



Merrimack Valley  
Planning Commission  
*plan \* develop \* promote*

**Community Innovation Challenge Grant Program(CIC)  
Final Report**

**Project title: Regionally Improving Citizen Access and Service Delivery**

**Participating Communities and Entities:**

City of Amesbury

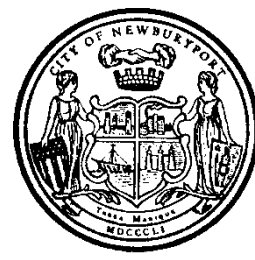
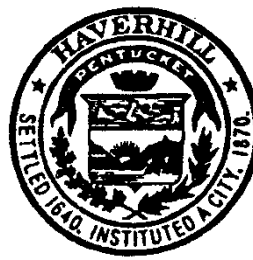
Town of Andover

City of Haverhill

City of Newburyport

Merrimack Valley Planning Commission

**Submitted: April 1, 2014**



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MERRIMACK VALLEY PLANNING COMMISSION  
160 MAIN STREET, HAVERHILL, MASSACHUSETTS 01830  
TELEPHONE (978) 374-0519 · FAX (978) 372-4890

RICHARD BYERS, Chair  
ROBERT LAVOIE, Vice-Chair  
ED RAMSDELL, Secretary  
ROBERT SNOW, Treasurer

DENNIS DIZOGLIO  
Executive Director

April 1, 2014

Secretary Shor  
Executive Office for Administration and Finance  
State House Room 373  
Boston, MA 02133

**RE: Regionally Improving Citizen Access and Service Delivery**

Dear Secretary Shor,

We would like to take this opportunity to thank you and the Patrick Administration and the Executive Office for Administration and Finance for the foresight in conceiving of this innovative grant program and the generous funding that we received.

The Merrimack Valley Planning Commission (MVPC), one of the Commonwealth's thirteen Regional Planning Agencies (RPA) and the communities of Amesbury, Andover, Haverhill and Newburyport are pleased to report on the success of our Community Innovation Challenge Grant project, Regionally Improving Citizen Access and Service Delivery.

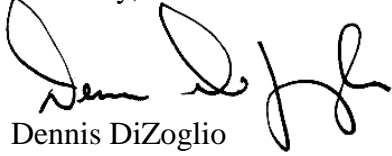
In 2011, the Director of Public Works (DPW) subcommittee of the Merrimack Valley Mayors & Managers Coalition (MVMMC) identified the need to improve administrative functions such as workload management, strategic asset management, and citizen response and customer satisfaction. To address this need the Subcommittee determined that an MVPC procurement of a regional site license for Computerized Maintenance Management System (CMMS) software would meet the communities' needs to improve citizen access, operational efficiency and work order management. As a compliment to the CMMS, MVPC agreed to assemble a feasibility study on the potential establishment of a regional 311 Constituent Services Call Center.

Since receiving funding from the CIC Program, MVPC has moved forward with the acquisition and subsequent deployment of a regionally-accessible CMMS software application. MVPC also established Memorandum of Understanding (MOU) with each of the participating communities to provide a funding stream for the long term sustainability of the program.

We now fully transitioned to the implementation phase of our CMMS project with ongoing training planned for 2014. We have also completed the 311 Feasibility Study and await further guidance from the Mayors and Mangers Coalition on next steps.

The Merrimack Valley Planning Commission, who served as the grant applicant and administrator, appreciates the opportunity to lead this endeavor. This program is another example of efforts by cities and towns to achieve efficiencies that maintain critical local services in a cost effective manner.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis DiZoglio". The signature is fluid and cursive, with a large initial "D" and a long, sweeping tail.

Dennis DiZoglio  
Executive Director

## **EXECUTIVE SUMMARY**

“Regionally Improving Citizen Access and Service Delivery” is a collaborative project between Merrimack Valley Planning Commission (MVPC) and the communities of Amesbury, Andover, Haverhill and Newburyport Massachusetts. The project was funded through grant funding provided by the Community Innovation Challenge Grant (CIC) program, through MVPC’s District Local Technical Assistance (DLTA) program and by funds contributed directly by the four participating communities. The resulting products are a regionally implemented computerized maintenance management system (CMMS) and a 311 Feasibility Study. Contained in this report is a detailed description of the process through which MVPC and participating communities implemented a regional CMMS. Implementation of a CMMS has been a high priority for DPW Directors in the MVPC region as this type of system offers a mechanism to improve citizen access, tools to enhance operational efficiency and an application to track work requests and work orders assigned to municipal assets.

The 311 Feasibility Study has been completed and can be found in the reference section of this document and the regional CMMS implementation is well under way as of April 2014. Servers and technical architecture have been set up, municipal data has been gathered and uploaded to the CMMS application and preliminary training has been completed. Next steps include three separate weeks of intensive end-user training and the expansion of the system to other departments and potentially to other MVPC communities.

Not only has this project served the public works departments in the region by providing an enterprise level software application at a very competitive cost but the implementation in a regional context has facilitated a positive atmosphere and collaborative working environment between municipalities. Public works managers have worked together on aspects of the project that set the groundwork for future collaborations and the potential for shared equipment and services.

This project was not without its challenges. As a home rule state, Massachusetts communities tend to pride themselves in their uniqueness. This uniqueness often extends to the manner in which municipalities manage their infrastructure and assets. Inevitably, individual communities have individual needs/expectations for how their systems will function in a regional setting. MVPC worked at great length to help overcome this perceived obstacle by presenting the advantages of a collaborative approach. Ultimately the potential for information sharing, for training to be conducted on a regional basis and for data to be collected in a system that would allow for performance comparisons between municipalities was recognized as having benefit that outweighed potential costs.

Transitioning MVPC’s 311 Feasibility Study to implementation has also proved challenging. The feasibility study was completed but currently remains in discussion among the regions Mayors and Managers. The concept of establishing a regional 311 center has not generated the desired and necessary level of interest to take next steps toward implementation. MVPC will continue to promote this concept while refining the potential costs and logistics for implementation.

In summary, we are very pleased with the progress made in implementing the regional CMMS. Once fully operational, the CMMS software will facilitate electronic access to citizens and provide the much needed “Back End” work order management tools to ensure prompt and efficient service delivery. This project demonstrates the basis of a new web-based services delivery model that can be adopted by other communities and regions. We anticipate this regional initiative will serve as a model of best practices to be replicated across other regions in the Commonwealth of Massachusetts.

## **PARTNER COMMUNITIES**

The concept of a regional Computerized Maintenance Management System (CMMS) was initially formulated by the DPW subcommittee of the Merrimack Valley Mayors and Managers Coalition. The DPW subcommittee which has been meeting approximately monthly since its conception in 2007 saw an opportunity with the Community Innovation Challenge Grant (CIC) program to fund the regional CMMS concept. The regional CMMS deployment was initially designed to support eight communities consisting of the Cities of Amesbury, Haverhill, Lawrence, Methuen and Newburyport along with the Towns of Andover, North Andover and Salisbury. However, the cost of implementation exceeded the grant award from the CIC program which required financial investment from those communities wishing to participate. As a result, the final implementation plan for establishing a regional CMMS is a collaborative effort by the Cities of Amesbury, Haverhill and Newburyport and the Town of Andover Massachusetts. MVPC provided the project guidance and has been the lead agency responsible for all contractual aspects of the CIC Grant.

The DPW Directors representing each of the four communities are the primary local partners in this regional initiative. They, along with staff from MVPC, comprise the CMMS User Group. The CMMS User Group is the committee responsible for decision making as it relates to the various aspect of the project.

MVPC has been responsible for development of the scope of work with the CMMS software vendor, Maintstar, with each of the communities providing input based on their specific needs and desired functionality. Operating in its capacity as a regional geographic information system (GIS) service provider, MVPC implemented and operates all servers and manages the software associated with this effort.

On the municipal side, each community has provided infrastructure records and GIS-based infrastructure data that will be managed within the Maintstar CMMS. Communities who also manage fleet and facilities data have provided information intended for management of those asset types within the Maintstar application. Participating communities have also contributed by authorizing staff time to be dedicated to this effort.

## **GOALS**

In 2011, DPW Directors of the region identified the need to improve administrative functions such as workload management, strategic asset management, citizen response and customer satisfaction. Until the current initiative, only some of the communities in the region implemented programs but all of these systems had limited asset and work management capabilities. The systems the communities historically implemented range from commercial software applications to simple databases and tabular spreadsheets. Because of the disparate and inconsistent nature of existing work and asset management systems, the implementation of a regional CMMS was viewed as an important step to address the management needs expressed by DPW Directors. With the critical background work of identifying necessary functionality and vetting a series of CMMS vendors completed, MVPC was poised to move into the implementation phases upon receipt of grant funding from the CIC program.

