



# **Vermont Public Safety Communications System Inventory and Assessment**

Final Report

*Prepared April 2025*

**Vermont Public Safety Communications Task Force**

**M MissionCriticalPartners**

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# 1 Introduction

Recognizing the importance of protecting public safety and welfare, the General Assembly of the State of Vermont enacted Act 78. In Act 78, the “General Assembly finds that protecting public safety and welfare an essential function of State government and it is in the public interest to establish a statewide reliable, secure, and interoperable public safety communications system, comprising integrated 911 call-taking and regional dispatch systems, and to ensure that the system is equitably and sustainably financed and universally accessible by all persons throughout the State.”<sup>1</sup> The General Assembly created a temporary Public Safety Communications Task Force (Task Force) to oversee and manage all phases of the communications system’s development, design, and implementation<sup>2</sup>.

Following the adoption of Act 78 in 2023, the Task Force identified the need to obtain a professional services consulting firm to serve as the technical consultant to assist the Task Force with providing expertise and recommendations.

Mission Critical Partners, LLC (MCP) was selected by the State to provide system planning expertise. MCP worked closely with the Task Force and Televate, LLC, the State’s project management consultant, on the following:

- A review of the existing governance models and communication standards
- A complete and thorough inventory of all pertinent information related to dispatch services in the state (*this document*)
- An analysis and evaluation of potential statewide public safety communications dispatch models
- Preliminary and final design models
- Support for the reports required for the State legislature

Within the state of Vermont, there are 37 communications centers. Six of these centers are public safety answering points (PSAPs) that provide both 911 call-taking services for the Vermont Enhanced 911 Board as well as dispatch services for partner agencies. Twenty-five of the communications centers only provide dispatch

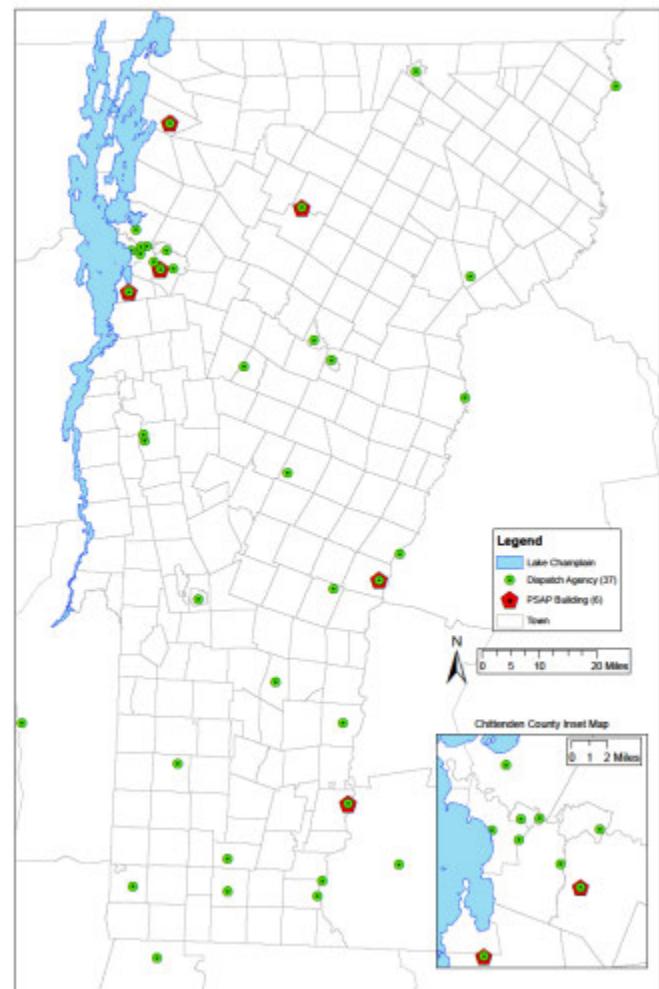


Figure 1: Vermont PSAP and Dispatch Center Locations

<sup>1</sup> [Pages from H-0494 As Passed by Both House and Senate Official c114toc116.pdf](#)

<sup>2</sup> Ibid.

services for one or more municipalities, and six are out-of-state dispatch centers that provide dispatch services to some Vermont emergency responders.

