TOWN of LEVERETT

BUSINESS CONTINUITY & SYSTEM IMPROVEMENTS | JULY 2017
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Photo Credit: Wiki Commons – John Phelan

EXECUTIVE SUMMARY

The Town of Leverett signed a Community Compact agreement with the Baker-Polio Administration in August 2015. The Town adopted the Business Continuity best practice and partnered with the Office of Municipal and School Technology at MassIT to develop a Business Continuity Plan (BCP) as well as a strategy to connect Town employees though a high speed, common network. Utilizing Community Compact funding, Leverett procured the services of Haas Networks to perform a comprehensive IT assessment and lay out their findings and recommendations in the form of an IT roadmap the Town can follow. The final assessment report helped the Town identify and prioritize manageable projects, as it uses a modular approach that can be built upon as more funding becomes available. The BCP documents developed were informed by the results of the final assessment and, as a result, the Town is more resilient against potential threats.

Community Profile

Located in Western Massachusetts, the Town of Leverett neighbors the "Five College Consortium" consisting of Amherst, Hampshire, Smith, Mount Holyoke, and the University of Massachusetts (Amherst). The Town has an abundance of scenic landscapes and is home to the first Peace Pagoda in the United States at the top of Cave Hill. In recent years, Leverett has been noted as a leader both nationally and internationally with their "fiber to the home" initiative.

Population is 1,851 [2010 US Census]
Annual Budget is $5.9M [FY 2018]
Median Household Income is $83,333 [2010 US Census]
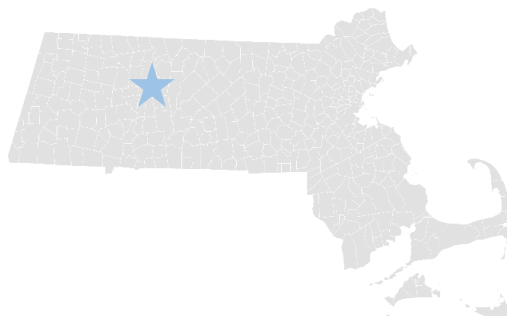In Partnership With :

Photo Credit: Flickr – Laura LaRose at the Peace Pagoda
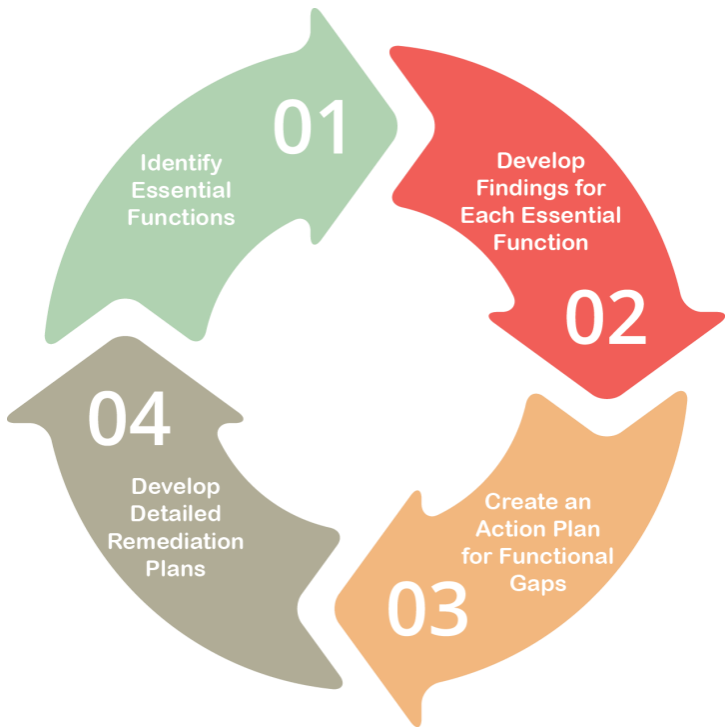
PROJECT BACKGROUND & PROCESS

The Town of Leverett became a member of the Community Compact Cabinet in 2015. MassIT's Office of Municipal and School Technology worked with the Town Administrator, Marjorie McGinnis, to develop business continuity documentation that can be referenced should a service disruption occur. Concurrently, the Town hired Haas Networks in 2016 to complete a comprehensive assessment of their IT environment, the assessment results included findings and recommendations that served as an IT roadmap.

Leveraging the state-wide middle mile broadband network, the Town of Leverett recently completed a last mile high speed fiber connection to every household in their community, in addition to their municipal facilities. With this new network expansion in place, Town officials began to examine how they could best connect their municipal employees, via their computer workstations and telephones, through an independent network to provide a higher level of security and consistent, automated back-ups for the munipal employees' computers.

Each employee uses an individual personal computer and back-ups are completed on a one-off manual basis, with the exception of the databases that are supported by a third-party vendor. A committee was formed to assist the Town in evaluating what type of disaster recovery and back-up plan would best meet the needs of employees, departments and the public while creating a better standardized and sustainable system.

Business Impact Analysis Overview

In partnership with MassIT's Office of Municipal and School Technology, Leverett leveraged MassIT's Business Impact Analysis (BIA) process to identify and prioritize recovery timeframes for business functions and applications by assessing the tangible and intangible impacts of a potential interruptive event. This process consists of four essential steps, which were repeated, cyclically, until the findings were complete and documented in a BIA master document:

- **Identify Essential Functions**

- **Develop Findings for Each Function**

- **Create an Action Plan for Functional Gaps**

- **Develop Detailed Remediation Plans**

Step 1: Identify Essential Systems

In this first step, the Town Administrator identified a list of the Town's essential systems which constituents heavily depend upon. Following that, recovery time objectives (RTOs) were identified. An RTO is the maximum amount of time a business service can be unavailable without causing unacceptable consequences. In addition to RTO's, recovery point objectives (RPO) were also documented. An RPO is the maximum amount of data that can be lost before it becomes unmanageable to reconstruct. Below is a list of systems that support the Town's essential functions, and services, via Town departments.