Specifically, the goals of this project were to:

- 1) Implement a regional CMMS to assist communities in the management of their assets while providing a mechanism for public involvement;
  - 2) Establish a regional CMMS User Group to oversee all aspects of this regional initiative;
  - 3) Provide a common framework for the collection of data and statistics that would allow for performance comparisons on municipal function; and
  - 4) Further enhance the cooperative work approach that currently exists among DPW Directors in the Merrimack Valley.
- \*5) Concurrent to the implementation of the regional CMMS, MVPC embarked on a feasibility study to determine the viability of setting up and operating a regional 311 call in center. This effort was funded by MVPC through its District Local Technical Assistance (DLTA) program and can be found in the References section of this document.



## **IMPLEMENTATION PLAN**

In 2007, several Merrimack Valley Planning Commission (MVPC) member communities formed the Merrimack Valley Mayors & Managers Coalition (MVMMC) to collaborate and develop regional solutions to municipal issues and discuss common governmental challenges. The MVMMC is comprised of 8 communities and represents over 290,000 of the region's population.

One of the MVMMC's prime objectives, established through work by a MVMMC subcommittee comprised of the region's Department of Public Works (DPW) officials, was the need to improve administrative functions such as workload management, strategic asset management, and citizen response and customer satisfaction. To address this need, in 2011, the DPW subcommittee determined that a MVPC procurement of a regional site license for Computerized Maintenance Management System (CMMS) software would meet the communities' needs to improve citizen access, operational efficiency and work order management.

With project funding in place through the Community Innovation Challenge (CIC) grant program, this initiative was defined to comprise of two overarching objectives. The first objective was to implement a regional CMMS for four participating communities (among the largest in the MVPC region) and, second, to produce a feasibility study for the establishment of a regional "311" center. Specifically, MVPC explored the possibility of operating such a center in conjunction with the Regional 911 Emergency Dispatch facility currently under construction in Middleton, MA. Funded by the Commission's District Local Technical Assistance (DLTA) program, the 311 Feasibility Study can be found in the References section of this document.

MVPC communities, as represented by their DPW Directors, completed much background work toward the implementation of the regional CMMS. By the time of grant award notification, the group had assembled a list of required functionality, had conducted informational interviews with vendors and made a final vendor selection. Once a formal agreement was in place between MVPC and the CIC Program, MVPC and the participating communities were able to execute a contract with the CMMS vendor, Maintstar, and establish Memorandum Of Understanding (MOU) to formally move the project forward.

The scope of work that was developed working with staff from the CIC Program brought the project from a conceptual stage to an implementation and operational stage.

The first step in this process was to acquire the CMMS software. As was discussed previously, the DPW Directors conducted an internal survey to develop a list of functionality that they deemed as necessary to help facilitate their goals.

The following is the list of desired CMMS functionality as derived from their internal survey:

- System should be an easy to use, computer-based graphical interface
- It should provide a fast and easy tool for submitting work requests
- Allow citizens to submit requests via email
- Record and track all work orders and work requests in the system
- Ability to map locations of complaints/integrate with GIS
- Automatic alerts when citizen requests are approved, rejected and completed
- Sort service orders by citizen, priority, region, problem type, or other filters

- Calculate labor, parts and material costs by work order, building, department or issue
- Track job time, response time, machine downtime and other statistics
- Assign Work Orders to projects and view project history
- Upload manuals, drawings or other documents and relate them to work orders
- Provide mobile (WiFi) access to system

### Selection of CMMS Vendor

With the survey results in hand the DPW subcommittee began to interview potential CMMS software providers to identify suitable products for consideration. Interviews were conducted in person and via web conferencing and the desired functionality was compared to each products capabilities. Those products with a high degree of compatibility to provide the desired functionality ranked highest.

Based on the results of interviews the subcommittee recommended a group of firms be shortlisted for a presentation and question/answer session. Of this shortlisted group, the DPW subcommittee selected two vendor products for a pilot demonstration effort. The intent of the pilot demonstration would be to have each vendor make their software available to the communities to test and evaluate on a hands-on basis. After testing each of the two products the DPW subcommittee recommended Maintstar as the preferred vendor.

MVPC checked references for Maintstar and received positive feedback. Acquisition of Maintstar software was accomplished through the State bidding list and did not require a full procurement process aside from the process followed above. With this regional approach to implementing a CMMS being the first of its kind, MVPC was able to negotiate a very competitive cost with the vendor. Compared to the expense if a municipality negotiated for itself, the cost per community through this regional implementation is significantly less.

### Development of service memorandum

MVPC as the lead agency in the project also holds the role of fiduciary agent. In this role, MVPC is the recipient of grant funding from the CIC Program. MVPC is also the signatory and financially responsible party to the CMMS vendor, Maintstar. Project costs shared by the four participating communities are also paid to MVPC. Based on the complexity of this arrangement, MVPC felt it important to develop Memorandum of Understanding (see copy of MOU in References) with each community. The purpose of the MOU was to establish the financial responsibility of the community to the regional CMMS project and to document the services provided by MVPC and Maintstar respectively. The MOU also names one key contact for each community who is designated by the community to be the local coordinator.

## CMMS User Group

With service MOUs in place, the project moved into the full implementation phases. As was outlined in the MOU, each community designated a project liaison. The four project liaisons along with the project manager from MVPC comprise the CMMS User Group. It was determined that this group would be responsible for guiding all aspects of the project in the event decision making would be required. The CMMS User Group, typically comprised of the DPW Director from each of the four participating communities, meets on a frequent basis nearly once per month or more as required. Working cooperatively with the CMMS User Group and Maintstar, MVPC assembled a project timeline to outline the major milestones associated with the data collection, application installation and training to be conducted through the term of the contract. The project timeline also serves as a mechanism for the CMMS User Group to evaluate performance and progress toward the final goal of full implementation.

## Application Installation

Each of the communities participating in the regional CMMS project has data in electronic format that will ultimately be managed within Maintstar. The organization and collection of this data was a task managed by MVPC. In working with each community, MVPC assessed the municipality's data and its suitability for use within Maintstar. Each of the communities also maintains geographic information system (GIS) data that will also be accessible via Maintstar. MVPC, through the use of its web based GIS server will manage the bulk of GIS data accessed by Maintstar. Data that was prepared for and provided by each community was organized both in electronic spreadsheets and as a series of GIS datasets.

From an information technology (IT) architecture perspective, the system was designed to be operated in the "cloud" using a virtual server. MVPC set up the virtual server using Amazon Web Services Elastic Cloud Computing (EC2). The cloud environment was recommended as the solution because it would be universally accessible by each community. As the project manager, MVPC also operates and manages all IT aspects of this project on behalf of the participating communities.

MVPC's virtual server will not only house the Maintstar software application but also provides GIS-based map services that are accessible from within Maintstar. This type of interconnectivity allows a user to analyze a specific asset within Maintstar and then visualize that asset on a web-based map. MVPC utilized its enterprise ArcGIS server licensing provided through the software company ESRI to facilitate the GIS based resources needed for this project. With all technical aspects of the project in place, the Maintstar application was loaded onto the virtual server with individual community databases established for each of the four communities. Once testing was complete, Maintstar loaded the municipal data into each database. Concurrently, MVPC established an interconnectivity between its GIS map server and the Maintstar application to facilitate visualization of assets.

## Training and Expansion

With the hosting and server architecture complete and municipal data loaded into the Maintstar system, the project shifted to expansion and training. For the purpose of training and implementation, the project was divided into three broad categories, Infrastructure, Facilities and Fleet. Accordingly, municipal data was collected by category with three training sessions geared to cover each category with a weeklong, in-depth, instructional and configuration session geared toward each of the three modules.

The assigned responsibilities of municipal managers vary from community to community which presents a challenge when implementing a regional system such as a CMMS. As an example, some municipalities in this program have functions that call for the management of Facilities while others do not (or do not at this time). During the data collection phase of the project and subsequently the training phases, special attention was given to this issue. Where applicable, the CMMS User Group provided input and developed tables of information to support the CMMS. Decisions were made by the CMMS User Group in both the area of data standardization and overall application functionality. These decisions were in part driven by the desire to be able to compare performance aspects of operations between municipalities but also because the training and operation of the application were being done in a regional context. As a result, the expectation would be that the system would function very similarly for each participating municipality and training would be conducted in a group setting. The CMMS User Group saw this as a valuable benefit of a regional implementation.

Initial training was completed via the internet using web conferencing. The first of three individual week-long trainings is scheduled for April 2014. April training will be focused on Infrastructure with the Facilities and Fleet modules to be completed later in 2014. The CMMS User Group will continue to meet going forward on an approximately monthly basis. The group will continue to monitor progress of the project and will also work with other departments in participating communities who are planning to migrate to Maintstar. Other communities participating in the MVPC DPW Directors Coalition have been closely watching the regional CMMS project and may wish to participate in the future. MVPC is committed to working with new entities in the region to expand this regional initiative.

## **BUDGET**

The total budget for this project was \$202,000. The line item budget is shown below.

