

October 6, 2015

To the Residents of Amherst,

The following is the Amherst Department of Public Works Operations Review prepared by the Matrix Consulting Group with a regional office in Worcester MA and headquartered in Mountain View CA.

While Bruce Berry, the Department of Public Works Director and the Selectmen generally agree with the recommendations provided in this report, it will take a great deal of effort on the part of the DPW Director, Town Administrator and the Board of Selectmen to prioritize and develop plans to implement a number of these recommendations.

Currently, the Selectmen, all Department Heads and the Ways and Means Committee are reviewing strategic plans and preparing the FY 17 operating budget, leaving insufficient time available this Fall to thoroughly discuss and put together a comprehensive plan based on this report.

Your Selectmen will address each and every item identified in this report and will work with the Town Administrator and the DPW management to develop specific strategies for moving the department more in line with contemporary best management practices identified in the review.

We ask that you take the time to read the review, prepare questions and offer recommendations when this topic is revisited this Winter.

Thank you.

Town Administrator, Jim O'Mara on behalf of the Board of Selectmen

**Management and Operations Study of the  
Department of Public Works**

**TOWN OF AMHERST, NEW HAMPSHIRE**

**DRAFT**



**September, 2015**

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# **1. INTRODUCTION AND EXECUTIVE SUMMARY**

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

## **1. SCOPE AND OBJECTIVES OF THE MANAGEMENT AND OPERATIONS STUDY**

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

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

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

## **2. PROJECT METHODOLOGIES**

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

- The Matrix Consulting Group conducted preliminary data collection for the operations review to ensure a clear understanding by the Public Works Department of the scope of the project, obtained the views and perspectives of department management and staff, and obtained an initial understanding of the Public Works Department including goals, objectives, business processes, service level targets, performance indicators, and initial issues and opportunities for improvement.
- The Matrix Consulting Group conducted interviews of the Town Administrator, certain Parks and Recreation staff, and held a focus group of Town residents in order to ascertain opinions on services and service levels, equipment use, alternative service delivery alternatives, customer service, and more.
- The project team collected data regarding service delivery by the Department including organization of services, the structure and functions of the department, budgets, workload data, management systems, inventory of the infrastructure, etc.
- The project team compared the practices and programs of the Public Works Department to various industry practices in the Public Works industry.

The following section provides examples of the strengths of the Public Works Department.

## **3. THE PUBLIC WORKS DEPARTMENT EMPLOYS A NUMBER OF BEST PRACTICES.**

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

- An inventory has been developed for many of the assets maintained by the Department such as the road network, sidewalks, numbers of catch basins, and others.

- The Public Works Department conducts regular condition assessments of many of its paved surfaces on a bi-annual basis.
- The Department makes effective use of contracted services to supplement full-time staff, provide access to specialized skills, and ensure services are provided in a cost-effective and timely manner.
- The Department has developed a comprehensive, detailed multi-year equipment replacement plan that outlines the projected year of replacement for each piece of equipment, along with its projected replacement cost and expected salvage value.
- The custodial contract is financially favorable, with costs that are less than \$0.50 per square foot serviced.

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

#### **4. KEY THEMES IDENTIFIED IN THE REPORT.**

Before summarizing the major recommendations, it is important to put the recommendations into context. The evaluation of the Public Works Department resulted in some key themes emerging that are critical to understanding the resulting recommendations:

- Although the Department is clearly accomplishing work, it is failing to record the work or the resources that were utilized in accomplishing it. This inhibits any meaningful analysis of crew productivity, or the ability to place the cost of the work within the context of the cost of any alternative methods of delivering services.
- The Department is failing to plan field work in a proactive manner. There are no long-range schedules developed for work to be performed that show the dates of service, or the labor, equipment and materials needed to accomplish it.
- The work activities performed by crews appear to be accomplished in an ad hoc manner, with initial daily assignments provided, but with no estimates of the time these activities are expected to consume.
- Field crews are not empowered to complete work outside their direct assignments in most cases. This is not only an inefficient use of labor resources, but is failing to develop staff to assume greater roles in the organization.

- The Public Works facility is inadequate in many respects in providing for an efficient operation. This is particularly true of the space within which the equipment mechanic performs work, but the facility is also generally deficient in its size, layout, amenities and lack of covered storage for heavy equipment.

The following section outlines the key recommendations for each division of the Public Works Department.

## **5. SUMMARY OF RECOMMENDATIONS**

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

### **Summary of Recommendations**

<b>Rec. No.</b>	<b>Recommendation</b>	<b>Priority</b>	<b>Timeframe</b>
<b>Chapter 2 – Planning and Management</b>			
1.	Commit to the development of an asset inventory as a first step toward a structured asset management program.	High	Immediate
2.	In preparation for the installation of a computerized maintenance management system, the Department should begin requiring all crew members to report elements of their work each day.	Medium	Immediate
3.	The Department should purchase and install a computerized maintenance management system. The cost of the system will depend upon the functionality chosen, however in the project team's experience, the cost is estimated to be in the range of \$50,000 to \$80,000.	Medium	FY 2017

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<b>Rec. No.</b>	<b>Recommendation</b>	<b>Priority</b>	<b>Timeframe</b>
4.	The Department should begin to define work activities that are commonly performed. These activity definitions should be utilized consistently and should not vary from employee to employee regarding the type of work that is performed. Further, the Department should ensure that the same field work activity is not defined in the inventory listing under different terms.	Medium	Summer 2016
5	The Department should begin to define service levels for each of its major work activities. These should define the desired level of service to be accomplished, and should be reflective of available personnel and financial resources. These service levels should be communicated to both internal and external stakeholders in the delivery of public works services in the Town.	High	Summer 2016
6.	The Department should develop and implement a formal plan and schedule for all major maintenance events for the year.	High	FY17
7.	The Department Director should generate a monthly performance report on the accomplishment of projected work, and discuss the work accomplished with the Town Administrator. As plans change, adjustments to these plans should be discussed in this monthly meeting.	Medium	Fall 2016
<b>Chapter 3 – Administration and Organization</b>			
8.	Transfer the responsibility for the maintenance and beautification of the Town's common areas from Public Works to the Parks and Recreation Department.	Low	Immediate
9.	Transfer one part time staff member engaged in maintenance of common areas from the Public Works Department to the Recreation Department.	Low	Immediate
10.	The Department Director should distribute certain administrative duties to the two Divisional Foremen, with these Foremen assuming greater responsibility for budgets, safety and training, performance evaluation, procurement, and process redesign.	High	Spring 2016
11.	The Department Director should hold monthly staff meetings with all staff to inform them of news that affects their work.	Low	Immediate
12.	The Public Works Director and Department Foremen should begin to devolve responsibility for the completion of daily assignments down to the crew leaders, and even the field workers themselves. This is necessary in order to ensure that work assignments are completed comprehensively, and that employees at lower levels of the organization are trained to assume greater leadership roles in the future.	High	Fall 2016
13.	Enhance the Department web site to provide more information and interactivity for users.	Low	FY17

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<b>Rec. No.</b>	<b>Recommendation</b>	<b>Priority</b>	<b>Timeframe</b>
14.	The Public Works Department should standardize the manner in which budgets are developed, and by which charges against specific line items with these budgets are made.	Medium	FY17
<b>Chapter 4 – Staffing and Operations</b>			
15.	Crews should be empowered to perform multiple tasks within the work zones to which they are assigned work.	High	Fall 2016
16.	The Department should establish productivity standards and accountability mechanisms by which the work of Highway crews may be measured.	High	FY17
17.	Establish and implement a rotating schedule for after hours call-backs for all employees in the Department.	Low	Immediate
18.	The Town should expend approximately \$31,500 for contracted services related to the institution of a preventive maintenance program for its 12 buildings.	Medium	FY17
19.	The Town should make many structural repairs to its facilities. The project team recommends that the Town form a capital planning committee that prioritizes facilities repairs based on criticality of need, as well as cost.	High	Multi-year effort beginning in FY17
20.	The Town should strongly consider expanding the space it allocates to its equipment maintenance function, and enhancing the ability of the Mechanic to perform not only more work, but to perform the work more efficiently.	High	Multi-year effort beginning in FY17
21.	The current workload of the Mechanic is appropriate under the current circumstances. However, the Town should make many improvements to the space allocated for the Mechanic in order to make this a more efficient operation.	High	Multi-year effort beginning in FY17
22.	The Town should implement the multi-year equipment replacement plan developed by the Public Works Department.	Medium	FY17
23.	The Department should assemble an ad hoc committee to discuss the optimum equipment specifications for the work performed by the Public Works Department.	Medium	Immediate
24.	Train the Scale House Attendants at the Transfer Station in the operation of all equipment in order to assure uninterrupted operations during times of absence of the Solid Waste Lead Man.	Low	Spring 2016

## **2. PLANNING AND MANAGEMENT**

This section describes a process of successfully managing the Public Works Department and planning the work that will achieve success. A fundamental assumption in this discussion is that management is accountable for results that are pre-defined and agreed-upon by both the Town and the Public Works Department. In short, if the elements of success are not defined at the outset, they cannot be achieved to the satisfaction of the maximum number of stakeholders.

The project team noted that the Public Works Department has management and staff who are dedicated to providing a high level of service to Town residents. It is responsible for maintaining some of the Town's largest investments, which include its roads, sidewalks, facilities, transfer station, parks, and grounds, and it is maintaining this infrastructure with a staffing contingent that is largely unchanged over the past several years, even as infrastructure maintenance requirements have increased and funding for their maintenance decreased over a significant portion of the previous 5-10 year period, although these levels are once again increasing. The staffing levels of the Highway Maintenance Division of the Department are sufficient to provide a relatively high level of service, as will be discussed in a later section of the report. However, it is too simplistic to assume that even increases in these staffing levels would result in large changes in productivity without concurrent changes in the approaches the Department and the Town take in managing and planning work.

This section will describe methods to achieve a greater level of service through a more rigorous approach to management and planning the work of the Public Works Department. This approach can be graphically shown as follows.



The following sections evaluate 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 DOCUMENT ITS INVENTORY OF ASSETS**

In order to manage the infrastructure for which the Public Works Department has been entrusted with responsibility, it must first ensure that it accounts for all assets. The

Department was able to provide the project team with primary information such as road miles, sidewalk miles, parks acreage, cemetery acreage, numbers of catch basins, numbers of vehicles and equipment, and other data. However, there is no single repository of data that shows, for instance, the age of pavement in each section of the Town, the type of pavement, the maintenance history and history of resident work requests, and other relevant data.

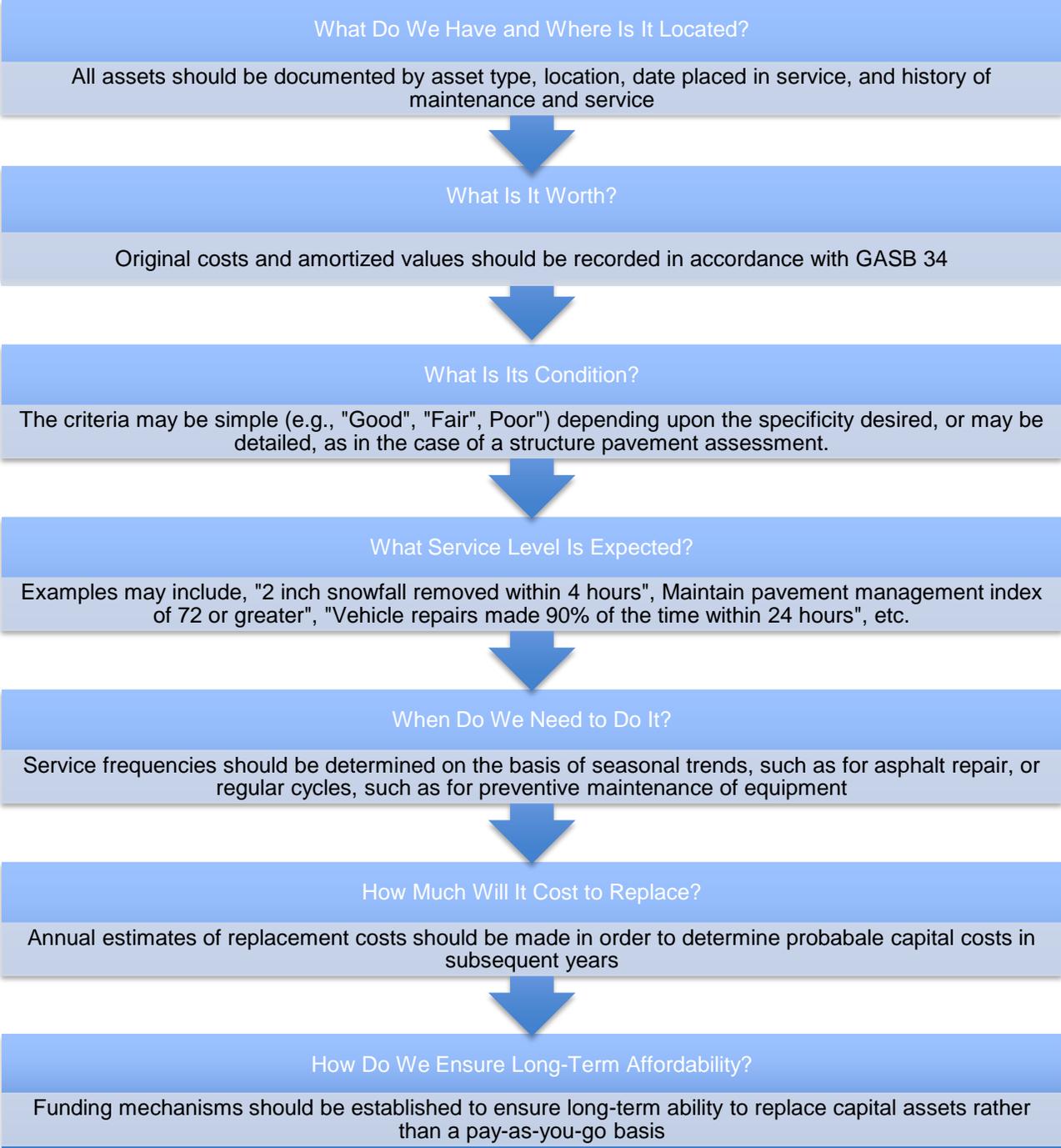
Effective asset management relies upon accurate information to facilitate decision-making regarding the condition and performance of those assets with a long-term view of their preservation and renewal and replacement.