The approach of having a small number of PSAPs combined with a large number of dispatch-only centers is common among New England states. However, it is not considered an industry best practice due to the inherent transfers of 911 calls embedded in the public safety communications system. The strategy to navigate the challenges that Vermont faces with this model is to first fully understand the current emergency communications landscape within the state and to recognize stakeholder needs and concerns. Overcoming the identified challenges may then allow the State to build a cohesive and coordinated plan for a reliable, secure, and interoperable statewide public safety communications system.

This is a challenging task that includes almost every aspect of today's public safety ecosystem:

- Communications center operations
  - Continuity of operations (COOP)
  - Training
  - Staffing
  - Policies and procedures
  - Alternative response
  - Governance agreements
  - Supervisory and executive leadership
- Wireless communications
  - Land mobile radio (LMR)
  - Commercial cellular, mobile data, and voice (including FirstNet)
- Dispatch facilities (renovation/expansion versus new facilities)
- Geographic information systems (GIS)
- Technology (computer-aided dispatch [CAD]/records management system [RMS])
- Cybersecurity
- Networking (redundancy and failover)
- Budget and funding models

MCP utilized a deep bench of subject-matter experts (SME) across all aspects of the firm to collect, compile, and produce this inventory and assessment report. These and other SMEs provided support to develop a statewide inventory and assessment of the 37 communications centers that provide 911 and dispatch services. This report includes an individual blueprint analysis and inventory for each of the 37 communications centers (Sections 4 – 6) as well as a comparison between national trends and insights alongside MCP's findings (Section 3).

This process was a collaborative effort of the Task Force, Televate, MCP, and PSAP and dispatch center stakeholders. Serving as the project core team for this engagement, the Task Force and Televate assisted MCP in its assessment by coordinating introductions, supporting data gathering efforts, and overcoming obstacles.

MCP's findings, articulated in Section 3, Trends and Insights, underscore the need for a collaborative approach to address the challenges faced by many communications centers, including staffing shortages, outdated technology, and limited resources. The report further highlights the importance of addressing the state's fragmented wireless communications system and the need for robust cybersecurity measures to protect sensitive data and ensure the continued operation of critical communication systems. The information provided, although not complete because agencies did not provide the requested information or could not due to systems not being able to report the data, indicates that across all PSAPs and dispatch centers, 282 full time and 82 part time staff are employed that handle an average of 242,932 calls made on 911 lines (call)<sup>3</sup> and 541,279 incidents

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<sup>3</sup> "Call is a generic term referring to any request for public safety assistance, regardless of the media used to make that request. This term may appear in conjunction with specific media, such as "voice Call," "video Call," "text Call," or "data-only Call" when the specific media is of importance...." <https://kb.nena.org/wiki/Call>

per year. Based on a number of variables highlighted throughout this inventory and assessment report, the cost for these services ranges between \$27,169,576 and \$34,556,502. These costs would increase by approximately \$2,914,478 for a total of \$39,688,422 if the recommended staffing adjustments to meet industry standards were implemented. This does not include the State's costs for providing 911 call-handling equipment, Valcour computer-aided dispatch (CAD), or mandatory 911 call-taker training.

MCP's conclusion that the state's public safety communications system needs significant improvement is supported by several key areas of concern highlighted in the reports:

- Lack of a cohesive statewide system
- Operational inefficiencies and lack of strategic inclusion
- Staffing shortages and inefficiencies
- Training gaps and dispatcher health and wellness
- Technological limitations and infrastructure issues
- Lack of failover/backup capabilities
- Fragmented public safety wireless environment
- Cybersecurity vulnerabilities

The content of this inventory and assessment report will be key to the next steps in this project, which include a series of planning workshops. The results of those workshops will further assist MCP in developing recommendations and a plan for a reliable, secure, and interoperable statewide public safety communications system that is:

- Equitably and sustainably financed and universally accessible by all persons throughout the state, and
- Enhances, strengthens, and builds upon previous efforts and initiatives.

Addressing the findings in this report as part of the development of a system plan for the desired reliable, secure, and interoperable statewide public safety communications system will require a collaborative approach, involving stakeholders from various agencies and organizations.