Maintstar CMMS Software	\$192,000
MVPC Administration	\$10,000
Total:	\$202,000
CIC Grant Funding	(\$80,000)
Balance:	\$122,000
Community Contribution	\$30,500 (each)
Cloud hosting cost per year:	1500*
*MVPC In-kind contribution	

### **Budget Development**

The initial budget was developed in working with CIC program staff from the Office of Administration and Finance. With grant funding in hand and a scope of work and associated cost from the preferred vendor, MVPC was able to assemble the budget. Despite generous funding from the CIC program, project costs were expected to exceed anticipated grant funds. As a result, municipalities choosing to participate in the regional CMMS were required to contribute a portion of the overall cost. These figures have been very accurate with the exception outlined below.

### **Budget Modifications**

MVPC contributed an additional \$18,000 through its DLTA program to cover the cost of project management and technical implementation aspects of the project. Only the initial \$10,000 initially budgeted for administration is shown in the outline above. With reduced grant funding, MVPC attempted to assemble a budget with as limited a portion for administration as possible. Given the duration of the CMMS implementation and the need for more direct involvement by MVPC's project manager and GIS staff, this initial apportionment was low. The total cost ultimately allocated for administration by MVPC was \$28,000. This also included, internet services and technical setup during the period July 1, 2013 through the estimated completion (estimated December 2014).

## **CHALLENGES AND SOLUTIONS**

The implementation of a regional CMMS in the MVPC region has been a successful project which benefited from the cooperative working relationships among the regions public works departments. A project of this magnitude was not without its challenges and our CMMS User Group has often remarked about the length of time to bring this project to fruition being longer than they had hoped.

This project was first conceived in 2011 and steps toward implementation have been taking place ever since this time. One of the first real challenges the group faced was the challenge of not receiving funding from the CIC program during our first application in 2012. The DPW Directors who had been guiding this effort did not have a plan for how to proceed in the event the project wasn't funded. Collectively, the group decided to move forward with all aspects that did not require financial commitments and the decision was made to re-apply for CIC funding in the following grant year. A contingency plan was also put in place in light of the possibility that the project would not be funded a second time. The contingency was to address the possibility that participation in such an endeavor might require all of the costs for the project to be paid for by those communities choosing to participate. Enterprise level software applications and implementation are significant and the costs potentially a serious hindrance for fiscally strapped municipalities. Fortunately, via re-application in 2013, the CIC program viewed this effort in a favorable light and the project was partially funded. The partial funding that was received meant communities would both benefit from a reduced overall project cost but also that the contingency solution would be partially put in to effect with any difference between the grant allotment and the cost to implement the regional CMMS being paid for by participating communities.

Proposed expenditures at the municipal level and associated commitments of staff time for a community to set up an application of this magnitude are inevitably scrutinized by municipal decision makers (City Councils, Town Managers and Water/Sewer management boards). Another challenge faced during the project was that not all communities executed the Memorandum of Understanding (MOU) as quickly as their neighbors. This delayed the desired start date as MVPC could only execute the final contract with Maintstar once all MOUs were in place with participating communities. The solution to this challenge was MVPC project managers and staff spending additional time providing background information to decision makers in support of the project. This information came in the form of explanation of application benefits and functionality, references for product users and specific technical assurances for capacity and operation of the system. While this took additional staff time, the additional benefit was a more robust and specific arrangement for the ongoing maintenance and operation of the system.

Municipalities in Massachusetts generally operate individual public works departments and, as a result, have varying management styles and differing municipal infrastructure record keeping and data. Some municipalities have more advanced systems in place while others have been able to function with very basic systems. Consequently, data that is collected and stored on municipal assets and infrastructure varies, often significantly, from community to community. As a regional project designed around an operational model geared to take advantage of regional cost savings and efficiencies, some data standardization would be required. The challenge of implementing regional standards in an environment with such varying municipal data was resolved by MVPC GIS staff revising and adding "homogenizing" elements to the data. Data

elements common to each of the municipal datasets were aggregated and standardized and original data unique to each community was maintained alongside standardized information to preserve data integrity. The CMMS User Group also helped to generate the standardization and commonality in the data framework. Training being conducted on the CMMS will be done in a regional setting with members from each of the communities attending common training sessions. The data standardization solution also allows communities to compare and contrast performance and cost on various public works activities.

One final challenge worth mentioning was that of staff availability. It was sometimes difficult to arrange for communities to participate in meetings due to conflicting schedules. A solution that was effective for this was to hold the CMMS User Group meeting directly following MVPC's DPW Director's meetings. The DPW Director's meetings are well attended and this allows those DPW Directors participating in the CMMS to consolidate the two meetings. Also effective as a solution was the extensive use of web-based conferencing. These services provide the ability for participants to "attend" a meeting while avoiding the time and expense of travel to a meeting location. The group was often able to arrange meetings with short notice taking advantage of the "virtual" meeting environment.

## OUTCOMES

Funding provided by the Community Innovation Challenge Grant (CIC) program was instrumental to the success of this project. In response to a reduced level of funding as compared to our original request, MVPC made the decision to apply all of the CIC funding toward the implementation of the regional CMMS. Then, working in parallel using funding provided by its District Local Technical Assistance (DLTA) program, MVPC conducted the 311 Feasibility Study. Specifically, in response to our anticipated project outcomes, the following work has been accomplished.

*Outcome: # of communities participating in the new regional 311 Call in Center*

With the modified budget, it was no longer a goal to have the regional 311 center in operation. MVPC provided its own funding through the DLTA program for the development of a 311 Feasibility Study. The study was completed and is currently still in discussion among the mayors and managers in the region.

*Outcome: # of communities to which the work order CMMS software is deployed*

Funding provided by the CIC program was applied directly to the total cost of the CMMS software, Maintstar. With the expense of Maintstar exceeding the funding provided by CIC, a payment from each community choosing to participate was required. The cost per community was calculated to be approximately \$30,500 for the first year with annual payments in the \$4,500 range. This cost proved to be beyond the reach of some of the communities in our region, nonetheless, four communities – among the largest in the MVPC region, opted in to the program. These four communities are the group to which the CMMS software has been deployed.

*Outcome: # of communities that integrate community infrastructure data*













Each of the four communities participating in the program has elected to provide infrastructure data to the system. These communities intend to use the CMMS to record information about individual assets, to track work assigned to municipal infrastructure and to track citizen requests as they relate to the maintenance or improvement of those assets.

*Outcome: # of personnel trained in the region in the use of CMMS*

During the data collection and implementation phase of the project, six individuals from the four communities (the DPW Directors and some departmental managers) were trained in the basic navigation of the system. The number of individuals trained in the software is anticipated to increase to twelve as the week long training sessions commence.

Overall the implementation of the regional CMMS in the MVPC region is well underway. Communities in our region are looking forward to the opportunities this type of application will help facilitate. Recognizing the importance of sustaining an effort of this magnitude, each of the four participating communities has committed to the ongoing cost of software maintenance and administration. After initial start up funding from the CIC program has been exhausted, this effort will continue to sustain itself through the cost structure and project management which has been finalized and agreed to through the municipal Memorandum of Understanding (MOU).



PROJECT GOAL	MEASURE	CURRENT PERIOD	PRIOR PERIOD	TREND	TARGET	STATUS	COMMENTS		
To develop a regional 311 and work order management system	# of communities participating in the regional 311 Call in Center	0	N/A		8		The is cu revis Mar We disc impl plac		
	# of communities to which the work order CMMS software is deployed	4	N/A		4				
	# of communities that integrate the community infrastructure data to record, evaluate, and track condition of assets	4	N/A		4				
	# of personnel trained in the region that join the use of CMMS	6	N/A		12				
STATUS LEGEND		OFF TARGET:		CLOSE TO TARGET		ON TARGET:		NOT APPLICABLE:	

## **CONTACT INFORMATION**

CMMS Project Manager – Merrimack Valley Planning Commission  
Jerrard Whitten, GISP (GIS/IT Manager)  
160 Main Street  
Haverhill, MA 01830  
(978) 374-0519  
jjwhitten@mvmc.org

Maintstar, Inc.  
Dimitry Poretsky  
28 Hammond, Unit D  
Irvine , CA 92618  
(949) 458-7560

City of Amesbury – Robert Desmarais, Director, Department of Public Works  
39 South Hunt Road  
Amesbury, MA 01913  
Phone: 978-388-8116

Town of Andover – Sandy Gerraughty, Business Manager, Department of Public Works  
397 Lowell Street  
Andover, MA 01810  
Phone: (978) 623-8350

City of Haverhill – Michael Stankovich, Director, Department of Public Works  
500 Primrose St  
Haverhill, MA 01830  
(978) 374-2360

City of Newburyport – Andrew Lafferty, Deputy Director/Director of Operations, Department of Public Services  
16A Perry Way  
Newburyport, MA 01950  
(978) 465-4464

## **REFERENCES**

- Copy of the MOU established between participating municipalities and MVPC.
- The 311 Feasibility Study completed for the MVPC region.

## MEMORANDUM OF UNDERSTANDING

BY AND BETWEEN THE

MERRIMACK VALLEY PLANNING COMMISSION – Regional Resource Center, Inc.

