town Engineer/Operations Manager should be revisited to ensure it meets current day needs before the position is recruited for. The project team recommends that the words “Operations Manager” be removed from the title, as the project team believes that managing the daily work efforts of the Department is the responsibility of the Superintendent and should not be delegated. Further, the description should emphasize the responsibilities listed above. The education and experience for the position should also be reconsidered. At present, the position requires license as a Professional Civil Engineer (PE) and indicates that certification as a Professional Land Surveyor, Soil Evaluator, and Competent Person is preferred. The second certification relates to trench excavation and confined space safety. The project team finds that anyone selected for the position need not have a PE license as they will not be required to stamp plans. Instead, the Town could elect to recruit for the position with the requirement of a degree in engineering and substantial work experience in the field. The Town could additionally seek someone who has passed the PE exam, but may not currently be licensed.

Recommendation: Fill the vacant position of Town Engineer. On the occasion that the Superintendent is absent, the Town Engineer could function in an acting capacity.

5. THE DEPARTMENT SHOULD ENHANCE ITS USE OF THE TOWN’S GEOGRAPHICAL INFORMATION SYSTEM.

As mentioned above, the Town has invested in a robust Geographic Information System (GIS). This software system maintains spatial records and allows them to be viewed on maps in varying levels of detail, from town-wide down to individual parcels, and everything in between. For example, at the Public Works Department’s initiative, Watertown has mapped the size and location of the Town’s many water and sewer lines, the direction of flow in the sewer system, the points at which the public infrastructure connects to private property, manholes, etc. The system also can be used to store and access many different types of data that apply to specific locations, such site photographs and scanned historic documents. Collectively, the information in the GIS system can be mapped and analyzed, whether this is looking at a specific parcel or looking for trends in the type and number of complaints

received. The GIS system could also potentially be tied into the Department's work order system to organize each day's work most efficiently or to look at the patterns of water main breaks to start investigation on whether particular lines are in need of wholesale replacement.

However, unless it the GIS data is regularly updated, it can quickly become obsolete. Replacements of water lines or sewer lines should be noted in the system, and major capital investments that change roadway or sidewalk width should be acknowledged as they may result in modification to the street layer. According to the Community Development Department, while the process to update the data is straightforward for the most part, to the best of their knowledge no updates have been submitted by the Department in, at minimum, the past two years. This should be remedied quickly, and an effort should be undertaken to identify the last known update and then add the missing information to make the information current once again. Potential exists for this effort to be accomplished by support staff who are trained in data entry and the use of spreadsheets; technical GIS expertise may not be needed for much, if not all, of the updating effort. In addition, the data gathered from the recent infrastructure studies, including the sign inventory, signal inventory, street tree inventory, and pavement inventory report should be added to the GIS system to allow for comparison with other data, even if stand-alone software came with the report, as is the case with the street tree inventory.

Further, as noted above, the Town Engineer should take on a leadership role within the Department to manage the data stored within the GIS system, identify new data that should be added. Further, the position should use the data to help the Superintendent guide work efforts of the Department in the short term and plan for the future, in the form of a proactive maintenance plan and capital improvement plan.

Recommendation: The Department should enhance its use of the Town's GIS to enable analysis of work performed on infrastructure, trends in calls for service, as well as many other facets of work. The Town Engineer should take a lead role in updating and managing the information in the GIS from a Public Works perspective.

6. THE DEPARTMENT SHOULD ENHANCE ITS COMMITMENT TO CUSTOMER SERVICE.

The Department of Public Works is highly regarded by its customers for its responsiveness to snow emergencies and emergencies in general. Nearly everyone interviewed in the process of preparing this report expressed their acknowledgement and appreciation for the work the Department does in snow removal, and they take pride in the fact that Watertown's streets are cleaner than any other nearby community during snowstorms. Several told personal stories of how Department workers helped them with emergency situations, such as water main breaks or sewage leaks, and were available almost immediately even on nights and weekends. In short, the Department receives high marks for its emergency response.

At the same time, many expressed substantial concerns about the other aspects of the Department's operations. Complaints included, but were not limited to: a lack of follow-up on concerns/complaints; inability to get timely responses to telephone calls, emails, etc.; the loss of paperwork and plans and resultant loss of time in processing permit applications; impolite or brisk responses in person and on the telephone at times; an inability to access information via the Town website; and resistance to new

initiatives, at least initially. One customer indicated that “the things they have been doing for a long time, they do well. They just aren’t so good at the new stuff.”

Beyond these concerns, the project team offers several more detailed observations regarding the impediments to good customer service in the Department, including:

- Staff vacancies directly impact the supervisors’ ability to field full crews and keep up with the volume of customer calls and complaints, leading to a backlog of work orders and customer dissatisfaction;
- The work order system is being used merely as a mechanism to print out the work to be done, not to organize or prioritize the work, nor as a means for the supervisors to monitor work performance or make a case for additional staff resources. The work order system is also not used to inform customers when their complaints have been addressed or whether they are in a queue to be addressed, leaving them uncertain as to whether their issue was ever recorded in the first place. As a result, the Department’s use of the work order system adds work, instead of making work more efficient and improving communication;

Support staff respond to the same questions multiple times, some of which could be resolved by providing additional and better organized information on the website, perhaps with the inclusion of an enhancement to the current limited set of FAQs on the site currently;

- Department leadership seems to feel the need to respond to nearly every customer call or complaint personally, producing several negative results. It is not unusual for customers to become frustrated with the delay in receiving a response, and they may call or email Department staff repeatedly. Support staff, in turn, can become frustrated when they are contacted repetitively on the same matter, yet are unable assist the customer themselves. Lastly, supervisors may be unaware of commitments being made by the Superintendent, or they may not learn of specific complaints about their operation, since they may not be tasked with speaking with the customer themselves directly; and,
- The Department is largely reactive rather than proactive. Priorities are directed by the extent and volume of complaints that occur, as opposed to identifying potential problems before they occur and taking action in advance. As has been discussed earlier in this report, a proactive department should develop an asset management plan for the Town’s infrastructure and align daily and weekly activities around the plan, while also building in time for the unanticipated emergencies. Town leadership has taken steps to equip the Department to act proactively, through the street maintenance inventory, street tree inventory, sign inventory, etc. However, the Department cannot yet take advantage of these important studies, as it is dealing with a backlog of work orders and complaints.

At present, customer needs are not being fully met by the Department, as it largely operates in a crisis mode. The Superintendent has taken on an inordinate burden by doing the work of at least three positions. This situation is due, in part, to the fact that he has not moved aggressively to fill vacancies, nor has he delegated sufficient responsibilities to the division supervisors. That said, the division supervisors are ill-equipped today to undertake additional responsibilities, as they are also adversely impacted by vacancies in their units, not knowing from day to day whether they will have full crews to

deploy. Filling the vacant positions in the field, the A&F Director, and Town Engineer positions, will provide additional personnel to whom duties can be delegated. It will be up to the Superintendent, however, to provide the delegation and clear direction, and then to hold staff accountable for their performance.

It is recommended that the Department develop an action plan to improve customer service. Components of this plan should include:

- Communications – Customers will typically understand if they have to get a permit to engage in a certain activity or if what they request will take time to get done, as long as they have the information they need and believe that the work will get done. If the Department can provide information in advance, customers will be better equipped before they first contact the Department, and they will be less likely to keep calling and emailing with the question of “when will my work get done?” In considering how to improve communications, Department staff can ask and answer several questions: What are the different types of customers we serve (e.g., homeowner, developer, etc.)? What specific items of information do the different types of customers most commonly need? Where can that information be made available for them to find without having to call the Department?;
- Training – All staff can benefit from periodic training in customer service. This can help them better understand their customers and learn techniques to work with various challenges that might occur in their workplace. In addition, as recommended above, the Department’s support staff could benefit from additional technical training that will help them better meet customer needs;
- Internal information-sharing – In many organizations, including the Watertown Department of Public Works, certain individuals are considered to be the sole proprietor of certain types of information (i.e., everyone must go to this one person to get their questions answered about a particular topic). That type of system does not provide quality customer service. When that person is out of the office, customer questions cannot get answered, and a department is vulnerable to a complete loss of information should the staff member decide to leave. In a strong organization, staff are cross-trained to back each other up during vacation or sick leave, and multiple people can answer the same question the same way. To strengthen the administrative operation, the duties of the different support staff should be identified, and at least two or three other staff members in the department should be cross-trained to do the same work. This will improve customer service and provide the department with the flexibility to reassign staff in the event of an emergency; and
- Use of technology – Technology has the ability to improve communication within a department and, at the same time, improve information-sharing with customers and members of the public. The work order system, in particular, not only has the capacity to document complaints or work that needs to be done, it can be a tool used by the supervisors to schedule that work, and it can be used by department management to see if work is being done in a timely manner. The system can also be used by clerical staff to respond to questions from the public and, even more powerfully, it can report back to customers to let them know that their work request has been completed or when it is being scheduled. The Town website is also an important tool in keeping the community abreast of projects in their neighborhood. Customer service would improve and

support staff time could be saved if documents that are routinely accessed by the public are scanned and posted on line for direct access.

Recommendation: Develop a plan to enhance customer service. This plan should include training, communications, internal information-sharing, and use of technology.

7. THE TOWN SHOULD CONSIDER THE FEASIBILITY OF CONSOLIDATING FACILITIES MAINTENANCE AND MANAGEMENT WITH THE SCHOOL SYSTEM.

The Town owns buildings that contain approximately 230,300 square feet of facilities space, as the following table shows.

Facility	Square Feet
Town Hall	29,822
North Branch Library	4,489
East Branch Library	6,307
Public Works Facility	49,928
Main Library	45,000
Ridgelawn Cemetery Building	4,525
Main Fire Station	13,902
East Fire Station	5,732
North End Fire Station	6,336
Ryan Skating Rink	30,920
Senior Center	20,772
Former Police Station	13,467
Total	230,300

The Property and Buildings Division maintains this space, to varying degrees, with a Division Supervisor, who serves as the Carpenter, an Electrician and a Linesman. The Electrician and Linesman expend a great amount of their time in the maintenance of alarm boxes in the Town, in addition to performing any needed electrical work in the buildings listed above. Note that the Division has no Plumbing or HVAC technician on staff, and this work is contracted out as needed.

The Watertown Public Schools maintenance staff is responsible for the maintenance of 571,667 square feet of space, as the following table shows.

Facility	Square Feet
Cunniff Elementary School	51,975
Hosmer Elementary School	102,682
Lowell Elementary School	84,600
Watertown Middle School	133,410
Watertown High School	165,000
Phillips School	34,000
Total	571,667

The Public Schools Maintenance staff consists of a Facilities Manager (who is a Master Plumber), one Plumber/HVAC Technician, one Mechanic/Craftsman, and one Painter/Rigger. Additionally, the Department has 20 Custodians assigned to buildings, most of whom work shifts after normal school operating hours.

As can be seen from a review of the descriptions of staffing, the Public Schools possess plumbing and HVAC staff, and the Town's Public Works Department does not. Conversely, the Town Public Works Department possesses staff with electrical expertise, whereas the Public Schools do not. This alone would appear to offer benefits to both organizations if the facilities maintenance functions were consolidated. However, another benefit to the Town is that the Public Schools have a relatively well-managed facilities maintenance function and possess a computerized maintenance management system (CMMS) in *School Dude*, which is populated with all major maintenance equipment, along with their associated preventive maintenance schedules and activities. It should be noted that the Public Schools are not currently utilizing *School Dude* to program preventive maintenance events due to a reported under-staffing situation. However, it is notable that the preventive maintenance events have been programmed into the system. This is at least an indication that preventive maintenance is a focus of the organization.

The two facilities maintenance organizations are responsible for a combined 801,967 square feet of space. This is maintained by seven employees, not all of whom are dedicated full-time to the maintenance of these facilities. However, even if these seven employees were dedicated full time, the ratio of maintainable space per employee is 114,567 to 1, which far exceeds the benchmark of 45,000 to 50,000 square feet per FTE, which is the average of an International Facilities Maintenance Association (IFMA) survey, and one which is verified by many years of observations by the project team in well-managed facilities maintenance organizations. The actual ratio is likely well above 130,000 square feet per FTE when considering the non-facilities maintenance duties performed by these seven employees. Custodial staff are likely performing many lower-level maintenance activities in the schools, but this cannot substitute for the need for trades maintenance staff, who should be engaged in a far greater level of effort in conducting preventive maintenance activities at all buildings.

This study's scope did not include a full analysis of the feasibility of facilities maintenance consolidation. However, it is clear to the project team that many synergies exist between the two currently-separate facilities maintenance staffs. There is too a severe shortage of trades maintenance staff to expect that a consolidation will result in the ability to adequately maintain either the Town or the School facilities, and it is certainly true that there would be no cost savings through consolidation of the two staffs as they are currently constituted. Nevertheless, there is a strong indication that consolidation would offer both the Town and the Schools the ability to utilize expertise which each does not currently possess individually, and for this reason, the project team strongly recommends that the two organizations further investigate the feasibility of full consolidation.

Recommendation: The Town and the Public Schools should further investigate the feasibility of full consolidation of their currently-separate facilities maintenance organizations. Each possesses trades maintenance expertise not found in the other, and the Schools have a relatively well-managed function that also possesses a CMMS with major maintenance equipment programmed into the system, with preventive maintenance schedules already populating the system.

8. THE WEIGHTS AND MEASURES FUNCTION SHOULD BE TRANSFERRED OUT OF PUBLIC WORKS.

Within the Property and Buildings Division of Public Works, a single employee, the Sealer of Weights and Measures, performs the weights and measures function for the Town and nominally reports to the Division Supervisor. The employee in Weights and Measures follows a routine that is largely self-directed in testing meters, scales, pumps, etc., on a periodic basis. In addition, this employee also collects coins from parking meters and repairs meters as they malfunction, assists the Electrician in unskilled work, and is a regular volunteer for snow removal efforts.

The duties and activities of the Sealer of Weights and Measures are generally unrelated to those of Property and Buildings, and to those of Public Works as well. The employee is receiving no specific direction from the Supervisor of Property and Buildings, and has a set of duties that are inspectional in nature. For this reason, the project team recommends the transfer of the Sealer of Weights and Measures out of the Department of Public Works, and into a Town department such as Community Development and Planning, in which other inspectional services reside.

Recommendation: Transfer the Sealer of Weights and Measures out of Public Works and into the Community Development and Planning Department, within which a more appropriate skills match exists. The primary impact on the Public Works Department in implementing this recommendation is believed to be the loss of an employee who regularly volunteers during snow removal events. The project team recommends that the employee be given the opportunity to continue work during snow removal efforts.

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OPERATIONS

This section of the report analyzes the operations of the Department of Public Works.

1. THE TOWN SHOULD CONTINUE ITS RECENT EMPHASIS ON REPLACEMENT FUNDING FOR THE FLEET.

The project team analyzed the age of the vehicles and equipment maintained by the Department's Maintenance Mechanics and determined that they maintain a relatively old fleet. The project team placed all 120 vehicles and pieces of equipment maintained by the Department's Equipment Maintenance Division into eight categories and determined the average age of the fleet for each of these categories. For purposes of classification, the following were used.

Category	Description	Number	Average Age
1	Sedan, Van	10	5.3
2	Heavy Van, Pickup	20	8.2
3	Heavy Equipment	60	10.8
4	Trailers	13	8.0
5	Pumps, Generators	8	13.4
6	Mowers, Small Engine	8	12.0
7	Boat/Motorcycle	1	12.0
Total	N/A	120	9.8

As the table shows, the weighted average⁴ age of the vehicles and equipment maintained by the mechanics at the shop is 9.8 years, suggesting a replacement cycle of about 19.6 years for the "average" unit in the fleet. Clearly, though, not all units in the fleet require the same replacement cycle. The economic life cycle of an administrative sedan or pickup truck is less than that of, for example, a front loader. Therefore, the "average" age of the fleet is meaningless as a composite number other than as a comparison to another benchmark, such as that of other municipal fleets with similar compositions. In the experience of the project team, a composite fleet age of almost 10 years is above the expected range. However, even in examining specific categories of the fleet, it is clear that many vehicles and pieces of equipment are well beyond their economic lives and are almost certainly contributing to excessive expenditures for fleet repair and maintenance. For example, the typical economic life cycle for a pickup truck is approximately 7 years, suggesting that the average asset in this category should be about 3.5 years. Watertown's average age of this class of unit is 8.2 years.

The project team does not possess adequate data to determine the current value of the fleet. However, given that there are 120 vehicles and pieces of equipment being maintained by the Public Works Department, it is likely that the current replacement value is close to \$6,000,000. As has been noted above, the economic life cycles of each category of equipment varies widely, but assuming, for

⁴ The weighted average takes into account the numbers of units in each class. Therefore, the age of the 10 sedans in category 1 account for 8.3% (10/120) of the total average, and so on.

illustrative purposes, that the overall average economic life cycle of the fleet is 10 years, then the Town should be making an investment of about \$600,000 per year in the fleet being maintained by Public Works. The Town's FY2013 budget book indicates that it will replace a hybrid Inspector's vehicle for \$30,000 and a 55 GVW dump truck for \$160,000, which totals only \$190,000. However, in the Town's Five-Year Capital Improvement Plan, it has budgeted \$582,000 for replacement of Public Works equipment in FY2014, \$508,000 in FY2015, and \$570,000 in FY2016. This would appear to indicate that, if carried out, a sufficient amount is being forecast for vehicle and equipment replacement over the next two years. However, given the overall age of the fleet, it is clear that this has not been the case in the recent past. There are also no significant replacement funds identified in FY2017 or FY2018 for Public Works.

The identification of relatively significant equipment replacement funding over the next three years is a positive development, and, if continued, will result in lower costs for vehicle maintenance and repair, particularly if it is coupled with an intensive preventive maintenance program. However, the current age of the fleet indicates that this renewed focus on equipment replacement may be subject to change in the future. Many cities and towns have created Vehicle Replacement Funds that ensure the availability of sufficient funding for vehicle and equipment replacement by identifying economic life cycles for each piece of equipment in the fleet, and allocating sufficient funding for their replacement on an annual basis to coincide with their individual retirements from the fleet. So, for example, since a pick-up truck has a predicted economic life of seven years, if at the end of this seven-year period, the replacement cost would be \$35,000, the Vehicle Replacement Fund would need to receive an amount of \$5,000 each year for seven years in order to ensure the availability of sufficient funding for the replacement of this piece of equipment.

The calculation of precise economic life cycles is dependent upon many factors, including initial purchase costs, maintenance and repair costs (which are themselves dependent upon external factors such as terrain, driver care, in-town mileage versus highway mileage, etc.), predicted salvage values, and cost of money. These precise calculations, while valuable, require historical data that are unavailable to the Public Works Department currently, as it does not capture all of these data to enable a reliable analysis. The project team has provided a listing of typical economic life cycles for vehicles and equipment in the following pages. These economic life cycles may or may not reflect the optimum cycles for Watertown, since they are composites of the project team's experience in multiple jurisdictions that may be dissimilar in certain ways to Watertown. However, given that the current average age of the fleet is roughly twice that of a fleet that has been replaced on a consistent cycle, the variations between the cycles provided in the exhibit and the exact economic life cycles for Watertown are considered to be relatively insignificant, and will suffice until more accurate data are accumulated by Central Motors over a period of several years.

Recommendation: The Town should continue the recent focus on vehicle and equipment replacement that is indicated in its capital improvement plan over the next three years. The project team recommends the establishment of a Vehicle Replacement Fund that serves as a repository of funds for vehicles and equipment that would ensure their replacement at the ends of their economic lives.

EXHIBIT

ECONOMIC LIFE CYCLES FOR VARIOUS FLEET CATEGORIES (1)

Equipment Type	Years	Mileage
<i>Automobiles</i>		
Administrative	7	125,000
Emergency	4	125,000
Pursuit	4	110,000
<i>Buses</i>		
Buses	15	NA
<i>Motorcycles</i>		
Motorcycle	5	50,000
<i>Non-Motorized</i>		
Trailer, Cargo	10	NA
Trailer, Equipment Transport	15	
<i>Trucks</i>		
Animal Control	7	150,000
Bucket, under 45'	7	110,000
Bucket, over 45'	10	110,000
Crane	10	175,000
Dump, under 15 ton	8	175,000
Dump, over 15 ton	10	175,000
Pumper	15	NA
Ladder	15	NA
Flatbed/Stake Body	8	150,000
Pole Digger	12	150,000
Pickup, under 1 ton	6	150,000
Pickup, 1 ton and over	7	150,000
Tractor	10	250,000
Packer	7	150,000
Sewer Cleaner and Rodder	7	150,000
Utility Body	7	150,000
<i>Vans</i>		
Cargo and Passenger	6	150,000
Law Enforcement	5	125,000

EXHIBIT

ECONOMIC LIFE CYCLES FOR VARIOUS FLEET CATEGORIES (2)

Equipment Type	Years	Mileage
<i>Non-Rolling Stock</i>		
Compressor, Air	8	NA
Boat	10	NA
Boat Motor	7	NA
Bulldozer	12	NA
Chipper	7	NA
Excavator	12	NA
Forklift	12	NA
Generator	10	NA
Grader	12	NA
Loader, Backhoe	10	NA
Loader, Front End	10	NA
Mower, Riding	7	NA
Mower, Self-Propelled	4	NA
Mower, Towed, Rotary	7	NA
Mower, Towed, Flail	7	NA
Pumps	5	NA
Roller, under 8 ton	6	NA
Roller, over 8 ton	8	NA
Scraper	10	NA
Sweeper, Street	6	NA
Tractor, Agricultural	10	NA
Tractor, Side Arm Mower	10	NA
Tractor, Flail Mower	10	NA
Trencher	7	NA
Utility Cart	6	NA

2. THE DEPARTMENT SHOULD CLOSELY MONITOR THE UTILIZATION LEVELS OF ITS VEHICLES AND EQUIPMENT.

One of the limitations of the project team's efforts during the study was the relative lack of data available for analysis. One of these areas was the lack of data relating to the utilization of current vehicles and equipment.

The primary method by which well-managed fleet management organizations monitor utilization is through their automated fuel dispensing systems. As drivers fuel their vehicles and equipment, they identify themselves and their units to the system by means of a key or card, or other method. Then, after identification is established, the driver is prompted by the system to enter the unit's current odometer reading. Thus, the system is able to compare the previous odometer reading to the current one and is able to calculate fuel consumption and efficiency. Additionally, once the vehicle or piece of equipment has been in the system for an extended period of time, the system is able to provide reports on the number of miles the unit has traveled (or, alternatively, the number of hours used) over a defined period, such as a year.

The Public Works Department has a GasBoy system that it uses to dispense fuel. The system is administered by the Property and Buildings Division, and has all of the capabilities described above, however Division is not producing reports on vehicle and equipment utilization. These reports should be produced and regularly analyzed as they can identify vehicles that may no longer be needed, as evidenced by low gas usage. It is also an important tool to make sure that the dispensing system is not being used for unauthorized vehicles, such as private vehicles, as has happened in other communities.

The project team noted above that, although the Town is allocating sufficient funding for vehicle and equipment replacement, the age of the fleet is relatively advanced. This indicates that there are potentially aging vehicles and pieces of equipment that are remaining in the fleet but are not being replaced. This typically is an indication that the units are seldom-utilized, and this is an easily-obtainable piece of information if utilization reports were being produced and analyzed.

The retention of aging units in the fleet is costly in that these units must be stored, insured and maintained. Further, replacement parts may be costly to obtain, if they are available at all.

The project team recommends that the administration of the automated fuel dispensing system be transferred from the Property and Buildings Division to the Central Motors Division. This Division can more easily administer the system, being based at the Public Works complex. But more fundamentally, Central Motors should be responsible for monitoring the utilization of the equipment for which it has responsibility for repairing and maintaining. The Supervisor should produce monthly utilization reports from the GasBoy system and identify units that are under and over-utilized, as well as those that exhibit unusual fuel consumption and efficiency. The Supervisor should make recommendations to the Superintendent for removal, or replacement, of certain units from the fleet based in part on the data produced by the system.

Recommendation: Transfer responsibility for the Department's automated fuel dispensing system from the Property and Buildings Division to the Central Motors Division. The Central Motors Supervisor should produce routine reports on fuel consumption and efficiency, as well as utilization of each unit in the fleet, making specific recommendations for removal or replacement.

3. WHILE THE CENTRAL MOTORS DIVISION IS CURRENTLY APPROPRIATELY STAFFED, THERE IS SOME EXCESS CAPACITY.

At the commencement of this study, the Central Motors Division was staffed with a Division Supervisor, a Foreman, and two Mechanics. During the course of the study, however, the Division Supervisor retired, leaving the Division with three employees. The project team does not believe that a fourth position is required for this unit and recommends that the unit be reduced by one position.

One simplistic method for determining the adequacy of staffing in a vehicle maintenance garage is by dividing the number of units maintained by the full time equivalent (FTE) mechanics maintaining them. Known as the “vehicle to mechanic ratio,” this is a crude but quick means of gaining some indication of the adequacy of staffing. In the case of the Watertown Public Works fleet, as was shown above there are 120 units in the fleet being maintained by three FTE mechanics, yielding a vehicle to mechanic ratio of 40:1. This is well within the expected range of a typical municipal fleet (between 32: 1 and 42:1) that includes a mix of heavy and light-duty units.

Beyond this rough measure, the industry has evolved over time and has developed a more meaningful ratio for determining the adequacy of staffing in maintenance shops. This method, known as the Vehicle Equivalent Unit (VEU) ratio, accounts for the varying intensities of maintenance required by each type of unit being maintained in the fleet. The use of VEUs is an improvement over the simple statement of the numbers of vehicles and pieces of equipment, since not all require the same intensity of maintenance and repair. The baseline for maintenance and repair is a sedan, which is defined as requiring one VEU. A piece of heavy equipment, such as a backhoe or front end loader, on the other hand, requires more maintenance, and is assigned a VEU of 5. Although Watertown’s Public Works Department has 120 total vehicles and pieces of equipment, the calculation of VEU for its fleet is 160.2, as the table below indicates.

Category	Description	Number	Total VEU
1	Sedan, Van	10	10.0
2	Heavy Van, Pickup	20	30.0
3	Heavy Equipment	60	107.5
4	Trailers	13	1.7
5	Pumps, Generators	8	4.0
6	Mowers, Small Engine	8	6.0
7	Boat/Motorcycle	1	1.0
Total	N/A	120	160.2

The primary advantage of the use of VEUs is that it allows the assignment of a standard number of hours of expected annual maintenance to each vehicle equivalent. This number can vary for fleets of exceptionally high or low average age; however, it is typically in the range of 14 to 18 hours of annual maintenance per VEU. If this were the case in Watertown’s experience, and an average of 15 hours of annual maintenance per VEU is assumed, its fleet would require approximately 2,403 hours of labor (160.2 VEU * 15 hours per VEU).

To determine the number of mechanics required to maintain the full DPW fleet of 120 vehicles and equipment, it is necessary to determine the actual number of hours that mechanics can spend in maintenance and repair efforts in a typical year. Again, this number can vary significantly depending

upon a variety of factors. However, the Center uses a figure of 1,381 hours of “wrench turning” time per mechanic, the calculation of which is provided in the table below.

Item	Number of Hours
Total Paid Hours	2,080
Vacation (@12 days per year)	96
Sick Leave	80
Training	40
Lunch/Breaks 200 days * 45 minutes)	150
Meetings	40
Total Available	1,674
Chargeable Rate	82.5%
Total “Wrench Turning” Time	1,381

Note that the table makes an allowance for the chargeable time for mechanics. Although the average mechanic may, in fact, be in the garage for 1,674 hours per year, the reality is that not all of this time will be spent performing maintenance and repair services on a department vehicle. This is due to such activities as cleaning the garage bay in between repairs, completing paperwork, waiting for parts, and discussion related to an upcoming assignment. Generally, between 80% and 85% of all available time can be expected to be chargeable time to a specific work order. For the purposes of the calculation in this instance, the project team uses the midpoint of this range, or 82.5%, to derive a figure of 1,381 total annual “wrench turning” hours per mechanic.