## 2 Inventory Framework Methodology

During the inventory and assessment process, MCP focused on 12 factors, identified for each PSAP in Section 3, paying special attention to determining opportunities to achieve efficiencies that would mutually benefit the collective 37 communications centers as well as the field responders and communities they serve.

To make practical and actionable recommendations toward the future state, MCP provided a high-level analysis regarding the current state of the PSAPs and dispatch centers that serve the state. These activities opened possibilities for the Task Force members, contracted vendors, and stakeholders to identify opportunities that can contribute to the recommendations regarding the creation of a reliable, secure, and interoperable statewide public safety communications system.

## 2.1 Data Collection and Stakeholder Engagement Strategy

### 2.1.1 Stakeholder Engagement

MCP believes strongly in holistic evaluations that are driven by a comprehensive stakeholder engagement strategy. MCP began our stakeholder engagement by providing a comprehensive survey questionnaire to each PSAP and dispatch center (both in and out of state) to gather highly technical data. This data provides a snapshot in time view of each agency and allows for a comprehensive evaluation of the respective agency.

#### *Site Visits*

Site visits and interviews were conducted with key staff members at each of the 37 communications centers<sup>4</sup> (see Appendix C for the stakeholder engagement schedule).

Public Safety Answering Points (PSAPs)	Dispatch Centers
<ul style="list-style-type: none"><li>• Hartford Police Department</li><li>• Lamoille County Sheriff's Office</li><li>• Shelburne Police Department</li><li>• St. Albans Police Department</li><li>• Vermont State Police – Westminster</li><li>• Vermont State Police – Williston</li></ul>	<ul style="list-style-type: none"><li>• Barre City Police Department</li><li>• Bennington Police Department</li><li>• Brattleboro Police Department</li><li>• Burlington Police Department</li><li>• Colchester Police Department</li><li>• Dover Police Department</li><li>• Essex Police Department</li><li>• Ludlow Police Department</li><li>• Mad River Valley Ambulance Service</li><li>• Manchester Police Department</li><li>• Middlebury Police Department</li><li>• Middlebury Regional EMS</li><li>• Montpelier Police Department</li><li>• Newport Police Department</li><li>• Randolph Police Department</li><li>• Rutland City Police Department</li><li>• Saint Michaels College Fire/Rescue</li><li>• South Burlington Police Department</li><li>• Springfield Police Department</li><li>• St. Johnsbury Police Department</li><li>• University of Vermont Police Department</li><li>• Wilmington Police Department</li><li>• Windham County Sheriff's Office</li><li>• Winooski Police Department</li><li>• Woodstock Police Department</li></ul>
<b>Out-of-State Dispatch Centers</b> <ul style="list-style-type: none"><li>• Colebrook Police Department, NH</li><li>• Grafton County Sheriff's Office, NH</li><li>• Hanover Police Department, NH</li><li>• North Adams Police Department, MA</li><li>• Southwest Fire Mutual Aid, NH</li><li>• Washington County Department of Public Safety, NY</li></ul>	

<sup>4</sup> MCP conducted 38 total site visits; upon visiting Regional EMS, it was determined that this agency does not have a dispatch operation as recorded by the State. Incidents for this agency are processed by a Vermont State Police (VSP) PSAP, which then dispatches these incidents via telephone to the agency.

Each center was visited by two MCP staff between July 14, 2024, and September 21, 2024. Each half-day visit included a tour of the site as well as in-depth interviews guided by MCP's proprietary Model for Advancing Public Safety® (MAPS®) tool (Section 2.2.1).

The wireless communications environment in the state is very fragmented—with the state system and numerous local systems operating within each dispatch center area. MCP determined that there are a total of █ radio sites within the state. Without knowing the path forward for wireless communications, MCP did not conduct radio site visits during this stage as it would have been impossible to know which sites could potentially be included in a future system. Once recommendations are made for possible paths forward, MCP could examine sites for feasibility if desired.

### *Town Hall Meetings and Listening Sessions*

To provide for a comprehensive statewide vision that includes not only emergency communications personnel but also field responders, MCP, assisted by the Task Force and Televate, conducted four town hall meetings to meet with the state's public safety community (see Appendix C for the schedule of the town hall meetings). The town hall meetings provided an opportunity for MCP to provide an overview of the overall project and an opportunity for the state's field responders to provide information on the current emergency communications environment. At each town hall meeting, MCP sought to gain responders' impressions of the state's current dispatch environment by asking:

- What is working well today?
- What is not working well today?
- What does a reliable, secure, and interoperable public safety system look like to you?