AND THE

<City or Town Name>

**THIS CONTRACT AGREEMENT** is made and entered into this 3<sup>rd</sup> day of July 2013 by and between the Merrimack Valley Planning Commission Regional Resource Center, hereinafter referred to as the “Commission”, and the <City or Town Name>, hereinafter referred to as the “City” or “Town”.

**WHEREAS**, the Commission is eligible to undertake and provide professional planning services to member communities under Chapter 30B of the Massachusetts General Laws; and,

**WHEREAS**, the <City/Town> has expressed an interest in retaining the services of the Commission staff for professional planning assistance and related technical support services; and,

**WHEREAS**, the <City/Town> has specifically indicated a desire to use the Commission resources to assist in the implementation of a regional Computerized Maintenance Management System (CMMS); and,

**WHEREAS**, the Commission, working through its coalition of DPW Directors, has identified the preferred vendor, Maintstar; and,

**WHEREAS**, the <City/Town>, has sufficient funds to retain said professional planning services from the Commission,

**NOW THEREFORE**, the <City/Town> and the Commission do mutually agree as follows:

### **I. EMPLOYMENT OF THE COMMISSION**

The Commission agrees to contract with the <City/Town> to provide professional services as cited in the SCOPE OF SERVICES of this agreement.

### **II. SCOPE OF SERVICES**

The Commission will provide the <City/Town> with the professional services specified in the Scope of Services, attached herein and made a part of this agreement. The Commission will be responsible for the implementation, operation and refinement of a regional CMMS and for the coordination of Training sessions for the <City or Town Name>.

### **III. PROJECT STAFF**

The Commission will assign appropriate staff who are trained in the use of Geographic Information Systems (GIS), Information Technology (IT) and database development to complete the Project. The project will be managed under the direction of MVPC's GIS/IT Program Manager.

### **IV. RESPONSIBILITIES OF THE <City/Town>**

The <City/Town> will provide to the Commission's Project staff all relevant existing digital data, maps, and other information as may be readily available to enable the timely and efficient execution of the Scope of Services. In addition, all <City/Town> employees, agents, and representatives as appropriate shall be made aware of the Commission's Project role so as to help facilitate completion of the Scope of Services.

The <City/Town> will assign a single point of contact who will serve as the local project manager. The <City/Town> designates, \_\_\_\_\_, as the liaison between the <City/Town> and MVPC. It is further recommended that the local project manager (or other <City/Town> designee) commit staff time on a weekly basis to facilitate local implementation of the Maintstar CMMS.

### **V. RESPONSIBILITIES OF THE COMMISSION**

The Commission will be responsible for the operation of the regional CMMS software and server. The Commission has chosen to use Amazon Web Services Elastic Compute Cloud (EC2) to provide server services. As such, the Amazon EC2 Service Level Agreement commitment is 99.95% availability for each Amazon EC2 Region.

MVPC will be responsible for upgrading server components and software updates as necessary and, working collaboratively with Maintstar, will perform upgrades to the system based on input and availability from Maintstar.

MVPC will perform backups on a weekly basis. If <name of City/Town> wishes to perform a local backup, MVPC will provide monthly interval backups directly to <name of City/Town> municipal servers (provisions need to be made by <name of City/Town> to make a backup server/location accessible to MVPC).

A project matrix (excel file) will be developed by Maintstar and the Commission outlining each task, associated responsibility and delivery dates. This document be made available and accessible to project managers/community liaisons.

**VI. COMPENSATION**

The <City/Town> agrees to pay the Commission a total compensation fee for professional services rendered through this agreement of \$30,500 (thirty thousand five hundred dollars).

The startup fee is determined as follows:

Maintstar software, implementation, training:\$48,000 (per community)

MVPC setup, administration, hosting:	\$2,500 (per community)
CIC Grant (Administration & Finance):	(\$20,000) (per community)
Total:	\$30,500 (per community)

The annual fee is determined as follows:

Maintstar licensing fee (adjusts for inflation):	\$4,500 (per community)
MVPC administration, hosting:	\$500 (per community)
Total:	\$5,000 (per community)

**VII. TERM OF PERFORMANCE**

The Commission agrees to commence performance of the planning services described herein as of May 6, 2013, subject to the receipt of this agreement which has been duly executed by an authorized representative(s) of the <name of City/Town>.

**VIII. PAYMENTS**

Payments to the Commission by the <City/Town> will be made within thirty (30) days of receipt of invoices and supporting documentation unless other arrangements are mutually agreed upon by the Commission and the <name of City/Town> and provided that full payment is made prior to December 31, 2013.

**IX. OWNERSHIP OF PROJECT DOCUMENTS**

All reports, maps, databases, and other materials produced by the Commission through this agreement will become the property of the <City/Town> and the Commission. No data will be distributed to any third party unless authorized by the <name of the City/Town>.

**X. AMENDMENTS**

The provisions of this contract agreement may be revised and/or extended as mutually agreed upon in writing by the <City/Town> and the Commission. All changes which are determined acceptable to the <City/Town> and the Commission shall be outlined in the form of a simple, written amendment to this contract agreement.

**XI. TERMINATION OF AGREEMENT FOR CAUSE**

If, through any cause, the Commission or the <City/Town> fails to meet in a timely and proper manner its obligations and responsibilities under this agreement, or violates any covenants, stipulations, or agreements of this contract, the other party shall thereupon have the right to terminate this agreement by submitting written notice of termination to the party in violation, such notice to be issued at least fifteen (15) working days prior to the effective date of termination. Any and all services rendered by the Commission up to the effective date of termination shall be paid for by the <City/Town>. Any and all materials produced by the Commission shall be forwarded to the <City/Town>.

**XI. AUTHORIZATION OF OFFICIALS**

**IN WITNESS THEREOF**, the <City/Town> and the Commission have executed this contract agreement as of the date indicated above.

<Name of City/Town>

Merrimack Valley Planning Commission

Signature of Authorized Representative    Executive Director Dennis DiZoglio

Name of Authorized Representative





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## **I. INTRODUCTION**

This study is the result of another in a long list of initiatives undertaken by the Merrimack Valley Mayors/Managers Coalition (MVMMC). The Coalition was formed by the Merrimack Valley Planning Commission (MVPC) in 2007 in order to collaborate and develop regional solutions to municipal issues and discuss common governmental challenges. The five Mayors from Amesbury, Lawrence, Haverhill, Methuen, and Newburyport and the three Town Managers from Andover, North Andover, and Salisbury meet on a monthly basis to discuss their common challenges and to try and find solutions to those challenges. The MVMMC membership represents over 85% of the region's population.

Since its inception, the Coalition has discussed and acted upon a wide range of issues and common problems and concerns, and has made great strides in putting forth regional activities thereby providing cost savings for the municipalities participating. The MVMMC has conducted joint procurement of DPW goods and services, they formed a regional inspectional services program and a regional health district, utilized a regional purchasing agent, and has conducted a robust energy program to help streamline processes that enable its communities to address energy efficiency and renewable energy initiatives.

The following 311 Call Center study was born from discussions among the MVMMC and the participating communities desire to provide better customer service to their residents. A regional 911 center has opened at the Essex County Sheriff's Department, and the coalition discussed the possibility of incorporating a 311 Call Center with the 911 Emergency Call Center. This study's purpose is to provide the Coalition with the necessary information so that an informed decision can be made whether the cities and towns in the Merrimack Valley find it appropriate, cost effective, and feasible to develop a regional 311 Call Center.

We would like to recognize and give attribution for information in this report to the ICMA. They have completed numerous studies and articles regarding 311 call centers. The information they have published was very useful and valuable. Also, information from the National Center for Public Performance, Rutgers University was very helpful. The Center completed a feasibility study for a potential statewide system in New Jersey. Also, a report titled: Evaluation of City Call Centers completed by the Department of Management Services, Virginia Beach, VA was referenced and used in the completion of this report.

## II. NATIONAL AND REGIONAL TRENDS

### 311 CALL CENTERS – WHAT ARE THEY? WHAT DO THEY DO?

In 1996 President Clinton ordered a directive to find a way to reduce the number of non-emergency calls being placed on 911 emergency call systems. A 311 trial was initiated in Baltimore, Maryland, the goal being to designate an easy to remember telephone number for non-emergency calls which could be used in all localities and reduce confusion among users. This trial resulted in reducing the number of non-emergency calls to 911 by nearly one-third, thus improving 911 system access for life threatening emergencies as 911 is intended. As a result of the successful trial run, the FCC issued an order reserving 311 as the national code for non-emergency police calls and access to other government services. Unlike 911, the FCC does not require local governments to use 311, but assures that a standard number is available for those communities that do want to use it. A 311 non-emergency system allows the public easy access to their local jurisdiction with calls for potholes, stray animals, loss of water pressure, and any other non-emergency needs. Between 1996 and 2007, the Federal Justice Departments Community Oriented Policing Services (COPS) program provided \$6 million in funds for the development, enhancement, and evaluation of non-emergency 311 numbers in the United States. Understandably, almost all systems in place today were set-up during those years.