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:

- Develop an inventory of trees in the Town's parks, open spaces and rights of way.
- Develop an inventory of parks for which the Department has responsibility. The inventory should contain not only locations and sizes, but amenities, conditions and service levels as well.
- Develop a facilities infrastructure strategic plan that identifies all structures, their deficiencies, and a plan and schedule to address these deficiencies. The project team toured all Town facilities, and found numerous structural deficiencies, and has documented many of these in this report.

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 building from the asset inventory to a true asset management plan includes the following chronologically-ordered questions



The overall goal of the asset inventory and management process is not to simply list all assets and their locations, but rather to minimize the life cycle cost associated

with each asset. Therefore, each of the steps shown in the graphic above is a critical component of ensuring that all assets are recorded, that they are prioritized in terms of condition assessment, that values are placed on current assets, that levels of service are established to prolong lives of assets, and that they are ranked in terms of risks associated with failing to replace the assets. Only then can the Public Works Department definitively state that life cycle costs have been minimized to the Town.

Perhaps the most challenging element in the development of the asset inventory and management plan is the estimation of probable replacement costs. In the case of vehicles and equipment, this may be relatively straightforward, as current replacement costs are available for most equipment types. These costs may be extrapolated out several years, based on historical price escalations, and the Department has accomplished this through its development of a multi-year replacement spreadsheet. So, although projecting the replacement cost of a tandem axle dump truck may be somewhat imprecise over a five to seven year period, the margin of error in this exercise is far lower than, for example, the cost of rehabilitating two sections of roadway that may deteriorate at uneven rates over an extended period of time. Further, these sections of roadway may require the Town to address their rehabilitation in different ways. For example, one section may require a chip seal overlay, while one may deteriorate to the point of needing complete reconstruction. The point of this discussion is not to recommend that the Department anticipate in advance every possible scenario of asset replacement, but rather it is to ensure that a standard methodology is applied in the estimate of cost. Crack sealing, pavement rejuvenation, chip seal, micropaving and full reconstruction each have different estimated life cycles as well as costs. Whereas

crack seal carries one of the lower costs per lane mile, it also has one of the shortest life cycles of any repair. Conversely, full reconstruction can cost as much as \$400,000 or more per lane mile, however it carries a 20 year life cycle, or more. These may vary somewhat in Amherst's particular conditions, however the point to be made is that the costs and life cycles should be tailored to these conditions, with the overall goal of maximizing the life cycle, and minimizing the cost, of each asset.

***Recommendation 1: Commit to the development of an asset inventory as a first step toward a structured asset management program.***

**2. THE PUBLIC WORKS DEPARTMENT SHOULD PURCHASE AND INSTALL A COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM TO COLLECT AND REPORT WORK-RELATED DATA AND INFORMATION.**

The Public Works Department currently does not possess a computerized maintenance management system (CMMS). Further, it does not consistently record the activities assigned and completed by staff in the Department other than the daily assignments given to the staff at the beginning of the work day, and these are simply the initial assignments given to staff members.

There are many benefits of a CMMS, which include not just the obvious advantages associated with tracking and justifying the dates, employees, locations, and descriptions of work performed, but they also include the definition of appropriate service levels that are achievable with a given number of labor hours, and at a defined level of productivity. Currently, the Highway Lead Foreman issues initial assigned duties to crews and individual staff members with no instruction as to the expected duration of each. This has the effect of both allowing the employee to determine the level of productivity required, and the potential expansion of time taken for the tasks into the amount of time available to perform them. The benefit of using the CMMS to

accumulate standard times for specific tasks is that it leads to greater productivity of available resources, and increased productivity ensures that the same work levels may be accomplished at less cost. Alternatively, more work may be accomplished for the same cost, with work quality remaining constant.

The Public Works Department should utilize a CMMS to enable the identification of the services provided (e.g., street sweeping), the levels of service (e.g., each street is swept annually), the outputs of each of these services (e.g., the number of curb miles swept, 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 should incorporate the following basic elements:

- The ability to plan and schedule preventive maintenance. Preventive maintenance should constitute the majority of the Department's work. The staffing levels of the Department, particularly in the Highway Division, are sufficient to provide a relatively high service level that is based on proactive scheduling of work in a CMMS.
- The ability to monitor and report on the inventory and procurement processes of the Department. Currently, there are no automated systems to track the inventory of automotive parts, tools, supplies, and other consumables. A standard CMMS should provide the ability of the Department to electronically track the inventory on hand, and to reconcile this against purchase orders, as well as to routine physical inventory counts.
- The ability to record and manage the work performed in the Department. Work activities should be defined for the significant maintenance work that is performed. The project team's analysis of daily work activity sheets indicates that there is a manageable number of these major work activities, and they should be entered into the CMMS. As work is accomplished against these work activity codes data such as the crew member, date, labor hours, equipment hours and materials used should be entered as well.
- The ability to run and analyze reports on the maintenance of an asset, and on the productivity of the staff in maintaining it. Analysis of trends in maintaining an asset may be indicative of either a need to replace the asset, or the need for

greater skills and training of the staff who maintain it. Anecdotal reports of these trends may suffice when there are relatively few assets being maintained by a few number of staff, however they are insufficient in providing meaningful analysis of the number of assets under management by the Amherst Public Works Department. A CMMS would allow the Department to isolate these trends and to make decisions regarding asset replacement as well as skills development.

- The ability to measure performance. Currently, the Department issues certain statistics related to the accomplishment of its workload. Redesigning work practices to ensure that all work, materials and equipment are associated with specific jobs and categories of work will allow the Department to analyze and report on the efficiency with which the work was accomplished.

The Public Works Department has never possessed a CMMS, and the field staff who accomplish the work have not been required to report the details associated with the work. Therefore, it is unrealistic to expect that the crews will immediately begin to report work in the consistent and comprehensive manner that will ultimately be necessary to maximize the usefulness of the CMMS. For this reason, the Department should begin to require employees to report time on manual forms as an interim step in acclimating them to the requirements of the new system. The basic information that should be required on each work order should include the following:

- Crew Member Name (or Numeric identifier).
- Location of Work. Ideally, this would incorporate a geo-coded location, however in the absence of this, a park name, a street segment or intersection will suffice.
- Job Number. This should be a unique numeric assignment associated with a definable activity. Should the work activity span multiple days, the same numeric identifier should be used, however different dates of activity should be noted, as in the next category.
- Date of Work.
- Equipment Used. This should reflect the number of hours a specific piece of equipment was used. It should reflect the total time at the work site, and not simply the number of engine hours or mileage accumulated.

- Materials Used. This should reflect the quantities and their costs.
- Contracted Costs. Bills from contractors should be reflected in the work order and should reflect the dates of accomplishment, hours, materials and equipment billed, and total labor hours.
- Activity Code. As will be described in the following section, the Department should develop activity codes that describe the work accomplished. For example, the alpha numeric code, "P-001" may describe pothole patching, whereas "C-001" may describe cemetery mowing.

In the early stages of development, the Director and Foremen should analyze each crew member's input on these work orders to ensure a proper and consistent understanding and completion of each element. Any remedial instructions should be made at the earliest possible time to ensure that incorrect procedures are not ingrained into the process.

The cost of a CMMS will depend a great deal upon the functionality desired. The Public Works Department should develop specifications for a CMMS and work with the Town's Purchasing Agent to issue a request for proposals. In the project team's experience, the cost of such a system should be in the range of \$50,000 to \$80,000 for an operation the size of Amherst's.

There are several steps that need to be accomplished before the automated maintenance management system can be effectively utilized, and these are described in the following sub-sections.

***Recommendation 2: In preparation for the installation of a computerized maintenance management system, the Department should begin requiring all crew members to report elements of their work each day.***

***Recommendation 3: The Department should purchase and install a computerized maintenance management system. The cost of the system will depend upon the functionality chosen, however in the project team's experience, the cost is estimated to be in the range of \$50,000 to \$80,000.***

**3. THE PUBLIC WORKS DEPARTMENT SHOULD DEVELOP AN INVENTORY OF MAJOR WORK ACTIVITIES IT PERFORMS IN MAINTAINING ASSETS.**

The project team summarized all work accomplished, as reported on Work Logs, during the 12 months comprising fiscal year 2013-14 and found that there were no standard listings of work activities assigned to Department personnel. Examples of work assignments included such entries as “Chk sheds”, “Misc. items to rap up”, “Get water cooler at TH”, “TFS power to new bldg.”, “duct work”, and many other similar entries. Further, many work assignments that involved the same, or very similar work, were listed differently for different employees, and for the same employee on different days. For example, on certain days a staff member may be assigned a “cleaning” activity, and the next day the same work may be referred to as “continue cleaning”. So although the work activity may have been the same, or very similar, the use of these two terms would be recognized as separate activities by a CMMS.

The Department Director and Foremen 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 in order to enable the Department to derive standard times and costs for specific activities, as was recommended in a previous section of this report.

The objectives in this particular step are to allow for an objective evaluation of productivity of staff, and to allow for job-costing on a standardized basis.

***Recommendation 4: The Department should begin to define work activities that are commonly performed. These activity definitions should be utilized consistently and should not vary from employee to employee regarding the type of work that is performed. Further, the Department should ensure that the same field work activity is not defined in the inventory listing under different terms.***

**4. THE DEPARTMENT SHOULD DEFINE THE LEVELS OF SERVICE FOR ALL MAJOR WORK ACTIVITIES.**

The main objectives of the Public Works Department are to maintain the infrastructure of the Town, and to respond to resident requests for service related to this infrastructure. Without an agreed-upon set of service levels, however, the degree to which the Department achieves satisfactory results will be subjective, and will vary based on the individual making the assessment.

The project team attended a resident forum during the course of the study, and it was clear from the comments at this forum that there are not only differing expectations of the service levels provided by the Public Works Department, but there were differing opinions on the resources that should be allocated to the functions performed as well. A common theme, though, was that Public Works personnel should be achieving greater levels of output than has been the case historically.

A major theme throughout the course of the study, as well as in this report, was that although the Department of Public Works reports the accomplishment of workloads, it does not report the efficiency with which the work was accomplished. Therefore, although the Department can, for example, report that 122.7 tons of asphalt were used in patching activities, there is no associated report on the labor hours and equipment that were used in accomplishing the work. By comparison, in 2012, the Department only 61.0 tons were used. If these two figures were the only points of reference in the assessment of the efficiency and effectiveness of the crews in asphalt patching

activities, it would be logical to assume that the crews were more productive in 2014 when 101% more asphalt was used. However, if 150% more labor, materials and equipment were used in achieving this result, the conclusions regarding productivity would be much different.

The Public Works Department should, in conjunction with the Town Administrator, develop levels of service that are commensurate with the financial and personnel resources at its disposal. These service levels should be defined in terms of response times to requests, how the services will be delivered, and how long they will take. Examples may include the following:

- Responses to requests for pothole patching will occur within 48 hours of request. Potholes will be filled with asphalt mix one to two inches higher than the road surface and rolled with a wheel roller or vibratory compactor to be level with the road surface. The use of a three-person crew will be used, including traffic flagger.
- Once requests for service have been accomplished, the service requestor shall be called or visited within 48 hours to ensure that services were accomplished in accordance with the request.
- Grass in parks shall be maintained at a height of two inches or less, and shall be mowed no less than weekly. Grass in rights of way in low-traffic areas shall be maintained at a level not exceeding six inches.
- All major maintenance equipment in facilities will receive preventive maintenance in accordance with manufacturers' guidelines, or in accordance with more frequent service levels defined by the Department's policy and procedures manual.

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. The result of this step in the overall process of developing an asset management plan is to define the levels of service that can be achieved with the levels of staff and financial resources available to the Department.

Labor hours, materials and equipment should be estimated for each level of service. Should this exercise indicate that insufficient resources currently exist to provide these service levels, the service levels should either be reduced to be commensurate with available resources, or additional resources should be obtained to provide the agreed-upon service levels. The project team's experience in interviews with Department staff as well as in the resident forum indicate that the Department has not developed or communicated these service levels either to Town management or to its residents. In the absence of a formal definition of these service levels, each "customer" of Public Works Department services may have a different view as to the services to be provided.