If each mechanic, therefore, expends 1,381 hours on vehicle maintenance and repair, the number of mechanics required to maintain the fleet becomes a mathematical calculation of the number of VEUs divided by the number of chargeable (i.e., “wrench turning”) hours expended in its repair, as the table below shows.

Element	Number of Hours
A. VEUs	160.2
B. Maintenance Hours per VEU	15
C. Annual Hours of Maintenance Required (A*B)	2,403
D. Hours of Wrench Turning Time per Mechanic	1,381
E. Mechanics Required (C/D)	1.7

As the table shows, the maintenance of the current DPW fleet requires 1.7 mechanics, according to this methodology.

The application of the simple vehicle to mechanic ratio indicates that Central Motors is appropriately staffed. On the other hand, the application of the somewhat more meaningful VEU calculation indicates that the Division has at least some excess capacity, given that it has two FTE mechanics and a Foreman who also repairs vehicles and equipment. However, with the departure of the Division Supervisor, the Foreman will be required to perform a greater number of administrative duties and will not have the same available time as was the case when the Division Supervisor was present to handle such tasks as maintenance scheduling, service writing, filing, parts coordination, etc. In any case, these hours are unlikely to constitute the need for a full FTE to manage a small fleet of 120 units, indicating that Central Motors is likely over-staffed even after the departure of the Division Supervisor. Of course, there are mitigating factors, such as the relatively advanced age of the fleet, and the fact that none of the

mechanics is ASE-certified. These factors would tend to require a somewhat greater number of expected labor hours expended in maintenance and repair than would otherwise be the case, but likely not enough to require the full-time labor of three FTEs in the shop.

As was noted earlier in this report, no division in DPW accumulates and reports the hours expended in specific activities in sufficient detail to enable a true analysis of productivity, either on an individual or divisional basis. The project team reiterates the recommendation here that the Central Motors Division record and report labor hours by individual piece of equipment repaired, and at least by major repair code (e.g., chassis, engine, cooling system, hydraulics, electrical, etc.). This reporting will allow for a further analysis to determine the productivity of mechanics, and in what categories. This in turn will allow analysis of the ratio of time spent in scheduled versus unscheduled work, rework, waiting for parts, etc. It will also allow an analysis of the areas in which mechanics may need greater levels of training.

The project team does not recommend the elimination of a mechanic at this time, as there are mitigating factors that may, in fact, require the presence of three mechanics in the shop. However, if it is determined after some greater analysis of actual time expended by mechanics that there is, in fact, excess capacity in the shop, the Town may at that time analyze the feasibility of consolidating the maintenance of its fleet under a single organization. Currently, the Police and Fire Departments both have mechanic staff repairing the vehicles and equipment in their respective departments, and the consolidation of the separate fleets under the management of a single organization may allow for the elimination of one or more mechanics, and will almost certainly result in a more standardized system of maintenance, and will also facilitate a more standard approach to the vehicle replacement decision process.

Recommendation: The Department should reduce the Central Motors Division by one FTE by holding an internal recruitment for Supervisor, and then reducing the position previously held by the selected candidate. At the same time, a mechanism by which labor hours are accumulated and reported to enable the Division to analyze productivity needs to be put in place. Based on ratio analysis, and in anticipation of the results of the productivity analysis, it is likely that the Department will find that there is excess capacity in the repair shop, and if so, the project team recommends that the Town consider the feasibility of consolidating all fleet maintenance and repair services under a single organization.

4. THE CENTRAL MOTORS DIVISION SHOULD RESTRICT ACCESS TO THE PARTS ROOM.

Interviews and observations indicate that there is an almost unrestricted access to automotive parts in the garage. One interviewee noted that there are eleven keys to the parts room, and any of the individuals possessing a key can enter at any time.

The project team has no knowledge of any improprieties in accessing automotive parts. However, it is also true that there are no mechanisms in place to ensure that they do not occur. With at least eleven individuals possessing keys to the parts room, there can be no accountability for the parts that are used. Further, there is no financial accountability for either the parts that are purchased, or those that are issued in the repair of vehicles and equipment.

Well-managed repair shops perform periodic physical inventories and match these against automated records of the numbers of parts that should be in stock. For example, if on January 1, there are four air filters of a certain brand on hand, six are purchased during the ensuing period, and eight are used in the maintenance of equipment, there should be two such filters available on the parts shelves at the end of this period (i.e., $4+6-8=2$). To the extent that there are fewer than two filters, a discrepancy exists, and this discrepancy should be reported both to the Department Superintendent as well as to the Town Auditor.

The value of the parts inventory is likely relatively small, but this should not be the determining factor in whether to implement good business practices. In order to account for inventory on hand, and to avoid any appearance of impropriety, the Central Motors Division should immediately begin to account for its parts inventory by establishing a baseline inventory level for each parts line item, and performing at least semi-annual physical inventories that are matched against the baseline at the beginning of the period. During the conduct of this baseline inventory, it is likely that the Division will find obsolete parts that should be purged from inventory, with these parts sold back to the supplier at what may be fractional value.

Recommendation: Establish a baseline inventory level for each line item of automotive parts. Then, at least semi-annually, a physical parts inventory should be undertaken, with any discrepancies reported to the Department Superintendent and the Town Auditor. Further, the Central Motors Division should restrict access to the parts room to no more than two employees. This move will allow for greater accountability for parts issued from stock.

5. THE DEPARTMENT SHOULD IMMEDIATELY FILL THE VACANT POSITIONS IN THE HIGHWAY DIVISION.

The Department's Highway Division is authorized for nine positions. These are as follows:

- Highway Supervisor
- Foreman (2) – one on Workers Compensation
- Heavy Equipment Operators (2) – primarily engaged in street sweeping activities
- Heavy Equipment Operator/Welder
- Skilled Craftsman
- Motor Equipment Operator (vacant)
- Heavy Equipment Operator (vacant)

The Division is responsible for the repair and maintenance of approximately 74 center line miles of paved surfaces and about 140 linear miles of sidewalk with these nine positions. It should be noted, however, that during the course of this study, there were two vacant positions and one position that was absent on Worker's Compensation. Given that the Highway Supervisor is generally not involved in accomplishing work in the field, and that the two street sweepers are primarily engaged in a single activity, the Division is effectively responsible for the maintenance of the Town's hard surfaces (i.e., asphalt and concrete) with a contingent of three field workers (a Foreman, an HEO/Welder and a Skilled Craftsman), equating to a ratio of about 24.5 paved center line miles to one FTE.

Like most functions under the broad “umbrella” of public works, there is no “right” ratio of paved surface mileage to FTEs, but in the absence of meaningful documentation regarding actual crew activities and the time spent on them, the project team typically compares this ratio (24.5 to 1 in the case of Watertown’s Highway Division) to a benchmark that reflects an average staffing level found in other municipalities across the country. This benchmark is typically in the range of 8 to 12 miles of paved surfaces per FTE dedicated to the maintenance of these surfaces. Clearly, Watertown’s Highway Division staffing ratio is well above this benchmark, indicating a relatively severe staffing shortage.

The project team also conducted a survey of similar Massachusetts cities and towns (see Appendix C for the results of the full survey) and found that these municipalities generally have more staff per lane mile than does Watertown. A summary of these survey results is provided in the table below.

Municipality	Center Line Miles	Highway FTE	Ratio
Arlington	100	15	6.7 to 1
Belmont	83	6.1	13.6 to 1
Canton	103	10	10.3 to 1
Dedham	117	20	5.9 to 1
Newton	275	69	4.0 to 1
Waltham	162	19	8.5 to 1
Watertown	74	3	24.6 to 1
Winchester	93	13	7.2 to 1

Note that the project team received the data presented in the table above via written survey responses, and therefore cannot definitively state that they are correct for any municipality other than Watertown. However, the data do tend to corroborate both the validity of the benchmark of 8 to 12 center line miles per FTE and the assertion that the staffing level in the Watertown Highway Division is relatively low. It should also be noted that there are three working positions in Watertown’s Highway Division that are not reflected in the table. If these three positions, which have been unfilled for some time, were present in the Division, the ratio would be a more reasonable 12.3 to 1.

The relatively low level of available staff in the Division is resulting in an inability to proactively manage and maintain the Town’s infrastructure. The Highway Supervisor maintains a log of work activities, with a very brief description of work on each date, along with the location and the crew member assigned. Although there is no notation of the time spent in each of these activities, it is clear even from a brief review that the large majority are reactive in nature, which is to be expected with so few staff members available. Even with all three crew members available on a particular day, it is not possible to assemble more than one crew, and this is further limited when a crew member is absent for any reason, which occurs rather frequently. It is true that the Division may obtain necessary staffing from other divisions in the Department when it is required, but this transfer of staff has ramifications for the lending division as well.

The Highway Division is likely spending well over 90% of its available time on corrective and emergency repairs, as opposed to scheduled maintenance activities such as vegetation management, asphalt surface treatment, drainage maintenance, sidewalk inspections, etc. Well-managed and properly-staffed Highway divisions should strive for a scheduled-to-unscheduled ratio of about five to one, meaning that corrective and emergency work orders should account for about 15% to 20% of all hours expended. Clearly, this is not the case in Watertown’s Highway Division.

A large part of this issue appears to stem from the failure or lack of initiative within the Department to prioritize the filling of these relatively unskilled positions.

Recommendation: Immediately fill the two vacant positions in the Highway Division. The lack of staffing in this unit will, over time, result in the deterioration of the Town's roads and sidewalks.

6. ENHANCE THE OVERALL MANAGERIAL SKILLS OF THE DEPARTMENT.

During the course of the study, it became clear that field staff, division supervisors and administrative and clerical employees defer to the Department Superintendent when responding to requests and in making decisions. This even extended to waiting for approval for fulfilling data requests made by the Center's project team. It is understandable that decisions of an important or publicly-sensitive nature are discussed first with the department head, but in the Watertown Public Works Department, even routine correspondence appears to be treated in this manner.

The lack of autonomy over routine matters will not serve the Department well in developing future managers. Nor does it empower employees in dealing with the public. To some degree, the assumption of the role as the single point of contact for departmental correspondence by the Superintendent may be an outgrowth of the lack of supervisory and managerial training on the parts of the division supervisors. In this regard, the project team recommends that management staff be allowed to attend trade conferences such as the American Public Works Association (APWA), National Association of Fleet Administrators (NAFA), American Recreation and Parks Association (ARPA) and others.

In addition to these conferences, the project team also recommends that division supervisors attend routine and ongoing training to enhance their technical skills as well as their supervisory and managerial skills.

There are numerous courses and providers of skill enhancement training. APWA is a large provider of such courses, but there are others as well. The project team suggests the following initial broad topics for consideration for supervisors in the Department.

- Technical specialty courses in such fields as fleet management, construction inspection, stormwater management, facilities management, grounds maintenance and urban forestry management, etc.
- Work planning and goal setting
- Effective teamwork
- Effective communication skills
- Budgeting and financial management
- Labor relations
- Dealing with regulatory agencies

- Public relations management
- Fundamentals of municipal engineering

Fundamentally, supervisors should know how to communicate clearly and effectively under pressure, how to navigate the political environment, how to leverage resources, how to rethink systems, and how to critically consider and integrate solutions and options across all functional areas.

Recommendation: Begin the cultivation of future managers in the Public Works Department, and the empowerment of current line staff, by embarking on a system of routine professional and technical training for supervisors. The project team has listed several broad topics for consideration in this regard. Further, the Department should allow the attendance of supervisors at technical conferences and trade shows in order to increase their exposure to trends in the public works field as they regard equipment and current topics of interest. The costs of attendance at trade shows may vary significantly depending upon the popularity of the show itself, as well as its location. Course registration for topics such as those listed above may also vary, but courses offered locally may cost between \$150 and \$400 per attendee, depending upon the course, the course materials, and the number of employees sent to the training, as many training providers will grant discounts for multiple employees.

7. THE WATER AND SEWER DIVISION SHOULD CRITICALLY EVALUATE THE DEPLOYMENT OF TRUCK 60.

The project team has noted in numerous cases in this report that the Public Works Department generally lacks a computerized maintenance management system (CMMS) that captures data relating to the expenditure of time on specific tasks. This is equally true within the Division of Water and Sewer, which is responsible for the maintenance of the distribution and collection lines, as well as water metering and water quality.

The Division utilizes a truck, known as “Truck 60,” staffed with a Skilled Craftsman and a Motor Equipment Operator (MEO). The staff on Truck 60 respond to sewer emergencies on an on-call basis, and generally are deployed in the field conducting such efforts as gas mark-outs, responding to requests made directly by the Police and Fire Departments, servicing manholes, painting hydrants, cleaning debris from the road, and other activities. Given that there is no documentation of the utilization of time of the employees on Truck 60, the project team cannot state definitively that these employees are fully utilized, or if, in fact, they have excess capacity to perform other work within the Division when not being deployed to service calls and emergencies. However, an analysis of the work orders received by the Administrative Division and input into the Department’s work request system, indicates that the Water and Sewer Division received only 32 non-Water Quality⁵ calls from the public during the period from September 13, 2011 through September 13, 2012, comprising a total of 279 work days. This

⁵ Water Quality calls are clearly a responsibility of this Division, but these calls typically involve complaints related to high water bills and questions related to metering/high usage, which are generally not handled by Truck 60.

equates to one call every 8.7 work days, and does not, in itself, justify the dedicated deployment of two Sewer Unit employees.

Most of the calls reported in the work request system during the noted time period related to catch basin problems, which may or may not have required two employees for investigation and abatement. However, given that there are always two employees in the truck, both would have likely responded.

The employees on Truck 60 also respond to emergencies, such as sewer line breaks, service breaks, etc., that are not reported via the work request system. These account for some expenditure of time, and may, in fact, account for the full utilization of the crew. The project team recommends only that the Division critically evaluate the use of this crew in order to justify its continued dedicated deployment.

Recommendation: Critically evaluate the continued deployment of the two employees on Truck 60 to determine the efficacy of dedicating these resources to emergencies and service calls. The Division does not document the utilization of the two employees, but rather only lists the tasks completed by them each day. The only quantifiable data to which the project team had access were the work request data entered by the Administrative Division staff, and these work requests themselves do not justify the continued dedicated deployment of Truck 60 and its crew.

8. THE DEPARTMENT SHOULD ELIMINATE THE POSITION OF WATER SUPERVISOR, AND CONVERT THIS POSITION TO A WORKING FOREMAN POSITION.

The position of Water Supervisor is responsible for tracking and documenting the activities of the Water and Sewer crews, taking pictures of work sites, assisting in construction inspections, taking referred calls for work from the administrative staff, and making hand-drawn sketches of services to residences. Further, the incumbent reports that he and the Assistant Superintendent for Utilities act as a supplemental crew handling sewer backups, main breaks, etc.

Many, if not most, of the duties performed by the Water Supervisor are administrative in nature. The entire division is comprised of only twelve employees, and three of these are Foremen themselves. Further, the inspectional duties of the position are duplicated to a large degree by the presence of the Assistant Superintendent for Utilities. The presence of two inspections personnel at construction sites is not typical in the experience of the project team and is not an optimal use of the scarce personnel resources of the Department, which is lacking in adequate numbers of staff in other divisions.

The project team recommends that the Department convert the position of Water Supervisor to a working crew member position. However, the project team recommends that this position be transferred from the Water/Sewer Division in order to address issues with more acute staffing shortages in other divisions of the Department. The Water and Sewer Division is relatively well-staffed as compared to both the Highway and Forestry functions, and is accomplishing at least some degree of preventive maintenance, such as gate valve exercising and hydrant flushing, and contracting for catch basin cleaning. Given that the position of Water Supervisor generally performs administrative work, this would not materially detract from the Division's ability to continue to accomplish its preventive maintenance activities.

The project team’s typical experience is that field maintenance staffing approximates one FTE per 10 to 15 linear miles of distribution and collection system line. The Watertown Water and Sewer Division is responsible for the maintenance of about 182 miles of line, and does so with nine field maintenance crew members, excluding the Assistant Superintendent and the Water Supervisor. This equates to 18 miles per field maintenance FTE. However, it is also true that the Division is not responsible for any water and sewer pump and lift stations, which, if present as is the case in most of the towns in the comparative survey, would require a substantial dedication of staff time for maintenance. Additionally, the comparative survey that the Center’s project team conducted substantially corroborates the benchmark of 10 to 15 miles per field maintenance staff member, as the table below indicates.

Municipality	Linear Miles of Water and Sewer Line	No. Field Maintenance Staff	Ratio
Belmont	169	11.14	15.2 to 1
Canton	187.7	9	20.8 to 1
Newton	560	50	11.2 to 1

As can be seen in the table, although Canton’s field maintenance staff maintains about 21 miles per FTE, Newton and Belmont are much closer to the benchmark of 10 to 15 miles per FTE. It should be noted that Newton, with 11.2 miles per FTE, maintains no pump or lift stations, as is the case in Watertown.

The project team does not suggest that by making the recommendation to transfer the position to another division in the Department, there is significant excess workload capacity in the Water and Sewer Division. Rather, the recommendation is a product of the recognition of the following points:

- The Town is limited in its ability to fund new positions in each organization.
- The Water and Sewer Division is receiving few documented calls for service (6.6% of all calls), as defined by the non-Water Quality calls. This low level compares to the approximately 28% of all work requests made for Highways (33% of which are for sidewalk repairs), and 27% for Forestry.
- The Division has an Assistant Superintendent, a Water Supervisor, and three Foremen. This is a supervisory and management ratio of five positions to seven field maintenance positions, which is higher than any other in the Department.
- The Water Supervisor is largely functioning in a duplicative role to the Assistant Superintendent in inspecting work sites.
- Much of the manual sketching performed by the Water Supervisor could, and should, be converted to electronic format and imported to the GIS.

The current Water Supervisor possesses a Class 3 license, and the Department of Environmental Protection requires that the Division have such a license-holder in place behind the Class 4 license-holder, which is the Assistant Superintendent for Utilities. The Water and Sewer Division has another Class 3 license holder who is a member of the Teamsters (non-supervisory) union. The transfer of the Supervisor position may have some impact on DEP compliance, and this is an issue that the Town should resolve prior to making this organizational change.

The conversion of the Water Supervisor position to a working crew member position would not contribute significantly to the accomplishment of needed work in the Highway or Forestry division if this were the only position to be converted. In order to maximize the value of a working position, the position must be a part of a crew. In order to fully staff a crew of three employees, it is necessary to convert other positions to working crew members as well. The project team has noted earlier in this report that the Division Supervisor of Central Motors has retired, and that the project team has recommended that the position be filled by an existing mechanic, with the vacated position not being filled. This creates a cost savings that would be nearly sufficient to fund a three-person crew in either Highway or Forestry, as the table below shows. (Note that the cost savings are based on the assumption of the elevation of one employee in the Division to the position of Supervisor.)

Element	Number
Eliminated cost of Water Supervisor	(\$76,056)
Eliminated cost of Central Motors Working Foreman/HEO	(\$57,066)
Total Eliminated Costs	(\$133,122)
Cost of Working Foreman/HEO	\$57,066
Cost of 2 Skilled Craftsmen	\$94,748
Total Cost of additional 3-employee crew	\$151,814
Net Additional Cost of additional 3-employee crew	\$18,692

As the table shows, the net cost of an additional three-person crew would be approximately \$18,692. The project team recommends that this crew be cross-trained in sidewalk repair and urban forestry work, such as tree trimming and stump removal. These are activities that not only are needed through a visual observation of the Town’s infrastructure, but are accounting for the majority of calls in the work-request system as well.

Recommendation: Convert the position of Water Supervisor to a working position in the field. The project team recommends both the conversion of the position and the transfer to the Highway Division in order to contribute toward the creation of a three-person crew that should be cross-trained in sidewalk inspection and repair, and urban forestry in order to abate critical needs in these areas. This conversion may raise some additional issues related to the collective bargaining agreement, and these should be investigated by the Town prior to implementation.

9. THE DEPARTMENT SHOULD CLOSELY REVIEW THE INVITATIONS FOR BID FOR SERVICE CONTRACTS FOR PARKS, TREES, AND CEMETERIES TO REASSESS WHAT SERVICES SHOULD BE PERFORMED BY STAFF AND ELIMINATE DUPLICATION OF WORK PERFORMED BY STAFF AND CONTRACTORS.

At present, maintenance of the Town’s parks, trees, and cemeteries is performed by a combination of Department staff and outside vendors. The Department has contracts with vendors in at least three areas at present: Parks and Grounds Maintenance, Turf Care Maintenance, and Cemetery Maintenance. Each of the bids for this work identifies a series of tasks to be performed and the frequency. On the weekends, Town staff have sole responsibility for the parks, which appeared appropriate to the project team given the high use of the space on the weekends and the fact that the staff member working on

weekends can be redeployed to respond to any unanticipated circumstances immediately and at a lower cost than calling out a vendor at a moment's notice. However, Department staff reported that they also removed trash from receptacles in the parks during the week, calling into question whether the schedule of weekday trash pickup by the vendor responsible for Parks and Ground Maintenance was less than what was required or whether the vendor was not as diligent as needed during the week. As these bids appear to be two years old and the division has a new Supervisor who has extensive experience in turf management, it appears appropriate to revisit the allocation of work between staff and vendors on all of the contracts.

Recommendation: The Department should re-evaluate its current contracts with grounds maintenance service providers in view of the skills of the newly-hired Supervisor.

10. THE NEW TOWN ENGINEER SHOULD ENSURE A COMPREHENSIVE PUBLIC INPUT PROCESS FOR CAPITAL PROJECTS.

One common theme that emerged in interviews with individuals outside the Public Works Department was the need for a greater degree of information regarding capital projects. The project team addresses one dimension of this issue, which is the need for an enhanced orientation toward customer service, later in the report. However, the need for greater information and input from the public regarding capital projects is an issue that involves not only an orientation toward customer service, but one that can provide great benefits to the Town, the public, and even the Public Works Department itself.

Conducted in good faith, public participation can contribute to better decisions, because decision-makers have more complete information, in the form of additional facts, values, and perspectives obtained through public input. They then can incorporate the best information and expertise of all stakeholders. Decisions can be more implementable and sustainable, because the decision considers the needs and interests of all stakeholders, and stakeholders better understand and are more invested in the outcomes. As a result, decisions that are informed by public participation processes are seen as more legitimate and are less subject to challenge. Fully understanding the various stakeholder interests can lead to decision-makers becoming better communicators, making them more able to explain decisions and decision rationales in terms stakeholders understand and in ways that relate to stakeholders' values and concerns.

Involving the public should be genuinely viewed as an integral and valuable part of the capital planning process. This necessarily means that projects should be presented to the public at a stage early enough to incorporate their input. Further, the public should be invited to participate at other meaningful points in the process as well – as early as the conceptual design stage, and also through the 30% and 60% design stages for more complex and wide-ranging projects.

The public input forums should also be viewed as opportunities for the Public Works and Planning and Community Development departments to collaborate on projects, and to hear public input simultaneously, as each department has different perspectives on projects.

Recommendation: The new Town Engineer should be tasked with providing public input sessions on all major capital projects. These sessions should involve not only interested public participants, but

also the Department of Community Development and Planning to ensure a comprehensive assimilation of the input received from differing perspectives.

11. THE TOWN AND DEPARTMENT SHOULD PREPARE MORE INFORMATIVE DOCUMENTATION AND SCHEDULING OF ITS APPROVED CAPITAL PROJECTS.

The Town's FY2014-2018 capital budget document lists all funded capital projects by owning department, the total amounts allocated to the projects, and their anticipated funding by year. Although this format provides meaningful financial information, it does not provide the reader with a great amount of information on these projects. Further, left at this high level, the format does not hold owning departments accountable for scheduling projects and for displaying the scheduling impacts of one project on another.

There are several informative elements missing in the current format of the Town's capital improvement plan (CIP) that could enhance the reader's understanding of these projects, as well as their timing. These include the following:

- A description of the project. The FY2014-2018 capital plan lists, under the Water/Sewer Enterprise Funds section, "Sewer Line Replacement," in the amount of \$482,400, to be completed from FY14 through FY16. However, there is no description of the sub-elements of the project(s). These might have included the number of linear miles of replacement line, and a reason for the replacement, perhaps even including a description of the age and condition of the existing line.
- A detailed breakdown of project costs. Currently, the capital budget identifies only the total project amounts. There is no breakdown of costs for, for example, project design, survey, environmental assessment, engineering, testing, land acquisition costs, inspection, construction, or other elements of cost.
- Source of funding. There is no consistent identification of the source(s) of funding for capital projects. Certain projects note that bonds will be the source, but this is not consistently provided to the reader. In some cases, there may even be multiple funding sources for projects, and these should be identified.
- The need for the project. This should provide the reader with a description of how the project was identified as being needed, why it was considered a high priority, and perhaps even the anticipated impact of not performing the replacement over the short and long terms.
- The location of the project. The Town possesses a geographical information system that should be utilized to provide readers, many of whom are residents who would quickly identify the location, with a map or even aerial photography of the affected area.
- The operational impact of undertaking the project. One of the more common oversights in capital project planning is the failure to anticipate the impacts of these projects on operational expenditures. For example, construction of a new park, or even the expansion of an existing park, will have impacts on the time required by staff (or even the need for additional staff) to

properly maintain the expanded area, and to protect the Town's investment in the longer-term. These impacts should be identified in the CIP. In the case of the noted sewer line replacement, this may have the opposite effect of decreasing the probability of main breaks, infiltration and infestation, and blockages. The impact of this time-saving project on staff time should be estimated, with a corollary notation that this time savings will result in, for example, a greater ability to perform preventive maintenance on other segments of the collection system.

- Identification of any anticipated revenues. Some capital projects represent investments in infrastructure that may actually increase anticipated revenues to the Town. The expansion of a water or sewer line to a new development, or a new public facility for which admissions may be charged for entry represent additional sources of revenue that may even have a calculable "payback period." These revenues should be identified in the CIP.

Beyond the provision of the above information in the CIP for the general reader, there should be a project schedule developed for each capital project. This study focuses on the Public Works Department, but this recommendation should be generalized to all other owning departments as well. The Public Works Department contracts with private construction firms for the large majority of road construction projects, and the schedules for these projects are typically developed and provided by these contractors. However, the Department has not assimilated these schedules into a Master Schedule of projects that provides the Town Council and Town Manager with the ability to assess the impacts of delays, or project acceleration, on any other project occurring in the Town, either concurrently or in the future. For example, a delay in the completion of one project may have implications on another project in terms of the staff available to conduct thorough inspections on all projects. This should be clearly identified in the schedule.

Recommendation: Enhance the Town's CIP document to include more information for the reader regarding project description, justification, location, and impacts on operations. Further, require the development of project schedules, perhaps in an easily-learned application such as Microsoft Project, for each capital project, as well as a Master Schedule for all projects by an owning department.

12. THE CEMETERY DIVISION SHOULD SUBSTANTIALLY ENHANCE ITS CEMETERY RULES AND REGULATIONS, AND PLACE THESE ON ITS WEBSITE.

The Town's Cemetery "Rules and Regulations" covers only permissible memorial stones on graves. A copy of these rules and regulations is provided in Appendix E of this report.

There are many categories of rules and regulations that should be developed by the Town, and placed on the DPW website. These include the following:

- Eligibility for burial. There is no discussion of what constitutes eligibility for burial in the Ridgelawn cemetery. Typically, cemetery rules and regulations will state whether there is a residency requirement or other eligibility factor.
- Minimum notice of time required prior to interments.

- A definition of any compulsory requirements related to the burial, such as concrete liners or vaults.
- A definition of allowable monument heights, flush marker dimensions, number of markers on each lot, etc.
- Prohibition of advertisements.
- Requirements for funeral processions, such as locations of entry and exit, responsibilities of funeral directors, the responsibilities of the Town, etc.
- Prohibitions of the scattering of ashes.
- Any price differentials related to services held on weekends, holidays, etc. Further, there is no definition of the normal operating hours of the cemeteries, and the allowable times for interments and services.
- Authority of the Town to prohibit services scheduled simultaneously in a single cemetery.
- Authority of the Town to prohibit monuments that are deemed to be objectionable. Further, there is no definition of the allowable composition and appearance of stones and monuments.
- Differential rules and regulations related to Memorial Day.
- Prohibition of certain types of plants and flowers.
- Allowable placement of plantings and flower relative to the headstone/monument.