Cities that have set up 311 call centers reported a significant decrease in their overburdened 911 call centers and began to realize the effectiveness and efficiency 311 had on customer service, and the desire to improve customer service is now a major impetus for establishing 311 call centers. Citizens calling city and town halls want convenience, quality, and quick resolution to their issues, whether it be a simple question about office hours for a particular department, or more complex questions like zoning issues or a request for a service such as potholes or litter in public parks. As city and town halls moved from switchboards to automated phone service and real people answering calls was replaced by “voice mail”, citizens often grew more and more disgruntled with the service they received. As mayor of Boston for 20 years, Tom Menino insisted people answer the phone and resisted any form of automation. Many cities also have hundreds of listed phone numbers in the phone book and often a search of the city’s website makes it no easier to find the right number to call for assistance. Citizens constant complaints with the way communities provide information or respond to requests for services has been a key factor why City and Town Mayors or Managers set up 311 call centers. A 311 system provides the single point of entry to local government information and services with an easy number to remember and a “real” person to speak to. But having a “real” person to answer the phone and speak to callers is only the beginning. 311 call centers are not intended to simply

transfer calls to a department voice mail, it needs to be a catalyst for significant transformation – one that reinvents the way municipalities do business!

What needs to be vitally important as the Merrimack Valley Mayors/Managers Coalition (MVMMC) moves forward is that the goal should be to provide efficient, consistent, and timely information and services to citizens of our communities. Better service than what now exists! We should only move forward if we can improve upon the customer service our citizens are now receiving. There are cases where local government managers “put the cart before the horse” by obtaining a 311 number, set up an office and staffed it, but then didn’t provide the staff the tools needed to achieve the goal of efficient, timely assistance and correct information. We will need to have all the tools in place to achieve that goal. The call center itself and the call takers are just the beginning. The rest of the service includes the delivery system – the technology, the work crews that carry out the services requested, and a mechanism for reporting what is being done back to callers, managers and elected officials. Many call centers also quantify their agency’s performance for decision making through a separate statistical analysis such as SomerStat in Somerville, PhillyStat in Philadelphia, or CitiStat in Baltimore.

## **BENEFITS OF 311 SYSTEMS**

Establishing a 311 call center in the Merrimack Valley has the ability to enhance citizen access to services, improve the ability of our cities and towns to manage these services, and to increase the accountability and efficiency of local government agencies. Some of the core benefits found by the national Center for Public Performance is as follows:

1. Centralizing the point of contact for citizens makes it easier for them to get service. A 311 system is also viewed as a “proactive management tool” that allows managers to see the volume and type of calls, and how long it takes for them to be dealt with. Data from incoming calls can be tracked and reviewed with customer relationship management (CRM) software.
2. Eliminating phone answering duties for department workers with more pressing tasks is an immediate benefit of 311 call centers. A 311 system helps departments free up resources to handle their core functions rather than having people work on getting callers in touch with whomever they need to speak. Having skilled workers spend their workday on projects for which they have been trained is clearly more cost-efficient than having them answer phones and forward calls.
3. Freeing up resources within departments can help jurisdictions deal with budget strains.
4. As more and more data from 311 is fed into CRM systems, public officials find that by analyzing the details they can begin to make strategic decisions on how resources and services can be better managed. Not only does the data give officials precise information that can be acted upon, such as pinpointing persistent illegal dumping problems, but it can also be used to set service standards for city/town departments.
5. Savings and efficiencies gained from a central call center become much easier to recognize over time. The City of Chicago’s water department used system data to pinpoint which fire hydrants were opened most frequently, and then placed locking caps on those hydrants to insure water pressure.
6. All the information in the system provides management support for decision-making and for the allocation of resources. An example given was graffiti – for instance, some graffiti can be painted over, and sometimes it needs to be blasted off the surface. By analyzing data about graffiti calls, 311 managers have an idea how many painters versus blasters are needed.
7. The 311 system has also resulted in revenue enhancement. In Baltimore for instance, 311, CitiTrack, and CitiStat have combined for real-time management and accountability, allowing for more efficient cost expenditures. The Baltimore water department saved money by improving how they handled leaks. Prior to 311 and CRM, when water maintenance crews found an outside meter that had a leak, it would install a by-pass pipe and refer meter replacement to another division in the water department. With CitiStat,

the 311 managers learned about tens of thousands of instances in which people were waiting for bypasses to be replaced with meters. Now when the maintenance crew installs a bypass, the CRM tool automatically generates a request to the meter shop. By tracking these, the number of bypass pipes has been reduced by thousands, which has turned into millions of dollars of recaptured water revenue.

8. The real-time reports and streamlined nature of 311 systems allow for faster response from both officials and citizens. For instance, in severe weather 311 officials can pinpoint areas that have more water on the streets and predict potential flooding.
9. A 311 system allows departments to measure average response time. They can use this information to set performance standards within a department and provide citizens with realistic expectations as to when a complaint will be addressed, a problem solved, or a service rendered.
10. A 311 system can improve the way cities and towns deliver services. It may be an extreme example for the MVPC region, but in New York City, the 311 system helped reduce the waiting time for scheduling appointments for inspections within the Building Department from weeks to days.

## **BEST PRACTICES**

A 311 call center feasibility study conducted by Rutgers University for the state of New Jersey surveyed several cities around the country using four categories to evaluate 14 municipal 311 systems. The categories were usability, service, operations, and system measure. A brief summary of the description of each category is as follows:

**Usability** – Usability highlights the relationship between the caller and the 311 system. When a citizen calls into a system, the ease of use is critical for success. Transfers to departments or even within the 311 system may be necessary, but excessive transfers can become a deterrent for using the system. In addition, wait time and being able to speak to a live operator are measures of usability. Other survey questions regarding usability were about hours of operation, multi-language capabilities, and tracking (whether citizens are able to track a service request via call-in, the web, or automated Interactive Voice Response).

**Service** – Service represents the broad range of service deliverables by the 311 system. Some 311 calls may be seeking information only, while in other cases a call in request requires processing so that a particular service can be addressed. More sophisticated 311 centers are able to process service requests without transfer, while some are able to address service requests via transfer or simply providing information to the caller.

**Operations** – The operations assessment focused on internal operations of the 311 system. The areas of internal operations include the call routing and the ability to route based upon time of day or week. The ability to have walk-in and on-line service requests via call centers and websites was also examined. Additionally, the 311 systems ability to automatically determine service area based on GIS and physical address information was seen as an advantage and scored higher.

**System measure** – The fourth area evaluated was System Measure. This category covers much of the data associated with measurable outputs by the 311 system. Performance scores judged such things as the percentage of calls an Interactive Voice Response system handles, the average number of calls received per an agent in a work shift, and the existence of a feedback mechanism for citizens.

## **SUMMARY OF SURVEY RESULTS-BEST PRACTICES GUIDE FOR MVMCM**

From a usability perspective the best models allow for transfers from people in the 311 call center to other departments. Also, when a caller is transferred, that person does not go back into another queue. Rather, they are directed to a live person. One community further notifies

callers as to their expected wait time or their position in the queue. Five of the respondents provide 24/7 service. Of the remaining nine that do not provide 24/7 311 service, four provide an automated information system. The growing diversity of the American population increases the need for multi-lingual call takers. As such eight systems have agents in place that are multi-lingual. Furthermore, giving callers the ability to track service requests is an important usability function of 311. Twelve of the municipal systems surveyed provide such a function.

From a **service** perspective, the common thread among the “best practices” communities is they are able to process a significant number of service requests directly through their 311 call centers. In other words, they do not have to transfer a caller to another department in the hopes that the service request will eventually be filled. Directly processing a service request is far more efficient and convenient for the citizen.

With regard to **operations**, the common threads among the highest ranking communities include: call routing based upon time of day or day of week; the 311 center database is SQL in nature (SQL allows for efficient and effective management and retrieval of data); the 311 system includes online internet submission/requests; the system technology tracks service requests through telephone and/or electronic channels.

In terms of **system measures**, the better 311 systems: 1) keep caller wait time to a minimum, 2) insure that only a small percentage of calls are handled through Interactive Voice Response, as opposed to a live agent, 3) provide callers with a means of providing customer service feedback, and 4) have the means of safeguarding a callers privacy.



## **CRITERIA FOR AN EFFECTIVE 311 SYSTEM**

According to a study for the state of New Jersey, the criteria for an effective 311 system can be divided into three areas: leadership, usability, and systems. In addition to implementing these specific criteria, a 311 system should, in general, emphasize management, performance, and accountability.

### **Leadership**

Strong commitment is required, in terms of attention and resources from the Chief Executive, to establish a 311 system and to set goals for the system. Consistent commitment and attention is vital to reinforce the importance of the successful development of a 311 system.

The Chief Executive needs to devote on-going attention to implementing the system and securing the cooperation and commitment of other city departments in the effort.