***Recommendation 5: The Department should begin to define service levels for each of its major work activities. These should define the desired level of service to be accomplished, and should be reflective of available personnel and financial resources. These service levels should be communicated to both internal and external stakeholders in the delivery of public works services in the Town.***

## **5. THE DEPARTMENT SHOULD DEVELOP AND IMPLEMENT A WORK PLANNING AND SCHEDULING SYSTEM**

As noted earlier in the report, the project team analyzed 12 months of work assignments made to crew members in the Department. The manual sheets on which these assignments were made provide information regarding the date, the high and low temperatures, humidity, wind chill, general weather conditions (e.g., sunny, cloudy, snow, etc.), and also provide, by crew member, the initial work assignments of the day. These work assignments are typically brief descriptions of the work to be accomplished, as well as the general work location. The following are typical descriptions of work assignments:

- "3/8 top @Broxs plant"
- "Shop"

- “new Sander Bays”
- “Trimming @ cemetery”
- “rake upper mackhill bates rd”
- “trk 9 treat”

As can be seen from these sample work descriptions, although they may be descriptive of work on a particular day, and understood by the specific crew members at that moment, they are not helpful in identifying the work that was accomplished well after the fact. The project team has, in a previous section of the report, made a recommendation to standardize these work activity identifiers, and reiterates that recommendation here. However, in addition to not being helpful in terms of describing the work, the descriptions are also reflective of work assignments that are made on a daily basis rather than in accordance with an overall plan.

The Department should develop a formal work scheduling system to both plan the work, and to ensure that the planned amount of work is done. The Director and both Foremen should develop this plan based on a discussion of the work to be done as outlined by the Town Administrator and the Board, with input from the Public Works Committee and even residents and business owners in the Town. The Director should apply the standards for levels of service for these proactive tasks, as developed in an earlier task, assign resources and costs to them, and develop a schedule to accomplish the work.

After the annual work program is approved, the Foremen must have a simple method of authorizing and scheduling work to ensure that the work program is carried out as planned. To accomplish this, a monthly schedule should be 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. However, 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. The plan should incorporate the following elements:

- Work description (e.g., hot top Old Milford Road between Col. Wilkins and General Amherst roads)
- Planned dates of accomplishment (e.g., June 6 through July 12)
- Materials needed
- Equipment needed
- Personnel needed (this should be stated in terms of the crew sizes and position categories)

Each of the planned events should be developed in this manner and entered into a Gantt chart that matches available resources with the dates of their need. As unplanned events arise, schedules should be adjusted, and resources rearranged to fit the needs. Some unscheduled events may necessitate the movement of scheduled events so that a projected lack of resources occurs. As public works operations are, to a large extent, driven by unplanned occurrences, this will likely happen from time to time. However, the benefit of having developed a longer-term schedule for planned events is that it gives the Department the maximum amount of time to prepare for alternative methods of delivering services, which may include contracting for service or hiring temporary labor.

***Recommendation 6: The Department should develop and implement a formal plan and schedule for all major maintenance events for the year.***

## **6. THE DEPARTMENT SHOULD BEGIN TO REPORT THE ACTIVITIES IT ACCOMPLISHES**

This last step of the planning and work programming initiative involves the development of a work reporting system. A system should be developed to summarize the daily work reports on a monthly basis to produce performance measurement reports. The Public Works Director should be required to provide a monthly status report to the Town Administrator, 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.

The activity report should be viewed as a discussion document between the Director and the Town Administrator to discuss the accomplishment of work, any reasons for not accomplishing the planned amount of work, and the action steps necessary to revise to work plan to ensure that the work is accomplished.

***Recommendation 7: The Department Director should generate a monthly performance report on the accomplishment of projected work, and discuss the work accomplished with the Town Administrator. As plans change, adjustments to these plans should be discussed in this monthly meeting.***

### **3. ADMINISTRATION AND ORGANIZATION**

This section of the report analyzes the management and organization of the Amherst Public Works Department.

**1. THE DEPARTMENT OF PUBLIC WORKS SHOULD TRANSFER THE RESPONSIBILITY FOR COMMON AREA MAINTENANCE TO THE RECREATION DEPARTMENT.**

The Public Works Department accomplishes the maintenance of approximately 8.6 acres of Town common areas through the use of part time personnel during the growing season. These areas are included in the table below.

<b>Location</b>	<b>Acreage</b>
Large Common (at Town Hall square)	2.00
Pierce Common	0.25
Moultons Common	0.63
Frenches Common	0.33
Old Central Fire Station	0.33
Long Common	0.66
Spaulding	1.06
Huntington	0.60
Ryans Common	0.08
Beaver Brook	0.17
Civil War Common	0.50
Town Septic System (Baboosic Lake area)	2.0
<b>Total</b>	<b>8.61</b>

The Department generally hires three part time workers for mowing and general maintenance of the cemeteries and the common areas, however one of these is typically assigned to the maintenance of the cemeteries, and does not usually work in the common areas. The two other part time staff split time between the cemeteries and the common areas on days on which they are assigned to maintenance activities. These part time employees average about 20 hours per week for the months employed

The project team analyzed the work assignments made to these maintenance

workers for the 2014 fiscal year, and determined that there were 72 days on which they were assigned maintenance duties in the cemeteries and commons, or 216 person-days. Given that one of these two workers is almost exclusively assigned to the cemeteries when assigned maintenance duties, this effectively results in about 144 person-days ( $2/3 * 216 = 144$ ) during which the two other part time employees are assigned to maintain the common areas.

Since these part time workers generally average about 20 hours per week (or, 4 hours per day), this equates to about 576 total annual hours ( $144 \text{ person-days} * 4 \text{ hours per day}$ ) spent by the two workers who maintain the common areas. This figure should be viewed as the maximum number of hours expended by maintenance workers in the common areas, as the two part time staff members who work in the common areas also spend time maintaining the cemeteries. As it is not possible to determine the actual locations maintained by workers in a given day, nor how many hours were expended at any location, it may be conservatively assumed that no more than 400 hours were expended in FY 2014 in the maintenance of common areas.

In the experience of the project team, the maintenance of parks and common areas requires one full time equivalent (FTE) staff member for every eight (8) to twelve (12) developed acres in order to provide a reasonable level of service. By way of comparison, the expenditure of 400 hours in the Town's common areas is equivalent to about one-quarter of one FTE, a level that is likely sufficient only to ensure that the common areas are mowed on a regular cycle.

Common areas should be viewed as attractive areas that stand out from general Town rights of way areas. These areas should be manicured, with lush grass, and

beautified with flowers, natural areas, and other attractive features. They require a level of maintenance intensity well beyond ensuring that they are mowed regularly.

The Town's Recreation Department has approximately 25 acres of parks and athletic fields that, in the project team's visual observation, are well maintained, with attention to details such as edging, trimming and beautification, in addition to the routine mowing. The Recreation staff have experience in beautification practices such as the planting and optimum placement of trees and flower beds, as well as others, and could enhance the Town's common areas in a similar manner if given the responsibility and sufficient resources.

The project team recommends that the Public Works Department transfer the responsibility of maintaining the 12 common areas to the Recreation Department, along with one of the part time staff members noted above. This personnel transfer will not be sufficient in itself to provide sufficient labor hours to maintain the common areas to the level that they will require in order to meet the beautification standards of the Recreation Department, however there may be excess capacity in that Department to allocate to these additional 8.6 developed acres to at least partially offset the deficit. The transfer, however, will result in a set of Town common areas that are likely to show improvement in their aesthetic appeal even with a simple transfer of the one part time employee from Public Works to Recreation.

***Recommendation 8: Transfer the responsibility for the maintenance and beautification of the Town's common areas from Public Works to the Parks and Recreation Department.***

***Recommendation 9: Transfer one part time staff member engaged in maintenance of common areas from the Public Works Department to the Recreation Department.***

**2. THE DEPARTMENT DIRECTOR SHOULD DEVOLVE MANY OF THE MANAGEMENT AND ADMINISTRATIVE FUNCTIONS TO DEPARTMENT FOREMEN.**

The Town's Public Works Director has many varied responsibilities in the Department. In addition to the general responsibility for daily operations and the delivery of quality services, the incumbent is the primary contact point for all residents who desire information from the Department, and also develops and monitors the budget; represents the Department in meetings with the Public Works Committee and Town management; issues bid specifications for engineering design; works with contract engineers on construction projects; develops and makes capital improvement requests; and many other administrative functions.

During interviews and observations of the operations in the Public Works office, it is clear that almost all administrative functions of the Department are performed by the Director, with clerical assistance from the Executive Assistant and part time Secretary. The two Foremen in the Department do provide daily assignments to field staff, and ensure the performance of work in accordance with instructions, however this is generally the extent of their involvement in the administration of the Department. This has effectively created silos in the organization which are mostly disconnected from each other, as the volume of work that has been assumed by the Director greatly limits the degree to which the incumbent can be involved in daily delivery of services.

This situation is somewhat exacerbated by the fact that the Director attempts to limit the amounts paid to engineering consultants by performing many of the tasks that these consultants typically perform as parts of their engagements. This includes providing locations of such features as hydrants, driveways, road edges, and others.

So although the financial costs may be limited in this way, there is a cost to the organization in terms of administrative direction, oversight and connection to the work of the Foremen and field staff.

The project team has made recommendations earlier in this report for the Director and Foremen to collaborate in the development of work plans and schedules, service levels, as well as work reporting and analysis. These recommendations are reiterated here. In addition, however, the Foremen should be responsible for the following:

- Development and oversight of their respective budgets, with variances explained to, rather than discovered by, the Director.
- Development and implementation of the Department's safety program, ensuring that all employees receive monthly refresher courses on topics that they design in advance or in response to noted deficiencies in the field.
- Formal performance appraisals of employees in their respective divisions.
- Procurement of materials, parts and supplies. The Foremen should also be held accountable for the reconciliation of physical inventories on hand with inventory levels in the CMMS that has been recommended for purchase in an earlier section of the report.
- Analysis of productivity of crews, and recommended alterations in work processes to increase productivity, and training for employees consistently not meeting productivity and safety standards.

The Department Director has, over time, effectively assumed almost all administrative duties in the Public Works Department, which has created a "disconnect" between the Director and the field crews. The Foremen should assume many of these administrative duties as enumerated above, and perhaps others as well, as the Director believes is appropriate. The role of the Director should naturally be to direct the operations of the Department, to set guidelines in place, and to be the primary point of

contact for residents, business owners and Town management. However, the Director should also be seen as approachable to the field staff, and should be accessible as much as possible.

***Recommendation 10: The Department Director should distribute certain administrative duties to the two Divisional Foremen, with these Foremen assuming greater responsibility for budgets, safety and training, performance evaluation, procurement, and process redesign.***

**3. THE DEPARTMENT DIRECTOR SHOULD HOLD MONTHLY MEETINGS WITH STAFF.**

In order to further solidify the connection between the Director, the Foremen and crew members, the project team recommends that the Department Director begin to hold monthly staff meetings that bring all staff together at the Public Works complex to provide updates and to disseminate important information.

Many, if not most, of the staff members in the Department do not regularly check e-mail, and so this method of communication is not reliable. In any case, there are benefits to meeting face-to-face with all staff on a regular basis, as this allows the Director and Foremen to disseminate important information to all staff members at the same time, and also allows staff members to communicate information to managers, as well as with each other. Further, it ensures that all employees hear the same things at the same time, eliminating the confusion as to whether a particular employee was informed of an important piece of information.

The monthly meetings should be more than a simple passing along of information related to current projects and Town-wide activities. In addition, the monthly meetings should have themes related to either a particular issue noted in the field, or about refreshers and reminders regarding safety practices, responsibilities related to

equipment maintenance, housekeeping, and others.

***Recommendation 11: The Department Director should hold monthly staff meetings with all staff to inform them of news that affects their work.***

**4. THE PUBLIC WORKS DEPARTMENT SHOULD BEGIN TO DEVELOP ITS EMPLOYEES TO ENABLE THEM TO ASSUME MANAGEMENT ROLES IN THE FUTURE.**

Although the project team has no direct knowledge of any intent on the parts of the top management staff in the Public Works Department to leave the employment of the Town in the near future, it is also true that should this occur, the Department is ill-prepared to continue uninterrupted operations. This is not only the case because of the institutional knowledge of the Director and the two Foremen due to their tenures in the Department, but also, and perhaps more significantly, because there has been no formal or informal plan to train and develop employees to assume greater roles than those which they currently perform.

In conducting the on site portion of the study, the project team noted that the Lead Foreman develops a daily list of initial duties for each employee in the Highway Division, and as these duties are performed, employees report the completion of their assigned tasks, and are then assigned a different task. Aside from the inefficiency of this method of work assignment, and the lack of planning that it may reveal, it also is failing to place any degree of autonomy with the workers themselves. As a result of this lack of autonomy, the staff is not being developed to assume any greater role in the organization than to complete ad hoc job assignments.

The project team has noted certain examples of the job assignments made in the daily assignment sheets by the Lead Foreman. These tend to be tersely-worded instructions such as “Columbia Drive holes”, or “Town Hall Admin Offices to remove

covers”, and similar examples. The project team recommends instead that the work assignments be expanded to convey an expectation that employees, or at a minimum the assigned crew leader, will not only complete a specific task assignment, but will determine the need for additional work in the area. Clearly, employees should report the additional needs to the Foremen, as there may be other, more pressing assignments to conduct, however each crew is equipped with a radio and this reporting is a simple matter of a short communication. Employees should also be tasked not only with determining the additional work in the area, but should also provide estimates to the Foremen as to the amount of time needed, and any additional equipment and materials needed as well.

The Department of Public Works needs to evolve from a single task-oriented method of work completion to a method of assigning work to crews who are empowered to expand upon specific assignments in order to more efficiently provide needed work in the geographical areas within which they are working. This not only will result in a more efficient use of time, but will also develop certain field staff members into candidates for higher level positions in the organization when these positions become vacant.