There are many other potential items for inclusion in the Cemetery Rules and Regulations, and the intent is not to list them all here, but rather to point out the relatively minimalist nature of the Town's current Rules and Regulations, and the need to enhance these.

The Cemetery Rules and Regulations reside only in paper form and are not available on the DPW website. In fact, there is no description of any of the cemeteries themselves on the website. The project team recommends that the Parks, Trees and Cemeteries Division be assigned the responsibility for developing much more descriptive and thorough rules and regulations, and placing these online so that all residents and funeral directors may be aware of the most pertinent details of burials and care at these cemeteries.

Recommendation: Significantly enhance the rules and regulations as they relate to pricing, burial procedures, allowable vegetation and decorations, monuments, and many other pertinent details of the Ridgelawn cemetery. These should be placed on the DPW website, along with, at a minimum, descriptions of the Ridgelawn cemetery and other historic cemeteries, and possibly photographs of the cemeteries themselves, as well as their historic details.

13. THE DEPARTMENT SHOULD ENHANCE THE FUNCTIONALITY OF ITS WEBSITE TO CONFORM TO BEST PRACTICES IN THE INDUSTRY, AND IT SHOULD INCORPORATE PERFORMANCE MEASURES IN THE DIVISIONAL PAGES AS WELL.

In the not-too-distant past, the simple provision of a website of any description for a Public Works Department was considered a progressive and customer-oriented feature of government. Today, however, residents expect that their governments’ websites 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 municipality, just as does a poorly-designed one.

The project team has made numerous visits to the Watertown Public Works website throughout the course of this project, and there are several facets of its content and design that perhaps could be refined and enhanced to provide a more informative and useful experience for visitors, whether they are residents, other governmental entities, or simply interested viewers.

Darrell West, of the Brookings Institute, in his book, *Digital Government: Technology and Public Sector Performance*, describes four stages of government websites that progress from the “billboard style,” that simply houses information, up to the “interactive democracy style,” that offers residents services and a variety of ways to get in touch with public officials and to accomplish tasks. It is this latter style that West says that governments should aspire to in order to develop a more knowledgeable and empowered citizenry.

Although the Watertown Public Works website is more than a simple “billboard” of information, it falls short of being truly interactive. Further, it does not provide certain information that the project team believes should be shared with visitors to the site. The project team noted several areas in which the divisional websites should be enhanced and has listed these in the table below.

Division	Comments on Web Page
Parks, Trees and Cemeteries	<p>Post Cemetery Rules and Regulations.</p> <p>Although the DPW site has Protocol for Tree Pruning and Removal, and the Tree Warden’s site has Regulations, there is no link between the two.</p> <p>The Cemetery website has an excellent feature which allows individuals to enter the cemetery name and the name of the deceased to locate a grave site. The site also has interment and disinterment forms as well as all cemetery charges. The site would benefit from a description of the cemeteries, and a posting of all rules and regulations.</p> <p>The Parks webpage should provide a listing of all parks and their amenities, as well as the manner in which parks sites may be reserved. The page currently describes the number of fields and the maintained acreage, and relates that contractors assist with the maintenance of the parks, but there is no description of the parks themselves. The site should provide links to the Recreation Department web site, where photographs of parks may be found.</p>

Division	Comments on Web Page
Highway	<p>The Highway webpage only relates information on the number of road miles and sidewalks maintained, and that it is responsible for an “enormous” number of inspections.</p> <p>Highways are some of the most visible characteristics of a town, and the webpage should describe not only the current projects (there are three form letters on the site currently, telling residents the locations and the need for cooperation in parking, etc.), but future projects as well. The site should inform residents of future community input forums in the areas of planned construction and rehabilitation efforts.</p>
Central Motors	<p>Although Central Motors does not perform a function that directly interacts with the public, residents are interested in knowing the number and types of equipment maintained. This should be provided, perhaps in a downloadable link, and updated as the fleet profile changes. The web page should include photographs of the garage, and as well as a statement regarding its commitment to preventively maintaining the fleet, and to maximizing the useful lives of each vehicle and piece of equipment. The Division should also list any green initiatives related to energy-efficient vehicles purchased.</p>
Property and Buildings	<p>The site currently says only that it maintains all Town facilities, maintains street signs, signage for elections, etc., and that it also maintains “complex electrical wiring” for the town-wide fire alarm and emergency response system.</p> <p>The site should provide a listing of the facilities for which it is responsible. The Division is not responsible for all town buildings, as the Police station is maintained by a technician in that Department. It is also not responsible for the schools. There should also be some notation that although the Division does directly provide HVAC and electrical services, it should note the services which it provides via contract.</p> <p>The webpage should identify all major current and future capital building projects. Further, the site should describe any energy saving or green initiatives in Town buildings and other structures, such as the recent grant from the Green Communities Grant Program, supplemented by NSTAR, to retrofit street and parking lot lights, and the installation of LEDs in street lights. Finally, the efforts of the Environment and Energy Efficiency Committee should be highlighted here.</p>
Water and Sewer	<p>The website could be significantly enhanced through the provision of simplified descriptions of the water and sewer treatment processes provided by MWRA, perhaps even including a schematic that describes, at a basic level, the raw water intake (and a description of the source), addition of coagulants (and their utility), transmission to the coagulation/flocculation process, movement to sedimentation (and what happens in this process), polymerization (and what is used), filtration, disinfection, corrosion control, storage, and finally,</p>

Division	Comments on Web Page
	<p>consumption. The similar process for wastewater should also be described at a high level. Alternatively, the web site should provide a link to the MWRA site that provides explanations of these processes.</p> <p>The site could also benefit from the inclusion of information on capital improvements (both recently completed, as well as planned, and the costs of each), backflow prevention program description (as well as types of devices and how installed, and what to expect in an inspection), water rates, conservation measures, typical consumption rates for various family sizes, as well as others.</p> <p>There is virtually no useful information on the Water or Sewer sections of the Department’s website beyond a description of water rates and a very basic description of the causes of sewer backups and how to prevent them.</p>

It should be noted that, although they are not specifically defined in the table above, each of the divisional webpages should ultimately include summary performance measures that provide enough information for readers to determine the efficiency and effectiveness of the use of the resources allocated to the respective divisions. The project team has provided many potential performance measures in the comparison of Watertown’s practices to those of best management practices, in Appendix C. However, there may be others that the Department and the Town desire to implement. The Center would only caution that the number of performance measures for any division should be manageable, and the measures themselves should be reflective of the actual workloads of the divisions. Further, the measures should reflect the efficiency and effectiveness of the work performed, rather than simple statements of the work that was accomplished. So, for instance, in Central Motors, the workload measures should potentially include the following:

- Percent of vehicles scheduled for preventive maintenance that actually received services within two days of schedule.
- Turnaround times for repair (expressed as percent of units that were returned to user divisions within 24, 48 and 72 hours).
- Vehicle downtime (expressed as the number of hours vehicles and equipment were out of service as a percent of their normal business hours).
- Mechanic downtime awaiting parts for repair.
- Vehicle “comebacks” (a measure of the percent of vehicles that are returned for the same service within one week of repair).

There are many other potential performance measures to consider, not only for Central Motors, but in the other operating divisions of DPW as well. Note, though, that each of the above suggested performance measures is a reflection of efficiency and effectiveness, and not of absolute workload. It is not helpful for either the reader of the measures, or the Department itself, to list, for example, the

number of vehicles scheduled for preventive maintenance in a particular month, quarter or year, as this is meaningless in the absence of context. However, the expression of the degree to which the units arrive in the garage for service on schedule is a reflection of both the effectiveness of the preventive maintenance program and the attentiveness of management to servicing the equipment. Similarly, vehicle downtime is a reflection of the expertise of mechanics and the management of the workflow.

Recommendation: Each of the divisions of the Department of Public Works should enhance its website to provide more meaningful information. This should incorporate description of the infrastructure and equipment for which each division is responsible, but it also should incorporate performance measures that focus, not on simple workload metrics, but rather the efficiency and effectiveness with which the divisions are utilizing their resources.

14. IN TOTAL, THE USE OF OVERTIME IN THE DEPARTMENT IS WITHIN EXPECTED RANGES, BUT ITS DISTRIBUTION AMONG DIVISIONS POINTS TO STAFFING ISSUES.

The very nature of public works organizations is that they must respond to emergencies and other unpredictable events. These events may occur either conveniently during normal business hours, or later, when relatively few, or no, staff members are available to abate the problems. Thus, it is understandable, and even predictable within certain historical ranges, that overtime will occur. This is, and has been, the case in Watertown’s Public Works Department, as it is in all other public works departments that are not fully-staffed 24 hours per day.

In the project team’s experience, overtime expenditures as a percentage of total salaries typically fall within the range of 6% to 12%. Overall, Watertown’s Public Works Department’s percentage, including that for snow and ice removal, is 10.2%, which is well within the expected range. This percentage falls even lower, to 8.0%, when removing overtime expenditures for snow and ice removal, which are highly unpredictable events. However, the distribution of overtime usage among DPW divisions is highly variable, as the table below shows.

Division	Full Time Salaries	Non-Snow & Ice Overtime Expenditure	Overtime Expenditure Percent of Salaries
Administration	\$397,026	\$14,359.97	3.62%
Central Motors	\$233,935	\$27,626.99	11.81%
Highway	\$450,817	\$69,036.76	15.31%
Sewer	\$244,933	\$1,449.04	0.59%
Water	\$641,012	\$5,102.28	0.80%
Cemetery	\$107,705	\$7,673.07	7.12%
Property & Bldgs.	\$239,116	\$48,134.39	20.13%
Forestry	\$151,174	\$13,180.86	8.72%
Parks	\$231,547	\$29,060.38	12.55%
Total	\$2,697,265	\$215,623.74	7.99%

As the table shows, the usage of overtime varies greatly among divisions, with a low of 0.59% of salaries (Sewer Division), to a high of 20.13% of salaries (Property & Buildings). The Highway Division is relatively high, at 15.31% of salaries, but this may be reasonably expected with the number of vacancies

in the Division. The project team has addressed this situation in a separate section of this report and will not duplicate that discussion here.

The 20% overtime in Property & Buildings is of some concern, as this is well above typical levels for any organization. The project team has noted earlier in this report that the vast majority of this Division's requested work through the work order system is for signage issues. However, it is unlikely that these issues account for a substantial amount of overtime, as these may be postponed in most cases until the following work day. The majority of overtime usage, therefore, almost certainly is due to special community events such as Faire in the Square and Concerts on the Common.

Recommendation: The Department should routinely monitor overtime expenses and the causes for the overtime. At the same time, they should take affirmative steps to reduce the number of emergency repairs, which often trigger overtime use, through implementation of a preventative maintenance program of Town assets.

15. THE TOWN SHOULD CONSIDER ORGANIZATIONAL AND STAFFING CHANGES IN THE DIVISION OF PROPERTY & BUILDINGS.

As noted in the Organizational Structure section of this report (page 39, recommendation #7), the project team has earlier recommended that the Town strongly consider the feasibility of consolidating facilities maintenance operations with the Schools. However, this will not, in itself, solve the issue of excessive overtime expenditures. The critical issues are:

- There is effectively no preventive maintenance being performed at any of the Town buildings. This is a situation which has reportedly existed for some time, and the inevitable result of this, over time, is failing systems and frequent emergency repairs.
- There are no routine structural integrity tests being conducted at Town buildings.

The first of these factors is likely contributing to emergency repairs, both during and after normal working hours. The lack of structural integrity testing may mean that the Division of Property & Buildings is failing to receive early warning of potential structural failures in facilities that could be abated prior to emergency repairs being needed.

The Town likely has invested tens of millions of dollars in the facilities for which the Property and Buildings Division is responsible, and these facilities have not been properly and preventively maintained. The Division is responsible for 230,300 square feet of maintainable space, and is doing so with a Supervisor and a Chief Electrician who are both responsible for far more than building maintenance. The Supervisor manages contractors, supervises the division's employees and makes work assignments, directs the installation of traffic signage, and other duties beyond the hands-on carpentry work the incumbent is capable of performing. The Chief Electrician primarily is responsible for the fire alarm and emergency communications systems in Town, in addition to being responsible for electrical systems in Town buildings. These other duties take away from their respective abilities to dedicate time to preventive, and even corrective, maintenance of the Town's facilities.

To restate, the Center’s project team recommends that the Town consider consolidating facilities maintenance and management operations with that of the Schools. However, if this is not considered to be a viable option by one or the other of these organizations, then the project team recommends that the Public Works Department hire an HVAC Technician to supplement the activities of the Supervisor/Carpenter and the Chief Electrician. Further, the project team recommends that the Property & Buildings Division transfer the currently-vacant position of Sign Technician to the Highway Division. This is advisable not only because signage issues are such a significant portion of the Division’s activities and thus consume a significant portion of the Supervisor’s time, but because most of the signage work is in areas of the Town for which the Highway Division is responsible currently (i.e., the Town’s rights of way).

Recommendation: The project team reiterates its recommendation for the Town to consider consolidating facilities maintenance and management activities with the Schools. However, if this is not done in the short term, the Town should hire an HVAC Technician to supplement the facilities maintenance activities of the Supervisor/Carpenter and the Chief Electrician. The project team does not possess information on the exact cost of such a position, but it is reasonable to expect a direct salary cost of approximately \$55,000. The project team also recommends that the Property & Buildings Division transfer the signage function to the Highway Division, both to allow a greater focus on building maintenance and because signage issues typically occur in areas for which the Highway Division is already responsible.

16. THE DEPARTMENT SHOULD TAKE ACTIONS TO MINIMIZE ABSENCES.

The project team has made recommendations throughout this report that will increase the efficiency of management and staff, and the effectiveness of the work performed. However, for any of these recommendations to achieve their desired effects, employees must be at work and available for deployment in the field. In analyzing the number of sick days taken by management, support staff and field workers, this is not uniformly the case.

Department employees receive a total of 15 sick days per year. These are to be used for legitimate illnesses that prohibit the employee from performing work, and that risk the health of other workers if they are exposed to that employee. In analyzing the incidence of sick time taken, it is clear that many employees are taking very nearly the maximum of 15 sick days annually, as the summarized table below shows.

Sick Days Taken	No. of Employees	Average Seniority (Years)
13 or more	15	17.6
10 to 12.9	10	12.9
7 to 9.9	6	15.4
Less than 7	13	16.8
Total	44⁶	15.6

⁶ There were 45 employees listed in the divisional rosters, from which these data were taken. One of these employees had less than one year of seniority and was therefore excluded, since there was insufficient data related to the number of sick days accumulated and taken.

The table shows that approximately one-third of the Department's employees have averaged over 13 sick days per year. Further, these employees tend to be the most senior in the Department, with 17.6 years, on average. When the second category of sick time taken (i.e., from 10 to 12.9 days per year) is included, fully 25 of the 44 employees (56.8%) average at least 10 days of sick leave per year. With this degree of absence it is very difficult to manage the workforce to accomplish planned and scheduled work. Many public works tasks require multi-employee crews, and if insufficient numbers of employees are available for work, these tasks are delayed. Alternatively, staff members from other divisions are borrowed in order to complete the tasks, potentially causing work delays in those divisions.

It is notable that, of the three division Supervisors with sufficient time in the Department to make a calculation, each has averaged less than seven sick days per year.⁷ However, the Department Superintendent, with 24 years of seniority, has averaged approximately 14.6 days of sick leave per year. Given that the majority of decisions of the Department are made by the Superintendent, this is yet another point at which work of the Department may be delayed.

The Department needs to take steps to minimize the use of sick leave. There are clearly legitimate needs for using sick leave, and the project team wishes to acknowledge these, and further, has no specific knowledge of abuse of the sick leave policy. However, the Department as a whole is averaging an extraordinary 10.1 days of sick leave per employee on an annual basis.

The Department should make a statement, both verbally and in its Department Policies, that attendance is expected and required for the accomplishment of the Department's work. Further, the Department should state that it will require a written medical note from those employees who exceed a pre-established number of sick days in a year. If employees cannot produce the required note, or continue to exceed the pre-established threshold for attendance, a written reprimand should be issued. This policy cannot be effectively enforced, however, if the Department Superintendent is among the employees with the highest incidence of sick leave. The project team therefore recommends that the Town Manager enforce the same policy with the Superintendent as will be enforced within the Public Works Department for its employees.

Recommendation: The Department should take steps to minimize the incidence of sick leave by establishing a policy that attendance is both expected and required for the accomplishment of the Department's work. The Department should begin strictly enforcing Article 8, Section 5 of the Teamster Collective Bargaining Agreement which states, in part, that "the Superintendent or his designee may require the presentation of a doctor's certificate or report in connection with any claim for sick leave."

17. THE DEPARTMENT SHOULD CONSIDER OPPORTUNITIES TO OUTSOURCE CERTAIN SERVICES.

The Department of Public Works performs most of its services with departmental personnel. And, in fact, the Department has not suffered severe staffing eliminations and down-sizing to the degree that

⁷ One Supervisor has less than one year of seniority, and one that was listed in the roster is no longer employed by the Town.

many other municipal public works departments have experienced in the past several years, making it feasible to perform many of these services internally.

The project team does, however, believe that outsourcing certain services makes financial and operational sense under several conditions. Almost any departmental service may be outsourced, or privatized; however, the DPW should be judicious in the decision-making process to do this. The project team has provided a sample scoring methodology in Appendix F to help in the determination as to whether a specific service is a good candidate for outsourcing. Ultimately, however, the decision should rest with the Superintendent, in concert with division supervisors as well as the Town Manager.

Generally, functions that are good candidates for outsourcing are those that are either performed infrequently enough by internal staff to attain a sufficient degree of skill, or are provided by multiple contractors in the area, creating price competition that reduces the cost to the Town.

As has been noted earlier in the report, the Department generally utilizes private contractors in a prudent manner, however all functions should be periodically re-evaluated for either the potential for outsourcing or, for those functions currently outsourced, for potentially performing with Department personnel. The Department does perform certain functions internally that many public works departments have found to be candidates for outsourcing, such as, for example, street sweeping, cemetery operations and pavement markings.

Recommendation: Institute a structured approach to the evaluation of the feasibility of outsourcing. The Department should use, or modify, the scoring methodology provided in Appendix F for all functions performed by the divisions in order to maximize the utilization of internal staff.

18. A FORMAL SAFETY MANAGEMENT PROGRAM SHOULD BE ESTABLISHED AND IMPLEMENTED.

Although the project team did not analyze historical incidences of worker's compensation in the Public Works Department, there have been a number of cases in recent years. The Public Works Department does not have a comprehensive employee safety program, and this may be contributing to the number of cases of worker's compensation. With a lean staff, it is imperative that the Department strive to maximize attendance of all employees, and ensuring that safety practices are taught and observed in the workplace will not only assure this, but will minimize costs to the Town as well.

There are a number of elements, essential to effective employee safety program, which are absent, including the following:

- The Department has not established goals, objectives, and performance measures for employee safety. These could, for example, include such objectives as the total number of recordable injuries and illness cases per 100 full-time employees shall be less than the average for local governments in Massachusetts.
- The Town does not provide a "core" safety training program for employees.
- The Public Works Department does not have a designated Safety Coordinator.

- The Department does not have an active safety committee.
- An employee safety handbook has not been developed.

There are clearly a number of opportunities for the Public Works Department to improve its employee safety program, and the elements above should be implemented as soon as possible to potentially avoid a higher incidence of worker's compensation claims.

Recommendation: The Public Works Department should establish goals, objectives, and performance measures for its employee safety program.

CONCLUSION

The Center has made many observations and recommendations in the preceding pages which, if implemented, will result in a more efficient and effective Public Works Department in Watertown. However, the implementation of these changes will certainly require the acceptance and dedication of Department management. There are many individual recommendations for change made in this report, but collectively they will require a change in orientation from a reactive organization to one that more actively plans and manages work.

The Superintendent of the Department should be relied upon to initiate many of the recommended changes in the organization and should also instill the change in overall orientation toward proactive planning and management, and even more toward responsive customer service. But in order for the types of change recommended in this report to be successfully implemented, the Superintendent will need support from outside of the department, in terms of resources and clear direction and priorities. The Town Manager and Council will be important partners in this effort as they make budget decisions, work with the Superintendent to develop a phasing plan, track progress, and hold leadership accountable for making progress on implementing the recommendations of this report.

Many books have been written on the topic of effective management styles and practices, however these generally distill down to a recurring few managerial traits, and the project team has provided these in the table below. Although not all managers are equally proficient in each of the traits, and not all traits are, themselves, of equal importance to any particular organization, it is instructive to periodically reacquaint management with these traits and assess performance against them.

Trait	Description
Personal Characteristics	
Self-Motivation	A leader of an organization cannot motivate others if he or she cannot self-motivate. This is the ability to get oneself going and take charge of the task at hand.
Integrity	Subordinates need to know that department management will advocate for them, do what he/she promises, and follow the rules.
Dependability	Subordinates need to know that department management can be counted on to follow through on instructions and commitments, and to be on the job at least as frequently as the workers themselves.
Flexibility	The ability to adapt to changing conditions is an important personal characteristic.
Business Characteristics	
Knowledge	Any specific departmental leader may not be the Department's expert in all fields, but must be knowledgeable and conversant in the important ones, and further, must stay abreast of changing technology and operational practices in the field. This should not simply be a philosophy of comparing one's operations to surrounding towns, but rather to those of industry best practices
Delegation of Work	An effective leader knows that he/she cannot possibly accomplish everything alone, but should be able to both identify competent subordinates and give them tasks that allow them to learn and succeed.

Organization	Departmental management should be able to anticipate projects, adhere to timelines, track progress and report on them in a timely manner.
Financial Acumen	Departmental management should have a basic knowledge of financial and budgetary concepts in order to manage projects and budgets that have been entrusted to them.
Legal Knowledge	An organizational leader need not be a legal expert, but should have a grasp of legal concepts that have an impact on their operations.
Communication Characteristics	
Written Communication	An organizational leader should be able to express him/herself clearly and with proper grammar and tact. This includes both formal correspondence as well as e-mails, internal memos, and even follow-up correspondence with residents who take the time to either write letters to the Department or to make routine work requests.
Feedback	Departmental management should be able to provide immediate and meaningful feedback to subordinates on their performance, and do so in a constructive, thoughtful and respectful manner. He/she should always be scanning for “teachable moments” with subordinates.
Active Listening	Listening is perhaps among the most critical skills of any leader. The effective leader is one who listens attentively to both superiors and subordinates, and follows with a summary of what he/she understands from the conversation in order to minimize the possibility of misunderstanding.
Specificity of Instruction	The effective departmental leader is specific both in instruction as well as expected outcomes.

There are undoubtedly other management characteristics of importance, however, in the project team’s experience, these are core and critical ones against which every manager, whether in Public Works or other departments, should be evaluated. However, as this study focused on the Public Works Department, the project team recommends that the Town Manager evaluate the Superintendent and Supervisors in that Department against these traits and characteristics in a formal manner and make adjustments as appropriate.

APPENDIX A:
DESCRIPTIVE PROFILE OF THE PUBLIC WORKS DEPARTMENT

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DESCRIPTIVE PROFILE OF THE PUBLIC WORKS DEPARTMENT

The following pages provide a descriptive profile of the Public Works Department and its component divisions. The purpose of this descriptive profile is to document the project team's understanding of the Department's organization, allocation of staff by unit and function and principal assigned responsibilities of staff. Data contained in the profile were developed based on the work conducted by the project team over the past month, including:

- Interviews with staff in the Department, Council, and the steering committee members.
- Collection of various data describing organization and staffing, workload and service levels as well as costs.
- Documentation of key practices as that relates to work planning and scheduling, policies and procedures, as well as work processes.

In this document, the structure of each division's descriptive profile is as follows:

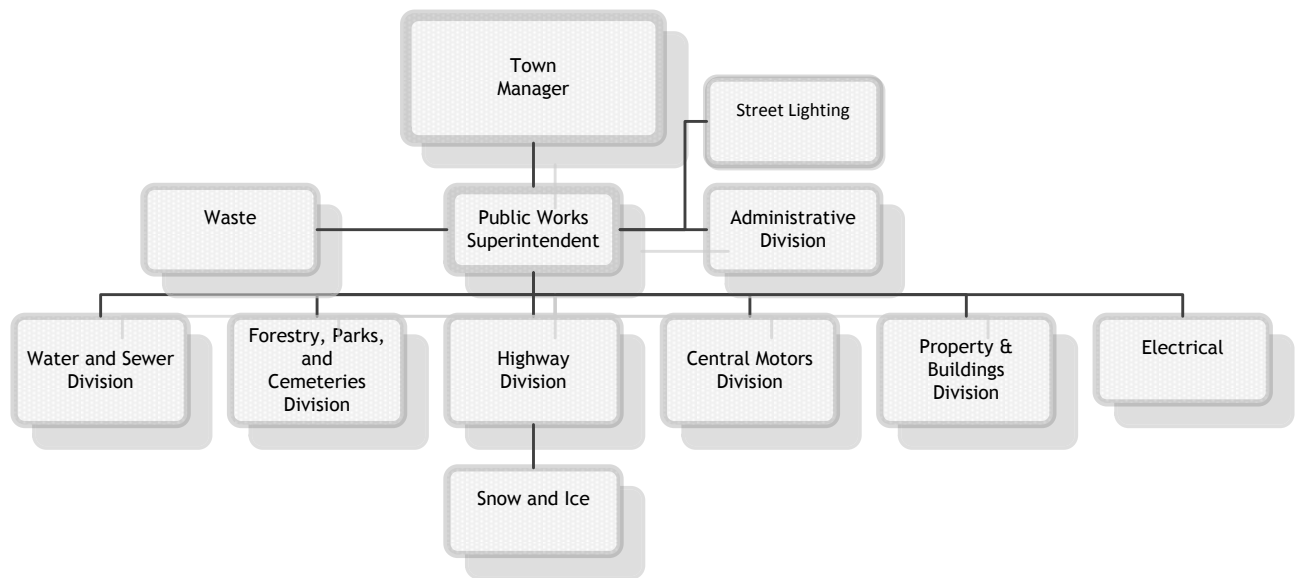
- Organizational charts showing all staff positions by function and shift as appropriate and reporting relationships.
- Summary descriptions of key roles and responsibilities of staff. It should be clearly noted that responsibility descriptions are not intended to be at the "job description" level of detail. Rather, the descriptions are intended to provide the basic nature of each assigned position.
- Presentation of the actual expenditures for FY11, as well as approved budgets for FY12 and recommended budgets for FY13 for each division.
- Summaries of key indices of workloads and service levels provided by each division.

PUBLIC WORKS DEPARTMENT

The Department of Public Works (DPW) has broad responsibilities in the Town. Included are divisions dealing with finance and administration; property & building maintenance; snow removal; street and sidewalk maintenance and improvements; vehicle maintenance and repair; water and sewer maintenance; and trees, park and cemetery maintenance.

The following organization chart provides an overall depiction of the reporting relationships of the divisions of Public Works. Note that the chart depicts the organization as it was described to the project team, and is not offered as an official organizational structure.

Detailed organization charts are provided within the divisional descriptive profiles that follow.



The Department of Public Works has a total staffing contingent of 51 authorized positions, of which 44 are currently filled. It should be noted that there is one position in Water & Sewer, one in Highway and one in Cemetery that are on medical leave or Workers Compensation leave. These positions are shown as “filled” in the table, however they are currently unavailable for work.