The project should hire people with call center experience who are knowledgeable about the management of call center operations.

A strong advertising campaign about the 311 system and the difference between it and 911 will facilitate implementation. People won't use 311 if they are not aware of 311.

Consider using existing "front line" personnel who now handle many calls into the city as 311 call takers. This will allow the 311 call center to operate with fewer new staff.

The system must insure proper staff training. Training is critical to the successful operation of a 311 system.

### **Usability**

If possible, the system should provide 24/7 access with a live operator on the other end. This provides citizens with the feeling that local government is there to address their issues at any time.

A clear goal should be established for wait time from the IVR to the time a call is answered by a live operator. This establishes a benchmark for performance from the call center. It also insures that a prompt response to callers is a priority – the main reason for establishing a system in the first place.

The system should notify callers as to their position and wait time in the queue. This demonstrates consideration for the caller.

A caller should receive a report number or ID number for an incident. The ID number tells the caller their issue has a unique identification number and that the caller can refer to it in future communications.

The system must consider multi-lingual assistance.

## System

Decide if the system is incident-based or caller-based. The incident based system is organized to track the specific issue the caller identifies. Since the data is maintained by incident, the system is better at maintaining the privacy of callers. A caller based system that maintains information by caller is more focused on the caller rather than the issue that needs to be resolved.

Build in excess caller capacity. Excess capacity allows the system to handle increasing volumes of calls as citizens become more familiar with 311, and insures calls will be answered in a shorter period of time.

Select a computer CRM package which needs as little customization as possible to reduce development time and costs. The selection of the CRM package is based on knowing the needs of the system and choosing a system that most meets these identified needs. Additional costs having to customize a system can be considerable.

Select a goal of broad coverage versus a goal of information. Broad coverage will insure having some 311 information about issues in all departments. This provides callers with access to most or all departments, even though the information may be limited. Starting with broad coverage provides a basis to collect more in-depth information as the system develops.

Focus on caller privacy. Without privacy callers may not use the system and the goal is to encourage participation.

Build in GIS capacity. The primary use of GIS in 311 is to insure the information received about an address is correct so that the issue can be resolved.

Use the internet for access to the system to track incidents by caller. Internet access will encourage a higher level of use especially by citizens who prefer that mode of communication.

Provide callers with a feedback mechanism regarding the quality of a 311 system. Feedback on citizen experience with the system provides knowledge of what is and what is not working. This enables the system to be improved and will increase participation and citizen involvement with the 311 system.

Support the capture of information on departmental performance in resolving the issues raised by callers to the 311 system. For example, was the pothole fixed and how long did it take to fix it? The capability of capturing performance information of municipal departments should be incorporated into a 311 system in the planning stages whether or not this information is collected in the initial startup phase. Once performance information is in a 311 system, it can be more easily activated in a later phase.

- Implementation timetable should be gradual. A soft start is recommended to begin implementation of a 311system. Any advertisement of 311systems functionality should follow an **initial** stage of testing. Initial stages would allow for calls traditionally intended for a municipality to be forwarded to 311.

## **MUNICIPAL BUY-IN FOR 311**

Research reveals that a major challenge communities face with 311 is securing buy-in from municipal departments. Implementing centralized customer service, either 311, or a centralized ten digit number, changes the way a city does business. We in Massachusetts know all too well how resistant to change people can be. Just look at our zoning code – one of the oldest and most archaic and most confusing one in the country, and look at the failed attempts to change it. The regionalization of services has also been a very trying task to accomplish.

Implemented correctly, the information flow to and from 311 centers improves customer service and efficiency. Departments begin to understand each other, what department processes involve, and how to solve citizen request the first time it is made. Municipal departments need to be vested in the process of implementing a 311 system and have ownership in the end product. Department involvement will be critical from the planning stage to the “go live” stage. Allowing departments to pick and choose whether they want to be a part of the system could doom failure. As we discuss a regional system in the Merrimack Valley, we deal with several communities and many, many departments with differing issues. The need for executive direction and leadership from the outset will be vital to the success of implementation.

Voiced by many communities considering a 311 system, was the concern of layoffs because of the new system. Good long-term planning with the initial emphasis on communicating how the departments can free up their employees to be able to deliver service more efficiently and effectively should be the starting point. Good performance measurement and use of CRM data will help drive resource allocation decisions over time.

A major decision as the Merrimack Valley moves forward, is who manages and directs the 311 system. An experienced 311 person can be hired to set up the system with the needed hardware and functionality and even train call takers, but who does that person answer too? Who directs the 311 systems operation and make final decisions? If three or five or ten communities sign on to the 311 regional system, who is in charge? The question is not as simple as it sounds, and needs to be answered as we go forward.

Large amounts of data will need to be assembled from all the communities involved so that call takers have the information available in their database as they answer calls. Trash and recycling pickup will be done on different days and on different weeks in varying sections of any given community. That type of information will need to be collected and someone needs to be responsible for assembly of all the data from all the municipalities involved. Where one community is initiating a 311 system, that overall responsibility is with the Mayor or Town Manager and the person he puts in charge of that function. Regionally, it is a bit more complex.

If community "A" signs on to participate in the 311, but is slow to respond with completing all the necessary tasks needed to open the system, how and who addresses that? Regionalize 311 systems involving multiple communities do not seem to be in place anywhere in the country. The task for one community is large. Regionally it is highly complex. A management system will need to be set up to operate the 311 system on a regional scale.

## **CUSTOMER RELATIONSHIP MANAGEMENT (CRM) TECHNOLOGY**

A CRM system helps streamline the collection of service request information and allows all departments to share the data. This allows the amount of time necessary to deploy services where needed as well as allowing multiple departments to coordinate services. The CRM allows customers and employees to place service requests from any location. The system is built with scripts that provide 311 call takers with answers to most of the frequently asked questions and has generic information to allow most of the calls to be immediately handled and closed.

### **Key CRM Attributes:**

Customer Access – Provides capability for customer to access municipal services and information through the mechanism of their choice.

Service Provider Collaboration – Coordinates all departments and jurisdictions that respond to service requests.

Drives Operations to Resolution – Manages the intake, work breakdown, routing and resolution of service requests.

Measures Performance/Provides Accountability – Can be a tool used by municipal officials, department heads and management to assess request activity and to plan resource allocation.

Intelligence Everywhere – Puts the right information in the right hands at the right time. Customers, employees, and service providers may be connected through mobile, wireless communications, applications, and devices.

### **How a CRM System Works**

When a citizen calls the 311 center, the 311 system queues the next available call taker, who responds and determines the callers concern. Next, the call taker keys in a few key words and the system displays scripts that help the call taker quickly and efficiently respond to the inquiry. While 311 call takers need to be trained to serve as comprehensive information resources, they cannot be completely familiar with the detailed operations of each department in all the communities that are in the 311 Merrimack Valley systems. This is why scripts help them direct each call. Each script is a directory that uses key numbers and words to help the call taker find additional information on a topic and determine the appropriate questions to ask the caller. For example, when a caller asks for a pothole to be filled, scripts allow the call taker to distinguish whether the problem is a simple pothole or base failure in the street. The difference between the two problems is significant for the department and the team that investigates the situation. The 311/CRM system assigns a caller ID to the call, the call taker

gives the caller that call ID, and the system automatically forwards any work order to the appropriate department. The individual departments have access to the 311/CRM system to log in their work schedules and work completion information. The caller may use their ID number to check back on the status of their request.

### **Benefits of a CRM System**

Citizens measure and evaluate performance of their community by the level of service provided and the results experienced. Was the pothole fixed? Is the trash picked up? Is the stop sign no longer blocked by a tree?

The primary benefits of integrating 311 with CRM include the following:

- It provides the ability to accurately evaluate the performance of each department and resolve problems prior to them affecting citizens.

- It can decrease the amount of time it takes to complete transactions for each process/service provided. Departments develop a timeline for each service and call takers can give an approximate time of completion.

- Departments are able to automatically and accurately monitor the activity of their staff. It increases government accountability. If a citizen calls or reports through a self service website a problem, the citizen is given a report or ID number and has the ability to find out about the resolution of their problem.

- Cities that have implemented CRM technology have reported increases in efficiencies. It offers a customer-focused approach with one person authorized to answer a question and dispatch service.

## **INTEGRATING 311 AND 911-ONE COMMUNITY'S EXPERIENCE**

Consideration at the onset of this study was to determine the feasibility of operating a 311 call center in conjunction with the Essex County regional 911 dispatch center. Much of the research undertaken for this report suggests that 311 call centers should stand alone and not be combined with 911. The reason most cited for not integrating the two is that 311 should report directly to a Mayor or City/Town Manager. A 911 center normally reports to the Police or Fire Chief or other Public Safety Officer.

