

## Proposal for 2021 Collaboration Project on Municipal Cybersecurity

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The [MassCyberCenter](#) and the [Cyber Resilient Massachusetts Working Group](#) (Working Group) have been pursuing initiatives aimed at bolstering municipal cybersecurity and resiliency in Massachusetts. In October 2019, the Working Group released a [Municipal Cybersecurity Toolkit](#) (Toolkit) to help municipal leaders assess the cybersecurity posture of their municipality and figure out next steps for protecting their municipal infrastructure against cyber threats. The Working Group recently released the [Minimum Baseline of Cybersecurity for Municipalities](#) as part of its Toolkit. The Working Group and the MIT Cybersecurity Clinic (The Clinic) are proposing to spend the next year working together to develop new ways of presenting the proposed Minimum Baseline of Cybersecurity for Municipalities, and getting feedback and suggestions from a sample of cities and towns in the Commonwealth regarding ways to support implementation of the Minimum Baseline.

### The Minimum Baseline of Cybersecurity for Municipalities

The purpose of defining a Minimum Baseline - the foundational level of cybersecurity for which municipalities should strive - is to give municipalities clear goals and metrics to measure their progress.

The Minimum Baseline is built on four goals:

1. ***Trained and Cyber-secure Employees*** – to reduce the risk of cybersecurity incidents by improving the training and awareness of all system users.
2. ***Improved Threat Sharing*** – to achieve a faster response to threats and improved regional awareness and resilience.
3. ***Cyber Incident Response Planning*** – to create an effective strategy for responding to incidents and strengthening municipal defenses.
4. ***Secure Technology Environment and Best Practices*** – to reduce the threat of incidents and minimize incident impacts.

Each goal includes a description of what communities should be trying to achieve and how they can build their local capacity.

MassCyber and the Clinic are searching for the best ways of presenting the Minimum Baseline to cities and towns so that municipalities with different levels of cybersecurity capacity can fully comprehend, ask questions about, and formulate implementation strategies to help them achieve the four goals.

### **MassCyberCenter and The Clinic:**

The MassCyberCenter leads the Cyber Resilient Massachusetts Working Group (CRMWG) and other initiatives aimed at improving the resiliency of the Commonwealth's 351 municipalities. The MassCyberCenter and CRMWG have partnered with The Clinic and Professor Larry Susskind on several initiatives, including providing input on a role-playing cybersecurity tabletop exercise for municipalities, and recommending cities and towns for vulnerability assessments.

MassCyberCenter will not provide funds to support this project. The MIT Clinic will identify and tap appropriate student volunteers to help the MassCyberCenter achieve the next phases of the work outlined below.

<b>Purpose:</b>	The purpose of this research project is to make the Minimum Baseline of Cybersecurity for Municipalities (Minimum Baseline) more understandable to public officials and interested citizens, while identifying and developing – with input from a sample of cities and towns – ways of making it easier for municipalities to achieve their objectives.
<b>Objectives of Project:</b>	<p>Using a range of research tools and methods, the Clinic will assist the Working Group and MassCyberCenter in:</p> <ul style="list-style-type: none"> <li>• Reviewing the four goals of the Minimum Baseline with Commonwealth cities and towns to determine reaction;</li> <li>• Gathering feedback from a sample of municipalities regarding the obstacles they foresee and the help they need to comprehend and implement the Minimum Baseline; and</li> <li>• Identifying tools and capacity-building assistance that will create new opportunities for municipalities to implement the Minimum Baseline.</li> </ul>
<b>Timeline for Project:</b>	January 2021 – December 2021
<b>Project Management:</b>	<p>The project will be managed on the MIT side by Professor Larry Susskind, Mr. Jungwoo Chun, and Ms. Avital Baral.</p> <p>MIT students in the Clinic will receive academic credit for their work on this project. One or two students will also be paid a stipend to cover the time they put in time beyond their regular Clinic obligations.</p>

***PHASE I: Gauging Reactions to the Proposed Minimum Baseline.***

*Present the Minimum Baseline to a subset of Commonwealth cities and towns to help determine their ability to understand and implement the goals. Gather reactions and feedback to report back to the Working Group, and recommend changes to the Minimum Baseline to make it easier for municipalities to understand and implement each of the four goals.*

The Working Group would like to be certain that the Minimum Baseline of Cybersecurity is easy to consume, yet robust enough to provide municipalities with a blueprint for protecting their networks and systems infrastructure from cyberattack.

1. Focusing on the four goals of the Minimum Baseline, The Clinic will
  - Review the resources and tools currently available to cities and towns in the Commonwealth to meet the four goals;
  - Gather reactions from a sample of municipalities to the way the Minimum Baseline is currently presented;
  - Make recommendations regarding additional resources or tools to supplement the current Minimum Baseline capacity-building support available from MassCyber
2. Using available municipal cybersecurity data, the Clinic will help the Working Group assess the range of challenges facing municipalities of different size and levels of preparedness in implementing the Minimum Baseline.
3. Students and Clinic staff will attend regular working group meetings, report on their progress, and discuss challenges with MassCyber staff and affiliates.

## **PHASE II: Outreach**

*Gather data and interview municipalities to understand more about the obstacles likely to surface in implementing the Minimum Baseline of Cybersecurity for Municipalities:*

The Working Group would like to understand the challenges municipalities will face as they try to implement the Minimum Baseline. The Clinic will use semi-structured interviews and surveys to help identify the support municipalities want and need to implement the Minimum Baseline across the Commonwealth.

Clinic students and staff will:

- Create a set of questions that can be used in a set of semi-structured interviews with municipalities
- Identify a subset of the Commonwealth's 351 municipalities to interview
  - Include a range of municipalities by size and form of government
- Interview municipalities, and for each:
  - Determine their current level of cybersecurity readiness in light of the Minimum Baseline goals
  - Identify challenges they feel they will have in implementing the Minimum Baseline
    - Analyze how challenges are likely to differ, depending on the size or form of government or other municipal attributes.

## **PHASE III: Generate a Preliminary Process Design along with possible new Tools & Programs**

*Given an analysis of the results of Phase II, the Clinic will create a preliminary design of the possible steps, processes, and technologies that cities and towns could use to implement the Minimum Baseline and recommend programs for the Commonwealth to develop in support and encouragement of the implementation process.*

The Working Group wants to identify and develop tools and programs to help municipalities overcome the challenges they are likely to face as they implement the Minimum Baseline. This phase will emphasize:

- Suggesting a proposed process design that cities and towns can use to reach each of the Minimum Baseline goals
- "Testing" the proposed process design by reviewing it with a sample of public officials
- Sharing with MassCyber the most likely obstacles to implementing the proposed process design so they can identify and develop programs to support and encourage municipalities