***Recommendation 12: The Public Works Director and Department Foremen should begin to devolve responsibility for the completion of daily assignments down to the crew leaders, and even the field workers themselves. This is necessary in order to ensure that work assignments are completed comprehensively, and that employees at lower levels of the organization are trained to assume greater leadership roles in the future.***

**5. THE DEPARTMENT SHOULD ENHANCE THE FUNCTIONALITY OF ITS WEBSITE TO CONFORM TO BEST PRACTICES IN THE INDUSTRY.**

In the recent past, the simple provision of a web site 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' web sites will be informative, interactive, and easily navigated. In fact, "web surfers" throughout the country and the world scan websites for information, and a well-designed website says much about a town, just as does a poorly-designed one.

The project team has made numerous visits to the Amherst 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. These include the following.

- The transfer station page provides factual information related to the location, hours of operation, fees and the materials that it accepts and does not accept, however there is no discussion related to the benefits of recycling or composting. The web site should also inform visitors of the tipping fee cost avoidance from recycling.
- The transfer station web site would benefit from the provision of a sketch of the site, with instructions on the locations of all of the areas. Residents in the focus group expressed some confusion as to where they should drive once they enter the transfer station site to deposit certain materials. Attendants are not always available to assist visitors, and the web site could prepare visitors to a greater degree once they arrive.
- There is no mention of the cemeteries on the web site. Many progressive web sites have electronic data available to visitors so that they can search the database of burials. This is not available on the Amherst site. The site should also post cemetery rules and regulations.
- There is very little information related to Town streets. The web site does list the street segments scheduled for resurfacing, and also provides readers some information on snow removal as well. However, there is no information related to the other functions the division performs, and there is no capability provided to residents to report issues such as potholes, street tree damage, site distance issues, or other concerns.
- There is no information on the web site related to the work that the Department provides in maintaining Town buildings.. To some degree this is understandable because the division does not provide service directly to residents. However, it is

also true that residents should be aware of such attributes as the number and location of buildings in the Town's inventory of buildings, total value of facilities under management, "Green" initiatives, and energy saving measures being implemented, and any new construction or modifications under way.

- There is no "Frequently Asked Questions", or FAQ, section on the web site that proactively answers residents' commonly-asked questions related to such items as how and when streets are swept, how the Town determines which roads get resurfaced, how to make a work request, who treats water and wastewater in the Town, how to purchase a permit or a cemetery lot, and many others.

The project team has made some specific recommended enhancements to the divisional web pages in the table above. The exhibit on the following page provides a checklist of best practices in web design that should prove to be useful as the Department makes upgrades to its site.

***Recommendation 13: Enhance the Department web site to provide more information and interactivity for users.***

**EXHIBIT – WEB DESIGN CHECKLIST**

<b>General Site Features</b>
Is the home page clean, and can residents find what they're looking for easily? Are there minimal numbers of clicks necessary to find what is needed?
Are common fonts used, such as Arial, Times New Roman, etc?
Is there always up-to-date and relevant information on the home page?
Is there a link to the home page from every page on the site?
Is the website design consistent on every page?
Are the font styles, colors, and sizes consistent throughout the website? Are there minimal numbers of colors used?
Are there headers on every page in font styles consistent throughout the site?
Does the site contain tools to assist those with disabilities?
<b>Navigation</b>
Is the main navigation on the site consistent from page to page?
Do the major sections of the website have navigation that makes sense?
Are forms easily accessible through navigation?
Are publications easily accessible through navigation?
Are regulations easily accessible through navigation?
Are services easily accessible through navigation?
Is access provided to agendas and minutes through navigation?
<b>Images</b>
Do images enhance the site, and do they load quickly?
Does text color have sufficient contrast with background color?
Are images bright, clear, and sharp?
Is the site free of animated graphics?
<b>Content</b>
Is the content driven by the audience? Does the site provide residents what they want and need?
Are the website's major sections tailored to various audiences?
Is the content written in common language, without acronyms or jargon that residents won't understand?
Is web content monitored and removed when obsolete?
Is content reviewed on the site's major entry points so that it is always up-to-date with the most relevant information?
Is the content as timely as possible?
Is there a language translation option on the site?
Does the site have pages that include addresses, contact information, staff, missions, responsibilities, and key links?
If content is available in file forms, does the site provide links for residents to download the necessary readers?
Is information available in other file formats accessible in small chapter files as well as a complete file?
Is the site free of information of use only to staff, meant for an intranet?
<b>Interactive Features</b>
Does the site include subscription access to electronic newsletters? Are electronic newsletters available on the site for those who don't subscribe?
Are there online registration options available for programs/events/services/permits?
Does the site feature interactive maps for key points of interest?
Does the site have an interactive FAQ area for resident self-service? Can residents submit inquiries and service requests if information they seek is not available?
Does the site include live e-mail links to various administrative and departmental staff?
<b>Policy Features</b>
Does the site have disclaimers regarding information on external links?
Does the site have a privacy policy about what information the Department collects and uses?

Does the site feature a responsiveness policy for following up on resident contact?
Does the site have a security policy for financial transactions made online?
<b>Web Management</b>
Does the Department have regular content manager meetings to enable teamwork and discussions regarding the website?
Does the Department have a style guide in place as a reference for content managers?
Does the Department have a plan in place for how the website will operate in a time of emergency or crisis?
Are content managers aware of their roles in emergency or crisis situations?
Does the Department have a schedule or priority list for changing and updating content on key pages?
Does the Department have a schedule for conducting site reviews to be sure the site matches the needs of the audience?
Does the Department have internal site security that allows content managers access to their specific areas?
Does the Department have publishing workflows in place that allow webmasters to ensure consistency and quality throughout the site?

**6. BUDGETING AND REPORTING SHOULD BE ACCOMPLISHED IN A MORE CONSISTENT MANNER IN THE PUBLIC WORKS DEPARTMENT.**

In analyzing the operating budgets for the Public Works Department, the project team noted several inconsistencies that give the reader an illusory impression of the level of detail provided. The following are a few examples of these inconsistencies.

- The Highway Division employs two Equipment Operators who, although they are nominally budgeted in the Highway Division, are typically “loaned” to the Buildings and Grounds Division on a daily basis. When their activities are related to building repair and maintenance, their time is not transferred into the “General Government Buildings” account (Account No. 4194), however when their time (and the time of others in the Department) is spent in performing work at the Cemetery, their time and charges are transferred into the Cemeteries account (Account No. 4195).
- Water usage is charged out to using departments from the Public Works budget, however Town Electricity and Lighting remains in the Public Works budget.
- The Department budgets approximately \$500 for “Common Lighting”, however there is little difference between this line item, and the “Town Electricity and Lighting” line item in the General Government Buildings account. This device may be useful if the “Common Lighting” item were charged to a specific event on the common in order to calculate the total cost of the event(s), yet interviews indicate that this is not the case.
- The full salary and benefits of the Buildings, Grounds and Transfer Station Foreman remain in the General Government Buildings account, however this employee also supervises the activities of the Landfill and Transfer Station. Yet none of the salary and benefits of this position are transferred out to the Landfill account (Account No. 4324).
- The General Government Buildings account contains budgeted amounts for most Town departments under the “Repairs and Maintenance” line item, however it does not include the building repairs for the Public Works Administration building, which is a separate line item under the “Public Works Administration” account (Account No. 4311).

These are examples of inconsistencies in the budgeting and reporting procedures used by the Public Works Department. They, as well as perhaps others, convey a sense of specificity of detail that is not actually the case. The Department

requires that each employee report time against each account, including Highway (account no. 4311 or 4312), Town Building (account no. 4194), Cemetery (account no. 4195), Parks (account no. 4522), Landfill (account no. 4324) and overtime. However, the charges against these individual budgets do not reflect these charges, as several examples above indicate.

The project team has made recommendations in the Planning and Management chapter of this report regarding the reporting of labor, materials and equipment going forward. These recommendations are reiterated here, however the project team also recommends that the Department standardize the manner in which budgets are developed, and the manner in which charges against these budgets are made. The analysis of expenditures for “General Government Buildings”, for example, is not meaningful if water utilities remain in the Public Works Department, yet other utilities such as for Heating are charged to the various departments. Conversely, other departmental budgets do not provide a meaningful level of detail regarding their full costs if these inconsistencies remain.

***Recommendation 14: The Public Works Department should standardize the manner in which budgets are developed, and by which charges against specific line items with these budgets are made.***

## **4. STAFFING AND OPERATIONS**

This section of the report provides analysis and recommendations on the staffing and operations of the Public Works Department.

### **1. THE PUBLIC WORKS DEPARTMENT IS STAFFED SUFFICIENTLY TO ENABLE IT TO PROVIDE A GREATER LEVEL OF SERVICE THAN IS BEING PROVIDED CURRENTLY.**

As the project team has noted throughout this report, the Public Works Department does not record the labor, materials and equipment used in the performance of any work performed in the field. This inhibits the assessment of productivity by any means other than visual observations and the use of metrics. In the latter case, the project team calculates the average number of center line miles maintained by field workers engaged in street maintenance and repair to determine whether this metric appears reasonable. In the case of the Amherst Department of Public Works, the Town has approximately 115 center line miles of paved roadways. These roads are maintained by seven (7) primary field workers for an average of about 16.4 linear miles per worker. In the project team's experience, an average of between 15 and 20 linear miles per worker is sufficient to provide a relatively high level of maintenance. However, the Department contracts out certain functions that many public works departments perform with internal crews, including street sweeping and catch basin cleaning, which are accounted for in the metric of the average number of center line miles maintained by crew members.

In observing the paved surfaces in the Town of Amherst, it is clear that the recent eight-year initiative to repave town streets has been successful in improving the

conditions of many of the Town's paved surfaces, however most are in a state of repair that could be characterized as only fair to poor. The project team drove most of the roads in the Town during the course of the project, and noted many roads that are in poor condition. The following illustrates some typical conditions in the Town.



The picture above is of a section of Boston Post Road, and is illustrative of both the poor condition of the road itself, and also of the poor maintenance of the shoulder of the road, which is washed away due to poor drainage conditions.

Similarly, the photograph below shows a section of Old Milford Road, which is showing significant cracking and poor drainage conditions.



The relatively poor condition of a large portion of the Town's paved surfaces may be indicative of many factors, including insufficient funding in prior years for resurfacing and reconstruction of roads, poor sub-surface conditions, poor design and engineering of roadways, and perhaps others. However, it is also the case that although the Department of Public Works has sufficient personnel resources to provide a relatively high level of service, it is not maximizing these resources. The project team has, in previous sections of the report, noted that employees are typically given initial daily assignments, and then report back to the Foreman for additional work assignments once these initial assignments are complete. This linear method of accomplishing work is failing to maximize the efficiency and effectiveness of crews who could, if given sufficient authority, ensure that all needed repairs to roads were accomplished at the time they are in their particular work zones. During the project team's attendance at a resident focus group session, this particular issue, with many different specific

anecdotes, was noted multiple times, with residents expressing frustration that crews cannot perform any work that has not been specifically authorized by the Foreman. This directive not only fails to effectively maintain roads, trees, shoulders, signs, and other Town infrastructure, it is symptomatic of a lack of focus on customers' needs.

The project team reiterates the recommendation to alter the manner in which daily jobs are assigned to crews. The Foremen should assign road sections to crews with instructions to perform multiple tasks within the work zone, and the crews should be equipped with tools and equipment that anticipate the work that may occur in the road segment. For example, if branches are to be removed in order to improve sight distance, or to mitigate potential hazards due to falling limbs, the crews should be empowered to perform this work in other areas of the immediate work zone. The work should be reported as having been done on work orders, however crews should not need to get authorization for routine work of a similar type in the zone. Unusual or hazardous circumstances should be reported to the Foremen for advice and authorization, however these occurrences should not be the norm.

The relatively poor conditions of roads in the Town may or may not be related to poor productivity of crews. However, this is, in itself, an issue for resolution by the Public Works Department, as was discussed in the Planning and Management section of this report. Although in the project team's experience, the staffing levels for the Department should be more than sufficient to achieve a relatively high level of service on Town roads, anecdotally this is not the case, and there are likely many reasons for this. However, the broader issue is that there are no systems in place to ensure accountability for work being performed, nor are there any standards in place by which

to measure success. Therefore, the recommendations of the project team relate not only to maximizing the productivity of highway crews by more efficiently assigning work and empowering crews to perform more tasks in a given work zone, but to establishing the standards by which crew productivity is to be measured. The first steps to take in this latter regard are to begin reporting the work that is accomplished, and to report the labor, materials and equipment that were used in accomplishing it. This should ultimately be facilitated through the procurement and installation of a computerized maintenance management system, however the Department should immediately begin to establish service levels standards and accountability mechanisms that were described in the Planning and Management section of this report.

***Recommendation 15: Crews should be empowered to perform multiple tasks within the work zones to which they are assigned work.***

***Recommendation 16: The Department should establish productivity standards and accountability mechanisms by which the work of Highway crews may be measured.***

**2. THE DEPARTMENT SHOULD ADOPT A ROTATING POLICY RELATED TO AFTER HOURS CALL-OUTS.**

Periodically, events occur in the Town that require the call-back of Public Works employees to address them. Although it is not possible to predict with any certainty when, or if, these call-backs will occur, it is very typical of public works departments that these events occur, and when they do, it is expected that public works employees will respond to abate the particular problems. The events that require call-back of personnel vary according to the day, and by the specific events occurring in a municipality, but may involve the collection of dead animals in the roadway, the marking or repair of large and dangerous potholes, removing trees or large limbs blocking a

roadway, or many others.