Division	FY 2011		FY 2012		FY 2013	
	Auth.	Filled	Auth.	Filled	Auth.	Filled
Administration	6	4	6	4	6	4
Highway	10	8	9	7	9	7
Property & Buildings	4	3	5	5	5	4
Forestry, Parks, Cemeteries	11	8	10	10	10	10
Central Motors	4	4	4	4	4	3
Water & Sewer	16	16	17	16	17	16
Total DPW	51	43	51	46	51	44

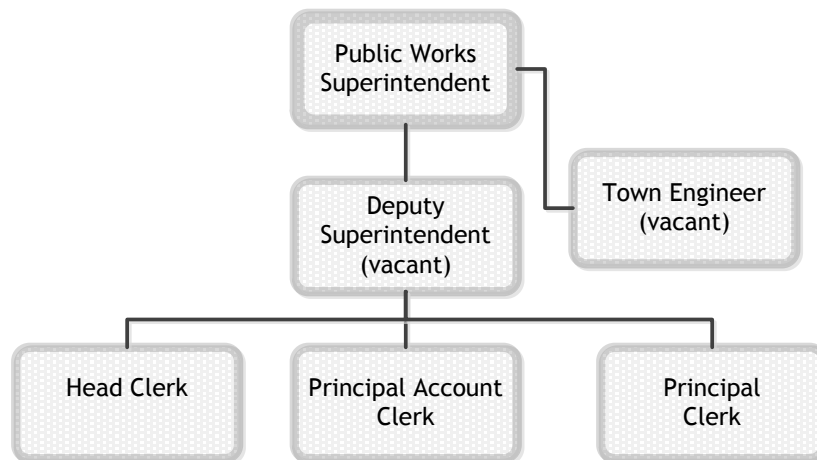
A. DIVISION OF ADMINISTRATION

1. INTRODUCTION

Public Works Administration is responsible for all administrative and financial functions of the Department such as accounts payable and receivable, water and sewer billing, purchasing, payroll, permit sales, cemetery sales and record-keeping, etc. It is also responsible for public relations, information dissemination, work order tracking, coordination with construction contractors and the solid waste and recycling contractor, and interface with state and federal agencies.

2. ORGANIZATION

Public Works Administration is comprised of the Public Works Superintendent, a Head Clerk, one (1) Principal Account Clerk, and one (1) Principal Clerk. In addition to these positions, the Department is allocated a Deputy Superintendent position that is currently unfilled. There is also an unfilled Town Engineer position in the Division of Administration. Public Works Administration's organizational structure is provided in the chart below.



3. STAFFING

The following table presents a summary of Public Works Administration staffing and key elements of responsibilities.

Division	Staffing by Classification		Key Elements of Staffing and Scheduling
Public Works Administration	Public Works Superintendent	1	<ul style="list-style-type: none"> • Provides the overall executive management and administration of divisions within the DPW. • Responsible for developing the overall priorities of the DPW, including the development of policies and procedures, performance goals and objectives, monitoring of budget, etc. • Prepares the operating budget and confers with Town Manager on formulating the capital improvement program, and meets with division managers on a regular basis to discuss operations, issues, performance, etc. • Ensures that department operations conform to local, state, and federal government regulations, and other applicable rules and policies. • Meets with the public to discern needs, answer questions, receive comments and complaints, and to direct DPW resources to abate these concerns and complaints. • As member of Traffic Commission, makes recommendations for changes in traffic flow.
	Deputy Superintendent	1 (vac)	<ul style="list-style-type: none"> • Coordinates departmental compliance with requirements of regulatory agencies and consent agreements • Responds to resident requests and resolves customer service issues • Conducts requested research from Town Council, Superintendent, and makes reports
	Engineer	1 (vac)	<ul style="list-style-type: none"> • Writes specifications for sidewalk, catch basin, streets • Reviews development plans and makes comments. Corresponds with developers on required modifications. • Supervises design, survey and inspection of storm water systems, buildings and other Town structures • Manages the design and administration of municipal infrastructure projects • Prepares plans and drawings and oversees construction, inspection and quality assurance
	Head Clerk	1	<ul style="list-style-type: none"> • Serves as confidential secretary to the Superintendent • Orders supplies for the office • Processes weekly payroll for the Department for submittal to Auditor's office • Handles inquiries from contractors on, e.g., bond renewals, other questions. Forwards technical questions to the appropriate supervisor or to the Supt. • Receives work order requests from the public, both in person and on line. Forwards requests to appropriate division, and

Division	Staffing by Classification		Key Elements of Staffing and Scheduling
			<p>closes out once completed.</p> <ul style="list-style-type: none"> • Posts job openings, sends copies to Personnel. Once filled, completes paperwork. Completes Personnel Action Forms (PAF). • Assists in development of part of budget • Processes billings for backflow testing
	Principal Account Clerk	1	<ul style="list-style-type: none"> • Enters cemetery interments (locations, owner, etc.), deposits checks for burials, assists the public in locating graves, processes accounts payable, enters permits (street closures, utilities, sidewalk crossings, meters, etc.), closes out work orders. This Clerk also fills in on payroll processing and backflow inspection billing. Waits on public at counter and answers phones. Scans water and sewer cards and uploads into system.
	Principal Clerk	1	<ul style="list-style-type: none"> • Handles telephones and assists visitors at the counter. • Updates web site, posting information on, e.g., composting, rain barrels, storms, droughts and conservation, emergency parking, etc. • Takes notes at Stormwater Subcommittee meetings, sits on Recycling Subcommittee. • Researches information on assigned projects such as single stream recycling

4. Financial

The following table provides the actual budget for FY11, and the approved budgets for FY12 and FY13 for the Administrative Division of Public Works.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 263,645	\$ 397,026	\$ 413,249
Longevity	\$ 4,000	\$ 4,387	\$ 5,725
Clothing	\$ 1,000	\$ 1,000	\$ 450
Total Personal Services	\$ 268,645	\$ 402,413	\$ 419,424
Equipment Maintenance	\$ 4,322	\$ 4,775	\$ 4,775
Contracted Services	\$ 2,419	\$ 2,800	\$ 2,800
Medical Testing			\$ 6,000
Communications	\$ 23,675	\$ 23,854	\$ 23,854
Office Supplies	\$ 8,000	\$ 8,000	\$ 8,000
Printing and Forms	\$ 4,101	\$ 4,600	\$ 4,600
Uniforms/Cleaning			\$ 25,000
Dues and Subscriptions		\$ 100	\$ 100
Staff Development		\$ 9,600	
Total Expenses	\$ 42,517	\$ 53,729	\$ 75,129
Total Administration	\$ 311,162	\$ 456,142	\$ 494,553

5. WORKLOAD

The following table provides selected workload information for the Administration Division.

Service	Workload
Payroll	<ul style="list-style-type: none">Once weekly for 51 staff members (includes Admin., Streets, Lands & Buildings, Central Motors and Water and Sewer divisions)
Budget	<ul style="list-style-type: none">Department Director oversees and is responsible for a total DPW budget of \$8.5 million, and a water/sewer enterprise budget of \$14,708,934.
Cemetery	<ul style="list-style-type: none">In FY10, handled 115 interments and 17 cremations. In FY11, handled 106 interments and 12 cremations.In FY10, sold 23 graves for immediate use, and installed 31 foundations. In FY11, sold 19 graves for immediate use, and installed 37 foundations.

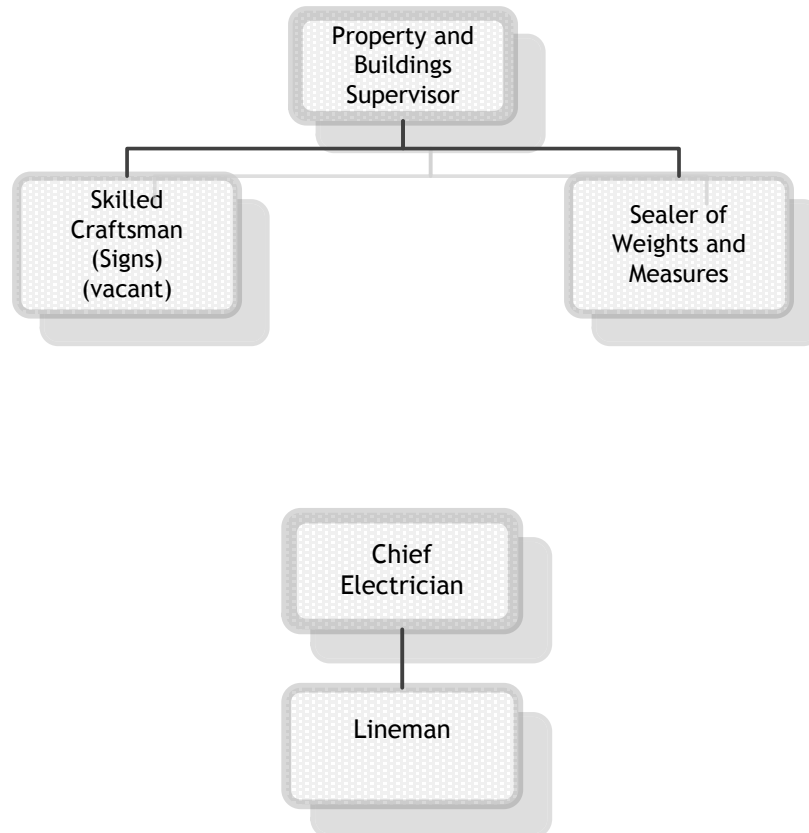
B. PROPERTY AND BUILDINGS DIVISION

1. INTRODUCTION

The Division of Property and Buildings is responsible for fuel dispensing, street lighting, snow removal and facilities maintenance and repair services for the Public Works complex, Town Hall, the Town's Library, two storage buildings, old Police station and Town-owned vacant buildings. Further, the Division responds as requested at the Police and Fire buildings. Note that school facilities are maintained by the Schools themselves.

2. ORGANIZATION

The Division of Property and Buildings' organizational structure is portrayed in the organization chart below. The Division reports that the Electrician is a separate division manager, reporting to the Department Superintendent. The project team has therefore shown two separate organization charts below.



3. STAFFING

The table below provides a summary of the Property and Building Division’s staffing and key elements of responsibilities.

Division	Staffing by Classification		Key Elements of Staffing and Scheduling
Property and Buildings Administration	Supervisor	1	<ul style="list-style-type: none"> • Oversees building maintenance and repair services of the Town, and handles any customer complaints related to these services. Oversees the work of contractors performing work in Town facilities. • Receives work requests from administrative staff, assigns work, tracks progress of work performed. • Coordinates facilities maintenance services, including electrical, plumbing, HVAC, painting, structural repairs, etc. for Town Hall, Library, two former libraries currently serving as storage buildings, the former Police station, Town-owned abandoned buildings and Public Works complex. • Ensures that services are performed to customer satisfaction. • Ensures the timeliness of service provision. • Serves as Town Carpenter, repairing, maintaining and constructing structural facets of facilities. • Determines the needs for contract services and coordinates with contractors on timing and quality assurance. • Coordinates the installation of traffic signs. • Coordinates the hanging of Christmas lights.
Property and Buildings Operations	Chief Electrician	1	<ul style="list-style-type: none"> • Makes repairs to electrical components in Town buildings, fire alarms. • Directs the activities of the Division as they relate to electrical repairs, fire alarms, traffic signal controller boxes, etc. • Clears cable and telephone wires in storm emergencies. • Hangs Christmas lights. • Supervises the work activities of the Lineman.
	Lineman	1	<ul style="list-style-type: none"> • Runs wires, changes lights and ballast, etc. • Assists in repair of fire alarm street boxes, master boxes, other municipal equipment. • Installs, maintains, repairs electrical systems in Town buildings. • Re-lamps street lights, maintains lighting at Town Hall, scoreboards • Assists in hanging Christmas lights
	Skilled Craftsman	1 (vac.)	<ul style="list-style-type: none"> • This position is currently vacant. • Develops and installs street and building signs. • Assists in hanging Christmas lights.
	Sealer of Weights and Measures	1	<ul style="list-style-type: none"> • Performs services in accordance with State mandate. • Ensures all metered products are accurate by field checking devices such as food scales, fuel dispensing systems, taxi meters, oil truck dispensing devices, etc. • Collects money from parking meters in various locations in the Town. Transports fee boxes to Treasurer’s office. • Repairs broken parking meters.

4. Financial

The following table provides the actual budget for FY11, and the approved budgets for FY12 and FY13 for the Property and Buildings Division of Public Works.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 227,937	\$ 239,116	\$ 258,859
Part Time Salaries	\$ 22,411	\$ 23,435	\$ 25,755
Overtime	\$ 37,700	\$ 41,430	\$ 31,830
Longevity	\$ 6,809	\$ 7,600	\$ 9,415
Clothing	\$ 4,396	\$ 4,397	\$ 2,200
Total Personal Services	\$ 299,253	\$ 315,978	\$ 328,059
Electric	\$ 105,891	\$ 95,000	\$ 95,000
Gas	\$ 100,427	\$ 128,000	\$ 128,000
Building Maintenance	\$ 28,544	\$ 29,000	\$ 29,000
Traffic Control	\$ 100,604	\$ 108,438	\$ 108,438
Bldg. Maint. Supplies	\$ 36,436	\$ 36,000	\$ 36,000
Electrical Supplies	\$ 43,447	\$ 46,410	\$ 46,410
Tools	\$ 3,000	\$ 1,500	\$ 1,500
Custodial Supplies	\$ 8,058	\$ 8,058	\$ 8,058
Fire Supplies	\$ 457	\$ 2,520	\$ 2,520
Staff Development	\$ 796	\$ 1,000	\$ 1,000
Total Expenses	\$ 427,660	\$ 455,926	\$ 455,926
Total Prop & Bldg Operating	\$ 726,913	\$ 771,904	\$ 783,985
Replacement of Equipment	\$ 13,845	\$ 15,000	\$ 15,000
Total Capital	\$ 13,845	\$ 15,000	\$ 15,000
Total Operating and Capital	\$ 740,758	\$ 786,904	\$ 798,985

5. WORKLOAD

The following table provides selected workload information for the Property and Buildings Division.

Service	Workload
Maintenance of Facilities	<ul style="list-style-type: none"> Maintain Town Hall, libraries and Public Works complex
Facility Area Maintained	<ul style="list-style-type: none"> Not available
Traffic signs maintained	<ul style="list-style-type: none"> 2012 traffic sign inventory study indicated that there are 2,891 traffic signs on Town-owned roadways. This equates to about 39.3 signs per linear mile of roadway. Of the total, 2,311 are regulatory signs (79.9%); 285 are unlisted (9.9%); 166 are warning signs (5.7%); 55 are guide signs (1.9%); 48 are school signs (1.7%); and 28 are posts with missing signs (0.9%). The study indicated that 303 signs were obstructed from view, and 426 lacked the correct height. These two categories represent 25.2% of the total. The study also indicated that 85% of all signs do not comply with MUTCD standards, which pertain to retroreflectivity, size, condition, and whether the sign contains an MUTCD-approved graphic sign or symbol.
Scales and meters tested by Sealer of Weights & Measures	<ul style="list-style-type: none"> 400 annually
Parking meters	<ul style="list-style-type: none"> Collect from and repair 650-700 parking meters. Collection performed once weekly.

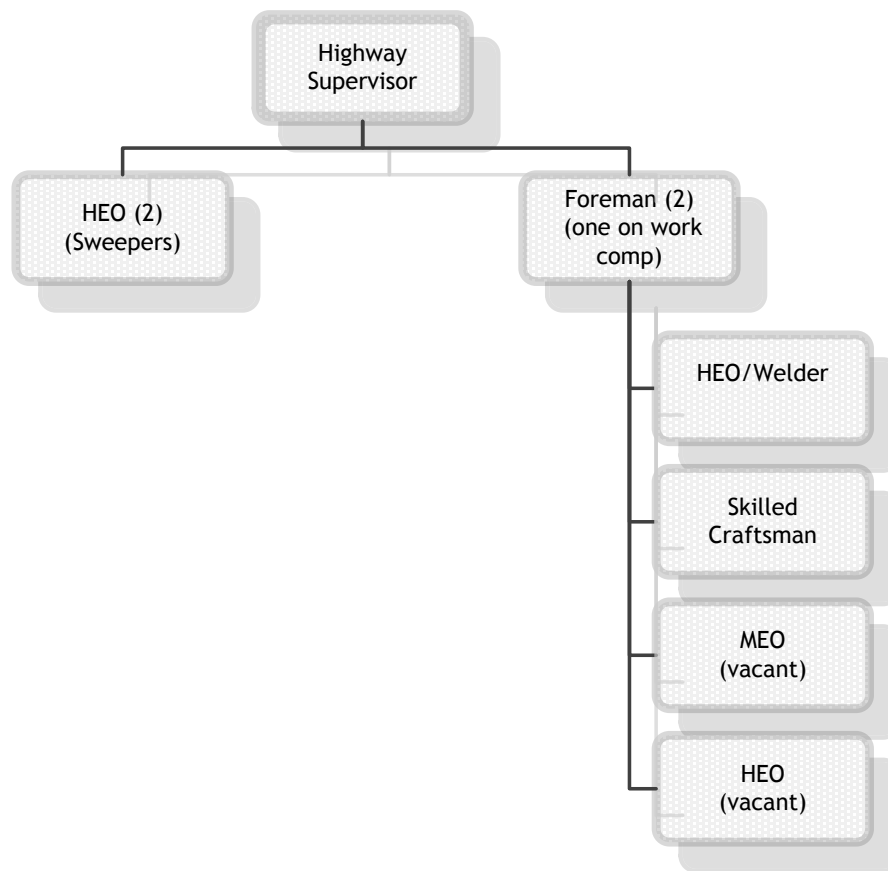
C. HIGHWAY DIVISION

1. INTRODUCTION

The Highway Division is responsible for the repair and maintenance of paved surfaces in the Town, of which there are approximately 72 center line miles, 140 linear miles of sidewalk, plus parking lots. The Division is also responsible for removing snow; sweeping streets and parking lots; repairing and replacing sidewalks; laying traffic markings; digging trenches for conduit pipe; maintaining grass borders between streets and sidewalks; trench restoration; clearing properties; removing leaves and brush; and other duties.

2. ORGANIZATION

The Highway Division's organizational structure is portrayed in the chart below.



3. STAFFING

The following table provides a summary of the Division’s staffing and key elements of responsibilities.

Division	Staffing by Classification		Key Elements of Staffing and Scheduling
Highway Division Administration	Supervisor	1	<ul style="list-style-type: none"> • Oversees the operations of the Highway Division, providing guidance in work scheduling and accomplishment. • Receives work requests relating to citizen requests for services as well as internally-generated requests, and ensures that these are assigned to appropriate staff, and that work is accomplished. • Coordinates with other divisions on street repairs and reconstruction. • Plans street resurfacing projects. • Oversees work of contractors performing work in streets, sidewalks, snow removal. • Directs work of crews in snow and ice removal • Processes insurance claims for damages to properties • Ensures that the recycling center (Grove Street) is clean and orderly, and that recyclable materials are hauled away on schedule • Reviews plans for road work and construction, and makes comments
Highway Operations	Foreman	2	<ul style="list-style-type: none"> • One Foreman currently on Workers Comp. • Foremen act as working members of assigned crews • Directs crews in completion of assigned duties • Ensures that divisional equipment is properly maintained and repaired • Operates equipment in digging trenches, hauling asphalt and concrete, laying traffic markings.
	HEO/Welder	1	<ul style="list-style-type: none"> • Uses equipment such as jackhammer, compactor, backhoe, skid steers, front loaders, etc., in digging trenches and other related work. • Operates a variety of hand tools in completing work such as chain saws, manual saws, etc. • Completes welding repairs for the Department. • Lays gravel. • Lays traffic markings
	HEO	3	<ul style="list-style-type: none"> • Two HEOs sweep all public streets and five parking lots, and respond to night calls. • Hand-clean parking lots. • 16 curb miles of downtown are swept 3 times weekly. • 128 curb miles outside downtown area are swept minimum of 3 times annually. • One HEO (sweeper) works Sun through Thurs, 11:00 pm to 7:00 am. • One HEO (sweeper) works Tue through Sat, 11:00 pm to 7:00 am. • The Division has two sweepers. These are used by the Department as first sanders in snow events.

Division	Staffing by Classification		Key Elements of Staffing and Scheduling
			<ul style="list-style-type: none"> • HEO can supervise and run the activities of a crew in the absence of the Foreman. • One HEO position is vacant.
	Skilled Craftsman	1	<ul style="list-style-type: none"> • Performs finishing work on asphalt and concrete projects. • Can operate a small crew. • Sets forms for sidewalks.
	MEO	1	<ul style="list-style-type: none"> • Position is currently vacant • Performs manual labor (shoveling, raking, jackhammering, etc.) • Picks up and delivers asphalt in truck

4. Financial

The following table provides the actual expenditures for FY11, the budget for FY12, and the recommended FY13 budget for the Highway Division.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 363,379	\$ 450,817	\$ 498,789
Overtime	\$ 58,930	\$ 69,113	\$ 43,613
Shift Differential	\$ 3,834	\$ 6,264	\$ 6,264
Longevity	\$ 11,714	\$ 16,600	\$ 12,050
Clothing	\$ 7,000	\$ 9,000	\$ 4,050
Meal Allowance		\$ 500	
Total Personal Services	\$ 444,857	\$ 552,294	\$ 564,766
Rental of Equipment	\$ 4,860	\$ 5,000	\$ 5,000
Street Repairs	\$ 330,946	\$ 332,000	\$ 332,000
Tools	\$ 11,000	\$ 11,000	\$ 11,000
Maintenance Supplies	\$ 85,130	\$ 85,300	\$ 85,300
Total Expenses	\$ 431,936	\$ 433,300	\$ 433,300
Total Highway Operating	\$ 876,793	\$ 985,594	\$ 998,066
Additional Equipment	\$ 4,525	\$ 4,600	\$ 4,600
Replacement of Equipment	\$ 36,000	\$ 36,000	\$ 36,000
Total Capital	\$ 40,525	\$ 40,600	\$ 40,600
Total Operating and Capital	\$ 917,318	\$ 1,026,194	\$ 1,038,666

5. WORKLOAD

The following table provides selected workload information for the Streets Division.

Service	Workload
Maintain Roads	<ul style="list-style-type: none"> • 73.59 center line miles • There are 6 Foremen, MEOs, HEOs, and Skilled Craftsman in the Highway Division maintaining these roads. This equates to about 12.3 miles per position. (This does not include street sweepers, which are not engaged in asphalt maintenance). However, with the vacancies of one Foreman, one HEO and one MEO, this equates to 24.6 center line miles per position. • Placed 580 tons of asphalt in road maintenance activities in 2011 • Hauled 918 tons of solid fill for asphalt and concrete recycling in 2011.
Pavement Management	<ul style="list-style-type: none"> • 2012 pavement condition study indicated that there are 73.59 miles of accepted roads in the Town (1.59 miles of unaccepted roads). • The accepted Town roads had a road surface rating (RSR) of 59 on a scale of 100 in April, 2012. • The pavement management study indicated that the following repair methods and costs were required for the noted segment lengths: <ul style="list-style-type: none"> - Reconstruction (14.53 mi.) at \$27,963,933 - Reclamation (31.29 mi.) at \$56,155,695 - Mill and overlay (11.16 mi.) at \$7,272,319 - Advanced technologies (5.07 mi.) at \$735,389 - Crack seal (4.67 mi.) at \$25,863 - No maintenance required (6.96 mi.)
Maintain sidewalks	<ul style="list-style-type: none"> • Approximately 140 linear miles
Snow Removal	<ul style="list-style-type: none"> • Snow and Ice removal budget was \$882,000 in FY12.

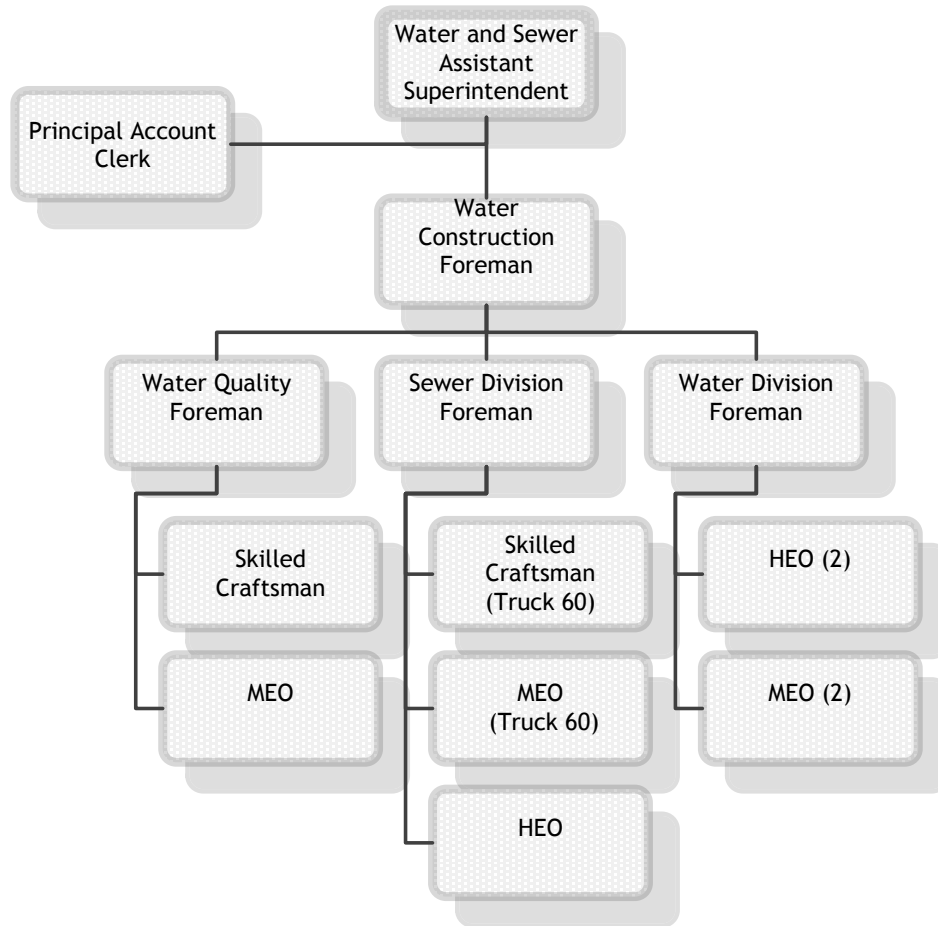
D. WATER AND SEWER

1. INTRODUCTION

The Water and Sewer Division maintains and repairs 80 linear miles of water line, 82 miles of sewer line and 80+ miles of drain line. The Division also assists in snow removal efforts. In addition, the Division installs and repairs 8,700 residential water services, 3,200 catch basins, 995 hydrants. The Division is also responsible for meter reading for approximately 9,000 accounts.

2. ORGANIZATION

The Water and Sewer organizational structure is portrayed in the organization chart below.



3. STAFFING

The following table provides a summary of the Water and Sewer Division’s staffing and key elements of responsibilities.

Division/Unit	Staffing by Classification		Key Elements of Staffing and Scheduling
Water and Sewer Administration	Assistant Superintendent of Utilities	1	<ul style="list-style-type: none"> • Oversees the operations of the Division, assessing requirements for infrastructure and technology improvements, determining appropriate service levels, etc. • Ensures compliance with NPDES and EPA regulatory requirements. • Develops daily plans of work for crews, and ensures that work is being performed in accordance with plans, and that crews have the needed equipment, materials and supplies. • Monitors and supervises contractors performing work on the Town’s water and sewer infrastructure, as well as work performed in excavation. • Responds to complaints of water leaks and drainage problems. • Possesses D4 License
	Water Construction Foreman	1	<ul style="list-style-type: none"> • Inspects work sites, taking pictures and documenting site activity before, during and after construction work. Also takes measurements in field. • Tracks and documents all work performed by crews on Weekly Work Sheets. • Receives requests for work from administrative section of Department on such issues as service renewals, meter checks, calls for low pressure, etc. • Makes manual sketches of water and sewer line locations. • Possesses D3 License
	Principal Account Clerk	1	<ul style="list-style-type: none"> • Processes water and sewer abatements • Makes deposits for final reads, new dwellings • Monitors Town building consumption • Orders gas and diesel and heating oil • Bills for water
Water Quality	Water Quality Foreman	1	<ul style="list-style-type: none"> • Prepares work for crew performing meter change-outs, meter reads, etc. • Performs backflow testing. • Educates residents on new service installations. • Handles water billing complaints. • Performs plan review for water infrastructure. • Incumbent possesses D1 license.
	Skilled Craftsman	1	<ul style="list-style-type: none"> • Repairs and test water meters. • Performs meter change-outs. • Reads meters. • Assists in repair of water/sewer main breaks. • Incumbent is preparing for backflow testing certification.
	MEO	1	<ul style="list-style-type: none"> • Repairs and test water meters. • Performs meter change-outs. • Reads meters. • Assists in repair of water/sewer main breaks.