The Task Force also sought to receive public input as well. MCP, assisted by Televate, conducted three virtual community listening sessions for the public (see Appendix C for the community listening session schedule). The community listening sessions were conducted in a similar manner to the in-person town hall meetings. An overview of the 911 system and the project were provided, followed by seeking input to the questions:

- What is working well today?
- What is not working well today?

Both the town hall meetings and community listening sessions were recorded, with the recordings posted on the Task Force website.<sup>5</sup>

### *Questionnaires*

To obtain the most information about each agency, while also maximizing the time spent onsite during data collection site visits and interviews, an agency questionnaire was created to obtain a vast amount of information for each agency. The questionnaire, developed in collaboration with the Task Force, collected 125 data points ranging from agency demographics to technology information to call processing and response statistics. Information regarding 911 statistics was provided to MCP separately.

The questionnaire was sent to the 37 communications centers; all but the following completed the survey:

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<sup>5</sup> <https://dps.vermont.gov/committees-boards/communications>

In-state Dispatch Centers	Out-of-state Dispatch Centers
<ul style="list-style-type: none"> <li>• Bennington</li> <li>• Manchester</li> <li>• Winooski</li> <li>• Woodstock</li> </ul>	<ul style="list-style-type: none"> <li>• Hanover, NH</li> <li>• North Adams, MA</li> <li>• Washington County, NY</li> </ul>

As such, the inventory for the agencies that did not respond was completed solely based on the data collected during MCP's onsite visits.

MCP also created a cybersecurity assessment to evaluate the status and effectiveness of each agency's cybersecurity efforts. This survey was developed based on the Secure Controls Framework (SCF) and contains a prioritized set of questions from the SCF related to 77 controls across the standard's 33 operational domains (Section 2.2.4 and Section 8). Of the 37 communications centers that received the cybersecurity survey, 15 agencies completed the survey:

<ul style="list-style-type: none"> <li>• Brattleboro</li> <li>• Colchester</li> <li>• Grafton, NH</li> <li>• Hanover, NH</li> </ul>	<ul style="list-style-type: none"> <li>• Hartford</li> <li>• Lamoille County</li> <li>• Ludlow</li> <li>• Middlebury Regional EMS</li> </ul>	<ul style="list-style-type: none"> <li>• Newport</li> <li>• Randolph</li> <li>• Shelburne</li> <li>• Springfield</li> </ul>	<ul style="list-style-type: none"> <li>• St. Albans</li> <li>• VSP – Westminster</li> <li>• Wilmington</li> </ul>
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Several agencies stated during MCP's engagement efforts that they did not complete the cybersecurity assessment survey because they did not know how to answer the questions. One agency declined to participate on the basis that its answers to the questions could potentially place it in a position that compromises the agency's present cybersecurity.

## 2.2 Analysis Approach

### 2.2.1 MAPS Assessment Considerations and Methodology

MCP's Model for Advancing Public Safety (MAPS) is a proprietary assessment methodology developed internally for determining where an organization stands regarding numerous critical factors. Applying this specific approach, the data collected focused on assessing each communications centers' current inventory and operational landscape across 11 operational factors. Attention was paid to the relationship between governance and organizational structure, operations, personnel levels, training, leadership and planning, quality assurance (QA) and quality improvement (QI), technology systems, response alternatives, facilities, and cybersecurity to measure each factor's impact on each communications center's ability to meet industry metrics. The outcomes of the MAPS analysis will be used to help frame the future proposed solutions for meeting the intent of Act 78 for the planning and implementation of a reliable, secure, and interoperable statewide public safety communications system.

#### MAPS Considerations

##### **Governance and Organizational Structure —**

Does the organization engage in effective/active governance within an organizational structure that supports organizational efficiency? Does leadership engage in effective and active governance? Are

##### **Quality Assurance and Quality Improvement —**

Does the organization engage in call and incident reviews that are based on industry standards and best practices, are conducted regularly, and are based on clearly defined workflows to enable



organizational leaders and dispatchers provided professional development opportunities?