One example of an integrated call center operating successfully is in Dyersburg, Tennessee. Dyersburg call center fields calls in an integrated 311 and 911 environment, where both emergency and non-emergency calls are answered by the same operators. Different ring tones let the operators quickly sort emergency calls from less urgent requests. The ability for a citizen to dial one number for everything simplifies their interaction with the city, and the ability for call takers to easily prioritize calls makes the process less stressful for both parties. You can dial 311 and it doesn't matter if it's a non-emergency request for a pothole or an emergency request for police and fire, the city can process both.

The city of over 17,000 implemented the combined system in 2010 and a major benefit seen is the reduced number of non-emergency calls coming through 911. The 311 calls have increased, but call takers appear to manage the calls easily even when volumes are high.

The call takers in the 12 person call center answer 99% of non-emergency calls in less than 20 seconds, and emergency calls in less than 10 seconds. In 2012 the city processed more than 123,700 calls.

### **How it Works**

Dyersburg advertises 311 as the number for citizens to dial to reach police, fire, and other government departments for non-emergency issues. When a citizen dials 311, that call is routed to the same operators who answer 911 calls. Staff can tell the difference between each call based on their ring tone – 311 has a softer ring than 911. And from an operational standpoint, a call taker will put a non-emergency call on hold if he or she receives an emergency call during an answering session.

Operators use CRM software to log and track non-emergency calls and the information associated with them. The operator can type notes about a call directly into the system while on the phone, essentially creating a report that is the basis for tracking and resolving the citizen's issue over time. The online reports increase accountability and data intelligence within the city's administration. The call taker can create a ticket for the issue, which is crucial to report tracking and future communication regarding the issue in question.



The CRM software's user interface lets an operator create geo-coded reports for future reference. He or she clicks a "where" tab on the computer screen, and the program zooms in on an interactive map containing GIS layers. The operator moves a digital pin dot onto a spot on the map to mark the location of the caller's incident and saves the interaction. This generates a trouble ticket that is automatically sent to the city department responsible for fixing the problem. The ticket will start the clock ticking. If the trouble ticket isn't closed in four hours, then it starts to re-mail to people. Dyersberg is using QAlert CRM software in their call center.

Citizens can also create trouble tickets themselves on the Dyersburg website, and the system automatically routes the complaint to the appropriate department to resolve the issue. Someone from the city must respond to the citizen within 48 hours with the status of the complaint. If the issue is not addressed timely, the ticket is automatically forwarded to that person's supervisor. If it is still not addressed, it's automatically forwarded to the mayor's office.

Citizens in Dyersburg can also browse the knowledge base online, sparing them the need to dial the call center for information about city services and rules. Someone can search topics ranging from housing to storage of junk, and what number to call to file a complaint.

## **311 AND MUNICIPAL BUDGETS**

When Baltimore became the first city to introduce 311 for non-emergency calls, no one was sure where it was all headed. Their call center now handles almost 1 million calls a year and many other cities have followed suit and instituted 311 call centers.

With the 5-year recession squeezing municipal budgets, all expenses have been under scrutiny. And 311, despite its popularity with both chief executives and citizens, are also being examined. The past few years have seen the costs of 311 calls, and 311 call centers receiving a much closer look. A recent 15 city study by the Pew Charitable Trust found that the average cost per 311 calls is \$3.39. Detroit had the highest cost per call at an alarming \$7.78. Given that many cities handle hundreds of thousands of calls per year, those costs add up dramatically, causing some to question whether constituent convenience is worth the price. Detroit has recently closed their call center due to the cost and their other fiscal woes.

The 311 call centers around the country were originally expected to save cities money by prompting municipalities to operate more efficiently, but according to Stern Consulting (a 311 consultant for 10 years), that hasn't necessarily played out.

Where is the expense in a 311 call? According to Stern, 70 to 80 percent of a call center's cost is tied to employee compensation. The next highest costs are attributed to software and hardware. Due to cities accounting for 311 costs many different ways, makes one on one budget comparisons difficult, confusing things even more. Yet, it appears that in the majority of cases, providing 311 services is not inexpensive. Given budget challenges facing almost all communities nowadays, are there better options for delivering non-emergency service.

Several cities have recently launched online options. Baltimore, in 2011, expanded its 311 service through a mobile app that lets citizens use their smart-phones to report problems and request services. New York, realizing answering voice calls is expensive, has tried to shift more traffic online. But the call volume hasn't slowed that much. The city hopes they will start to reach an audience that is much more comfortable using mobile apps and smart-phones and that 311 calls diminish although they may only be reaching a new audience and not necessarily cut back on the 311 phone use. Given that online alternatives to 311 are generally inexpensive to launch, communities have little to lose by offering it.

Another method to cut back costs of talking to a live operator is the use of interactive voice response systems. This way, systems provide information while citizens are on hold so they may not have to talk to someone live.

Cleveland launched its 311 service at the lowest point in the recession, and feels it has been worth the cost so far. They expected the system to cost \$1 million and employ 15 call takers to

support an anticipated one million calls. Currently, they have seven call takers and 400,000 calls, so they have spent less than expected.

Regardless of the cost, most city chief executives agree that 311 call centers are the city's "front door" and welcome mat, and that finding a way to fund them even in tight times is probably worth the effort. Most Mayors and Managers want the human interaction that a 311 system offers. They realize that a human touch is important to their constituents. That is why Mayor Menino insisted that his people answer the phone.

### III. ISSUES/DECISIONS

Throughout this study, a number of important questions have been raised. The answers to these questions will determine how we move forward towards possible implementation of a regional 311 call system for the Merrimack Valley and what that system will look like. **This report has emphasized that a regional call center is not intended to be a money savings operation. Call centers are expensive. The average cost per 311 calls nationwide is \$3.39. A regional call center with four or five of our cities/towns participating could easily receive 100,000 calls per year.**

The goal of establishing a 311 system is to provide better customer service for the residents of the towns and cities which may choose to participate. Also, it can provide chief executives and department heads a tool to more effectively and efficiently do their jobs. But, like many things the type of 311 service established will affect the degree of effectiveness. This report includes a “Best Practices” section and a section discussing the “Criteria for an Effective 311 System.” These sections should be read carefully. Decisions made as Merrimack Valley communities move forward from this report will dictate how well and how effective a regional 311 system will work. If deemed feasible to go forward with a 311 regional call center, it may well be the first multi-jurisdictional and multi-governed regional 311 call center anywhere in the country.

#### **Important issues to be addressed:**

**Need** – As discussed, most 311 systems have been put in place because of existing poor customer service. If residents now calling or emailing the regions city/town halls get their calls/emails answered promptly and get their issues resolved timely, then a 311 system is probably not needed. A 311 system may improve upon that service, but only if done properly. If the development of a 311 system does not improve customer service, valuable time and money and political capital may be lost.

**Leadership** – There will need to be strong leadership from the top executives to make the 311 call center work properly. The Mayors and Managers need to buy in completely and need to inform their department heads to buy in and do whatever is necessary to make it work. A partial effort will result in failure and then credibility is lost.

**Finance** – It has been repeated and needs to be stressed that development and operation of a 311 call center is not a budget saver. It is reasonably expensive to start and to operate. The City of Somerville’s annual 311 budget is \$530,000. Startup cost in Somerville back in 2005 was approximately \$50,000. The Mayors/Managers need to determine how to fund the regional 311 center.

**CRM Package** – The Mayors/Managers will need to decide on the most important aspect of the 311 system and that is the CRM package which is explained in detail earlier

in this report. There is low end CRM software and high end and the capability and data storage of the differing types is crucial to the effectiveness of the system and the information provided. A very intelligent CRM will be needed for a multi-jurisdictional system.

**Start-Up Implementation** – If deemed important and feasible to proceed with a regional 311 system, the implementation timetable will need to be determined. All research indicates a gradual, soft start is best, but this will be an important decision to make. Also, the Mayors/Managers of each participating municipality need to determine which services get shifted to 311. For example, DPW and Health Department information may be easy to shift to 311 because it is fairly straightforward, whereas Building Department information may be too complex because it could easily involve zoning questions such as setback requirements and allowed uses in different zoning districts, etc making it more difficult. Somerville has 20 departments involved on their 311 system. In addition, the departments involved must be committed to the 311 call center and must furnish the center with the necessary information on their respective departments. It is vital to keep the flow of information moving. There will be a tremendous amount of information to gather.

**On-Going Implementation** – Constant updating of the information stored for the call takers is vital to the success of a 311 call center. Someone in each community involved needs to be in charge of this. The information on trash pickup schedules, departmental hours of operation, the person or department in charge of different tasks, etc, changes over time – it is not static information. Constant updating of information is necessary so that constituents receive the correct information each and every time they call.

#### IV. SURVEY OF MASSACHUSETTS 311 CENTERS

The communities of Somerville, Newton, Malden and Springfield were interviewed for this study as those communities and their 311 operations appeared that they would be most comparable and best align with the system the communities in the MVPC region might put forth. In the research for this report, several communities across the country that operate 311 call centers had been analyzed and discussed and the results of those studies proved very valuable to understanding the nature and intricacies of 311 call centers.