Division/Unit	Staffing by Classification		Key Elements of Staffing and Scheduling
			<ul style="list-style-type: none"> • Incumbent currently on Workers Compensation
Water	Foreman	1	<ul style="list-style-type: none"> • Directs the activities of crews repairing leaks and catch basins, replacing hydrants. • Coordinates the annual hydrant flushing program. • Determines jobs to assign, and personnel, equipment and material resources needed for jobs • Observes work in the field to ensure work is done properly and answers questions from staff. • Conducts initial tests of backflow devices. • Tests all Town building backflow devices. • Meets with Asst. Superintendent to discuss work needing to be performed, and work that was accomplished during day.
	HEO	2	<ul style="list-style-type: none"> • Operates equipment and performs manual work in the repair of water leaks and catch basins. • One HEO works M-F, 7:00 am – 3:30 pm; one works W-Sun, 7:00 am – 3:30 pm.
	MEO	2	<ul style="list-style-type: none"> • Operates equipment and performs manual work in the repair of water leaks and catch basins.
Sewer	Foreman	1	<ul style="list-style-type: none"> • Directs the activities of crew engaged in hydrant repair, sewer backups, sewer maintenance. • Ensures crew has all needed equipment, materials and supplies to complete work. • The position is the lead worker on Truck 60, which is the on-call sewer emergency truck. • Possesses D1 License • Exercises gate valves.
	HEO	2	<ul style="list-style-type: none"> • Operates heavy equipment in the repair of hydrants, sewer line. • One works M, T, W, 7:00 am – 3:30 pm, Sa and Su 3:00 pm – 11:00 pm. • One works M-F 3:00 pm – 11:00 pm.
	MEO (Truck 60)	1	<ul style="list-style-type: none"> • Operates equipment and performs manual work in the repair of hydrants and sewer line. • Applies sewer chemicals. • Responds to emergencies and customer calls from Truck 60
	Skilled Craftsman (Truck 60)	1	<ul style="list-style-type: none"> • Performs mostly manual work in the repair of hydrants and sewer line. • Applies sewer chemicals. • Responds to emergencies and customer calls from Truck 60

4. Financial

The following table provides the actual expenditures for FY11, the budget for FY12, and the recommended FY13 budget for the Water and Sewer Divisions. Although the staff in these two divisions

work interchangeably at times, the divisions are separately-budgeted, and these two budgets are presented here.

Water			
Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 574,782	\$ 641,012	\$ 656,942
Overtime	\$ 127,169	\$ 122,000	\$ 122,000
Shift Differential	\$ 1,248	\$ 1,253	\$ 1,253
Longevity	\$ 17,824	\$ 24,530	\$ 23,200
Clothing	\$ 10,000	\$ 11,000	\$ 4,950
Meals		\$ 2,000	\$ 2,000
Total Personal Services	\$ 731,023	\$ 801,795	\$ 810,345
Computer Maintenance	\$ 9,956	\$ 16,500	\$ 16,500
Street Repair Services	\$ 59,458	\$ 75,900	\$ 75,900
Sidewalk Repair Svcs.	\$ 27,461	\$ 27,500	\$ 27,500
Contracted Services	\$ 15,000	\$ 15,000	\$ 15,000
Printing and Forms	\$ 7,052	\$ 21,246	\$ 21,246
Tools	\$ 8,234	\$ 14,000	\$ 14,000
Water Matls. And Supplies	\$ 134,266	\$ 124,990	\$ 124,990
MWRA Assessments	\$ 2,683,079	\$ 2,638,812	\$ 2,929,688
Reserve Fund		\$ 15,821	\$ 35,000
Total Expenses	\$ 2,944,506	\$ 2,949,769	\$ 3,259,824
Total Water Operating	\$ 3,675,529	\$ 3,751,564	\$ 4,070,169
Improvements	\$ 174,998	\$ 175,000	\$ 175,000
Replacement of Equipment	\$ 32,000	\$ 32,000	\$ 32,000
Total Capital	\$ 206,998	\$ 207,000	\$ 207,000
Retirement of Debt Principal	\$ 248,636	\$ 248,636	\$ 248,636
Interest on L-T Debt	\$ 39,544	\$ 37,388	\$ 35,063
Transfer to General Fund	\$ 1,296,564	\$ 1,308,092	\$ 1,366,270
Total Financing Issues	\$ 1,584,744	\$ 1,594,116	\$ 1,649,969
Total Water	\$ 5,467,271	\$ 5,552,680	\$ 5,927,138

Sewer			
Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 223,277	\$ 244,933	\$ 244,499
Overtime	\$ 106,828	\$ 95,500	\$ 95,500
Shift Differential	\$ 4,320	\$ 4,385	\$ 4,385
Longevity	\$ 3,300	\$ 6,105	\$ 5,700
Clothing	\$ 5,000	\$ 5,000	\$ 2,250
Meals		\$ 2,000	\$ 2,000
Total Personal Services	\$ 342,725	\$ 357,923	\$ 354,334
Rental of Equipment	\$ 30,000	\$ 30,000	\$ 30,000
Street Repair Services	\$ 58,971	\$ 59,000	\$ 59,000
Sidewalk Repair Svcs.	\$ 30,000	\$ 30,000	\$ 30,000
Contracted Services	\$ 186,232	\$ 186,712	\$ 186,712
Tools	\$ 73	\$ 7,500	\$ 7,500
Sewer Matls. And Supplies	\$ 51,466	\$ 65,266	\$ 65,266
MWRA Assessments	\$ 5,271,596	\$ 5,591,351	\$ 5,530,570

Reserve Fund		\$ 9,575	\$ 20,000
Total Expenses	\$ 5,628,338	\$ 5,979,404	\$ 5,929,048
Total Sewer Operating	\$ 5,971,063	\$ 6,337,327	\$ 6,283,382
Improvements	\$ 715,000	\$ 715,000	\$ 715,000
Additional Equipment	\$ 152,893	\$ 152,900	\$ 152,900
Replacement of Equipment	\$ 74,565	\$ 75,000	\$ 75,000
Total Capital	\$ 942,458	\$ 942,900	\$ 942,900
Retirement of Debt Principal	\$ 289,317	\$ 194,812	\$ 254,212
Interest on L-T Debt	\$ 39,544	\$ 37,388	\$ 35,063
Transfer to General Fund	\$ 1,199,725	\$ 1,250,071	\$ 1,266,239
Total Financing Issues	\$ 1,528,586	\$ 1,482,271	\$ 1,555,514
Total Sewer	\$ 8,442,107	\$ 8,762,498	\$ 8,781,796

5. WORKLOAD

The following table provides selected workload information for the Water and Sewer Division.

Service	Workload
Collection System	<ul style="list-style-type: none"> 78 linear miles of sewer line Televise system on periodic basis (no data currently on miles televised to date). This is done on contract. 80+ miles of drain line Responded to 45 house line sewer backups in 2011 Responded to 116 main line backups in 2011 Cleaned 28,623 feet (5.4 miles) of sewer line in 2011. This equates to about 6.6% of the total system. Completed 20 sewer system repairs in 2011. Rebuilt 15 manholes in 2011.
Catch Basin Cleaning	<ul style="list-style-type: none"> Oversee the catch basin cleaning contract for cleaning of 3,200 catch basins yearly Rebuilt 37 catch basins in 2011
Distribution System	<ul style="list-style-type: none"> 80 miles of water line 995 hydrants that are flushed bi-annually Repaired 11 water line breaks in 2011 Replaced 29 fire hydrants in 2011 There are approximately 3,200 gate valves in the system Billed \$75,785 for backflow testing in FY 2012, equating to about 1,010 inspections at \$75 each
Service Renewals	<ul style="list-style-type: none"> Performed 5 house service renewals in 2011 Repaired 41 house service line leaks in 2011

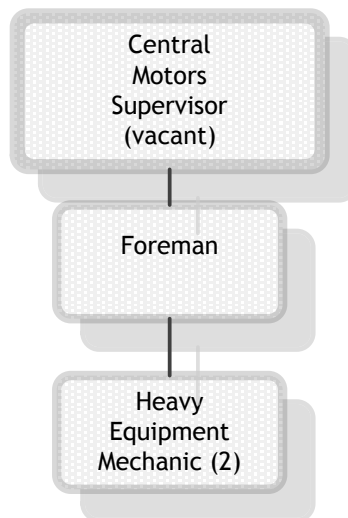
E. CENTRAL MOTORS

1. INTRODUCTION

The Central Motors Division maintains and repairs all Public Works Department vehicles and equipment, as well as Inspectional Services vehicles, the Senior Center bus, the Town Manager's vehicle, and, at times, certain Fire apparatus.

2. ORGANIZATION

The Central Motors organizational structure is portrayed in the organization chart below.



3. STAFFING

The following table provides a summary of the Central Motors staffing and key elements of responsibilities.

Division/Unit	Staffing by Classification		Key Elements of Staffing and Scheduling
Administration	Supervisor	1	<ul style="list-style-type: none"> • Assigns work to Foreman and Mechanic • Assures that repairs and maintenance are performed appropriately and in accordance with safety requirements and customer needs • Completes reports of work performed on each piece of equipment and maintains manual files of work histories. • Performs mechanical repairs as necessary. The incumbent reports that 2 hours per day are spent in “wrench turning” activities.
Operations	Foreman	1	<ul style="list-style-type: none"> • Repairs and maintains vehicles, equipment and small engines • Obtains necessary parts for repairs and maintenance • Diagnoses vehicle and equipment malfunctions using diagnostic equipment and experience in similar repairs.
	Heavy Equipment Mechanic	2	<ul style="list-style-type: none"> • Repairs and maintains vehicles and heavy equipment for the Town.

4. Financial

The following table provides the actual expenditures for FY11, the budget for FY12, and the recommended FY13 budget for the Central Motors Division.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 227,433	\$ 233,935	\$ 239,784
Overtime	\$ 12,120	\$ 13,135	\$ 13,000
Longevity	\$ 8,600	\$ 10,630	\$ 10,300
Clothing	\$ 4,000	\$ 4,000	\$ 1,800
Total Personal Services	\$ 252,153	\$ 261,700	\$ 264,884
Equipment Maintenance	\$ 41,760	\$ 42,070	\$ 42,070
Tools	\$ 11,938	\$ 12,000	\$ 12,000
Gasoline	\$ 256,854	\$ 356,248	\$ 386,700
Vehicle Parts	\$ 74,839	\$ 75,080	\$ 75,080
Total Expenses	\$ 385,391	\$ 485,398	\$ 515,850
Total Central Motors Operating	\$ 637,544	\$ 747,098	\$ 780,734
Additional Equipment	\$ 4,000	\$ 4,000	\$ 4,000
Vehicle Replacement	\$ 30,000	\$ 30,000	\$ 30,000
Total Capital	\$ 34,000	\$ 34,000	\$ 34,000
Total Operating and Capital	\$ 671,544	\$ 781,098	\$ 814,734

5. WORKLOAD

The following table provides selected workload information for the Central Motors Division.

Service	Workload
Equipment Maintenance	<ul style="list-style-type: none"> • The Division maintains 120 vehicles and pieces of equipment. The average age of the equipment is 9.8 years. The breakdown by category of this equipment is as follows: <ul style="list-style-type: none"> – 10 Sedans (average age = 5.3 years) – 20 P/U and Hvy Vans (8.2 years) – 60 Heavy Equip. (loaders, backhoes, etc.) (10.8 years) – 13 Trailers (8.0 years) – 8 Pumps, generators, compressors (13.4 years) – 8 Mowers, small engines (12.0 years) – 1 Boat (12.0 years)
Staffing	<ul style="list-style-type: none"> • The Division maintains 120 units equating to 160.2 Vehicle Equivalent Units (VEU), which is a measure of maintenance and repair intensity of the fleet. • The Division has a Mechanic, a Foreman and, by the account of the Supervisor, who reports that he spends 2 hours per day on “wrench turning” activities, there is another 0.25 FTE, equating to a total of 2.25 FTE. The average number of VEUs maintained by a single mechanic is typically between 90 to 110, equating to the need for about 1.5 FTE.

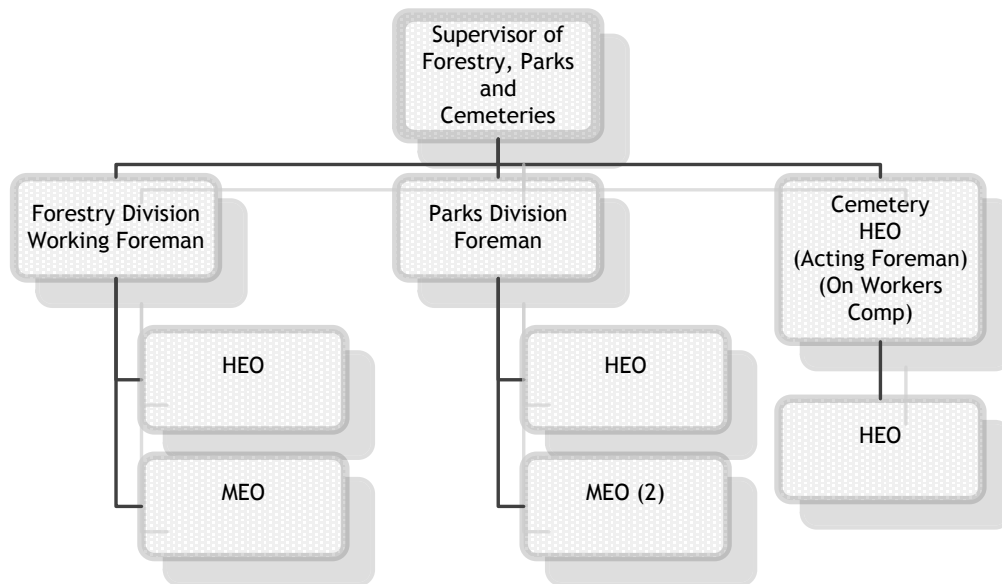
F. FORESTRY, PARKS AND CEMETERIES

1. INTRODUCTION

The Forestry, Parks and Cemeteries Division maintains all Town parks and trees, as well as the one active cemetery (Ridgelawn) and two inactive cemeteries.

2. ORGANIZATION

The Forestry, Parks and Cemeteries Division organizational structure is portrayed in the organization chart below.



3. STAFFING

The following table provides a summary of the Forestry, Parks and Cemeteries Division staffing and key elements of responsibilities.

Division/Unit	Staffing by Classification		Key Elements of Staffing and Scheduling
Administration	Supervisor	1	<ul style="list-style-type: none"> • Assigns work to Foremen • Assures that maintenance is performed appropriately and in accordance with instructions • Leads burial processions • Serves as working crew member on burials as required • Completes all paperwork on burials • Maintains irrigation systems by setting clocks and adjusting heads • Trains staff on proper equipment use on, e.g., aerators and paint sprayers
Cemeteries	Foreman	1	<ul style="list-style-type: none"> • On Workers Compensation leave at the current time. • Acts as crew member leveling monuments • Serves as crew member on burials, digging graves, re-filling, etc.
	HEO	1	<ul style="list-style-type: none"> • Levels monuments • Digs graves, re-fills graves
Parks	Foreman	1	<ul style="list-style-type: none"> • Marks and grooms fields • Ensures crew members understand and complete their assigned work • Ensures crew members have proper equipment
	HEO	1	<ul style="list-style-type: none"> • Works 10:00 am to 6:00 pm from May-Nov. on Wed through Sun • Works regular schedule in winter months • Clears snow from Town Hall • Grooms and paints fields • Empties trash barrels • Services playground equipment • Maintains irrigation system • Weeds flower beds
	MEO	2	<ul style="list-style-type: none"> • Assists with field grooming and marking • Checks and cleans bathrooms in parks • Performs some mowing of parks • Empties trash barrels • Weeds flower beds
Forestry	Foreman	1	<ul style="list-style-type: none"> • Operates aerial lift to trim trees • Uses saws and chippers to trim and dispose of limbs and other vegetative debris • Responds to work orders transmitted by Tree Warden • Serves as crew leader on site for tree removals, prunings, and beautifications
	HEO	1	<ul style="list-style-type: none"> • Operates aerial lift to trim trees • Uses saws and chippers to dispose of limbs and other vegetative debris
	MEO	1	<ul style="list-style-type: none"> • Performs manual labor related to tree trimmings and beautification

4. Financial

The following table provides the actual expenditures for FY11, the budget for FY12, and the recommended FY13 budget for the Cemeteries section of the Division.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 81,167	\$ 107,705	\$ 110,398
Overtime	\$ 20,495	\$ 32,890	\$ 32,890
Longevity	\$ 4,800	\$ 6,000	\$ 5,400
Clothing	\$ 2,000	\$ 2,000	\$ 900
Total Personal Services	\$ 108,462	\$ 148,595	\$ 149,588
Electric	\$ 2,122	\$ 3,200	\$ 3,200
Heating Oil	\$ 3,170	\$ 4,400	\$ 4,400
Groundskeeping	\$ 137,504	\$ 149,658	\$ 149,658
Tools	\$ 3,170	\$ 3,170	\$ 3,170
Trees and Shrubs	\$ 2,500	\$ 2,500	\$ 2,500
Groundskeeping Supplies	\$ 4,706	\$ 5,000	\$ 5,000
Total Expenses	\$ 153,172	\$ 167,928	\$ 167,928
Total Cemetery Operating	\$ 261,634	\$ 316,523	\$ 317,516
Improvements	\$ 25,000		\$ 25,000
Total Capital	\$ 25,000	\$ -	\$ 25,000
Total Operating and Capital	\$ 286,634	\$ 316,523	\$ 342,516

The following is the budget for the Parks section of the Division.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 101,037	\$ 231,547	\$ 263,895
Part Time Salaries		\$ 5,800	
Overtime	\$ 21,536	\$ 19,975	\$ 16,975
Shift Differential		\$ 1,958	\$ 1,958
Longevity	\$ 2,000	\$ 4,050	\$ 2,900
Clothing	\$ 2,000	\$ 5,000	\$ 2,250
Total Personal Services	\$ 126,573	\$ 268,330	\$ 287,978
Electric	\$ 6,205	\$ 7,300	\$ 11,825
Gas	\$ 19,404	\$ 14,200	\$ 14,200
Groundskeeping	\$ 195,739	\$ 240,928	\$ 200,928
Building Maintenance	\$ 5,521	\$ 8,772	\$ 8,772
Groundskeeping Supplies	\$ 23,925	\$ 27,336	\$ 27,336
Soil Loam	\$ 5,000	\$ 14,280	\$ 14,280
Recreational Supplies	\$ 11,254	\$ 13,000	\$ 13,000

Total Expenses	\$ 267,048	\$ 325,816	\$ 290,341
Total Parks Operating	\$ 393,621	\$ 594,146	\$ 578,319
Improvements	\$ 44,238	\$ 46,000	\$ 46,000
Additional Equipment	\$ 6,980	\$ 10,000	\$ 10,000
Replacement of Equipment	\$ 32,314	\$ 33,000	\$ 33,000
Total Capital	\$ 83,532	\$ 89,000	\$ 89,000
Total Operating and Capital	\$ 477,153	\$ 683,146	\$ 667,319

The following is the budget for the Forestry section of the Division.

Description	FY 2011 Actual	FY 2012 Budget	FY 2013 Recommended
Full Time Salaries	\$ 146,452	\$ 151,174	\$ 156,067
Overtime	\$ 20,146	\$ 24,400	\$ 24,400
Longevity	\$ 2,450	\$ 4,300	\$ 3,400
Clothing	\$ 3,000	\$ 3,000	\$ 1,350
Total Personal Services	\$ 172,048	\$ 182,874	\$ 185,217
Rental of Equipment	\$ 26,057	\$ 30,000	\$ 30,000
Tools	\$ 5,400	\$ 5,400	\$ 5,400
Trees and Shrubs	\$ 52,000	\$ 52,000	\$ 55,000
Staff Development	\$ 381	\$ 4,000	\$ 4,000
Total Expenses	\$ 83,838	\$ 91,400	\$ 94,400
Total Forestry Operating	\$ 255,886	\$ 274,274	\$ 279,617

The Division has a total operating budget in FY 2013 of \$1,175,452, which represents a decrease of \$9,491 from the previous fiscal year, and an increase of \$264,311 over that of FY 2011.

5. WORKLOAD

The following table provides selected workload information for the Forestry, Parks and Cemeteries Division.

Service	Workload
Parks	<ul style="list-style-type: none"> • The Division is responsible for the maintenance of 14 to 18 parks, covering a reported 88 total acres, and 28 to 34 developed acres. This equates to about 10 developed acres per FTE in the section. • There are 12 baseball fields, 7 soccer fields, one field hockey field, one football field and two water parks that include picnic tables, grills and public restrooms • The Division also maintains 4 flower beds, playground equipment and amenities at the parks.
Cemeteries	<ul style="list-style-type: none"> • The Division maintains one active and two inactive cemeteries. • The crew conducts a reported 12 to 14 burials per month.
Forestry	<ul style="list-style-type: none"> • There are a reported 200 to 400 requests for tree prunings at any given time • The Division removes a reported 80+ diseased trees each year.

APPENDIX B
COMPARISON TO BEST MANAGEMENT PRACTICES

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DIAGNOSTIC ASSESSMENT OF THE DEPARTMENT OF PUBLIC WORKS

Town of Watertown, Massachusetts

While the management study for the Town of Watertown's Department of Public Works is designed to provide an analysis of operations, organizational structure, and staffing, a comparison to 'best practices' represents an important step for the project team to report its preliminary findings and issues. In order to make the assessments of 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 Department and its component divisions. These performance measures comprise the main thrust of this diagnostic assessment.

The measures utilized have been derived from the project team's experience and represent the following ways to identify departmental 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 the Department meets the performance targets.
- A brief description of potential alternatives to current practice.

1. CEMETERIES

Performance Target	Strengths	Potential Improvements
Existence of regulations regarding unsightly decorations.	The Deed of Burial Right form includes a rule that plants, flowers, and trees cannot be cultivated on burial plots.	The unit's rules and regulations do not address unsightly decorations on graves.
Existence of regulations regarding length of time live decorations may remain at gravesites.	The Deed of Burial Right form includes a rule that plants, flowers, and trees cannot be cultivated on burial plots.	The unit's rules and regulations do not indicate how long live decorations may remain at gravesites.
Existence of policies and procedures for employees working at cemetery sites, related to material handling, lifting procedures, grave site safety, etc.	The staff follow general safety practices – use of boots, boots, gloves, eyewear, etc..	The Division does not have published policies and procedures relating to material handling, lifting procedures, grave site safety, etc.
Searches for grave sites may be accomplished through the Cemetery web site.	Findagrave.com website is linked to DPW cemetery page. PDF of historic burials at Arlington Street is on DPW website.	Staff is in process of creating digital records from cemetery cards so not all records are currently available. The amount of time needed to complete this task should be assessed and overall timeline. Then, should consider whether to bring someone in on a limited basis to complete.
The Cemetery utilizes GIS to enter land information and spatial data for all grave sites.		The Cemetery Unit does not use GIS to enter land information and spatial data for all grave sites.
Formal maintenance management system in place for cemetery.		There is no formal maintenance management plan for cemetery maintenance. Work is assigned to the crews on an as-needed basis.
Fees for lot sales, burials, cremations, etc., are current and reasonable as compared to other	Internment and disinterment charges seem to be consistent with nearby communities.	Fees are not as high as surrounding communities. Grave purchase price is significantly less

cemeteries in the area.		Cambridge, Stoneham, Waltham. Cambridge charges an additional fee for lowering the remains.
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2. PARKS & TREES

Performance Target	Strengths	Potential Improvements
Staffing at the level of one FTE per 8 – 10 acres of developed turf at a B level of maintenance.	According to the Supervisor, the Parks unit is responsible for maintaining 74.85 acres of parks and playgrounds in addition to the cemetery, which has an additional 15 acres of land area. With 4 positions in the parks unit, this translates into 18.7 acres per person. However, the Town does contract out substantial portions of the maintenance work. The two positions at the cemetery would be responsible for 7.5 acres each, except one employee is currently on extended sick leave.	
Tree trimming schedule exists for trees- 3 to 5 year cycle.	Tree Warden page has considerable information including: NStar tree pruning list and map; tree planting fact sheet; spring tree care tips, etc. Outside contractor is available for emergency response, such as after a large and damaging storm.	Currently, the Tree Warden sends lists to DPW staff of needed pruning. All other trimming work is done in response to a work order, i.e., community complaint/request. In fall 2012, the group was reportedly 2-3 months behind on work orders. The supervisor provides written notes on work orders to indicate when they are complete. Tree Warden does not get clear and consistent information about when work is done.
Existence of an inventory of all trees for which the Town is responsible, which includes location, age, type of tree and the maintenance cycle for each.	Tree inventory has been completed.	DPW staff do not have access to the software system that goes along with the inventory. Since the communication between the Tree Warden and forestry unit is on paper, potential exists for the inventory to quickly become out-of-date. Once out of date, the system's utility as an ongoing management tool will be lost.
Maintenance activities are documented in		Some of the activities are recorded on manual

Performance Target	Strengths	Potential Improvements
sufficient detail to allow managers the ability to analyze workloads and productivity of crew members.		work order sheets, however, the data are not summarized in any detail that facilitates analysis by supervisors or managers. Routine tasks, such as cleaning parks bathrooms, emptying trash cans (in addition to work done by contractors), etc. are not documented.
Parks are being maintained in good condition.		<p>Watertown adopted Integrated Pest Management policy in 2000 which eliminates use of pesticides, which is a good policy, but practices were not put in place to properly maintain grass without pesticides. The new Supervisor intends to address this issue.</p> <p>Community complaints exist regarding receptacles for recycling that are not properly placed so that recyclable materials are either thrown in trash or trash is thrown into recycling receptacles. Other concerns exist relative to length of time and number of requests needed to new trash bin(s) installed.</p>
Maintenance standards are documented for athletic field conditions, pavilions and shelters, parks amenities (tables, grills, trash receptacles, etc.), hard-surface courts, lights, ponds, etc.	The new Supervisor has extensive expertise in turf and landscape maintenance, and expressed an intent to revise specifications of maintenance contractor(s) when the opportunity arises.	<p>The only documented maintenance standards are to be found in contracts with vendors responsible for parks maintenance. Parks staff have established personal standards and practices relative to maintenance which are communicated verbally.</p> <p>Conflict has occurred between DPW and Recreation in the past when a field(s) may open in the spring. This has generated community concern as parents do not understand why their children are practicing indoors when other communities are practicing outside.</p>

Performance Target	Strengths	Potential Improvements
		Staff were unclear whether playground equipment was being inspected by departmental employees or by outside contractor. A licensed inspector is needed.
A formal infrastructure preservation plan has been developed for parks.	The unit structures its maintenance activities around the playing schedule for sports and uses the schedule to determine activities that need to be done. e.g., field marking, grooming, etc.	There is no infrastructure maintenance plan in place that outlines frequencies for such major activities such as care of trees and shrubs (with seasonal frequencies related to planting, fertilization, mulching, pest control, etc.); ground covers (with planting, weed control, pest control, trimming frequencies identified); ornamental grasses; lawn care (with mowing, aeration frequencies, de-thatching frequencies, etc., identified).
The Town's tree ordinance is available on line.	"Tree Warden Regulations" are posted on the Tree Warden web page. "DPW Protocol for Tree Pruning and Removal" is posted in DPW Forestry web page.	Web pages do not link to each other.
Web site provides residents with helpful information in user-friendly format		The Parks and Forestry web pages are nearly empty. The only information is the tree pruning protocol and information on the planting strip improvement project. The Recreation Department web page lists the various parks, but DPW is not linked to that page.