The frequency of these occurrences in many towns results in the establishment of a standard night crew that operates on a regular night shift, and as these emergencies arise, they are addressed by crew members on “straight time” rather than overtime, or flat response charges by personnel responding after hours. In Amherst, the incidence of such emergencies is infrequent enough that it is not cost-effective to allocate a full staff contingent at night to address them, and therefore, as the needs arise, Public Works personnel are called back after hours to repair these problems.

The issue in Amherst is not that these call-backs occur, but rather that as they do occur, there is no rotating call-back roster. Depending upon the emergency, only the two Foremen respond to these emergencies. In some respects, this is understandable, as one lives in Amherst, and the other in a neighboring town and are the most proximate of any Departmental employees. However, it is also true that this is both an expensive manner of response, and disrupts the lives of the Foremen disproportionately to the rest of the workforce.

The Department should establish and implement a rotating schedule of call-backs for all employees in the Department. This will not only minimize overtime costs, but will also minimize the impact on the two Foremen.

***Recommendation 17: Establish and implement a rotating schedule for after hours call-backs for all employees in the Department.***

**3. THE TOWN SHOULD INCREASE ITS FOCUS AND EXPENDITURES ON FACILITIES MAINTENANCE AND REPAIR.**

The Town of Amherst allocated \$120,000 for the maintenance and repair of its 12 buildings in FY 2016, which equates to approximately 1.3 full time equivalent personnel.

In addition, the activities that were assigned to the two primary building maintenance employees in the Department, in a recent 12-month period, equate to about 0.3 FTE. This combined contractual and in-house effort equates to about 1.6 FTE, or about 51,000 square feet of maintainable space per FTE.

The project team has noted that some of the facilities in the Town have deferred maintenance that should be attended to. Further, interviews and observations indicate that there is no preventive maintenance program in place for facilities. This section of the report analyzes the need for a preventive maintenance program, as well as for a greater level of attention to the structural issues apparent in certain Town buildings.

**(1) The Town Should Increase Expenditures to Ensure That Its Buildings Are Preventively Maintained.**

In determining the appropriate number of staff for the maintenance of Amherst's facilities, the project team utilizes a range of 45,000 to 50,000 square feet per building maintenance equivalent technician. This figure has been determined by the results of an International Facilities Maintenance Association (IFMA) survey<sup>1</sup>, which established a benchmark of 45,000 to 50,000 square feet of facility maintained per FTE, a figure which has been verified by many years of observations by the project team in well-managed facilities maintenance organizations.

Although the calculated figure of 51,000 square feet per equivalent maintenance technician is very slightly above that which would be expected based on IFMA standards, it is not so much above the standard that it should be resulting in inadequate maintenance and repair of the Town's buildings that the project team observed during

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<sup>1</sup> IFMA, "Operations and Maintenance Benchmark Survey", 2005. This survey of over 650 members indicated that the average rentable area per trades maintenance worker was approximately 47,000 square feet.

on site visits to the buildings.

The Town is effectively outsourcing its facilities maintenance functions, as only slightly more than one-quarter of the time spent by the two primary facilities maintenance employees in the Public Works Department is spent in what can be considered building maintenance activities. The project team analyzed the daily activity sheets for these two employees for FY 2014, and determined that only about 28% of all time as expended in these activities, as the table below summarizes.

<b>Activity Category</b>	<b>Days of Activity</b>	<b>Percentage of Time Expended</b>
<b>Facilities Maintenance</b>	<b>133</b>	<b>28.85%</b>
Road Work	30	6.51%
Miscellaneous	151	32.75%
Snow and Storm Events	13	2.82%
Equipment Maintenance	30	6.51%
Burials and Cemetery Work	17	3.69%
Building Sheds, Bays	15	3.25%
Training	4	0.87%
Brush/Trees	16	3.47%
Grounds Work	15	3.25%
Out (Sick, Vacation)	37	8.03%
<b>Total</b>	<b>461</b>	<b>100.00%</b>

The allocation of only 28% of the time of the two primary facilities maintenance employees to actual facilities work effectively results in the relegation of their building maintenance-related duties to minor work that can be accomplished within very short periods of time. This has further resulted in a facilities maintenance program that focuses exclusively on reactive repairs rather than preventive maintenance.

The failure to implement a preventive maintenance program for facilities maintenance has meant that the Public Works Department has relied on contractors to repair noted structural and mechanical failures, rather than proactively maintaining its major maintenance systems and structures.

The relatively small area of maintainable building space in the Town does not warrant the hiring of an employee to perform the required building maintenance. The Town will always have a need to outsource its more complex building repairs, and given that only about 1.6 FTE are needed for facilities maintenance, it is not cost effective to hire a dedicated trades worker who would not be able to perform all of the required electrical, plumbing and HVAC repairs in any case. Instead, the project team recommends that the Town increase the budgetary allocation for building maintenance to ensure that preventive maintenance work is performed in a timely manner. This allocation should approximate the value of the time spent by the two Maintenance Workers who currently spend an unfocused amount of time performing work that can be generally classified as building maintenance-related. Given that these two employees' total compensation equates to approximately \$112,600, 28% of this is approximately \$31,500. This additional expenditure will ensure that there are an equivalent of 1.6 FTE are allocated to true building maintenance work that includes not only facility repairs, but also the preventive maintenance of the buildings' major maintenance systems such as electrical panels, plumbing fixtures, boilers and the like.

The two Maintenance Workers should continue to perform minor structural repairs, such as repairing shelving, door handles, leaking toilets, and similar tasks. However, these constitute a minor fraction of their overall time, as the table above shows, and should be supplemented by the focused work that can be performed by licensed trades workers who can accomplish both repairs and preventive maintenance for the Town's facilities.

***Recommendation 18: The Town should expend approximately \$31,500 for contracted services related to the institution of a preventive maintenance***

***program for its 12 buildings.***

**(2) The Town Should Allocate Sufficient Resources to Correct Certain Deferred Maintenance on Its Facilities.**

The project team toured each of the Town's buildings during the course of the project, and although this study's scope of services did not include a full structural assessment, it was clear that structural maintenance on certain of the buildings has been deferred for some time and should be corrected in the near future.

In touring the facilities, although the Library is in generally good condition, most other structures have at least some deficiencies. Town Hall is notable in this regard, as there are certain cosmetic issues with the building that are likely noticeable to a larger percentage of Town residents than at other facilities due to the foot traffic at this building. It should be noted that the project team is not qualified to conduct structural assessments of any Town building, however there are certain notable problems that illustrate the deferred maintenance of these structures.

The front entrance of Town Hall is also showing significant deterioration in the front door, as well as decay in the brick façade, as the following two photographs show.



The Police Station on Amherst Street also is experiencing issues with separating siding panels, as the photograph below shows.



At the Central Fire Station on Amherst Street, the unfinished upper floor is clearly being used by Firefighters, with only a single means of entrance and egress via the unfinished stairwell, as the two photographs below show.





In addition to the photographs shown above, the Public Works complex is inadequate for many of the functions it must perform. For example, the only covered storage for the Department's equipment was constructed by Department personnel, and this is insufficient for the vast majority of the equipment. Similarly, the vehicle maintenance garage consists of the equivalent of one small bay, with no vehicle lift capability.

In summary, there are many deficiencies in the Town's buildings, both from a deferred maintenance standpoint as well as from the standpoint of adequacy to perform tasks.

The Department of Public Works has requested \$93,000 for structural repairs to Town Hall in the 2017 budget. Additionally, the Department has requested \$156,710 for improvements to the public safety complex, and over \$5.5 million for improvements to

the Public Works facility. The project team does not take a position on whether the dollar values submitted for these improvements are valid or, in every case, necessary in the immediate term. However, there are many structural issues that are apparent, and these are clearly the results of multiple years of deferring the maintenance on these structures, and the project team does recommend that the Town prioritize the repairs needed for each of these buildings, and begin to allocate sufficient funding over several years. This should involve not only the Public Works Department Director and Town Administrator, but also other stakeholders as well. This should take the form of a capital planning committee who would be tasked with the development of a set of criteria by which each submitted capital request is evaluated, and whose charge is to make recommendations to the Town regarding necessary capital improvements, and the probable multi-years costs associated with them as well.

***Recommendation 19: The Town should make many structural repairs to its facilities. The project team recommends that the Town form a capital planning committee that prioritizes facilities repairs based on criticality of need, as well as cost.***

**4. THERE ARE SEVERAL IMPROVEMENTS NECESSARY IN THE PROVISION OF FLEET MAINTENANCE AND MANAGEMENT SERVICES IN THE DEPARTMENT.**

Vehicle and equipment maintenance services are provided by the Public Works Department for its own fleet, however, other departments in the Town also provide or obtain maintenance for their particular fleets of vehicles. At the time of the project team's on site work, the Department of Public Works had recently hired a new Mechanic who was making strides toward making the equipment maintenance function at least less burdensome than it has historically been. This task, however, is made difficult by several factors, including the relative lack of vehicle bay space and parts inventories,

the absence of a vehicle lift, and the lack of any automated records for vehicle maintenance. In spite of this, the Mechanic had cleared the available bay space of clutter, thereby somewhat increasing the available repair space, and had also procured space in a separate storage unit in the parking lot for automotive parts.

The project team admires the initiative of the Mechanic in making the task of vehicle and equipment repair as efficient as can be done, however there are impediments that need to be addressed before the function of vehicle and equipment repair is as effective as it can be for the Town. These impediments, and potential solutions, are analyzed in the following sections.

**(1) The Space Allocated for Vehicle Repair Is Inefficient, and the Town Should Make Decisions Regarding the Future of the Space and the Ability to Provide Effective Repair Services within It.**

Equipment maintenance and repair is performed by the Department's Mechanic in a narrow, one-bay space at the rear entrance of the DPW complex. The bay has no space for equipment parts, and has no vehicle lift, making it extremely limiting for the Mechanic in accessing the undercarriages of vehicles and equipment.

The project team recognizes the limitations of space at the DPW complex, as well as the financial limitations of the Town in adding to, or even modifying, the space to accommodate a more efficient equipment maintenance operation. However, the current configuration of space is not optimal, and is limiting the efficiency that can be achieved.

The DPW complex itself is inadequate in a number of respects, including, primarily the lack of covered storage for heavy equipment. However, there are other limitations as well, such as the lack of a vehicle wash facility, lack of an employee lounge, and others. However, the lack of sufficient space for equipment maintenance

and repair is impacting efficiency to a very great degree.

The project team recommends that the Town place a relatively high priority on the addition to, or renovation of, the equipment maintenance shop. Although a possible alternative is to outsource the equipment maintenance function to a private contractor, the project team believes that the Town benefits from the presence of an on-site Mechanic, particularly during winter storm events.

In summary, the Town has at least two main options regarding equipment maintenance. First, it can continue with the very sub-optimal and inefficient operation as it stands. Second, it can invest in either the renovation of the existing facility, or the construction of a new facility that should optimally include the full Public Works complex. Clearly, the near-term costs are minimized by continuing with the current operation as it stands, however this comes at a cost of inefficiency that would likely preclude the assumption of a greater workload by the Public Works Mechanic.

***Recommendation 20: The Town should strongly consider expanding the space it allocates to its equipment maintenance function, and enhancing the ability of the Mechanic to perform not only more work, but to perform the work more efficiently.***

**(2) The Public Works Mechanic's Workload is Appropriate, but Is Constrained by Space and Other Factors.**

The Public Works Mechanic is responsible for the maintenance and repair of 43 units of light and heavy equipment, as well as certain small engines and trailers. In calculating the appropriateness of the workload of mechanics, the project team converts equipment to "Vehicle Equivalent Units", or VEU. The advantage of using VEU is that it incorporates the relative maintenance intensity levels of the equipment, and as such represents an improvement over the historic method of calculating workloads based on

the number of vehicles per mechanic. Therefore, rather than reporting the Mechanic's workload ratio as 43:1 (i.e., 43 units per one mechanic), the project team converted these 43 units into VEU. The concept of a VEU is that it relates the maintenance intensity of a sedan, which is defined as one VEU, to those of the rest of the fleet so that a pickup truck is 1.5 VEU, a grader and a dump truck are 3 VEU, a Police Patrol unit is 2.5 etc. The fleet maintained by the Public Works Mechanic does not contain any Fire apparatus (e.g., pumpers, ladder trucks), but these are rated at 10 VEU.

The application of this concept results in a total vehicle equivalency of 97.5 VEU for the 43 units in the Public Works fleet. The project team typically uses a range of between 90 and 110 VEU per mechanic position as being the appropriate range. This places the Public Works Mechanic's workload near the middle of the expected range. However, as was described in the previous section, not only is the incumbent Mechanic new, and therefore engaged in many activities in an attempt to make the workspace more efficient, but the space itself is constraining productivity.

Another factor in assessing the Mechanic's workload is the relatively advanced age of the fleet. The general application of the VEU concept assumes that the fleet maintained by mechanics is replaced on a fairly routine cycle, and that the equipment has experienced normal wear and tear. The Amherst Public Works fleet average age is about 7.7 years per unit, which is relatively high. The average age of the four sedans is 7.0 years, and the average age of the five pickups is 6.8 years. However, the bulk of the fleet is comprised of heavy equipment such as graders, loaders, dumps, etc., and these units average 8.0 years per unit, which means that, on average, these 20 pieces of equipment are being replaced on a cycle of once per 16 years.