**Operations, Policies, and Procedures** — Do workloads and duty assignments reflect the operating environment, and do they align with industry standards and best practices? Are policies and procedures conducive to effective performance while limiting the communication center's liability?

**Personnel** — Is the communications center's authorized number of full-time equivalent personnel within 5% of the level identified by a staffing assessment? Does the communications center meet national call handling standards? Is turnover minimal? Are open positions filled promptly? Does the communications center's authorized strength reflect the current operating environment? Does the authorized strength enable the communications center to operate the shift schedule it prefers?

**Recruitment and Hiring** — Does the recruitment program engage a broad spectrum of outreach sources and consider external influencers particularly those along municipal and jurisdictional lines? Is the communications center's entry-level compensation competitive? Does the hiring process advance qualified candidates quickly? Does it place as much emphasis on the candidate's skillsets as opposed to determining whether the candidate is a good cultural fit? Does it take too long to fill job vacancies?

**Training** — Does the communications center's training program align with or exceed state-level standards? Does the program align with or exceed national minimum training guidelines or standards developed by NENA<sup>6</sup>, APCO<sup>7</sup>, and NFPA<sup>8</sup>? Does the center experience a high failure rate among new employees?

**Leadership and Planning** — Does the communications center have a strategic plan? Does it have COOP and disaster recovery plans? Is there a succession plan and communication plan for internal and external stakeholders? Does it have a

effective personnel management and error reduction?

**Technology Systems** — Is the organization using technologies that contribute to operational efficiency and not inhibit productivity and are kept current with end-of-life equipment being upgraded or replaced before it fails? Does the organization have service level agreements in place with vendors and are those vendors responsive?

**Response Alternatives** — Are calls unnecessarily entering the communications center that could be managed outside of the traditional 911 or 10-digit line workflow? Are solutions in place to manage calls that may or may not require dispatch but involve repetitive or standard information that does not necessarily need call-taker contact to process? Are technology and novel solutions being considered or in place to manage calls that require response but not necessarily traditional services?

**Facilities** — Does the organization's facility provide an efficient, safe, and functional work environment that promotes system resiliency, employee satisfaction, and adequate space for optimal performance?

**Cybersecurity** — Does the organization have physical and technological measures, as well as policies in place to improve cybersecurity protections? Does the organization proactively monitor its network and systems for unauthorized access? Are employee permissions sufficiently complex to reduce the organization's cybersecurity risk? Does the organization have the organizational process and structure to actively manage the cybersecurity preparedness as risk and vulnerabilities evolve?

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<sup>6</sup> National Emergency Number Association

<sup>7</sup> Association of Public Safety Communication Officials

<sup>8</sup> National Fire Protection Association



change management plan? Are leaders actively engaged with personnel? Are new leaders trained effectively or thrust into the role? Are leaders, including supervisors, trained for the responsibilities of their position?

Since its inception, MCP has conducted hundreds of assessments of clients' public safety communications landscape. These assessments were largely qualitative based on the experience and knowledge of our SMEs. Driven by a desire to introduce quantitative analysis into these assessments, MCP launched the MAPS methodology. The methodology—which is based on industry standards and best practices in addition to our collective expertise—enables officials to immediately discern and understand where their organizations stand regarding numerous factors.

### **Question Set**

MAPS leverages a quantitative and qualitative question set, and the questions are weighted based on importance. For example, short- and under-staffed, minimum personnel per shift, persistent vacancies, ancillary duties, and low training completion statistics would be given greater weight than other factors when considering the ability to meet industry standards.

### **Collaborative Interview**

In addition to the questionnaire results, MCP used the question set in collaborative interviews with an organization's officials and stakeholders. Many questions are asked multiple times to uncover potential discrepancies in the provided answers. Follow-up interviews, where necessary, address disparities and dive deeper into questions for which officials and/or stakeholders may not have provided answers.

### **Scoring and Blueprints**

A vital element of MAPS is a color-coded blueprint that illustrates the status of each factor that was assessed. The traffic light colors specify the following on a 10-point scale:

- Green indicates factors that are at low risk and thus not in need of immediate attention (scores ranging from 7.1–10)
- Yellow indicates those at medium risk (scores ranging from 4.0–7.0)
- Red indicates factors that are at high risk (scores ranging from 0–3.9)

The MAPS scoring and blueprint become the basis of a comprehensive picture of not only each communications center but also a holistic view of the state's entire public safety communications ecosystem. The blueprint will help guide decision-making to determine where efforts and resources need to be placed to shore up areas of weakness statewide and develop specific strategic options for addressing the intent of Act 78.