ES#	SYSTEMS THAT SUPPORT ESSENTIAL FUNCTIONS	DEPARTMENT(S)	Priority
1	Two-Way Radio System	Police, Fire, Highway	1
2	Connection to state police database via fiber	Police	1
3	Fire alarm control systems – installed in all Town buildings. Each system required two paths of	Fire Department, All Other Town Departments	1

	communication. Currently, the two paths are both Verizon telephone lines.		
4	Phones	North Leverett Fire Station, Public Safety Complex, Elementary School, Village Coop, Public Library, Town Hall	1
5	Internet	Town Hall, Elementary School	2
6	WiFi	Town Hall, Elementary School	3

Step 2: Develop Findings for Each System

Leverett's Town Administrator identified gaps for the systems documented in the previous step.

For example, the Leverett Police, Fire, and Highway departments depend on essential systems in order to achieve their RTO and RPO goals. One of the systems they depend on is a two-way radio system that allows staff to communicate effectively with one another from various locations within Town:

ES#	DEPARTMENT	ESSENTIAL SYSTEM	GAP IDENTIFIED	GAP FINDING
1	Police, Fire, Highway	Two-Way Radio System	Poor Radio Coverage	Challenges identified with radio coverage throughout the Town, due to Leverett's rural, hilly terrain with heavy tree canopy.

Step 3: Create Action Plan for Gap Findings

Leverett developed an action plan to get the current state of the Town's network and radio technology evaluated by an IT consulting firm to identify ways it can be improved.

ES#	ESSENTIAL SYSTEM	GAP IDENTIFIED	GAP FINDING	ACTION PLAN
1	Two-Way Radio System	Poor Radio Coverage	Challenges identified with radio coverage throughout the Town, due to rural, hilly terrain with a heavy tree canopy.	The Town hired Haas Networks to assess the state of their network and radio environment and create a roadmap towards improving that infrastructure.

Step 4: Develop Detailed Remediation Plans

The Town asked Haas Networks to develop their IT assessment report using a roadmap format so Town officials can easily communicate and plan for next steps. Remediation plans include their recommendation to develop and implement an "IT Future State" and "Budget and Implemendation Plan". The plan would include the network and radio topology diagrams and details completed by Haas. The development and consideration of these diagrams close the gap identified in steps two and three by providing suggested improvements to the Town's network and telecommunications infrastructure.

IT Assessment Overview

Haas Networks performed an assessment of Leverett's technology environment in August of 2016 to provide the Town with an understanding of how their technology infrastructure was operating. Haas conducted staff interviews, site reviews, and created a report on general operations to help the Town plan and budget for future IT improvements. They explored various locations of Town IT including: Town Hall, the Public Library, the Elementary School, the Public Safety Complex, the Transfer Station, and the North Leverett Fire Station. Haas also reviewed potential municipal IT functions that might be installed at the location of the Leverett Village Coop, a center of community activity at the eastern edge of the Town. The assessment also addressed other challenges the Town was facing, such as a lack of funding and limited in-house IT support. The following information systems - a combination of software and hardware - were reviewed by Haas Networks and their current states were documented in the final report:

Applications and Systems	Support Systems
• Computer and printers • Software applications • WiFi • Data storage and back up • Email • Telephone • Video surveillance and Alarms • Two-way radio system	• Battery backup power • Generator backup power • Equipment locations • Cabling • Racks, pathways, entry points • Network • Cyber security

The assessment identified several areas within Leverett's existing IT structure that could be improved, including:

- Disaster recovery for mission critical systems
- Foundation Core IT Infrastructure
- Backup strategy and Plan (in support of geographically dispersed backups)
- Policies and procedures
- Disparate networks for Town hall, school, and public safety
- Paper document digitization

Haas Networks provided guidance on next steps, including encouraging the Town to develop the "IT Future State" and "Budget and Implementation Plan" documents, mentioned in step four of the BIA process, to further develop the roadmap for an effective and secure municipal IT environment. They recommended taking advantage of the Town's fiber optic broadband network to simplify operations, increase productivity, and improve security.

Conclusion

Leverett has demonstrated its commitment to improving technology services for its constituents. Like many municipalities, they have been challenged to meet the increasing demands for technology with limited financial and staffing resources. However, with assistance from the Community Compact program, Leverett was able to accomplish a multitude of technology-focused initiatives.

Site reviews of Town Hall, the Public Safety Complex, and Library, resulted in the creation of an IT future state roadmap for the Town. Leverett now has network topologies, designs, and documentation of their current and proposed future IT state. They have received similar documentation from Haas for their wireless communications.

With the IT assessment and BIA complete, the Town is well positioned to fully execute their technology upgrades. They now have a clear understanding of how they can achieve most, if not all, of their technology goals. Recently, Leverett was awarded a grant through the highly competitive Community Compact IT Grant Program. The grant will fund the installment and implementation of a townwide network, which will address gaps identified in the BIA and IT assessment.

Designing a roadmap gave the Town of Leverett a strong foundation for future IT deployments. Planned network improvements will enable a secure, centrally maintained operating environment for municipal government and public safety telecommunications. The Town can leverage the roadmap until they've achieved an optimal work flow and IT environment.

"Leverett has been pleased with this process and the Community Compact program, which has allowed the town to examine and strengthen some of our functional weakness and exposures. With the help of MassIT, the town has now developed a plan for addressing our IT exposures and even has secured the funds to complete the first step of it. We will continue to seek funding to address other components of the plan in the future."

Marjorie McGinnis, Leverett Town Administrator