The Public Works Department has developed a multi-year equipment replacement plan that is commendable in its level of detail. The project team recommends that the Town implement this replacement plan, as it will ensure that equipment is safe, can be maintained in a reliable manner, and minimizes overall cost.

***Recommendation 21: The current workload of the Mechanic is appropriate under the current circumstances. However, the Town should make many improvements to the space allocated for the Mechanic in order to make this a more efficient operation.***

***Recommendation 22: The Town should implement the multi-year equipment replacement plan developed by the Public Works Department.***

**(3) The Town Should Create an Ad Hoc Equipment Committee to Determine Appropriate Equipment Needs.**

During the course of the study, the project team's interviews indicated that there are differing viewpoints regarding the appropriate equipment types that are most effective for use by the Public Works Department. These discussions tended to center on whether ten-wheel dumps are more efficient than the smaller, less expensive six-wheel variety, and whether the utilization of the Department's grader warrants ownership or whether it should be rented as needed.

There are many factors that affect a department's needs for equipment, and the specifications for dump trucks generally revolve around the payloads required. The Public Works Department has elected to issue specifications for 10-wheel dump trucks, which generally have dump body capacities of around 15 cubic yards, but come with a higher price than the six-wheel dumps, which have maximum payloads that typically hold two to three tons less than the larger 10-wheelers. This added capacity may save crew time by making fewer trips to material staging locations, but clearly there is a cost involved in this additional capacity.

There is no standard answer to the question of equipment specifications, but rather these should be products of discussions about the work requirements and costs. The project team recommends that the Department assemble an ad hoc committee comprised of knowledgeable stakeholders in the Town to discuss equipment needs. The committee's charter should be to analyze the specifications for each of the major pieces of equipment, including dumps, graders, trackless, loaders and perhaps tractors and pickups as well. Ultimately, the Public Works Department Director should make the decision regarding the type of equipment required for operations, as that position is accountable for the performance of the organization. However, the decision could be much better informed through a discussion of needs with experts and other interested stakeholders.

***Recommendation 23: The Department should assemble an ad hoc committee to discuss the optimum equipment specifications for the work performed by the Public Works Department.***

**5. SCALE HOUSE ATTENDANTS AT THE TRANSFER STATION SHOULD BE TRAINED IN THE OPERATION OF ALL EQUIPMENT.**

Interviews indicate that the Solid Waste Lead Man is the only employee at the Transfer Station who is qualified to operate the loader. The loader is used to turn mulch, as well as other functions at the Station, and on occasions when the Lead Man is absent for extended periods, mulch piles may remain unturned and grow sour. The project team recommends that the Scale House Attendants be trained to operate the equipment at the Transfer Station in order to allow uninterrupted operations during times when the Solid Waste Lead Man is absent.

***Recommendation 24: Train the Scale House Attendants at the Transfer Station in the operation of all equipment in order to assure uninterrupted operations during times of absence of the Solid Waste Lead Man.***



## **APPENDIX A – DESCRIPTIVE PROFILE OF THE DEPARTMENT OF PUBLIC WORKS**

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

- Interviews with Amherst DPW staff to discuss roles and responsibilities, services provided, existing policies and procedures guiding work activities, communication and coordination, technology utilized, etc.
- Interviews with Department management to gain an overview of services provided, issues of concern, background and history of the DPW, etc.
- Collection and review of various data describing organization and staffing, work processes, workload and service levels as well as costs.

The structure of this descriptive profile for the Amherst DPW is as follows:

- Introduction
- Organizational chart for the Department.
- Budgets for the Department
- Summary descriptions of key roles and responsibilities of Divisions.
- Technology utilized by the Department.
- Infrastructure maintained by the Department and summary workloads of the staff.

The descriptions of responsibilities provided in the “Summary of Key Roles and Responsibilities” section summarize the team’s understanding of the major programs

and service activities to which staff in the DPW are assigned. These descriptions are not intended to provide the level of detail of a typical job description. Rather, the descriptions provide the basic responsibilities and reporting relationships within each Division.

## **1. DEPARTMENT OF PUBLIC WORKS**

The Department of Public Works provides services to the Town's residents, businesses and other Town departments. The Department has two operational divisions, which are the Highway Division and the Buildings, Grounds and Solid Waste Division. The Highway Division is responsible for a wide variety of functions including paved and gravel road maintenance and repairs, snow removal, street sweeping debris collection and transport, brush cutting, sign maintenance, line and crosswalk painting, utility mark-outs and other related duties. In addition, the Division's Mechanic maintains and repairs the Town's fleet of vehicles and equipment. The Division contracts for major road improvements, street sweeping, catch basin cleaning and crack sealing.

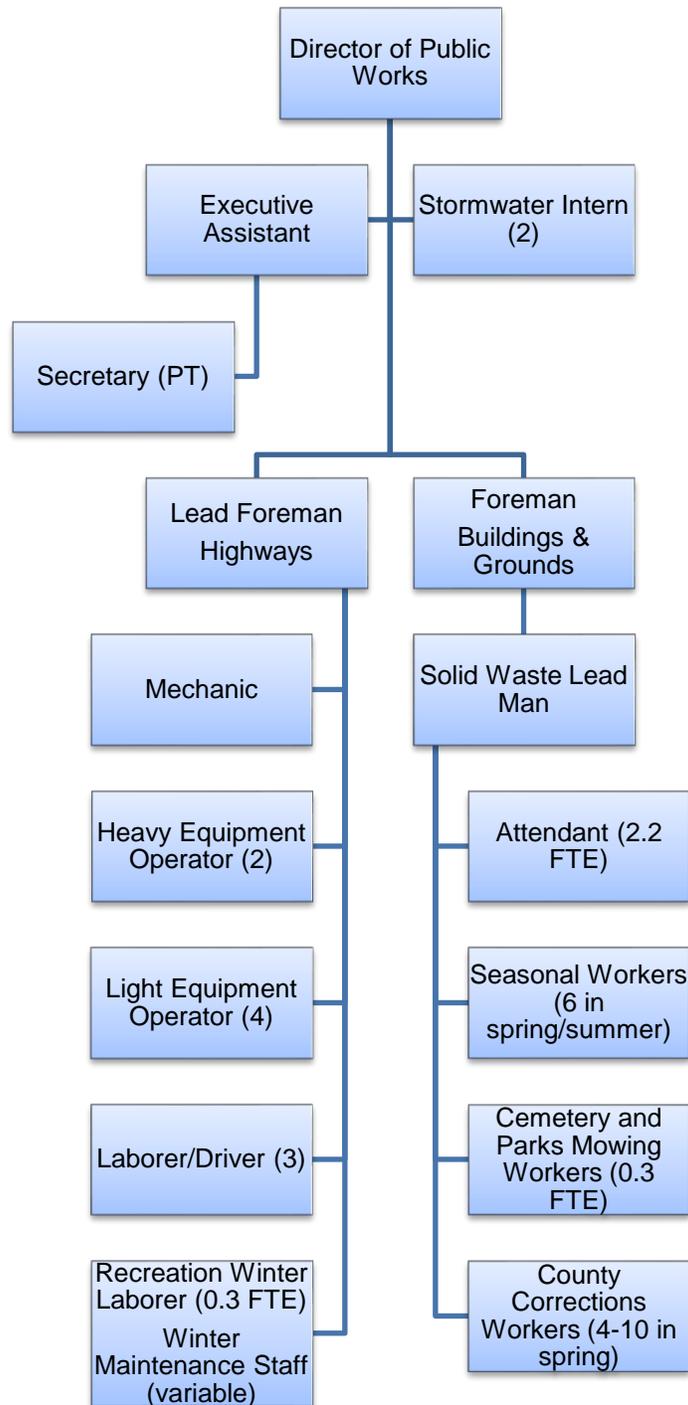
The Buildings, Grounds and Solid Waste Division is responsible for the maintenance and repair of all Town facilities, maintenance of the Town's parks and common grounds, and the operation of the transfer station, which receives and transfers trash and recyclable materials.

The next section shows the organizational structure of the Department of Public Works.

### **(1) Organizational Structure of the Department**

The following chart shows the current organizational structure of the Public Works Department:

### Public Works Department Organizational Chart



**(2) Department Budgets and Expenditures**

The following chart provides the budgeted expenditures for FY 2010 through FY 2014 for the Department of Public Works, as well as the change from FY 2010 to FY 2014. Although there are two primary divisions in the Department, it develops budgets at the functional level of detail. These functional budgets are provided below.

<b>Function</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY14</b>	<b>Change</b>
Gen Gov Bldgs	\$273,978	\$274,965	\$239,417	\$301,394	\$301,957	\$27,979
Cemeteries	\$43,433	\$45,575	\$45,856	\$43,373	\$45,910	\$2,477
DPW Admin	\$348,513	\$370,018	\$450,544	\$360,881	\$363,455	\$14,942
Highway	\$2,293,075	\$2,594,887	\$2,629,119	\$2,790,456	\$2,747,811	\$454,736
Street Lighting	\$26,680	\$26,680	\$26,680	\$30,008	\$30,008	\$3,328
Landfill District	\$497,967	\$374,231	\$300,908	\$300,908	\$334,549	(\$163,418)
Landfill	\$288,708	\$289,685	\$300,412	\$276,448	\$261,006	(\$27,702)
Parks and Grds	\$15,437	\$15,609	\$15,772	\$15,286	\$15,483	\$46
<b>Total</b>	<b>\$3,787,791</b>	<b>\$3,991,650</b>	<b>\$4,008,708</b>	<b>\$4,118,754</b>	<b>\$4,100,179</b>	<b>\$312,388</b>

Highlights from an review of the budgetary table, above, include the following:

- The overall budget of the Public Works Department has increased by \$312,388 over the five-year period from FY 2010 to FY 2014. This represents an 8.2% increase.
- The largest functional increase was in the Highway Division, which was \$454,736 over the five-year period. This represents a 19.8% increase, which was also the largest percentage increase of any of the functions.
- The budgets for the Souhegan Landfill District and the Landfill Division were the only two budgets to decrease over this period.

The next section provides a summary description of staffing, roles and responsibilities of the divisions of the Department.

**(3) Summary of Key Roles and Responsibilities.**

Position	Number of Staff	Responsibilities/Roles
<b>Division of Administration</b>		
Public Works Director	1.0	<ul style="list-style-type: none"> <li>• Provides overall guidance to the Department of Public Works</li> <li>• Interacts with the Town Administrator on departmental matters such as budgets, capital projects, resident concerns, performance objectives, etc.</li> <li>• Develops contracts with service providers and ensures conformance with contractual terms.</li> <li>• Interacts with residents on all departmental matters, including those related to the 44 homes on the Baboosic Lake Septic System.</li> <li>• Serves as Chair of the Souhegan Landfill District, Chair of the Nashua Regional Stormwater Coalition, represents Amherst at the Nashua Regional Solid Waste District meetings (Household Hazardous Waste), serves on the Amherst Highway Safety Committee, and Radio Dispatch Committee, serves as advisor to Amherst Cemetery Trustees serving as the Cemetery Sexton, the Amherst Solid Waste Committee and Road Commission. Serves as co-chair on Lighting and Utilities Committee of the Amherst Village Strategic Planning Committee, and serves on the Traffic Safety workgroup.</li> </ul>

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Position	Number of Staff	Responsibilities/Roles
Executive Assistant	1.0	<ul style="list-style-type: none"> <li>• Assists the Public Works Director and Foremen with general secretarial and administrative duties.</li> <li>• Greets the public at the Public Works facility on Dodge Road.</li> <li>• Interacts with residents, Town Administrator, Town officials and other department personnel regarding public works matters that require the attention of the Director.</li> <li>• Types correspondence for the Director and for the DPW generally.</li> <li>• Receives calls from the public related to maintenance and repair requests and enters into the Department's work order system.</li> <li>• Interacts with contractors on a variety of matters related to their individual services, including payments.</li> <li>• Prepares and coordinates agendas and public hearing notices for meetings. Attends meetings and takes notes and minutes.</li> <li>• Purchases supplies and fuel.</li> <li>• Processes and submits payroll for the Department.</li> <li>• Gathers, fills out, and completes all backup information for any FEMA event in which DPW participates.</li> </ul>
Secretary	0.38	<ul style="list-style-type: none"> <li>• Performs data entry, copying and filing of public works documents.</li> <li>• Types memos and correspondence</li> <li>• Performs research and enters cemetery data into system.</li> <li>• Answers phones and takes messages.</li> <li>• Performs bookkeeping duties and prepares cash deposits.</li> <li>• Employee works Monday (6 hours), Wednesday (6 hours) and Friday (3 hours).</li> </ul>
<b>Highway Division</b>		

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Position	Number of Staff	Responsibilities/Roles
Lead Foreman	1.0	<ul style="list-style-type: none"> <li>• Coordinates the Highway division’s response to snow removal, deploying staff members in the pretreatment, sanding and plowing of snow and ice. Coordinates with contractors in the removal of snow on certain routes.</li> <li>• Marks out utility locations.</li> <li>• Inspects roads, rights of way, trees and other areas of the Town to determine work requirements. Prioritizes work and discusses with Director.</li> <li>• Develops work assignments and transmits these to staff at morning briefing.</li> <li>• Selects and schedules areas for brush cutting</li> <li>• Reviews complaints related to signage; orders signs if needed; schedules installations and repairs. Coordinates painting of stop bars, crosswalks, etc.</li> <li>• With Director, determines catch basin cleaning requirements and coordinates with contractors for cleaning.</li> <li>• Determines roadside ditching needs, culvert cleaning and repair needs, shoulder stabilization needs, etc., and schedules these repairs with internal crews or with contractors.</li> <li>• Dispatches crews to collect and dispose of dead animals.</li> <li>• Interacts extensively with residents and other members of the Town.</li> <li>• Fills in for Director in that position’s absence.</li> </ul>
Mechanic	1.0	<ul style="list-style-type: none"> <li>• Preventively maintains and repairs all DPW vehicles and equipment as well as all other Town equipment other than Fire and EMS.</li> <li>• Obtains and stores automotive parts needed in repairs.</li> <li>• Makes repairs in the field.</li> <li>• Maintains records of repairs and maintenance performed on vehicles and equipment.</li> </ul>