3. FLEET MAINTENANCE AND MANAGEMENT

Performance Target	Strengths	Potential Improvements
Existence of centralized fleet management program for the Town.		Both the Police and Fire Departments maintain the vehicles assigned to their respective organizations, each reportedly with their own mechanic staff.
Existence of funded vehicle replacement program?		The Town does allocate funding for vehicle replacement, however this is done on an annual as-needed basis, and is not the product of a planned model that assures the availability of funding at predicted replacement cycles for each unit in the Town. With the average age of the fleet at 9.8 years, this is perhaps indicative of targeted replacement cycles that are either too long, or funding for equipment replacement has been deferred.
Centralized and standardized system of identifying vehicles and equipment for replacement.	Central Motors indicates that departments do consult them on occasion to determine the need for vehicle replacement.	Vehicle replacement decisions tend to be made on a unit-by-unit basis and are based on trends in vehicle repair costs. This method does not ensure that units are replaced on a routine basis and in anticipation of historically-probable cost increases prior to the upward trend in these costs. Further, salvage values are not maximized once vehicle repair costs have begun to escalate.
Existence of fleet management information system to monitor vehicle repair history, mechanic utilization, etc.?		There is no automated fleet management information system in the division. All records are manual.

Performance Target	Strengths	Potential Improvements
Existence of automated fuel dispensing system.	The Department does possess and maintain a GasBoy automated fueling system, but its operation is overseen by the Property and Buildings Division.	The Division is not utilizing the information available through the GasBoy system to monitor either vehicle/equipment utilization or to schedule preventive maintenance.
Fleet Maintenance is organized and established as in Internal Service Fund, charging user departments for parts and services.		This is not the case. Central Motors provides all vehicle and equipment services from the Public Works budget
An effective preventive maintenance program is in place.	<p>Central Motors installs a sticker in each unit indicating when next PM is due.</p> <p>The division does note the performance of preventive maintenance in the manual records for each piece of equipment.</p>	<p>Although the manual record on which vehicle histories are kept provides for more than lube-oil-filter entries, these are the only items checked on the records.</p> <p>Interviews indicate that there is not an effective preventive maintenance program in effect in the division.</p>
An effective facility is available for Central Motors that enhances their productivity.	The facility is relatively new. The division is responsible only for 120 units, and the facility is capable of handling this volume.	
The size of the fleet and the vehicle equivalency units are balanced with the number of authorized staff.	The division is responsible for 120 units that equate to about 160 vehicle equivalent units (VEU). This fleet is maintained by a mechanic staff of	
Fleet maintenance staff are ASE certified.	The Foreman reports being ASE certified.	The Division's Heavy Equipment Mechanics are not ASE certified.

4. HIGHWAY

Performance Target	Strengths	Potential Improvements
Existence of formal work planning and scheduling system.	There have been recent advancements, such as the contracted development of a sign inventory and the performance of a pavement management assessment, that should be viewed as parts of a foundation upon which effective planning for preventive maintenance may be performed.	Work is currently performed reactively, which may be a reflection of staffing vacancies. An effective work planning system would identify all structures for which the Division is responsible by major category (e.g., drainage systems, sidewalks, alley ways, paved streets, pavement markings, etc.), with the planned renewal or replacement cycles identified for each. Ideally, this would be posted on the Department’s web site, and would allow residents to determine when and how infrastructure in which they have an interest will be maintained or replaced.
An automated maintenance management system is utilized to track and report work output, service levels and productivity.		There is no automated information system that records work activities. Ideally, this system would record all work performed by category, and record labor hours, crew members, locations, equipment and materials used.
Staffing in the Division’s street maintenance function approximates 10 to 12 center line miles of asphalt surfaces per Street maintenance worker.	The Division is responsible for the maintenance of 73.59 center line miles. Fully-staffed, this would equate to about 12.3 center line miles per staff member, which is appropriate.	The Division has experienced an especially severe shortage of staff, with only three staff members available on a full time basis. This equates to about 24.5 center line miles per employee. With staffing levels this low, it is improbable that the Division is able to perform any but the most reactive of work requirements.
Potholes are patched promptly.	Interviews indicate that these are patched in a time period in accordance with their severity.	This performance measure is not monitored or reported.

Performance Target	Strengths	Potential Improvements
Formal pavement management system in place.	This is a particular strength of the Public Works Department, generally, as it has contracted for a comprehensive pavement management assessment that identified all road segments and their current ratings, as well as the recommended treatments for each.	
The Department resurfaces 5% to 8% of paved surfaces annually.		
Sidewalks are checked regularly for tripping hazards and the hazards eliminated.		The Division reports that it does not proactively check for tripping hazards, but rather responds to complaints and reports of uneven sidewalk sections.
Major road repairs and reconstruction contracted out.	The Department contracts out all major road repairs and resurfacing work	
Periodic inspection of sign reflectivity.	This is another particular strength of the Department, as it recently contracted with World Tech for a study of sign location and reflectivity. The Town has a total of 2,893 signs, with the vast majority (2,002) being Engineering Grade, 439 being High Intensity Prismatic sheeting, and 424 being Diamond Grade.	Only 448 of the Town's 2,893 signs (15.5%) passed tests for compliance with MUTCD retroreflectivity standards.
Annual painting of school cross walks, bi-annual painting of other cross walks. Legends painted on arterials every year, collectors at 18 mos., and residential at 2 years.	All are done at least annually. School crosswalks are painted semi-annually.	

Performance Target	Strengths	Potential Improvements
<p>Web site provides residents with helpful information in user-friendly format</p>	<p>The website does provide relatively good winter operations information in its 12-page Snow & Ice Booklet that is available for download</p>	<p>There is no information on the website relating to the primary activities of the Highway Division. Many residents may not know all the services that may be available, or to whom problems with infrastructure should be reported. These may include relatively simple services such as pothole reporting and repair (as well as the time the resident can expect to receive a response), leaf disposal, graffiti removal, and other services.</p>
<p>Sweepers accomplish 28-32 curb miles swept per day on average.</p>	<p>The Division sweeps an approximately 16-mile area of downtown three times weekly, with 128 curb miles in other areas swept three times annually.</p>	<p>The Department does not monitor or report the number of curb miles actually swept per day. However, given that the total targeted curb miles to be swept equals about 1,216 (see left), this would equate to about 40 days of sweeping at 30 curb miles per day. However, in counting the sweeping events listed in the Asst. Superintendent's "2011 Standard Diary" there were 202 person-days on which sweeping was conducted. The diary is not specific regarding the locations of the sweeping, but rather lists the term "sweeping" next to the worker's name, along with the period of time "sweeping" was performed (typically "11-7"). If 202 person-days were actually expended in sweeping the 1,216 curb miles, this equates to about 0.75 curb miles per day.</p>
<p>Catch basins are cleaned on a 2-year cycle.</p>	<p>The Department contracts out the cleaning of its 3,200 catch basins.</p>	

5. RECYCLING

Performance Target	Strengths	Potential Improvements
An aggressive recycling rate goal has been set, with specific time frames for accomplishment of the goal.	The Department reports a “15% to 25%” waste diversion rate.	
Waste reduction efforts have been focused on programs that educate businesses and residents.	Republic Waste Systems, the Town’s contractor, educates residents, constructs banners, and holds informational events on single-stream recycling program. Republic also appears at the schools on occasion to educate students with talks, coloring books, etc.	
On-site waste assessments and technical assistance are offered to businesses to provide a service-oriented approach to waste reduction.	There are only eight commercial properties in Town at which recyclable materials are collected.	
The Division has instituted a program to manage certain household hazardous wastes (HHW) and problem materials through recycling, diversion, reusing, reduction or proper disposal methods.	Watertown is a part of the Minuteman program (which includes Lexington, Belmont), that collects mercury, light bulbs. Regarding electronic waste, the Town handles monitors (not CRTs) and will pick up one or two pieces.	

<p>Web site provides residents with helpful information in user-friendly format</p>	<p>The web site provides helpful information on pick up days by street name, explanation of the single-stream recycling program and what has changed, as well as information on composting.</p>	<p>Much of the information on the site is redundant. For example, the site provides separate links to information on “Single-Stream Recycling” and “Trash and Recycling Information”, yet the information is almost identical. The same is true for the links to the “2013 Collection Calendar”, “Recycling Dates to Remember”, and “Trash and Recycling Pick Up Day by Street”. In addition, under the “Helpful Information” section of the Department web site, Allied is listed as the Town’s solid waste and recycling contractor, when in fact it is now Republic.</p> <p>The site does not include FAQs, such as:</p> <ul style="list-style-type: none"> • Why Recycle? • What Happens to My Recyclables after They’re Collected? • Why Wasn’t My Recycling Collected? • What Should I Do If a Recycling or Trash Truck Damages My Property? • How Do I Request a Recycling Bin? • Can I Still Recycle My Materials After They Get Wet? • Are Take-Out Containers Recyclable? • How Can I Get My Business to Recycle?
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6. WATER & SEWER

Performance Target	Strengths	Potential Improvements
<p>Goals, objectives, and performance measures have been developed to provide a guide for decision-making, link actions to the broad goals of the Department Superintendent, Town Manager and Council, and define what resources ought to be allocated to what utility services.</p>		<p>The Water & Sewer Division reports some workload measures such as numbers of house renewals, service line breaks repaired, fire hydrants replaced, etc. These are valid measures of activities completed, and can be utilized effectively to compare the number of events from one year to another, and to perhaps discern trends in the condition of the infrastructure. However, they are not useful in reporting the efficiency and effectiveness of the resources employed to complete the activities. For example, it may be useful in a general sense to know that there had been an increase from 9 to 11 water main breaks from one year to the next, however it would be much more useful to monitor and report the number of hours worked to repair each one, the equipment and materials utilized, and any contracted labor required to perform any of the required repairs. These could be reported as a composite measure of the cost per main break, or even the cost per main break by size of main.</p>
<p>Managers provide regular progress reports (e.g. monthly or quarterly) relative to individualized performance objectives.</p>		<p>There are no performance objectives established in the Water and Sewer Division, and thus no reported progress against these objectives.</p>

Performance Target	Strengths	Potential Improvements
<p>A formal safety program is in place that includes training, guidance documents and operational procedures, all of which are prominently posted.</p>	<p>The Division reports that there is a “tailgate” safety talk each morning. The Department Superintendent sets up formal safety training, and the Teamsters also conduct what was described as a “lot of training”.</p>	
<p>An effective asset management system has been installed that includes an inventory of the infrastructure to be maintained with details (e.g., size) about components to be maintained and where the components are located, a computerized maintenance management system, condition assessments, maintenance and rehabilitation strategies, and sustainable funding levels for maintenance and rehabilitation for the pump stations.</p>	<p>The Division has gone to extensive lengths to create manual cards that show the locations and distances of service lines from the main line, and the size and materials of the pipes. Further, these cards contain dates of service at each of the addresses on the cards.</p>	<p>Although there is a considerable amount of information available on the cards, these data are not searchable other than through manual efforts. The existence of the data only in manual form does not facilitate field searches of sections of pipe or view video inside the lines. It also does not easily identify the maintenance histories of work performed on pipes, the locations of pipes by age of pipe, the progress of work orders on specific sections of pipe, and other helpful infrastructure information. Further the manual nature of the information prohibits the quick identification as to whether the Town is collecting sewer service charges for each address, as it is not linked with the Town’s financial system or assessor’s database.</p>
<p>An effective cross connection inspection program is in place.</p>	<p>Contractors handle the majority of commercial and private devices and internal staff do the majority of survey and testing.</p>	

Performance Target	Strengths	Potential Improvements
1% to 2% of water and sewer mains are replaced annually. This formal program is linked directly to a long-term capital and financial planning program to assure adequate funding.		<p>The Town has replaced 1.23 miles of water main in the past two years, which equates to about 0.77% per year on average.</p> <p>The Town has replaced 0.67 miles of sewer line in the past two years, equating to about 0.86% of the 78 linear miles, which is about 0.43% per year for the period.</p>
Distribution valves are exercised routinely.	The Division has recently purchased specialized equipment for turning gate valves in the Town. The Division reports that it will attempt to turn valves once every two years.	
Water meter replacement is within 15 to 20 years and larger commercial meters are tested for registration accuracy in accordance with AWWA recommendations.	<p>The Department received about \$1M in funding from MWRA 11 years ago to replace all domestic water meters.</p> <p>There is a proposal in place to replace all water meters in FY15-FY16.</p>	
Fire hydrants are flushed annually.		The Town's 995 hydrants are flushed bi-annually. This is reportedly conducted on a 6-week schedule, all on overtime.
An automated maintenance management system is utilized to track and report work output, service levels and productivity.	The Division uses a manual system to record work descriptions, crew members, dates and locations.	There is no automated record of work performed, hours consumed in work by type of activity, materials used, equipment used, etc.
The Division has automated meter reading (AMR) technology	Currently, the Department is testing a new meter program prior to the end of the life expectancy of its 11-year old meters and researching multiple options in reading meters through radio frequency read.	

Performance Target	Strengths	Potential Improvements
For manual read systems, meter reading staff read between 4,500 and 5,000 meters per month.	Only about 1% of the Town's approximately 9,000 metered accounts are manually read.	
Periodically evaluate the feasibility of outsourcing certain functions.	The Division outsources all major construction and repairs. The "rule of thumb" is that repairs and construction are outsourced if they are projected to last two or more days.	

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Performance Target	Strengths	Potential Improvements
<p>Web site provides residents with helpful information in user-friendly format</p>		<p>The web site could be significantly enhanced through the provision of a simplified description of the water treatment process provided by MWRA, perhaps even including a schematic that describes, at a very high level, the raw water intake (and a description of the source), addition of coagulants (and their utility), transmission to the coagulation/flocculation process, movement to sedimentation (and what happens in this process), polymerization (and what is used), filtration, disinfection, corrosion control, storage, and finally, consumption.</p> <p>The site could also benefit from the inclusion of information on capital improvements (both recently completed, as well as planned, and the costs of each), backflow prevention program description (as well as types of devices and how installed, and what to expect in an inspection), water rates, conservation measures, typical consumption rates for various family sizes, as well as others.</p> <p>There is virtually no useful information on the Water or Sewer sections of the Department's web site beyond a description of water rates and a very high-level description of the causes of sewer backups and how to prevent them.</p>

Performance Target	Strengths	Potential Improvements
Wastewater mains are cleaned on a three-year cycle.		The 2012 annual report indicates that 28,623 feet of wastewater mains were cleaned in 2011, equating to 5.4 miles, or about 6.6% of the total system of 78 miles. This equates to a cleaning cycle of once per 14.4 years.
There is a wastewater main televising program (CCTV) based upon condition assessment information.	This is contracted out. The Department currently uses "Advanced Pipe" for this service.	This is only done on an "as needed" basis.
An automated maintenance management system is utilized to track and report work output, service levels and productivity.		The Division, and the Department generally, have no automated system to monitor and report the work performed, and the conformance to service levels and productivity standards.
15% to 20% of the manholes are inspected annually		The Division does not inspect these annually, and further, does not possess an inventory of manholes.

7. ENGINEERING

Performance Target	Strengths	Potential Improvements
<p>Policies and procedures for the Engineering Division are well documented.</p>	<p>The Superintendent indicated that these were started when the Engineer position was filled, including standard specifications for different types of projects/infrastructure (water gates, fire hydrants, sidewalks, ADA ramps).</p>	<p>The effort has not been completed. In addition, the comprehensiveness of the documents that are available vary significantly. The <i>Sanitary Sewer and Storm Drain Regulations</i>, <i>Water Regulations</i>, and <i>Work in Public Ways</i> documents are quite extensive, however, only a 1 page document is provided to developers seeking to understand submittal requirements and the review process. Given the scale and complexity of current development in town, this document is inadequate to guide developers through the plan review process; it also contains multiple typos.</p>
<p>GIS is used as a tool to keep up-to-date records on Town infrastructure including repairs/replacements, capital improvements, technical studies. GIS is used as a tool to manage and prioritize work</p>	<p>The Town has invested in GIS software and extensive data layers, including water lines, sewer lines (with flow direction), storm water lines, catch basins, etc. Planning staff have attempted to keep the layers up to date.</p>	<p>Although DPW does occasionally request printed maps, no one in the department routinely accesses, nor updates, the GIS data. As such, the data will become obsolete over time as segments of infrastructure are replaced or upgraded. Also, only a fraction of the system's capability is being used. The system allows DPW staff login access to the software and has functionality, such as tables, that can be used by staff who have limited GIS background to input updates, such as replacement of water lines. In addition, GIS data can be accessed in the field using hand held tablets and photos and field notes can be sent to the system from the site. Some of the more recent data collected by contractors the</p>

Performance Target	Strengths	Potential Improvements
		Town has hired, such as the sign inventory, roadway management program, and street tree inventory have not been added to the GIS. The road inventory and tree inventory vendors offer proprietary software, but if the data could be extracted it could be added to the GIS to paint a more comprehensive picture of Watertown infrastructure.
A five-year capital improvement program has been by Town Council.	Each year, Watertown adopts a five year capital plan identifying capital projects.	
An appropriate mix of in-house staff and consulting engineers are utilized for the design and inspection of capital improvement projects based upon the expertise required and the continuity of the workload.	A mix of different individuals, including staff and consultants, work on capital projects. Certain inspections, such as water gates, may only be performed by staff.	All design work is done outside of the office. Inspections may be done by DPW staff and/or by an outside clerk of the works. Consultants currently prepare project specifications for bids, even simple or routine work; specifications are not being written in house for the most part.
Project managers are responsible for capital improvement projects from “cradle to grave”, with responsibility for project development, design, construction inspection, construction management, and closeout.		The Superintendent manages the capital projects personally, using outside firms to prepare the design specifications. Inspections may be done by the clerk of the works or other DPW employees, as assigned.
30%/60%/90% reviews of the design of capital improvement projects are conducted by construction inspectors.	Plan reviews done by Superintendent; The Planning Director is to consider the driveway opening standards;	Plan reviews are performed by the Superintendent; division supervisors may be involved depending on the type of work to be performed.

Performance Target	Strengths	Potential Improvements
Staff respond to inspection requests within one workday of the receipt of the request.		The builders interviewed as part of the study believed that inspections were performed in a timely manner.
An automated voice-activated inspection request system is utilized to receive inspection requests with linkage to the automated permit information system.		An electronic scheduling system does not exist, nor does an electronic permitting system.
Turnaround times for first plan check are responsive.		Since the absolute length of time to review plans will vary depending upon the issues identified and the developer's ability to make needed corrections quickly, the initial plan check is the best measure to assess departmental responsiveness. In Watertown, multiple steps are needed before the first plan check is completed. Developers drop off their plans at DPW; they then need to meet with the Superintendent and the Planning Director. Only after this are the division supervisors engaged in the plan review. This multi-tiered process adds steps and time to the review. Multiple individuals have expressed difficulty in getting a meeting with the Superintendent to review plans. No hard data is available on the length of time to review plans. The Superintendent indicates that the average review time from start to finish is believed to be 30-45 days, with plans that are largely correct taking two weeks.
Plan review check checklists have been developed to enable the engineering staff to focus their attention on the relevant aspects of the plans and assure uniformity among staff.		Checklists have not been developed.
Building permit plan checking is accomplished concurrently by all of the departments involved in	The Superintendent does review plans with	Customers indicate that plan review takes a

Performance Target	Strengths	Potential Improvements
the process.	Planning Director and developer together. This meeting does not include the respective Supervisors who are also expected to review the plans.	longer time than in other municipalities, the process is unclear, and sometimes the steps to follow will change during the process. The supervisors who perform plan review are also responsible for assigning and monitoring the work of their field crews. Urgent issues in the field will supersede plan review thereby extending the review period.
A “one stop” system exists for submittal of development service applications. Applicants do not have to walk or drive their submittal from department-to-department.		Most builders deliver their plans to the ISD office in Town Hall and then submit another set of plans at the DPW office. Customer comments indicate that ISD and zoning reviews are completed before the DPW reviews, thereby delaying issuance of the building permit.
Responsibility for the assignment of street addresses for new development have been centralized.		The process for assigning street addresses has multiple steps and involves multiple parties leading to the potential for delay. The applicant is responsible for submitting a letter to DPW indicating their preferred address(s). Support staff give the application to the Properties & Buildings Supervisor who visits the site and determines the numbers of adjacent properties. The Superintendent reviews the request and the site visit results, and prepares a recommendation to the Town Manager. After the Town Manager has approved the address, staff will send a letter to the applicant.
Full-time staff are dedicated to the issuance and inspection of street closure, excavation, and encroachment permits.		Full time staff are not dedicated to this function. The relevant division supervisor reviews application(s), takes photos before the start of work and after final inspection;

Performance Target	Strengths	Potential Improvements
		respond in 3-5 days. After the supervisors review and approve the application, every permit has to be sent to Treasurer's Office who then signs off on permit itself for payment of taxes. In other communities, the Treasurer signs a separate form that is submitted along with the application which can reduce processing time. Supervisors have competing responsibilities that can impact their abilities to review applications in a timely manner.
Inspections are formally documented on a written inspection form. Automated records are maintained of these inspections and safety violations.	Inspections are documented on the paper permit. Staff take before and after photos of the site.	Electronic records are not maintained.
Contractors are required to submit proof that their first level supervisors have been trained in work zone safety.		Contractors do not submit written proof regarding training in work zone safety.
A traffic control plan must be submitted for the issuance of street closure permits.		If extensive work is being done, a traffic control plan is submitted and reviewed by the Superintendent, Highway Supervisor, and supervisor of Property & Buildings.
Fees are charged for the issuance and inspection of street closure, excavation, and encroachment permits to fully recover the Watertown's cost of administration		A \$100 application fee is charged plus \$140 for first 140 s.f. of street opening. Data are not available to determine the amount of time needed to issue the permit and inspect, therefore it is unclear whether the cost of this service is covered by the fee.
Requests for street closure, excavation, or encroachment permits may be submitted by customers on-line or by fax.		Applications may not be submitted on line. Although the applicant would need to come into the office to certify that their bonding is up to date, time could be saved by allowing

Performance Target	Strengths	Potential Improvements
		for electronic applications.
Requirements for issuance of street closure, excavation, or encroachment permits are available at the Engineering Division's web site.		Requirements are not posted on line.
Traffic control improvements (i.e., stop signs, red curbing for line-of-sight, etc.) are identified and studied proactively by staff rather than responding solely to citizen requests.		Although the Town has commissioned a study of the roadway surface conditions, traffic improvements are not studied proactively. As needed, engineering contractors perform studies of traffic signals and other improvements. The Superintendent reports on warrant requests for new signals.
Opportunities to improve pedestrian safety and bicycle safety are proactively investigated and measures developed and implemented to address these needs.	When roadway projects are being designed, they are evaluated for capacity for bicycle lanes and pedestrian improvements.	The Superintendent is the lead staff member on the complete streets initiative.

8. FACILITIES MANAGEMENT & CUSTODIAL SERVICES

Performance Target	Strengths	Potential Improvements
One trades staff position per 50,000 sq. ft. of building space (for "B" level of service.)	The Division is responsible for 92,291 square feet of maintainable space at Town Hall, the DPW building, North Branch Library, and East Branch Library. It is not clear how many staff, other than the Supervisor and Electrician maintain this space. However, these personnel have responsibilities other than these facilities, so it is not possible to determine the ratio of maintainable space to full time trades staff. Further, the maintenance of these facilities is supplemented by contractors.	
Custodial services in range of \$1.50 - \$1.75 per square foot, per 2008 IFMA survey.	DPW does not provide custodial services. The project team does not possess data to make this calculation.	
Custodians clean 27,000 square feet per custodial employee, per 2008 IFMA survey.	There are no full time Custodians funded within the DPW budget.	
Existence of a preventive maintenance program.		The Property and Buildings Division reports that there is no PM program in existence.
Existence of an energy management plan.	The Town Council has established a goal of reducing municipal energy consumption by 20% within five years. The Town has committed \$7,350,000 in the capital improvement budget related to the Energy Services Company (ESCO) project for the period 2013-2017.	
Periodic evaluation of feasibility of contracting and/or "in sourcing".	All major plumbing and HVAC work is outsourced, as the Division has no staff to perform these types of services.	
Coordination with Schools Facilities Maintenance to maximize available staff.	Both DPW and the Schools report that there is a good working relationship between the two	Both the Schools (ratio of one trades mechanic per about 200,000 sq feet) and the DPW have too

Performance Target	Strengths	Potential Improvements
	<p>organizations, and they work together on occasions when it makes sense.</p>	<p>few full time personnel to make consistent collaboration feasible.</p> <p>One opportunity available to the DPW is the existence of a relatively mature and well-functioning automated information system (“School Dude”) at the Schools. The Facilities Manager there has populated the system with all major maintenance components, and although the division is under-staffed to implement a full PM program, the system does facilitate the accomplishment of at least minimal PM, and further, tracks the hours, locations, crew members, components repaired, and materials used for each work order completed.</p>

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9. ADMINISTRATION

Performance Target	Strengths	Potential Improvements
Clerical and administrative functions are centralized in the Department, and workloads are balanced by a central authority	This appears to be the case, as each of the four administrative staff in the office answer phones and wait on the public as their individual availability dictates.	
The payroll process is automated		Division managers submit manual "Time & Attendance Record Sheets" and any overtime on an "Overtime Form". The Head Clerk then transcribes the manual submittal into an Excel spreadsheet. The manual copies are transmitted to the Auditor, which office then manually transcribes the data once again.
Personnel and payroll systems are integrated.		There are no automated personnel or payroll systems.
There is one accounts payable clerk for every 9,000 annual transactions.	The Administrative Clerk responsible for processing payables also is responsible for many other duties such as cemetery administration, entry of permit data, closing out work orders, etc. As of Feb. 26, 2013, there had been 1,998 purchase orders issued in the fiscal year, which equates to an annualized total of about 3,000. This is a reasonable number given the other duties of the Clerk.	
Support staff as a ratio to technical staff is in the range of 1:9 to 1:25, depending upon the degree	Currently, there are 40 filled technical positions (including the Supt.) and four filled	

Performance Target	Strengths	Potential Improvements
of automated systems in use	administrative/clerical positions, equating to a ratio of 1:10.	
The Division maintains a vendor file which reflects vendor histories.		Although files are maintained of all contracts, both current and historical, there is no separate vendor file that contains the performance histories of any single vendor. The maintenance of these files is considered a best practice both because the files provide substantiation for any justifiable deviation from stated award criteria such as low-bid, but also for purposes of transferring information to new administrative staff.
Regular, ongoing financial reports are provided to divisional management and supervisors.		This is not the case, however it is also true that division managers have not been made responsible for budgetary compliance.
Clerical and administrative staff receive ongoing training in the use of necessary tools such as word processing, financial spreadsheets, customer service, etc.	The clerical staff report that they believe they would be provided training if requested of the department or of the Town.	No administrative staff member reports any recent job-specific training.
Vacancies are filled expeditiously		Vacancies are not filled expeditiously. The Engineer and Deputy Superintendent positions have been vacant for a number of years. Positions that are internal promotion only and are within the department's purview, such as HEO and Skilled Craftsmen may not be filled for 6-9 months. Positions that require external posting can be vacant for longer periods of time. The Superintendent's failure to prioritize recruitment and the resultant vacancies creates instability in the department as crews often do not have adequate members to safely go out in the field. Seemingly each day staff members are

Performance Target	Strengths	Potential Improvements
		"borrowed" from units to cover for vacancies elsewhere and Supervisors do not know on a daily basis if they will have staff available.