Malden: The City of Malden is currently putting forth a 311 call center and it is not completely up and running at this time, but discussions with Malden were very helpful in pointing out the complexities in starting a call center operation. Malden is putting forth what they admit will initially be a fairly low-end call center operation. The CRM software used is called Gov-QA and is on the lower end of the spectrum in terms of price and functionality. Malden anticipates their annual operating expenses to start to be approximately \$12,000/year plus expenses for staff which has not been determined at this time.

Newton: The City of Newton has a 311 call center up and operating but it is a relatively new city hall initiative begun by the current Mayor because he saw a need for improved customer service as he was running for office. The call center operates from city hall using a staff of 3 people that were currently employed by the city. The center is open weekdays from 8:30–5:00 and 8:30–8:00 on Tuesdays. Like Malden, Newton uses the web-based Gov-QA CRM software. The call center manager states that start-up costs were approximately \$14,000 and that annual operating cost is currently \$17,000, but that is only for the database system. Employee costs were not revealed, but it can be anticipated they would run from \$180,000 to 220,000 per year for three call takers. The system currently is somewhat low key and the city hopes to grow and expand the system as budget constraints allow. They receive 150-200 calls per day or 39,000 to 52,000 calls annually. The 311 call center is used together with an improved web site that allows citizens to report and comment on a myriad of different topics and issues.

Springfield: The City of Springfield's 311-call center opened in 2008 with a start-up cost of \$90,000. Their FY-11 call volume was 161,000, but it is currently reported that between 15,000 and 19,000 calls are handled monthly. The operating budget for the call center in FY-12 was \$400,883. The 311-center employs a staff of 10 full time employees and the call center is open from 7:00 a.m. to 4:30 p.m. The 311-call center handles all calls to city hall and is the primary source and contact for 18 departments within the city. Springfield uses the Intelligov software as a service request system. Springfield reports that they handle 80 % of all calls without a transfer, and they have multi lingual call takers and access to language lines. Like Somerville, Springfield agrees it is far better to equip the call takers with enough information so that calls are not transferred. It allows departments to handle their important goals.

Somerville: The City of Somerville has a nationally recognized 311 call center operation. The city was cited in many of the research articles used in preparation of this report for its excellent operation. The MVMMC should regard Somerville as the city most suitable for comparison and most representative of the 311 system that should be studied. Somerville's 311- center began in 2005 at a start up cost of approximately \$50,000 and in 2005 the staffing level for the center was 3 people. The call center currently receives 95,000 calls per year, has a staffing level of 10 full time people and 4 on-call or temporary people, and has an annual operating budget for the 311-call center of \$530,000. Somerville uses Intelligov as their CRM package. The Somerville call center is available 24 hours a day. Somerville handles 20 departments in its 311-call center.

Discussions with the City of Somerville reinforced the thought that if MVMMC moves forward with a 311-call center, it is important to do it properly and completely. Any participating municipality must buy-in to the process 100%. Somerville reiterated many times that to be successful you need strong leadership and commitment.

## Merrimack Valley Planning Commission Survey of Massachusetts 311 Centers

Survey Questions	Malden	Newton	Springfield	Somerville
<b>City Population</b>	59,450	85,146	153,060	75,754
<b>311 Center Status</b>	In Progress	Up and Running - but new	Opened in 2008-in operation 5 years	Opened in 2005 - in operation 8 years
<b>Description</b>	"fairly low-end call center operation"	...begun because of a "need for improved customer service.." The City hopes to expand the system when budget allows.	Call center handles all calls to city hall and is the primary source and contact for 18 depts. Multi-lingual staff and use a language service.	Nationally recognized 311 call center operation, handling 20 depts. (most suitable for comparison). Multi-lingual staff and use a language service.
<b>Hours of Operation</b>	Unknown	Weekdays: 8:30-5:00 and Tuesdays 8:30-8:00	7:00-4:30	24 hours a day
<b>CRM Software</b>	Gov-QA	Gov-QA	Intelligov	Intelligov
<b>Staff</b>	Not determined at this time	3 people currently employed by the City	10 Full time employees	Began with 3 people and currently have 10 full time employees and 4 on-call or temporary employees
<b>Volume of calls</b>	Unknown	150-200/day or 39,000 to 52,000/year	15,000-19,000/month or 180,000-240,000/year	95,000/year
<b>Costs:</b>				
<b>Start-up</b>	\$12,000	\$14,000	\$90,000	\$50,000
<b>Currently per year</b>	n/a	\$17,000	\$400,883 (FY12- includes staff)	\$530,000 (includes staff)
<b>Staff</b>	Unknown	\$180,000-220,000 (estimated)	Included above	Included above



## **V. Recommendations:**

Based on the research and analysis presented in this report and our discussions with the communities in Massachusetts operating 311 call centers and with the Essex County Regional Emergency Communications Center, MVPC has compiled a list of recommendations using the best practices categories described on page 9.

### **Usability**

When citizen's call into a center, the ease of use is critical for success, therefore, the 311 call center should limit the number of transferred calls by fully training operators and by purchasing a CRM system capable of handling a large amount of data (critical for multi-community use) and scripts that help the call taker quickly and efficiently respond to the inquiry. The CRM package purchased needs to be one needing as little customization as possible. This will reduce costs down the road. Initially, the center should operate from 8 a.m. to 5 p.m. five or six days per week. The center should use a language service to deal with multi-lingual needs. The service should also allow for citizens and municipal managers to track requests and provide for "follow-up" to determine when the service was completed.

### **Service**

The center should provide both information and process service requests directly, and be an incident based rather than a caller based system. Those communities using the new CMMS software should connect the 311 inquiries into the CMMS service request access module. Those communities without a work order process should develop a protocol to process requests received.

### **Operations**

The center should process not only phone inquiries, but also web inquiries received through available avenues such as see-click-fix, citizen-connect, and community website inquires. The CRM system should accommodate GIS technology to insure that the information received about an address is correct so that the issue can be resolved. All MVPC communities have existing GIS data and capacity.

### **Leadership**

If a 311 call center is established, it will result in a "sea change" for those municipalities that pursue its creation. There will be a need for strong CEO leadership as the municipal managers will be asked to accept this change and keep up with the consistent data management that will be required to make the center a success. There will also be a need to identify a single point of contact and a manager that can respond quickly and effectively with the center regarding

operational needs. In addition, municipalities need to be responsible for “advertising” the 311 center. A robust advertising campaign is crucial. People won’t use 311 if they are not aware of 311.

### **Management and Budget**

The 311 call center should be operated in conjunction with the Essex County Regional Emergency Communications Center and managed with a management committee comprised of the CEO’s of the participating municipalities or their designee. The committee should meet on a regular basis to provide policy and ultimate oversight. The 311 call center should be separate from the existing 911 emergency call center. The 311 center can have its own call takers or call takers can be crossed trained to work both 311 and 911 functions, but the centers should not be integrated; meaning that both 311 and 911 calls should not be answered by the same operators during the same time period.

In terms of a budget proposal, much will depend on how many communities and how many departments in those communities will participate, and of course this number may evolve and grow over time.

**Labor** - The labor cost as quoted from the Essex County Regional Emergency Communications Center is \$29.88 per hour. We are recommending the center initially be open from 8:00 a.m. to 5:00 p.m. five days per week. The number of communities participating and the total number of residents being covered by the call center will drive the number of call takers needed. We would anticipate beginning with no less than three call takers working on any given day of the week. Total annual labor cost would therefore be approximately \$209,758.

**Customer Relationship Management System** – We recommend using a CRM of a caliber no less than what is being used in Somerville and Springfield. Both cities use InntelliGov CRM/311 software and the cost is approximately \$60,000 per year.

**Multi-Lingual Issues** – The City of Springfield and the City of Somerville both have multi-lingual call takers and they both also use a language translation service. A language service is on the state’s contractor list and the fee for this service is .79 per minute. Obviously it is impossible at this time to estimate an annual cost for this service without knowing which communities will participate.

**Miscellaneous Costs** – Miscellaneous costs (especially in the first year) would include such things as computers, phones, and office supplies. We anticipate these costs would not exceed \$20,000.

**Total Cost and Proposed Fee** – The total first year cost for developing and operating a 311 call center from the Essex County Regional Emergency Communications Center in Middleton is anticipated to be approximately \$290,000. As noted above, this anticipates a staff of three call takers to initially operate the center. This number will change significantly if more call takers (or less) are required. Also, if a more robust CRM system is determined by the MVMCC to be needed, than the cost could increase dramatically. At the present time, it appears the most reasonable method of dividing the cost among the participating municipalities will be a fee based on community population. It stands to reason that the larger communities would have more calls placed into 311 simply because they have more people. Therefore, the more populous communities of Lawrence, Haverhill, and Methuen will pay more than will a Groveland or Georgetown. Once the system is being utilized, we may find that a community such as Newburyport with a population of 17,000 places more calls into the system than North Andover with a population of 28,000, and if that happens, adjustments will have to be made and a fee based on volume may need to be designed.