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Position	Number of Staff	Responsibilities/Roles
Heavy Equipment Operator	2.0	<ul style="list-style-type: none"> <li>• Operates the Department’s heavy equipment such as backhoes, loaders, grader, etc., as well as all other DPW equipment, and may use hand tools at times.</li> <li>• Removes snow from Town streets on assigned routes.</li> <li>• Scrapes gravel roads.</li> <li>• Patches potholes.</li> <li>• Grades road shoulders.</li> <li>• Paints crosswalks and stop bars.</li> <li>• Hauls road debris from contractors’ street sweepers.</li> <li>• Hauls brush to transfer station.</li> <li>• Assists the Buildings and Grounds Division in activities such as trimming, light facility maintenance, assistance at transfer station, grounds maintenance around buildings, etc.</li> </ul>
Light Equipment Operator	4.0	<ul style="list-style-type: none"> <li>• Primarily operates light equipment in the Division (e.g., dumps, tractors, trucks), however may also operate heavy equipment other than the grader, and uses hand tools.</li> <li>• Removes snow from Town streets on assigned routes.</li> <li>• Scrapes gravel roads.</li> <li>• Patches potholes.</li> <li>• Grades road shoulders.</li> <li>• Paints crosswalks and stop bars.</li> <li>• Hauls road debris from contractors’ street sweepers.</li> <li>• Hauls brush to transfer station.</li> <li>• Assists the Buildings and Grounds Division in activities such as trimming, light facility maintenance, assistance at transfer station, grounds maintenance around buildings, etc. Two of the LEOs are primarily assigned to the Buildings and Grounds Division, installing insulation, painting, building and installing shelving, carpeting, repairing windows, doors, hinges, etc.</li> </ul>

Position	Number of Staff	Responsibilities/Roles
Laborer/Driver	3.0	<ul style="list-style-type: none"> <li>• Primarily uses light equipment and hand tools .</li> <li>• Removes snow from Town streets on assigned routes.</li> <li>• Scrapes gravel roads.</li> <li>• Patches potholes.</li> <li>• Grades road shoulders.</li> <li>• Paints crosswalks and stop bars.</li> <li>• Hauls road debris from contractors' street sweepers.</li> <li>• Hauls brush to transfer station.</li> <li>• Assists the Buildings and Grounds Division in activities such as trimming, light facility maintenance, assistance at transfer station, grounds maintenance around buildings, etc.</li> </ul>
Recreation Winter Laborer	0.3	<ul style="list-style-type: none"> <li>• Treats pavement in preparation for snow and ice events</li> <li>• Plows snow on route as assigned</li> <li>• Cuts and hauls brush as part of crew</li> <li>• Patches potholes as part of crew</li> </ul>
<b>Buildings, Grounds, Solid Waste and Cemeteries</b>		
Foreman	1.0	<ul style="list-style-type: none"> <li>• Coordinates the activities at the transfer station and makes assignments to staff at that location.</li> <li>• Troubleshoots, and maintains all Town buildings. Coordinates maintenance and repairs performed by contractors in maintenance and repair.</li> <li>• Coordinates and maintains the Town's cemeteries and grounds. Makes assignments to internal staff as well as assigned workers from Hillsborough County Corrections.</li> <li>• As licensed herbicide sprayer, administers herbicide as required on Town grounds.</li> <li>• Coordinates grounds grooming and maintenance on holiday events, mowing, trimming, placing barricades, placing additional trash receptacles, etc.</li> <li>• Serves as Town Tree Warden, reviewing requests for tree removals, scheduling tree work on commons and cemeteries.</li> <li>• Coordinates deliveries and pick ups of voting equipment.</li> <li>• Fills in for Lead Foreman in that position's absence.</li> </ul>

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Position	Number of Staff	Responsibilities/Roles
Solid Waste Lead Man		<ul style="list-style-type: none"> <li>• Oversees the daily operations at the transfer station on Route 101</li> <li>• Coordinates the work of the part time workers at the transfer station</li> <li>• Coordinates with contractors who collect and haul off recyclables, tires, solid waste, demolition debris, refrigerants, etc.</li> <li>• Operates loader to consolidate brush piles and compost piles. Turns mulch piles.</li> <li>• Ensures that operations at the recycling area of the facility run according to plans and to regulations.</li> <li>• Plows snow at the transfer station</li> <li>• Maintains files at the transfer station.</li> </ul>
Part-time Attendants	2.2	<ul style="list-style-type: none"> <li>• Attend the transfer station, ensuring that those entering are permitted users, ensuring the smooth flow of traffic through the facility and answering questions from the public.</li> <li>• Perform manual labor at the transfer station such as pushing up brush and compost piles, turning mulch piles, removing snow, etc.</li> <li>• Two Attendants are certified Weighmasters who weigh vehicles entering and exiting the transfer station.</li> <li>• One Attendant works T, Th and F</li> <li>• One Attendant works Saturday for 10 hours</li> <li>• Two Attendants work T, Th, F and Sa</li> </ul>
Cemetery and Parks Mowing Workers	0.3	<ul style="list-style-type: none"> <li>• Mow and trim cemeteries and parks, typically once per week, however may be more frequently as worker availability and growing needs vary</li> <li>• Maintain headstones</li> </ul>
County Correction Workers	Varies	<ul style="list-style-type: none"> <li>• Work one week in the spring and one in the fall, and an additional week or two in summer for special projects</li> <li>• Rakes leaves in cemetery and Town Common</li> </ul>
Seasonal Workers	6 in spring and summer	<ul style="list-style-type: none"> <li>• Trim cemeteries</li> <li>• Perform traffic control as members of crews</li> <li>• Cut and haul brush as part of brush crews</li> </ul>

**(4) Technology Utilized.**

The following table summarizes the current technology and software systems utilized by the Public Works Department to provide services.

<b>Technology / Software Name</b>	<b>Version</b>	<b>Summary of utilization</b>
AMAZE		Payroll input Budget input and reporting Purchase requests Purchase orders
MEMS 2000		Track vehicle and equipment inventory
HMIS		Record individual cemetery lots and name of person buried in plot

**(5) Infrastructure and Workloads**

The following table summarizes the major infrastructure and the associated workloads of the staff of the Public Works Department.

<b>Infrastructure/Workload</b>	<b>Quantity</b>
<b>Buildings and Grounds</b>	
Buildings maintained	Environmental Ctr – 6,188 sq ft Recreation Office – 3,696 Pavilion – 1,680 Police Station – 11,397 Central Fire – 18,404 South Fire – 3,530 Library – 12,280 Town Hall – 10,252 DPW Garage/Office – 5,508 DPW Salt Barn – 3,000 DPW out Buildings – 3,114 <u>Meadow View Cemetery Bldg – 1,344</u> <b>12 Buildings – 80,393 sq ft</b>
Acres of grounds maintained	3.5 at Town buildings 13.26 at current cemeteries <u>8.61 at common areas</u> <b>25.37 acres</b>  Note that the addition of Forest View Cemetery will add between 20 and 30

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Infrastructure/Workload	Quantity
	acres to this area.
<b>Transfer Station</b>	
Recyclable materials processed - tons (11 months – 2014)	Commingled – 55.9 Magazines – 184.12 Aluminum cans – 11.18 Mixed paper – 119.27 Plastic – 9.07 Cardboard – 140.44 Steel cans – 11.38 <u>Glass – 233.95</u> <b>Total – 765.31 tons</b>  In 11 months of 2013, the total was <b>743.34 tons</b>  In 11 months of 2012, the total was <b>779.23 tons</b>
Trash collection – tons (11 months – 2014)	2,612.23
Trash collection – tons (11 months – 2013)	2,673.16
Trash collection – tons (11 months – 2012)	2,707
<b>Highways</b>	
Linear miles of roadway	114 paved <u>8 gravel</u> <b>122 total</b>
Linear feet of sidewalks	7,679 (1.45 linear miles)  2,978 feet reconstructed in 2014 (39% of total)
Catch basins	372 – cleaned annually by contractor for \$34,840, equating to about \$93.66 per catch basin.
Linear miles of road reconstruction and overlay	2012 – 3.0 miles 2013 – 3.4 miles 2014 – 4.8 miles 2015 (proposed) – 6.4 miles
Crack sealing	2.25 miles crack sealed in 2012 4.00 miles crack sealed in 2014
Tons of asphalt used in patching	2012 – 61 tons 2013 – 108.63 tons 2014 – 122.67 tons
Street Sweeping	Approximately 50% of curb miles are swept annually by contractor at a cost

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<b>Infrastructure/Workload</b>	<b>Quantity</b>
	of \$212.50 per curb mile (FY 2011 cost estimate).
Street Lights	133
Bridges	14

## **APPENDIX B – DIAGNOSTIC ASSESSMENT OF THE DEPARTMENT OF PUBLIC WORKS**

While the management study for the Town of Amherst’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.

The purpose of the diagnostic assessment was to develop an overall assessment of the Department, identify key areas for further evaluation – leading to the development of specific recommendations contained in the report.

# 1. BUILDINGS, GROUNDS AND FACILITIES MAINTENANCE

Performance Target	Strengths	Potential Improvements
<b>PARKS AND GROUNDS MAINTENANCE</b>		
<p>Staffing at the level of one FTE per 8 – 10 acres of developed turf at a B level of maintenance.</p>		<p>The project team analyzed work order data from July, 2013 through June, 2014, and determined that approximately 333 days (about 1.3 FTE) were expended in maintaining the 25.37 acres of developed grounds in the Town. This equates to one FTE per 19.5 acres, which is sufficient for no more than a “C” level of maintenance, bordering on a “D” level, the lowest standard for grounds maintenance.</p>
<p>Tree trimming schedule exists for trees- 3 to 5 year cycle.</p>	<p>The Town annually budgets \$6,000 and has allocated \$50,000 this year for the removal of trees.</p>	<p>The DPW does not proactively trim trees on a routine cycle, but rather removes trees as conditions require. As trees that need to be removed are noted by residents or the DPW crews, they should be removed by the crews or called in to the private contractor.</p>
<p>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.</p>		<p>The DPW does not maintain an inventory of trees by species, location and treatment regimen.</p>
<p>Maintenance activities are documented in sufficient detail to allow managers the ability to analyze workloads and productivity of crew members.</p>		<p>Only the initial daily duties of staff members in the Division are recorded, and these are only recorded manually, with no automated ability to analyze the work accomplished. As duties are assigned on follow-up after initial duties are completed, these duties are not recorded, which prohibits any meaningful comprehensive analysis of the work performed.</p>

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Performance Target	Strengths	Potential Improvements
Parks are being maintained in good condition.	The parks were generally maintained in fair condition during the time period of the project team's on site assessment, which was in mid-spring, and before the period of heaviest use.	
Maintenance standards are documented for parks conditions, amenities (tables, grills, trash receptacles, etc.), ponds, etc.		There are no documented standards against which performance can be objectively measured. Well-managed parks and grounds maintenance organizations should develop and publicly publish maintenance standards for such areas as parks and common areas (grass height, mowing and trimming frequency, drainage adequacy, etc.), and other assets.
A formal infrastructure preservation plan has been developed for parks.		Staffing is an issue in the division's ability to accomplish more than reactive work, emergencies and mowing during certain times of the year, however the Buildings, Grounds, Solid Waste and Cemeteries Division should strive to develop a preservation plan for each of its major assets.
The Town's tree ordinance is available on line.		There is no tree ordinance available on the Town's web site.
Residents can request a tree removal application on line.		The web site offers no capability to request a tree removal.
Web site provides residents with helpful information in user-friendly format		The Town's parks and trees are not mentioned on the DPW web site, or in the Recreation Department site, in any manner. At a minimum, the site should note the locations, size and amenities of the parks.
<b>FACILITIES MAINTENANCE</b>		

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Performance Target	Strengths	Potential Improvements
<p>The division is organizationally placed with similar functions, and the structure fosters communication and accountability, and results in the maximum utilization of resources.</p>	<p>The Public Works Department itself is relatively small, and the facilities maintenance function is supervised by a division foreman who also oversees the transfer station as well as grounds maintenance.</p>	<p>The functions supervised by the Division Foreman are dissimilar, as they include not only facilities maintenance but grounds maintenance and the transfer station as well.</p>
<p>A formal skills assessment and training plan has been developed to keep employees current with changes in the facilities maintenance and management industry.</p>		<p>There are no ongoing training opportunities for the two employees who maintain Town buildings.</p>
<p>Existence of a preventive maintenance program for building maintenance</p>		<p>There is no formal preventive maintenance program for Town buildings. A well-functioning PM program should incorporate a schedule of maintenance for each major piece of equipment in each building, including chillers, air handlers, plumbing fixtures, electrical panels, etc. This schedule should be accompanied by a listing of materials and equipment that is likely to be needed in performing the PM.</p> <p>The Division allocates a sufficient amount of funding and personnel to maintain the 80,000+ square feet of space in Town buildings, and the in-house personnel should have sufficient capacity to institute an effective PM program.</p>
<p>Periodic evaluation of feasibility of contracting and/or “in sourcing”</p>	<p>The Town allocates about \$120,000 for outsourced building maintenance for which the two in-house building mechanics do not have adequate time or expertise to perform.</p>	