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10. CUSTOMER SERVICE & COMMUNICATION

Performance Target	Strengths	Potential Improvements
<p>Customers express satisfaction with the level of service provided by the department including the timeliness of response and quality of work performed</p>	<p>The Watertown DPW is universally recognized for its responsiveness to snow emergencies and emergencies in general. Nearly everyone interviewed expressed their appreciation for the work DPW does in snow removal and pride in the fact that Watertown streets were cleaner than any other nearby community. Several told personal stories of how DPW workers helped them with emergency situations, such as water main breaks or sewage leaks, and were available almost immediately even on nights and weekends.</p>	<p>Beyond emergencies, customers expressed concerns including: being able to get information in a timely manner as it appeared all information sharing must be cleared by the Superintendent, being able to clearly understand permit requirements and have them issued in a timely manner; support staff can be brisk at times and have told customers to call the Town Councilors “because they came up with the policy” (most admitted that the support staff were generally positive and helpful; issues were not daily occurrences), being unclear whether their complaint was being addressed expeditiously. Customers also complain they have difficulty getting their calls or emails returned.</p>
<p>The department fully utilizes its website as a means of communicating regulations, programs/policies, permit requirements, etc. to customers</p>		<p>The DPW website could benefit from posting more information and reorganizing what is there. The opportunity to communicate with customers can be used efficiently and to highlight the many services performed. For example, there are no forms under “Forms & Publications”, “Permit Requirements” so applicants cannot fill out the forms before getting to the office. In contrast, quite a bit of information can be found under “Did you know?” and “Helpful information?” when visitors may be looking for information by subject or department. Surprisingly little information on recycling can be found given the important shift to single stream that took place this year and the many services available at the recycling center.</p>

Performance Target	Strengths	Potential Improvements
<p>The department embraces new programs and is adept at meeting changing customer needs.</p>		<p>As one customer noted, “the things they have been doing for a long time, they do well. They just aren’t so good at the new stuff.” More than one individual indicated that they feel the department is more eager to slow new programs than they are to implement them. They understood that a lot of demands were placed on the department and there were not many staff available to implement new programs, but were frustrated nonetheless. This will be a particular issue as the Town residents become more sustainable in their lifestyles and seek to get support from (and give support to) DPW in efforts to increase recycling and reduce use of non-renewable energy.</p>
<p>DPW staff have strong working relationships with other departments.</p>		<p>Despite the fact that Watertown is quite small, many staff in other departments and elected officials have remarked that they have not met the line managers at DPW.</p>

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APPENDIX C
SUMMARY RESULTS OF THE COMPARATIVE SURVEY

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RESULTS OF COMPARATIVE SURVEY

Question	Dedham	Stoneham	Waltham
<i>General and Administrative</i>			
Does your Public Works Department utilize an automated information system to create work orders?	We are investing in the Cartegraph system this year	No Listed on computer	No. We have a system, iWorq, where calls and work orders are logged in manually. The system is not automated.
If so, what automated system do you use?	Cartegraph	dna	
When work is complete, what information do you record? (e.g., labor hours, crew members, work/labor category, etc.)	Not installed at this time	done	Date completed.
What divisions comprise your Public Works Department?	Highway, Cemetery, Forestry, Sewer, Drain. All employees do every job. No separate divisions	Highway, Water Sewer, Parks, Trees, Cemeteries Trash, Streetlights, Snow, Vehicle Maint.	Parks, Cemetery, Public Vehicles, Street & Forestry.

Question	Dedham	Stoneham	Waltham
<p>How many administrative/clerical staff members are in your Public Works Department?</p> <p>Please list these positions (non-managerial and non-supervisory), by division.</p>	<p>Two full time employees</p> <p>Director of Public Works – Management</p>	<p>6</p> <p>None are specifically assigned to divisions</p>	<p>4 Clerical Staff. (1 in Cemetery, 1 in Streets & Parks and 2 in Main office)</p>
<i>Parks, Trees, Cemeteries</i>			
<p>Are parks maintenance services provided within the same organization/department as recreational services?</p>	<p>Park and Recreation is separate from Department of Public Works</p>	<p>No</p>	<p>No</p>
<p>Does your department have a separate tree or arbor division?</p> <p>If so, how many personnel are in this division/function?</p>	<p>DPW handles all storm and ground clearing.</p> <p>Included in the DPW operations</p>	<p>No</p>	<p>Yes, Forestry Division.</p> <p>6</p>
<p>If not, does the department outsource tree maintenance and management or does it accomplish this with internal staff?</p>	<p>Tree Maintenance is outsourced for removal, pruning and planning</p>	<p>Both</p>	<p>We sub out some of the larger tree work that our equipment cannot reach.</p>

Question	Dedham	Stoneham	Waltham
How many tree-related calls for service do you receive in a typical year?	100 – 150	100	345
For pruning:	We prune two weeks in spring and 1-2 in the fall	50	
For take-downs:	15 - 25	20	
Does your Public Works Department operate one or more cemeteries? If so, how many?	One Active One Historical One Baby Cemetery	1	We operate 2 cemeteries.
Approximately how many acres of cemeteries are maintained by personnel assigned to this task?	60 +	16	500 acres at Mt. Feake 170 acres at Grove Hill 7 personnel
Do you contract out any cemetery maintenance? If so, what functions?	No	No	No
Is your Public Works Department responsible for sales of new plots?	Yes	yes	Yes
If so, do you have dedicated staff members for this task?	Yes	no	Yes
Are your grave site records in an automated program, or do these records only exist in manual (e.g., card) form?	Yes automated and written record	Manual	Yes
If automated, are the records and site locations in your Geographical Information System (GIS)?	Yes		Yes
Do you maintain any artificial turf?	No Parks is separate from DPW	No	Yes
How many developed acres are maintained by the staff dedicated to maintenance of these grounds?	N/A	25	Currently 25 acres. New construction this year will add 10 acres for 35 total.

Question	Dedham	Stoneham	Waltham
How many staff members perform grounds maintenance?	N/A	Varies 2-5	3
<i>Solid Waste and Recycling</i>			
Do you perform solid waste collection with in-house personnel or through contract?	Curbside Collection for Trash and Recycling is contracted out	Contract	Contract.
How often is each residence's solid waste collected?	Once a week	Weekly	Once a week.
If in-house, how many staff members are dedicated to collection?			
If in-house, how many crew members are on a truck?			N/A. N/A.
Do you collect recyclable materials with in-house personnel or through contract?	Contract	Contract	Contract.
How often is each residence's recyclable material collected?	Every other week		Weekly.
If in-house, how many staff members are dedicated to collection?		Bi-weekly	N/A
Is there a Supervisor responsible for waste and recycling issues?		No	Yes
How many residential accounts are in your city or town?	8700+	6,500	23,000
How many commercial accounts? (Is your commercial collection provided by in-house crews or contractor?)	No Commercial accounts picked up by town	0	Contractor

Question	Dedham	Stoneham	Waltham
Do you operate a transfer station? If so, please indicate the number of staff, by title, at the station.	We lease the transfer Station	no	No. N/A
Do you use Pay-As-You-Throw (PAYT)?	No	No	No
Do you operate single-stream recycling?	Yes	Yes	Yes
What are the fees in your city or town for solid waste collection?	Included in the tax rate	\$225 per unit	There is no fee.
<i>Engineering</i>			
Please provide the number of Staff (FTEs) by position title in Engineering, if applicable.	DPW is separate from the Engineering Department. There is the Director of Engineering, 2 engineers, and a GIS Coordinator	Director DPW/Town Engineer, Operations Engineer Senior Engineer	Engineering, Water & Sewer do not fall under Public Works.
If not specifically identified above, please indicate the number of Inspectors in the Division. How many of these inspect street opening permits and/or paving conditions? How many street opening permits were issued last year (or recent 12-month period)?	Street Opening inspections and permits are handled by the DPW and inspections done by the Director, hwy Supt or a Forman. Dedham has a pavement mgt system that VHB is the consultant and rates all roads every 3 years 323 Street opening permits issued thru the DPW	All 3 All 100	Public Works has one inspector. 1. 606
What are your fees for street opening permits?	\$100 Permit Fee \$ 50 Inspection Fee \$ 25 Trench permit Fee	Varies \$50 min	\$25.00 per week. \$50.00 w/residential trench opening

Question	Dedham	Stoneham	Waltham
<p>Does your Town have an automated pavement management system that indexes the condition of paved surfaces in your town?</p> <p>Is this administered by Engineering? If not, is it contracted out? Accomplished by another division in the Town?</p>	<p>Yes.</p> <p>The Engineering Department along with DPW administers the Pavement Mgt System. VHB is our consultant</p>	<p>No</p>	<p>Yes.</p> <p>No. Yes, we update it as streets are paved, but needs to be contracted out every 4 years to re-evaluate all of the streets.</p>
<p>How many bridges are in your town?</p> <p>Are inspections accomplished by your Engineering staff? Contracted? Please explain.</p>	<p>MADOT conduct the inspections</p>	<p>0</p> <p>Staff</p>	<p>17.</p> <p>State inspects some of the bridges, others are contracted out.</p>
<p>If not specifically identified above, please indicate the number of Surveyors in the Division.</p>	<p>N/a</p>		<p>1 in the Engineering Department.</p>
<p>Do you have a list of approved contractors (drainlayers list)?</p>	<p>Yes.</p>	<p>yes</p>	<p>Yes.</p>
<p>Do you have a list of approved paving companies?</p>	<p>No</p>	<p>no</p>	<p>No.</p>

Question	Dedham	Stoneham	Waltham
<i>Facilities Management</i>			
Please provide the number of Staff (FTEs) by position title in your facilities/building maintenance division	Facilities Department is separate from DPW	0	This in under the Building Department.
Total Area (square feet) maintained by Facilities Maintenance staff (If not available, please provide an estimate if possible)			Building Department.
If Facilities Management oversees custodial services, is it provided by municipal staff or outsourced? Is this service provided for the schools as well as Town buildings?			Municipal staff. Schools are separate.
Total Area (square feet) maintained by custodial staff			
<i>Streets / Highways</i>			
Please provide the number of Staff (FTEs) by position title in your streets/highways division	20 Operations 2 Admin Asst		Superintendents -2, Code Enforcement Inspector- 1, Foreman, 1, Working Foreman 2, and Laborers/operators/etc. -17
Number of center line miles of streets maintained by staff	117 miles	65	162

Question	Dedham	Stoneham	Waltham
Do you repair sidewalks with in-house personnel?	Yes	some	We try to.
If so, what percentage is repaired using hot top (as compared to concrete)?	90% Asphalt	80%	99%, using hot top even when concrete was existing.
Does the division maintain culverts?	Yes	Yes	Yes
Does the division pick up dead animals in streets?	Yes	Yes	Yes
In removing snow, how much salt do you use per lane mile?	N/A	(No response)	As much as it takes.
Do you use a mix of sand and salt in snow removal?	No Salt only	Yes	Yes
Do you use salt additives? (e.g., liquid calcium)	Yes, We have used the Magnesium but are switching back to the Ice b gone (Beer residual)	As needed	No
Do you utilize weather monitoring systems, such as road temperature devices? Video observation? (Please indicate which)	Yes, Roadwatch on supervisors trucks.	Observation	No
Do you use computerized controls in your salt spreading trucks?	Yes most have Compuspread	No	No
Do you utilize contractors for snow removal?	Yes	Yes	Yes
If so, approximately what percentage of the total effort is conducted by contractors?	Plowing is 65% Removal is 60 %	75%	

Question	Dedham	Stoneham	Waltham
What did your City or Town spend in the past three fiscal years for snow removal? (please list by FY if available)	FY10=\$593,965 FY11=\$1,282,790 FY12=\$340,000	FY10=\$420,000 FY11=\$634,000 FY12=150,000	FY10=\$1,537,525 FY11=\$1,939,910 FY12=\$460,219
Does your Department maintain street lights?	Yes	Yes	No.
Is this performed by in-house or contract personnel?	Contracted Service	Contract	In house, Wires Department.
Approximately how many street lights are in your City or Town?	2800+	1,600	
Does your streets/highways division repair utility cuts and excavations? If not, which division is responsible for this?	Yes	Yes	Only when city departments do the excavation.
Do you require granite curbing and concrete sidewalk on reclamation and/or full depth reconstruction projects?	In some areas yes	New subdivisions	Require whatever is taken out be replaced.
Is your department responsible for issuing driveway permits? Re-paving permits?	New Driveways Yes	No	Yes, part of street opening permits.
Is your department responsible for viewing and measuring driveway paved surfaces on private property?	No	No	No
<i>Fleet</i>			
How many vehicles and pieces of equipment are maintained by staff in your vehicle maintenance function?	50+	150	205 registered pieces. 56 non registered pieces.

Question	Dedham	Stoneham	Waltham
Number of Staff (FTEs) by position title	2	Master Mech 1 Mech 1 Maintenance man 2	Foreman- 1. Working Foreman-2. Mechanic- 4. Welder – 1.
For which town departments and/or divisions does your vehicle maintenance division provide maintenance and repair? Are there other vehicle maintenance and repair providers in other departments or divisions in your town? If so, which ones?	Dpw, Council of Aging, Dog Officer No	DPW Police Fire [some] No	Waltham/ All Division. No
Do you contract out any fleet maintenance? If so, what services are contracted?	No	Some large jobs	Fire truck work, suspensions, transmissions and warrantee work.
Do you have a software package that you use to track preventive maintenance, mechanic utilization, fleet utilization, etc?	No	No	Tracked in house using excel.
If you have a software package, what software do you use?	No	(No response)	No
<i>Wastewater System Maintenance</i>			
Do you operate a wastewater treatment plant?	No	No	No
Approximately what percentage of your wastewater service is provided by MWRA?	100% of our Sanitary Sewer goes to MWRA	100%	100%

Question	Dedham	Stoneham	Waltham
<p>Is your Public Works Department responsible for the maintenance and repair of the collection system?</p> <p>If so, how many miles of sewer lines are there in the system?</p> <p>How many miles of drain lines?</p>	<p>Yes along with the Engineering Department</p>	<p>Yes</p> <p>70</p> <p>40</p>	<p>No. Engineering Department</p>
<p>Number of staff in field maintenance by position title</p> <p>In what division is this performed?</p>	<p>DPW budget 3 employees for this year round</p>	<p>8 Foreman, Operator, Craftsman, Laborers</p> <p>Sewer</p>	
<p>Does the Department televise its collection lines?</p> <p>If so, approximately how many miles were televised last year (or any recent defined time period)</p>	<p>Yes</p> <p>(No response)</p>	<p>Contract</p> <p>3</p>	<p>Yes</p> <p>(No response)</p>
<p>How many CSO, sewerage and pumping stations are in your system?</p>	<p>3 Pumping stations</p>	<p>5 sewer stations</p>	<p>(No response)</p>

Question	Dedham	Stoneham	Waltham
Is your Public Works Department responsible for street sweeping?	Yes	yes	Yes
For catch basin cleaning?			
If so, are these performed contractually or by in-house staff?	Yes In house staff.	Contract	Engineering/Water & Sewer In house
Is your Public Works Department responsible for ensuring compliance with Stormwater regulations? If not, in which organization is this performed?	We have items for our MS4 permit but the permit is under the environmental department	Yes	Engineering
Is your Public Works Department responsible for the flood control system? If not, in which organization is this performed?	We do not have a flood control system	Yes	Engineering
<i>Water System Maintenance</i>			
Do you operate a water treatment plant?	Water system is separate from Public Works. Dedham is serviced by the Dedham Westwood Water District	No	No
Number of staff in field maintenance for the distribution system by position title			
Approximately what percentage of your water is provided by MWRA?		100%	100 %
How many miles of distribution lines are in the system?		70	(No response)

Question	Dedham	Stoneham	Waltham
Does your Public Works Department routinely contract out any services (e.g., backflow prevention, distribution, cleaning services, etc.)? If so, which ones?		Backflow Main replacement	(No response)
If you charge for backflow prevention inspections, what are your fees?	(No response)	\$55	(No response)
Does your Public Works Department have a valve exercising program?	(No response)	Yes	No
Hydrant flushing program?	(No response)	(No response)	No
Is your department responsible for water meter reading data collection?	(No response)	Yes	Yes
If so, do you use an automated reading system? For example, radio frequency, mobile data collection.		Radio	Not at this time, but project is underway.

Question	Dedham	Stoneham	Waltham
<i>Other</i>			
Does your department assist the Fire Department in application of absorbent materials for oil spills or for auto accidents?	No	Yes	(No response)
Do you use a fire hydrant marking system embedded in the street? For example, street markings, hydrant rods, reflectors.	(No response)	Rods	No

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Question	Arlington	Belmont	Newton
<i>General and Administrative</i>			
Does your Public Works Department utilize an automated information system to create work orders?	Yes	No	No
If so, what automated system do you use?			
When work is complete, what information do you record? (e.g., labor hours, crew members, work/labor category, etc.)	Web Q/A Mostly that the work was completed		NA NA
What divisions comprise your Public Works Department?	Parks, Trees, Cemetery, Water/Sewer, Admin, Engineering, Highway, MER, Building Maintenance, Custodial	Highways, Parks & Cemeteries, Water	Admin, Highway, Engineering, Utilities (Water & Sewer), Transportation, Environmental Affairs (Trash & Recycling), Fleet Maintenance
How many administrative/clerical staff members are in your Public Works Department?	6		Admin (9) Highway (0) Engineering (0) Utilities (5.5) Transportation (0) Environmental Affairs (0) Fleet Maintenance (1)
Please list these positions (non-managerial and non-supervisory), by division.	Admin – Bookkeeper Admin - Clerk Admin – Administrative Assist. Water/Sewer – Water Clerk/Meter Reader Water/Sewer – Accountant/Operation Assist Cemetery - Senior Clerk		

QUESTION	Arlington	Belmont	Newton
<i>Parks, Trees, Cemeteries</i>			
Are parks maintenance services provided within the same organization/department as recreational services?	IN DPW	Not currently, but considering consolidation	Yes
Does your department have a separate tree or arbor division?	Yes	No (under Highway Division)	No (Forestry is not part of DPW, it is part of Parks & Rec, which is a separate Department)
If so, how many personnel are in this division/function?	7		
If not, does the department outsource tree maintenance and management or does it accomplish this with internal staff?	NA	Part time Tree Warden with contracted tree service company. Use DPW staff as needed.	Parks & Rec department outsourced all tree work until this year. They now have a Forestry Division with 2 manager and 3 person crew.
How many tree-related calls for service do you receive in a typical year?	375±	400	Forestry is not part of DPW, it is part of Parks & Rec, which is a separate Department
For pruning:	200±	300	
For take-downs:	50±	100	
Does your Public Works Department operate one or more cemeteries? If so, how many?	1 current and 1 old Burial Ground	2 cemeteries	DPW does not operate the cemeteries
Approximately how many acres of cemeteries are maintained by personnel assigned to this task?	Grounds maintenance is contracted out. Staff of 3 maintained for burial services and other maint.	24 acres	
Do you contract out any cemetery maintenance? If so, what functions?	Lawn Mowing, spring/fall cleanup	No	DPW does not operate the cemeteries

Question	Arlington	Belmont	Newton
Is your Public Works Department responsible for sales of new plots?	Yes	Yes	DPW does not operate the cemeteries
If so, do you have dedicated staff members for this task?	yes	No	
Are your grave site records in an automated program, or do these records only exist in manual (e.g., card) form?	We are in transition period.	Both	DPW does not operate the cemeteries
If automated, are the records and site locations in your Geographical Information System (GIS)?	We are working on it	Yes, currently working on a program to put on Town web site	
Do you maintain any artificial turf?	no	Yes	DPW does not operate parks (separate Dept.)
How many developed acres are maintained by the staff dedicated to maintenance of these grounds?	The cemetery is 70 acres	62 acres of parks and playgrounds, skating rink and outdoor pool	DPW does not operate parks (separate Dept.)
How many staff members perform grounds maintenance?	11 in Parks	5.54 FTE	DPW does not operate parks (separate Dept.)
<i>Solid Waste and Recycling</i>			
Do you perform solid waste collection with in-house personnel or through contract?	Contract	Contract	Contract
How often is each residence's solid waste collected?	Weekly	Weekly	Weekly
If in-house, how many staff members are dedicated to collection?		NA	2 People are assigned to trash & recycling collection in public spaces (business areas and parks)
If in-house, how many crew members are on a truck?		NA	2

Question	Arlington	Belmont	Newton
Do you collect recyclable materials with in-house personnel or through contract?	Contract	Contract	Contract
How often is each residence's recyclable material collected?	Weekly	Every other week	Weekly
If in-house, how many staff members are dedicated to collection?		NA	NA
Is there a Supervisor responsible for waste and recycling issues?	DPW Admin and ½ time Recycling Coordinator	Shared responsibility	NA
How many residential accounts are in your city or town?	12,000 total. Commercial/residential not collected separately	9,930	28,000
How many commercial accounts? (Is your commercial collection provided by in-house crews or contractor?)		Belmont does not collect commercial	City does not collect business/commercial
Do you operate a transfer station?	no	No	No
If so, please indicate the number of staff, by title, at the station.			NA
Do you use Pay-As-You-Throw (PAYT)?	no	No	No
Do you operate single-stream recycling?	yes	No	Yes
What are the fees in your city or town for solid waste collection?	No fee collected	\$20 per appliance \$15 per CRT	\$0 for residential trash/recycling \$12 per CRT/TV

Question	Arlington	Belmont	Newton
<i>Engineering</i>			
Please provide the number of Staff (FTEs) by position title in Engineering, if applicable.	Town Engineer Senior Civil Engineer 2 – Junior Engineer	Engineering not a part of Public Works (Community Development Department)	City Engineer (1) Associate Engineer (1) Project Manager (1) Permits Engineer (1) Office Engineer (1) Design Engineer (1) Surveyors (2) Construction Engineers (2) Construction Inspectors (2)
If not specifically identified above, please indicate the number of Inspectors in the Division. How many of these inspect street opening permits and/or paving conditions? How many street opening permits were issued last year (or recent 12-month period)?	0. Task handled by Eng. Staff 440±	NA Public Works has one FT Street Opening Permit Coordinator who reviews and issues permits as well as inspects trenches FY12=418 permits	4 Construction Engineers/Inspectors 3 259 (in 2012)
What are your fees for street opening permits?	Attached	\$100 per permit and \$50 for time extension	\$250

Question	Arlington	Belmont	Newton
Does your Town have an automated pavement management system that indexes the condition of paved surfaces in your town? Is this administered by Engineering? If not, is it contracted out? Accomplished by another division in the Town?	Yes Yes	Yes Administered by Engineering (part of Community Development)	Yes, Admin in Engineering with assistance from a contractor.
How many bridges are in your town? Are inspections accomplished by your Engineering staff? Contracted? Please explain.	None which are the Towns Responsibility	3 bridges 2 owned and inspected by the State, one owned and inspected by MBTA	6 co-owned with abutting communities 49 owned by state agencies (< 20 feet) inspected by consultant (>= 20 feet) inspected by state
If not specifically identified above, please indicate the number of Surveyors in the Division.	No official position but one of the engineers is capable of survey	None in DPW (employees in Community Development Dept. serve several roles, building inspection, engineering)	2
Do you have a list of approved contractors (drainlayers list)?	yes	No	No, we maintain a list of available contractors, but no approval process
Do you have a list of approved paving companies?	yes	No	No, we maintain a list of available paving companies, but no approval process
<i>Facilities Management</i>			
Please provide the number of Staff (FTEs) by position title in your facilities/building maintenance division	Supt. of Building Maint. Sup. of Building Maint. Plumber, 2-Electricians, 4-Carpenters, Handyman	Not a part of DPW. Currently consolidating Town and School buildings into a separate Public Facilities Department	Public Buildings is not part of DPW

Question	Arlington	Belmont	Newton
Total Area (square feet) maintained by Facilities Maintenance staff (If not available, please provide an estimate if possible)	1,300,000± Supplemental work contracted when needed.	NA NA	Public Buildings is not part of DPW
If Facilities Management oversees custodial services, is it provided by municipal staff or outsourced? Is this service provided for the schools as well as Town buildings?	Combination 31 in-house, 10 contracted Both (mostly schools, some Town Bldgs, about 25%)	NA NA	Public Buildings is not part of DPW
Total Area (square feet) maintained by custodial staff	995,000±	NA	Public Buildings is not part of DPW
<i>Streets / Highways</i>			
Please provide the number of Staff (FTEs) by position title in your streets/highways division	Supervisor, 2-Highway Working Foreman, Dispatcher, Watchman/Laborer, 12 MEO's, Foreman Paint Shop, Carpenter, Foreman Mason, Mason	See FTE chart. Highway Division includes Street Maint., snow removal, sanitary sewer maint., stormwater maint., central fleet maint., forestry, Delta and grounds maint., street lighting, solid waste and recycling (FTEs are an approximation).	Highway Superintendents (2) Assistant Highway Superintendents (4) Working Foremen (14) Yard Maintenance Superintendents (2) Yard Maintenance Supervisors (2) HMEO Truck Drivers (17) SHMEO Equipment Operators (16) Mason/Curbsetters (17) Handyman (1)
Number of center line miles of streets maintained by staff	100 Public, 25 Private. Only responsible for snow/ice operations on private ways	83	275 miles

Question	Arlington	Belmont	Newton
Do you repair sidewalks with in-house personnel?	Both	Small area in-house, large areas contracted out	Yes
If so, what percentage is repaired using hot top (as compared to concrete)?	50/50	5%	15%
Does the division maintain culverts?	Yes	Yes	No
Does the division pick up dead animals in streets?	No	Yes	Yes
In removing snow, how much salt do you use per lane mile?	We shoot for between 400-600 lbs per lane mile.	200 lbs to 800 lbs depending on conditions	200-400lbs of salt per lane mile
Do you use a mix of sand and salt in snow removal?	No	On flat side streets	No mix, straight salt
Do you use salt additives? (e.g., liquid calcium)	Yes	Yes-Safe Melt	Yes, magnesium chloride
Do you utilize weather monitoring systems, such as road temperature devices? Video observation? (Please indicate which)	We use hand held infrared thermometers for road temperatures.	Private weather service and road temperature devices	We have a weather service
Do you use computerized controls in your salt spreading trucks?	No	No-calibrate spreaders and provide operator training	Yes, we have "compu-spread" in our salting trucks which monitors our salting operations such as distance traveled, lbs per lane mile, time truck is not spreading or spreading material
Do you utilize contractors for snow removal?	Yes	Yes, for plowing operations	Yes
If so, approximately what percentage of the total effort is conducted by contractors?	Depends on Storm. 3 or less inches, no Contractor. Over 3 we call in 45± trucks	50% for plowing	60%

Question	Arlington	Belmont	Newton
What did your City or Town spend in the past three fiscal years for snow removal? (please list by FY if available)	FY12=\$466,443 FY11=\$1,212,213 FY10=\$983,484	FY12=\$233,784 FY11=\$917,252 FY10=\$543,788	FY12=\$2,442,687 FY11=\$3,948,023 FY10=\$943,917
Does your Department maintain street lights?	Yes	No – municipal light department maintains	Yes
Is this performed by in-house or contract personnel?	Contract	NA	Contractor
Approximately how many street lights are in your City or Town?	3,300	2,400	Approx. 8,450
Does your streets/highways division repair utility cuts and excavations? If not, which division is responsible for this?	Yes for work we perform. Utility companies and contractors repair their own trenches	Each division is responsible for its own street cuts – permanent trench repair done by contractor	Yes
Do you require granite curbing and concrete sidewalk on reclamation and/or full depth reconstruction projects?	Typically yes	No	Yes
Is your department responsible for issuing driveway permits? Re-paving permits?	No	No – Community Development Department is responsible	Yes
Is your department responsible for viewing and measuring driveway paved surfaces on private property?	No	No – Community Development Department is responsible	No, this is done by Inspectional Services
<i>Fleet</i>			
How many vehicles and pieces of equipment are maintained by staff in your vehicle maintenance function?	150	516 including weed trimmers, lawn mowers, snow blowers, chain saws, pumps, etc.	263 vehicles 60 pieces of equipment