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Performance Target	Strengths	Potential Improvements
<p>A replacement reserve or sinking fund is used to insure the timely replacement of structural assets.</p>	<p>The Town has a Structural Repair Fund, which may be used for repairs to Town Hall. The Town also allocates \$100,000 for any emergency repairs that need to be made to buildings, or for any other types of repairs.</p>	
<p>The ratio of scheduled to unscheduled services is at least 1:1.</p>		<p>There is no formal PM program. Further, the DPW does not record the amount of time expended on any activities to enable the calculation of this metric. The project team did, however, analyze the daily assignment sheets for a recent 1-month period, and few of the activities listed for the two primary building maintenance employees could be classified as being preventive maintenance.</p>
<p>All technician time is recorded and monitored on a daily basis.</p>		<p>The Building Maintenance Mechanics in the Division do not record their time in any automated information system. Daily assignment sheets identify the Mechanic and the initial building at which the work is to occur, however, there are no records of the activities accomplished once at the structure.</p>
<p>Technician staffing levels are in the range of one trades staff member per 45,000 to 50,000 square feet of space maintained (excluding large open space such as garages, etc.)</p>		<p>There are 80,393 square feet of maintainable space in Town buildings. The Town budgets approximately \$120,000 each year for contracted facility maintenance and repair, which equates to about 1.3 FTE. In addition, the activities that were assigned to the two primary building maintenance employees in the Department in a recent 12-month period equate to about 0.3 FTE. This combined contractual and in-house effort equates to about 1.6 FTE, or about 51,000 square feet of maintainable space per FTE.</p>

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<b>Performance Target</b>	<b>Strengths</b>	<b>Potential Improvements</b>
Custodial services are provided at a reasonable cost, typically between \$1.50 and \$2.00 per square foot of space.	Costs are less than this range for custodial services in the Town.	It appears that there is no formal contract with the custodial service provider. The Town should immediately formalize this service contract.

## 2. SOLID WASTE AND RECYCLING

Performance Target	Strengths	Potential Improvements
The Department has developed a comprehensive solid waste management plan.		The Department has not developed a comprehensive solid waste management plan. This plan should provide an analysis of the waste stream and its components, the cost per resident, projections of waste, strategies for waste reduction, an analysis of alternative methods of collection, education of the public and other elements.
An aggressive recycling rate goal has been set, with specific time frames for accomplishment of the goal.	The Souhegan District is achieving a 30% waste diversion rate.	There is no stated goal for recycling, although the 30% rate is meeting at least reasonable levels.
Waste reduction efforts have been focused on programs that educate businesses and residents.	The web site does provide a link to the Nashua Regional Planning Council.	The Town does not offer recycling services to businesses, and does not provide any proactive education or programs to residents to increase the recycling rate. The recycling web page does mention that it is in all residents' interests to recycle, and provides an estimate of the revenues and tipping fee cost avoidance through recycling.
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.	The Department's web site offers information on the reasons for not disposing of batteries in the landfill, with an explanation of the toxic chemicals in batteries, and the results of placing them with the regular waste stream.	There is no mention of any other HHW other than oil and batteries on the web site. The site should note the methods in which residents can dispose of other HHW, and what materials are accepted such as paint thinner, pesticides, fluorescent lights, etc.

<b>Performance Target</b>	<b>Strengths</b>	<b>Potential Improvements</b>
Web site provides residents with helpful information in user-friendly format		The web site is not sufficient to provide residents with information that will both educate them in the benefits of recycling, nor in some of the basic information related to the operation of the transfer station. The Department also does not provide newsletters that inform residents of initiatives and events, nor how residents may get involved in recycling efforts in their communities.

### 3. FLEET MAINTENANCE AND MANAGEMENT

Performance Target	Strengths	Potential Improvements
Existence of centralized fleet management program for the Town.	The DPW Mechanic has responsibility for all DPW units, Police, Zoning and Recreation.	The Fire Department is responsible for the maintenance and repair of its own units. The lack of centralization does not capitalize on opportunities to standardize maintenance frequencies, monitor vehicle and equipment utilization.
Existence of funded vehicle replacement program?		There is no replacement fund for vehicles and equipment in the Town. This fund, if available, would receive funding from the Town on a unit-by-unit basis sufficient to ensure the timely replacement of vehicles and equipment at the pre-defined end of the economic life cycle of each unit. This funding mechanism has the effect of evening out the peaks and valleys associated with funding replacement units.
Centralized and standardized system of identifying vehicles and equipment for replacement.		The DPW reports that it determines which pieces of equipment need to be replaced on an annual basis, however the units are not replaced in a timely manner. This is evidenced by the relatively advanced age of the fleet of about 7.6 years per unit.
Existence of fleet management information system to monitor vehicle repair history, mechanic utilization, etc.?	The Mechanic uses MEMS 2000 system for certain records of maintenance.	Not all maintenance and repair activities are reported in the MEMS 2000 system. This inhibits the analysis of the maintenance costs for each unit in the fleet. Further, the lack of a comprehensive maintenance management system prohibits its use in instituting designing a preventive maintenance program.

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Performance Target	Strengths	Potential Improvements
Existence of automated fuel dispensing system.	The DPW has an automated fuel dispensing system on site.	
Fleet Maintenance is organized and established as in Internal Service Fund, charging user departments for parts and services.	Most of the Town's fleet is maintained centrally by Public Works Mechanic.	This is not the case. Parts and fuel are billed directly to user departments, however labor is not.
An effective preventive maintenance program is in place.	The Department utilizes a system whereby stickers are placed in vehicles and equipment to notify users of the dates and mileage/hours when PM is due.	
An effective facility is available for mechanics that enhances their productivity.		The maintenance shop consists of a single bay with very little space available, and no vehicle lift capability. There is no automotive parts room, however the Mechanic is utilizing an external enclosed container for this purpose.
The size of the fleet and the vehicle equivalency units are balanced with the number of authorized staff.	The Amherst fleet for which the DPW mechanic is responsible includes 29 units, with a vehicle equivalency of 97.5 units. The project team typically recommends that each mechanic be responsible for between 90 and 110 VEU (vehicle equivalent units), indicating that the staffing level is appropriate.	The facility layout is impacting the efficiency with which the Mechanic can accomplish work.
Fleet maintenance staff are ASE certified.		The DPW mechanic is not ASE certified.

## 4. HIGHWAY

Performance Target	Strengths	Potential Improvements
<p>Existence of formal work planning and scheduling system.</p>		<p>There is no formal work planning and scheduling system in existence in the Highway Division. 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, along with the maintenance cycles, labor equipment and materials needed to ensure the effective maintenance of each asset. 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.</p> <p>An analysis of 12 months of daily assignments of work to Division employees indicates that there is insufficient planning of work on a daily, weekly and monthly basis. Certain activities are planned for specific times of the year, such as hot topping, mowing, and certain other activities. However, analysis of daily work sheets indicates that on many days, employees are assigned initial duties, but full day plans are not provided, and employees are reporting the completion of work, with other work assigned on an ad hoc basis.</p>

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Performance Target	Strengths	Potential Improvements
<p>An automated maintenance management system is utilized to track and report work output, service levels and productivity.</p>	<p>The Highway Division does document the assignments of staff in terms of their initial daily assignments. These manual forms also document the weather conditions in effect on each of the days, as well as the equipment in use by the individual employees or crews.</p>	<p>No automated, computerized maintenance management system exists in the Highway Division that captures labor and materials usage by crew member and by category of activity. There are two separate work order systems in the Department, however neither of these captures adequate data to determine the actual or planned utilization of personnel resources, rather they simply report the accomplishment of a particular requested activity.</p>
<p>Staffing in the Division's street maintenance function approximates 15 to 20 center line miles of asphalt surfaces per Street maintenance worker.</p>	<p>There are nine (9) Heavy Equipment Operators, Light Equipment Operators and Truck Driver/Laborers in the Highway Division, however two of these are generally transferred into the Buildings Division on a daily basis. The remaining seven (7) working staff members are responsible for a total of 122 center line miles of roads, 8 of which are gravel, for a total of 115 miles of asphalt surface. This equates to a ratio of 16.4 linear miles per worker, which is within the expected average range of 15 to 20 center line miles per FTE.</p>	
<p>Potholes are patched promptly.</p>	<p>This is reportedly the case when potholes of an emergency nature are found or reported.</p>	
<p>Formal pavement management system in place.</p>	<p>The Department completed a pavement management assessment with UNH's Road Surface Management System in 2008 and 2010.</p> <p>The Department's most recent strategic plan proposes to purchase pavement management software in FY17.</p>	

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Performance Target	Strengths	Potential Improvements
<p>The Department resurfaces 5% to 8% of paved surfaces annually.</p>	<p>The Town plans to resurface or reconstruct 6.4 miles of roadway in the current fiscal year, which equates to about 5.6% of its total center line miles.</p>	<p>Prior to the current fiscal year, the Town had resurfaced and/or reconstructed 11.2 miles of paved surfaces, which equates to only about 3.3% of the total mileage.</p> <p>The project team noted many residential and collector streets in very poor condition, which is a reflection of insufficient funding for pavement rehabilitation and reconstruction over an extended period of time.</p>
<p>Sidewalks are checked regularly for tripping hazards and the hazards eliminated.</p>	<p>The Department recently upgraded several sidewalk segments in the downtown area.</p>	<p>There is no active sidewalk inspection program to proactively abate tripping hazards. These are noted as they are discovered or reported by the public.</p>
<p>Major road repairs and reconstruction contracted out.</p>	<p>This is the case in the DPW.</p>	<p>The Director attempts to minimize the cost of contractor repaving and reconstruction by performing work such as marking out center lines and making notes for contractors on the locations of hydrants, catch basins, driveways, lengths of street segments, etc. This may minimize contractor costs, however it is time consuming and may be detracting from the management and planning of the work of the Department.</p>
<p>Periodic inspection of sign reflectivity.</p>		<p>The Division has no sign inventory that shows locations of signs, last date of replacement, last date of reflectivity check, and history of maintenance. Reflectivity is accomplished only through visual inspection.</p>

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Performance Target	Strengths	Potential Improvements
<p>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.</p>	<p>This is typically completed by seasonal workers, although it was reportedly not completed this particular year.</p>	
<p>Web site provides residents with helpful information in user-friendly format</p>		<p>The web site is not helpful in several areas, as information is not provided on the site related to the cemeteries, the functions performed by the Highway Division (other than snow removal and paving), or town buildings. Further, there is no FAQ section of the web site, and no ability for residents to report problems that need to be addressed.</p>
<p>Sweepers accomplish 28-32 curb miles swept per day on average.</p>	<p>This is accomplished contractually.</p>	<p>The Town contracts to sweep about half of the curb miles each year, and is expending over \$210 per curb mile for this service, and is providing a dump truck and Laborer for the collection of the debris. This is a costly expenditure, however the DPW facility is a limiting factor in allowing the Department to perform this service with in-house crews, as there is little or no covered storage space available for a sweeper.</p> <p>The Town may, however, be advised to re-bid this service to attempt to obtain a more reasonable cost per curb mile.</p>
<p>Catch basins are cleaned on a 2-year cycle.</p>	<p>The Town's 372 catch basins are cleaned on an annual cycle for \$34,840.</p>	

## 5. ADMINISTRATION

Performance Target	Strengths	Potential Improvements
The Department has developed a strategic plan to guide operations over a multi-year period.	The Department has developed a strategic plan that addresses many of its current and long-term issues, including the management of paved surfaces, bridges, sidewalks, buildings, solid waste, septic remediation, stormwater management, staffing and equipment.	The plan is strategic, however it is generally a representation of the Department Director's initiatives, rather than one of a broader-based segment of the Town.
Clerical and administrative functions are centralized in the Department, and workloads are balanced by a central authority	Both of the administrative employees in the office answer phones and wait on the public as their individual availability dictates.	
The payroll process is automated		The Department collects manual timesheets from employees and transmits payroll data electronically to the Town.
Support staff as a ratio to technical staff is in the range of 1:9 to 1:25, depending upon the degree of automated systems in use	Currently, there are 18 filled operational positions (including the Director.) and 1.4 filled administrative/clerical positions, equating to a ratio of 1:12.5. However, there are seasonal staff who increase this ratio somewhat.	

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Performance Target	Strengths	Potential Improvements
<p>The Division maintains a vendor file which reflects vendor histories.</p>		<p>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.</p>
<p>Regular, ongoing financial reports are provided to divisional management and supervisors.</p>		<p>This is not the case, however it is also true that the two division managers have not been made responsible for budgetary compliance.</p>
<p>Clerical and administrative staff receive ongoing training in the use of necessary tools such as word processing, financial spreadsheets, customer service, etc.</p>		<p>The clerical and administrative staff have access to typical office software such as word processing, electronic spreadsheets, etc., however there is no ongoing training provided to the staff in their use.</p>
<p>Policies and procedures are well documented</p>	<p>The Department has developed a policy and procedures manual for which all employees must sign and acknowledge. The manual covers many pertinent administrative and operational topics such as overtime use, holidays, training, seat belt policy, lock out tag out, chain saw use and many others.</p>	