Question	Arlington	Belmont	Newton
Number of Staff (FTEs) by position title	6	Shop Foreman – 1 FTE Mechanic-3 FTE	Superintendent (1) Assistant Superintendent (1) Working Foremen (2) Storekeeper (1) Metal Body Workers (3) Motor Equipment Repairmen (6) Handyman (1) Bookkeeper (1)
For which town departments and/or divisions does your vehicle maintenance division provide maintenance and repair?	All DPW	All departments	All except Fire Department
Are there other vehicle maintenance and repair providers in other departments or divisions in your town? If so, which ones?	Community Safety (Police/Fire)	No	No
Do you contract out any fleet maintenance? If so, what services are contracted?	Some – Mostly transmission service	Large complex repairs (engine rebuild, transmissions, springs, etc.)	No
Do you have a software package that you use to track preventive maintenance, mechanic utilization, fleet utilization, etc?	We do but it is under utilized	Yes	Yes
If you have a software package, what software do you use?	Fleetmax	Mitchell 1...on demand 5..manager plus	GasBoy
<i>Wastewater System Maintenance</i>			
Do you operate a wastewater treatment plant?	No	No	No
Approximately what percentage of your wastewater service is provided by MWRA?	100%	100%	100%

Question	Arlington	Belmont	Newton
<p>Is your Public Works Department responsible for the maintenance and repair of the collection system?</p> <p>If so, how many miles of sewer lines are there in the system?</p> <p>How many miles of drain lines?</p>	<p>Yes</p> <p>130 miles</p> <p>80 miles</p>	<p>Yes with Engineering assistance for the Community Development Department</p> <p>76 miles of main line</p> <p>54 miles of main line</p>	<p>Yes</p> <p>280 miles</p> <p>300 miles</p>
<p>Number of staff in field maintenance by position title</p> <p>In what division is this performed?</p>	<p>Water and Sewer Staff is combined Supervisor, 2-Working Foreman, 7-Water/Sewer Maintenance Craftsmen, 4-MEO's,</p>	<p>See FTE chart</p> <p>Highway Division</p>	<p>Director (1) (shared with Water) Superintendent (1) (shared with Water) Assistant Superintendent (2) Director of Admin (.25) Water/Sewer Control Clerk (1) Operations Tech (1) Billing Control Clerk (2) Time Clerk (.5) Environmental Engineer (1) Storekeeper (1) Water/Sewer Systems Craftsmen (3) Working Foremen (5) HMEO Truck Drivers(10) SHMEO Equipment Operators(6) Mason/Curbsetters (2)</p> <p>Sewer /Storm Water Divisions (2 separate divisions)</p>

Question	Arlington	Belmont	Newton
Does the Department televise its collection lines? If so, approximately how many miles were televised last year (or any recent defined time period)	No	Televise service – main lines are contracted out 40 (each) services, about 5 miles of main	Yes 2 miles
How many CSO, sewerage and pumping stations are in your system?	No CSO's. We maintain 9 pump statins	3 sanitary sewer and one stormwater pumping stations	None
Is your Public Works Department responsible for street sweeping? For catch basin cleaning? If so, are these performed contractually or by in-house staff?	Yes Yes Staff	Yes-in house Yes-contracted out See above	Yes Yes Street Sweeping – in house Catch Basins - contractor
Is your Public Works Department responsible for ensuring compliance with Stormwater regulations? If not, in which organization is this performed?	Yes	Yes, in cooperation with Community Development Department	Yes
Is your Public Works Department responsible for the flood control system? If not, in which organization is this performed?	If this is referring to Catch basins and drain lines, then yes.	NA	Yes
<i>Water System Maintenance</i>			
Do you operate a water treatment plant?	No	No	No

Question	Arlington	Belmont	Newton
Number of staff in field maintenance for the distribution system by position title	See above	See FTE chart	Director (1) (shared with Sewer) Superintendent (1) (shared with Sewer) Assistant Superintendent (1) Director of Admin (.25) Water/Sewer Control Clerk (1) (shared with Sewer) Water/Sewer Systems Craftsmen (5) Working Foremen (7) HMEO (7) SHMEO (5) Water Meter Readers (2) Water Meter Repairmen/Installers (2) Construction Inspector (1) Backflow Prevention Tech (2)
Approximately what percentage of your water is provided by MWRA?	100%	100%	100%
How many miles of distribution lines are in the system?	135 miles	93 miles	280 miles
Does your Public Works Department routinely contract out any services (e.g., backflow prevention, distribution, cleaning services, etc.)? If so, which ones?	Backflow prevention, TV'ing of sewer/drain lines, water main renewal and large scale sewer system repair.	Starting to do backflow in-house, all other work done in-house except for contracting out major water main replacement program	Cleaning and meter replacement
If you charge for backflow prevention inspections, what are your fees?		No charge	Yes, the fee is \$90.00

Question	Arlington	Belmont	Newton
Does your Public Works Department have a valve exercising program?	No	Exercise problem areas and areas surrounding new construction	Yes
Hydrant flushing program?	Yes	Yes	Yes
Is your department responsible for water meter reading data collection?	Yes	No-consolidated with municipal electric light department	Yes
If so, do you use an automated reading system? For example, radio frequency, mobile data collection.	Yes, fixed network radio.	Yes	Yes, fixed network
<i>Other</i>			
Does your department assist the Fire Department in application of absorbent materials for oil spills or for auto accidents?	No response	Yes	No
Do you use a fire hydrant marking system embedded in the street? For example, street markings, hydrant rods, reflectors.	No response	Some hydrant rods	Arrows on closest utility pole with distance marked in feet.

Question	Canton	Winchester	Watertown
<i>General and Administrative</i>			
Does your Public Works Department utilize an automated information system to create work orders?	Yes	No	Yes
If so, what automated system do you use?	GovQA	NA	Microsoft Access
When work is complete, what information do you record? (e.g., labor hours, crew members, work/labor category, etc.)	Work completed by Work assigned by	NA	Labor involved and whether the job was completed and on what date
What divisions comprise your Public Works Department?	Administration Engineering Highway Equipment Cemetery Tree Water Sewer	Administration, Maintenance, Buildings, Garage, Transfer station, Cemetery, Snow and Ice, and Water and Sewer Enterprise Fund.	Administration Highway, Prop/Bldgs., Wire Parks, Cemetery, Forestry Water and Sewer Central Motors
How many administrative/clerical staff members are in your Public Works Department?	Administration: Account Clerk Administrative Asst.	4	3
Please list these positions (non-managerial and non-supervisory), by division.	Water: Office Manager Sewer: Assistant Clerk	2 in Administration and 2 in Water/Sewer	Head Clerk, Principal Acct Clerk, Principal Clerk

Question	Canton	Winchester	Watertown
<i>Parks, Trees, Cemeteries</i>			
Are parks maintenance services provided within the same organization/department as recreational services?	There is a Parks & Recreation Department separate from DPW	Yes	No
Does your department have a separate tree or arbor division? If so, how many personnel are in this division/function?	Yes, Tree Division Foreman Operator (bucket truck) Laborer/Truck Driver	No	Tree Warden, in Community Development and Planning Department 1
If not, does the department outsource tree maintenance and management or does it accomplish this with internal staff?		We utilize both in-house tree department and outside contractors.	Supported by contractor during storm clean up, work around high tension wires.
How many tree-related calls for service do you receive in a typical year? For pruning: For take-downs:	90-100 total 85-90 pruning 5-10 take-downs	None Typically prune +/- 5 trees/year Do +/- 3 removals/year	139 Work orders, many duplicate calls on same request. 100 In addition to the 139 calls, 96 trees removed in 2012 from the Tree Warden.
Does your Public Works Department operate one or more cemeteries? If so, how many? Approximately how many acres of cemeteries are maintained by personnel assigned to this task?	Yes, one 130	One 75 Acres	1 Active 2 Inactive 15

Question	Canton	Winchester	Watertown
Do you contract out any cemetery maintenance? If so, what functions?	No	Yes. Currently contract out grass cutting and fertilization, Also leaf removal Spring/Fall.	Yes, grass cutting
Is your Public Works Department responsible for sales of new plots?	Yes	Yes. done @ Cemetery.	Yes
If so, do you have dedicated staff members for this task?	Cemetery Foreman	Yes, (1) full time Cemetery Superintendent. (1) part-time Clerk	No dedicated staff. One Principal Account Clerk handles this in addition to other duties
Are your grave site records in an automated program, or do these records only exist in manual (e.g., card) form?	Manual card system	Both	Automated
If automated, are the records and site locations in your Geographical Information System (GIS)?		Yes, within a live web-based map.	Not yet
Do you maintain any artificial turf?	No	No	Yes
How many developed acres are maintained by the staff dedicated to maintenance of these grounds?	96	45/75 acres.	80
How many staff members perform grounds maintenance?	2 (plus 2 summer helpers)	1 full time, 2-4 periodically from other divisions.	4

Question	Canton	Winchester	Watertown
<i>Solid Waste and Recycling</i>			
Do you perform solid waste collection with in-house personnel or through contract?	Contract (Allied)	Transfer Station in Town	Contract
How often is each residence's solid waste collected?	Weekly	N/A Transfer Station Hours Tue, Wed, Fri, 8-3 Thurs. 12-7 Sat. 8-4 N/A	Weekly
If in-house, how many staff members are dedicated to collection?		N/A	n/a
If in-house, how many crew members are on a truck?		Municipal/Schools/Public Spaces 1-FTE-5 days a week	n/a
Do you collect recyclable materials with in-house personnel or through contract?	Contract (Allied)	Transfer Station in Town	Contract
How often is each residence's recyclable material collected?	Bi-weekly	N/A	Bi-Weekly
If in-house, how many staff members are dedicated to collection?		(1-2) FTE's 1 collection day a week	n/a
Is there a Supervisor responsible for waste and recycling issues?	Shared duties between Operations Mgr and Engineer Asst.	Municipal/School/Public Spaces Yes (1) Prof/Technical/Recycling Coordinator	Yes, Superintendent

Question	Canton	Winchester	Watertown
How many residential accounts are in your city or town?	(No answer)	7700 (5000 use Transfer Station)	9058
How many commercial accounts? (Is your commercial collection provided by in-house crews or contractor?)	None-contracted out	(2700 Private Haulers, some use T/S) 200 Some drop off-some private haulers	407
Do you operate a transfer station?	Yard waste only	Yes (1) Prof/Tech Coordinator	No
If so, please indicate the number of staff, by title, at the station.	Contracted (2 people)	(2) Scale Operators (3) Tipping Building/Recycling Operators/class A drivers	n/a
Do you use Pay-As-You-Throw (PAYT)?	No	No-TBD in future	No
Do you operate single-stream recycling?	No	Yes Started Oct. 2, 2012	Yes
What are the fees in your city or town for solid waste collection?	Included in the tax rate	\$190 annual sticker fee at Transfer Station See attached for additional fees	\$ 0. Trash / Recycling \$20. White Good Appliances
<i>Engineering</i>			
Please provide the number of Staff (FTEs) by position title in Engineering, if applicable.	Town Engineer, Asst. Town Engineer, Jr. Engineer/Inspector	Town Engineer – 1 Assistant Town Engineer – 1 Junior Engineer/Inspector – 1 Special Projects Engineer – 1 Administrative - 1	The position of Town Engineer has been vacant for a number of years

Question	Canton	Winchester	Watertown
<p>If not specifically identified above, please indicate the number of Inspectors in the Division.</p> <p>How many of these inspect street opening permits and/or paving conditions?</p> <p>How many street opening permits were issued last year (or recent 12-month period)?</p>	<p>Asst. Town Engineer, Jr. Engineer/Inspector</p> <p>Water/Sewer: 81 Gas/Tele/Cable:151</p> <p>Street: 122</p>	<p>Street Opening Permits are handled through DPW, not Engineering.</p> <p>252</p>	<p>Division supervisors perform inspections on their respective divisional work.</p> <p>1</p> <p>320</p>
<p>What are your fees for street opening permits?</p>	<p>Apply: \$50 (unreadable fees for other permits)</p>	<p>\$106.00</p>	<p>Sidewalk Crossing Permit - \$105.</p> <p>Driveway Repave Permit - \$ 25.</p> <p>Digging on Town Property - \$240.</p>
<p>Does your Town have an automated pavement management system that indexes the condition of paved surfaces in your town?</p> <p>Is this administered by Engineering? If not, is it contracted out? Accomplished by another division in the Town?</p>	<p>Yes</p> <p>Asst. Town Engineer</p>	<p>No. Pavement condition is handled by DPW, not Engineering.</p>	<p>Not internally. Have results of the assessment performed by contractor</p> <p>No, Contracted Out</p>

Question	Canton	Winchester	Watertown
How many bridges are in your town? Are inspections accomplished by your Engineering staff? Contracted? Please explain.	No answer Inspected by State	We receive copies of that bridge inspection reports done by MassDOT. If there is a problem flagged in their report, we will have one of our consultants review it. There are no structural engineers on staff in the Town.	3 Contracted and also State
If not specifically identified above, please indicate the number of Surveyors in the Division.	Duty shared by members of division	There are no registered land surveyors on staff, though two staff members do have experience using survey equipment.	0
Do you have a list of approved contractors (drainlayers list)?	List of licensed, not approved	Yes	No, not allowed
Do you have a list of approved paving companies?	List of licensed, not approved	Yes	No, not allowed
<i>Facilities Management</i>			
Please provide the number of Staff (FTEs) by position title in your facilities/building maintenance division	Facilities Department is separate from DPW Bldg Maint. Tech/Foreman, Bldg Maint Worker (3)	1 Facilities Manager, 1 Skilled Foreman , 1 Plumber, 1 Electrician, 1HVAC Tech and 1 Union Skilled Craftsman	Supervisor – Prop/Bldgs., Supervisor - Chief Electrician, Line/Wire and Weights & Measures
Total Area (square feet) maintained by Facilities Maintenance staff (If not available, please provide an estimate if possible)	60,250	1.3 Million	About 93,000

Question	Canton	Winchester	Watertown
<p>If Facilities Management oversees custodial services, is it provided by municipal staff or outsourced?</p> <p>Is this service provided for the schools as well as Town buildings?</p>	<p>Mostly in-house</p> <p>No</p>	<p>Oversee 23 school custodians</p> <p>1 Town Hall Custodian</p> <p>Police and Fire in-house</p> <p>Library and Recreation have their own part-time employees.</p>	<p>Both</p> <p>No</p>
Total Area (square feet) maintained by custodial staff	35,300	770,000 cleaned School Custodian Town Hall 22,700	NA
<i>Streets/Highways</i>			
Please provide the number of Staff (FTEs) by position title in your streets/highways division	Highway Supt., Highway Foreman, 2 Equipment Operator, 6 Truck Driver, Laborer	14 (1) Prof/Tech (13) Laborers	Supervisor 2 Foremen HEO/Welder Skilled Craftsman MEO HEO <u>2 HEO-Sweepers</u> 9 Total
Number of center line miles of streets maintained by staff	103	93	72
Do you repair sidewalks with in-house personnel?	Yes	Yes	Yes, new work performed by contractors
If so, what percentage is repaired using hot top (as compared to concrete)?	95%	1/3	15%
Does the division maintain culverts?	Yes	Yes	No, Water/Sewer/Drain division
Does the division pick up dead animals in streets?	Shared with Sewer	Yes	No, Water/Sewer/Drain division
In removing snow, how much salt do you use per lane mile?	200-300 lbs.	½ ton	300 lbs.

Question	Canton	Winchester	Watertown
Do you use a mix of sand and salt in snow removal?	Sometimes	Yes	No
Do you use salt additives? (e.g., liquid calcium)	No	Yes Magic/ molasses	Yes, liquid calcium
Do you utilize weather monitoring systems, such as road temperature devices? Video observation? (Please indicate which)	Weather service	Yes Road temperature in vehicle	Weather station at DPW 2 private weather services
Do you use computerized controls in your salt spreading trucks?	Yes	No	Yes
Do you utilize contractors for snow removal?	Yes	Yes	Yes
If so, approximately what percentage of the total effort is conducted by contractors?	45%	1/4	60%
What did your City or Town spend in the past three fiscal years for snow removal? (please list by FY if available)	FY12=\$253,725 FY11=\$720,900 FY10=\$598,000	FY12=\$224,467 FY11=\$566,922 FY10=\$417,073	FY12=\$39,298 (contract only) FY11=\$781,672 (contract only) FY10=\$224,432 (contract only)
Does your Department maintain street lights? Is this performed by in-house or contract personnel? Approximately how many street lights are in your City or Town?	Contracted	Yes Contractor	Yes, on two streets (Mt. Auburn and Arsenal). All others are contracted out. Performed by Property and Buildings Division 300

Question	Canton	Winchester	Watertown
Does your streets/highways division repair utility cuts and excavations? If not, which division is responsible for this?	Water and Sewer patch their own work Highway patches older trench and cuts	No The contractor performs the work.	Yes
Do you require granite curbing and concrete sidewalk on reclamation and/or full depth reconstruction projects?	No, decided by project	Yes	Yes
Is your department responsible for issuing driveway permits? Re-paving permits?	Curb cut only	Yes	No
Is your department responsible for viewing and measuring driveway paved surfaces on private property?	No	No	No
<i>Fleet</i>			
How many vehicles and pieces of equipment are maintained by staff in your vehicle maintenance function?	400	125	120
Number of Staff (FTEs) by position title	Equip Main Foreman Mechanic Mechanic/Welder	3	1 Supervisor 1 Foreman <u>2 HEO Mechanics</u> 4 total

Question	Canton	Winchester	Watertown
For which town departments and/or divisions does your vehicle maintenance division provide maintenance and repair?	All except Fire	All	DPW Inspectional Services Skating Rink Council on Aging Bus
Are there other vehicle maintenance and repair providers in other departments or divisions in your town? If so, which ones?	Fire Department		Police Department Fire Department
Do you contract out any fleet maintenance? If so, what services are contracted?	No	No	Yes. Painting, body work, alignments, lighting, some upholstery
Do you have a software package that you use to track preventive maintenance, mechanic utilization, fleet utilization, etc?	Yes	Yes	No
If you have a software package, what software do you use?	Dossier	Fleet maintenance pro 12 deluxe edition	No automated fleet work order system, but fleet inventory is in Excel spreadsheet
<i>Wastewater System Maintenance</i>			
Do you operate a wastewater treatment plant?	No	No	No
Approximately what percentage of your wastewater service is provided by MWRA?	100%		NA

Question	Canton	Winchester	Watertown
<p>Is your Public Works Department responsible for the maintenance and repair of the collection system?</p> <p>If so, how many miles of sewer lines are there in the system?</p> <p>How many miles of drain lines?</p>	<p>Yes</p> <p>66.1 miles</p> <p>60 miles</p>	N/A	<p>Yes</p> <p>82</p> <p>83</p>
<p>Number of staff in field maintenance by position title</p> <p>In what division is this performed?</p>	<p>Sewer Foreman Sewer Tech Laborer</p> <p>Water/Sewer Division</p>	N/A	<p>1 Foreman 2 HEO 1 MEO <u>1 Skilled Craftsman</u> 5 total</p> <p>Water/Sewer/Drains</p>
<p>Does the Department televise its collection lines?</p> <p>If so, approximately how many miles were televised last year (or any recent defined time period)</p>	<p>Yes</p> <p>(No response)</p>	N/A	<p>Yes</p>
<p>How many CSO, sewerage and pumping stations are in your system?</p>	<p>(No response)</p>	N/A	<p>None</p>

Question	Canton	Winchester	Watertown
Is your Public Works Department responsible for street sweeping?	Yes	Yes	Yes
For catch basin cleaning?		Yes	Yes
If so, are these performed contractually or by in-house staff?	Yes In House	Both in house & contractor	Street sweeping in house Catch basins contracted
Is your Public Works Department responsible for ensuring compliance with Stormwater regulations? If not, in which organization is this performed?	Yes Shared some with Building Inspections, ConsComm	N/A	Yes
Is your Public Works Department responsible for the flood control system? If not, in which organization is this performed?	Yes	Yes	
<i>Water System Maintenance</i>			
Do you operate a water treatment plant?	2 2 Utility Tech Operators	Yes	No
Number of staff in field maintenance for the distribution system by position title	Water Sewer Supt. Water Foreman Equipment Operator Truck Dr/Laborer 3 Utility Tech	15 1 Management position 14 Union positions	1 Foreman 2 HEO <u>2 MEO</u> 5 Total
Approximately what percentage of your water is provided by MWRA?	15% - 20%	Approximately 50%	100%

Question	Canton	Winchester	Watertown
How many miles of distribution lines are in the system?	121.6	110	80
Does your Public Works Department routinely contract out any services (e.g., backflow prevention, distribution, cleaning services, etc.)? If so, which ones?	Backflow Leak Detection	Yes Backflow Drain cleaning Some construction	Catch basin cleaning and leak detection
If you charge for backflow prevention inspections, what are your fees?	(No response)	\$50.00 per test	\$75 per test
Does your Public Works Department have a valve exercising program? Hydrant flushing program?	Yes Yes	We do directional flushing which exercises some of the valves but not all	Yes, annual Yes, annual
Is your department responsible for water meter reading data collection? If so, do you use an automated reading system? For example, radio frequency, mobile data collection.	Yes No 3 Meter Readers 36,000 reads per year Quarterly billing	Yes Mobile data collection	Yes Mobile collector
<i>Other</i>			
Does your department assist the Fire Department in application of absorbent materials for oil spills or for auto accidents?	No	No	Yes

Question	Canton	Winchester	Watertown
Do you use a fire hydrant marking system embedded in the street? For example, street markings, hydrant rods, reflectors.	No	Hydrant flags	Reflective markers on street

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APPENDIX D
SAMPLE WORK ACTIVITY FORM

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APPENDIX E
CEMETERY RULES AND REGULATIONS

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TOWN OF WATERTOWN

DEPARTMENT OF PUBLIC WORKS

124 ORCHARD STREET

WATERTOWN, MASSACHUSETTS 02472

Tel: 617-972-6420

Fax: 617-972-6402

RULES AND REGULATIONS IN REGARD TO MEMORIAL STONES ON GRAVES

Monument and Markers may be erected subject to approval of the Manager or his designee.

Lot and section **identification must be on the base of the monuments.**

All monuments must be erected on concrete foundations to be built by the cemetery personnel.

Statues are prohibited.

Monuments must be erected during regular working hours – Monday thru Friday between 7:00 AM and 3:00 PM

One monument per lot, and must be centered on lot

The cemetery is not responsible for damage to monuments.

Monument sizes: (Base and Die)

Single Grave Lots 2'0 x 1'0 x 3'0

Two Grave Lots 3'0 x 1'0 x 3'0

Flush Markers 2'0 x 1'0

Date: _____

Cemetery: _____

Lot Number: _____

Signature of lot owner or his representative: _____

Please make checks payable to: The Town of Watertown

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APPENDIX F
SCORING SYSTEM FOR POTENTIAL PRIVATIZATION

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**Scoring for Potential for Privatization for Public Works
Town of Watertown**

Note: The higher the score, the greater the potential for privatization; however, there is no threshold scoring at which privatization becomes a definitive opportunity.

Department: Division: Service: Or Cross-Organizational Service:
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Issue	Response	Points
Is this a core Town service?		Yes=0 points No=10 points
Is this a core Departmental service?		Yes=0 No=10
Is this service available in the private sector? <ul style="list-style-type: none"> ▪ How many vendors provide this service? ▪ How would the Town replace a vendor, if performance required replacing the vendor? ▪ How much specialized professional or technical expertise would be required of vendors? 		Yes=20 No=0 Many =10 Some=5 Easily=10 With difficulty=0 A lot=0 Some=5 None=10
What is the expected level of political opposition to any privatization effort? <ul style="list-style-type: none"> ▪ Has this service been successfully privatized by other cities? ▪ Has this service been privatized by the Town in the past and then brought back in-house? ▪ Have other cities in the area privatized this service and then resumed providing the service themselves? 		High=0 Medium=10 Low=20 Yes=10 No=0 Yes=0 No=10 Yes=0 No=10
Are there legal barriers to privatization? <ul style="list-style-type: none"> ▪ What is the assessed difficulty of changing these legal barriers? 		Yes=0 No=10 If yes, could add 5 if not difficult to change
Does this service have quantifiable and measurable		Yes=10

Issue	Response	Points
<p>performance measures?</p> <ul style="list-style-type: none"> ▪ How difficult will it be to assess a contractor's performance? ▪ Would the Town be able to reward or penalize a contractor based on performance? ▪ What level of risk would be involved if a vendor did not perform? ▪ Is the Town able to transfer liability to the vendor for poor performance? 		<p>No=0</p> <p>Very=0 Somewhat=5 Not=10</p> <p>Yes=10 No=0</p> <p>Low to none=10 Some=5 High=0</p> <p>Yes=10 Maybe=5 No=0</p>
<p>What are the current costs of providing this service?</p> <ul style="list-style-type: none"> ▪ What percentage of these costs are fixed? ▪ What percentage of these costs are variable? ▪ How does Town cost compare with available information from possible vendors? ▪ How difficult would contract monitoring be, if this service were to be privatized? ▪ How difficult would constructing a performance contract be, if this service were to be privatized? ▪ What are the estimated costs of contract development? 		<p>High=10 Medium=5 Low=0</p> <p>High=0 Medium=5 Low=10</p> <p>High=10 Medium=5 Low=0</p> <p>High=10 Approx Same=5 Low=0</p> <p>Difficult=0 Somewhat=5 Not Diff=10</p> <p>Difficult=0 Somewhat=5 Not Diff=10</p> <p>High=0 Medium=5 Low=10</p> <p>High=0</p>

Issue	Response	Points
<ul style="list-style-type: none"> ▪ What are the estimated costs of contract monitoring? ▪ What are the estimated costs of employee pay-offs, if this service were to be privatized? 		<p>Medium=5 Low=10</p> <p>High=0 Medium=5 Low=10</p>
<p>What are the potential impacts on Town employees?</p> <ul style="list-style-type: none"> ▪ How many employees are involved? ▪ Would/could the vendor be required to employ Town's staff? ▪ Would there be any cost impact for requiring the vendor to hire Town employees? ▪ How many jobs face possible elimination? ▪ What requirements will the Town pass on to the vendor, in the way of labor laws? ▪ What is the financial impact of these labor law requirements? 		<p><10=10 10-50=5 >50=0</p> <p>Yes=10 No=0</p> <p>Yes=0 No=10</p> <p><10=10 10-50=5 >50=0</p> <p>None=10 Some=5 All=0</p> <p>High=0 Medium=5 Low=10</p>
<p>Are there unique capital or operating issues involved?</p> <ul style="list-style-type: none"> ▪ Are there unmet maintenance problems which contracting allows the Town to avoid? ▪ Are there unmet maintenance problems which the contractor would be required to resolve? ▪ Are there specialized equipment or supply needs which can be provided more economically by a vendor (due to economies of scale, large-scale procurement, etc.)? 		<p>Yes=10 No=0</p> <p>Yes=0 No=10</p> <p>Yes=0 No=10</p>
<p>Are there confidentiality issues involved?</p>		

Issue	Response	Points
<ul style="list-style-type: none"> ▪ Would the contractor need access to confidential information? ▪ Would the Town feel comfortable with contractor having such access? 		Yes=0 No=10 Yes=10 No=0
Are other Town Departments paying for part of this service? <ul style="list-style-type: none"> ▪ If yes, would other departments be able to buy services from another vendor for the same or less than from the current Town department? ▪ Does a current Town department have excess Capacity? ▪ If yes, could that excess capacity be sold within the Town or to another governmental entity? 		Yes=0 No=10 Yes=10 No=0 Yes=10 No=0 Yes=0 No=10
How comfortable does the Town feel about contracting this service?		Very=20 Somewhat=10 Not=0

Final Score: _____

Are there other issues which cannot be scored but which need to be considered in assessing this service for privatization potential?

RECOMMENDED ACTIONS:

ABOUT THE CENTER

The Edward J. Collins, Jr. Center for Public Management in the McCormack Graduate School of Policy and Global Studies at the University of Massachusetts Boston was established in 2008 to improve the efficiency and effectiveness of all levels of government. The Center is funded by the Commonwealth and through fees charged for its services.



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UNIVERSITY OF MASSACHUSETTS BOSTON