## **2.2.2 Wireless Network Assessment**

MCP's wireless SMEs engaged in a multi-pronged data collection approach. Staff members traveled to Vermont on multiple occasions and met with stakeholders, including staff from the Vermont Department of Public Safety (DPS) Radio Technology Services (RTS) unit and local radio shops that maintain most of the local LMR systems, and attended town hall meetings. Data was also collected from the online survey disseminated to each communications center, as well as from publicly available information from the Federal Communications Commission (FCC) website. MCP also leveraged State-collected data from the State's website concerning cellular drive coverage testing.

RTS staff were extremely helpful and provided a great deal of information about the wireless communications environment within the state. RTS staff were able to provide required technical information concerning the Vermont statewide public safety LMR system and the plan RTS is currently executing to improve that system, as well as the Vermont Communications System (VCOMM) interoperability network. The VCOMM system, as currently situated, presents challenges for practical use as an interoperability network for a variety of reasons, which are detailed in the Wireless Communications section of this report. Information provided by RTS made it possible to produce statewide propagation maps of the State-owned network only.

MCP discovered that information for the local systems was unfortunately not readily available to produce accurate propagation maps. Likewise, MCP was unable to locate public information concerning existing cellular networks to produce propagation maps for their current coverage.

MCP has included map layers of cellular drive coverage testing that had been performed by the Vermont Department of Public Service in recent years. RTS staff advised MCP that AT&T/FirstNet had just completed an expansion of its network on a number of sites within the state; however, the State had executed a non-disclosure agreement with AT&T concerning AT&T/FirstNet assets, and AT&T refused to waive the confidentiality requirements for purposes of this effort.

The full report is provided in the Wireless Communications Report companion document.

### 2.2.3 Cybersecurity Secure Controls Framework

The SCF has over 1,200 controls grouped into 33 categories. For this assessment, MCP focused on the top 77 controls, regardless of category. The scores for each category were based only on the controls that were reviewed, which means the report covers 15 categories. Each control is rated based on its importance, and extra weight is given to lower maturity levels to highlight critical gaps. This method provides a more complete and accurate picture of how well the controls are implemented overall.

Since not all maturity levels apply to every control, the maximum score is adjusted to 3.40 to include only the relevant controls within this report. To utilize this adjusted score within the MAPS framework, the agency's assessment score was converted to a maximum score out of 10 possible points.

The full report, with greater detail, is provided in the Cybersecurity Assessment Report companion document.

### 2.2.4 Inventory Framework Assumptions

The following explanations and assumptions are applicable throughout the inventory that follows. These constructs are used throughout the inventory document to reduce the overall size of the document.

Framework Element	Assumption Description
♦	Cells marked with this symbol indicate that the information was not provided by the communications center.
*	Cells marked with this symbol indicate that there is a gap in information collection that may need to be closed.
General	In Vermont, and applicable to those who work for the State, a dispatcher is a person responsible for "emergency dispatching, E 911 call taking, public information, and records management work for the Department of Public



Framework Element	Assumption Description
	<p>Safety involving the operation of radio, telephone, computerized and electronic communications equipment at one of the Communication Centers (PSAP).<sup>9</sup></p> <p>For this report, a person responsible for call-handling and dispatching—regardless of PSAP or dispatch center affiliation, is referred to as a dispatcher. The exception is in the <i>National Trends and Insights</i> sections that follow.</p>
<b>Agency Demographics</b>	<p>A formal governance agreement is a written, structured framework that outlines the roles, responsibilities, and decision-making processes among participating entities, ensuring coordinated and consistent operations. These agreements are essential in multi-jurisdictional scenarios, where multiple agencies, regions, or disciplines collaborate, as they establish clear guidelines for resource sharing, operational procedures, funding, and conflict resolution. This ensures effective communication, accountability, and unified response during emergencies.</p> <p>A service agreement is a formalized contract or memorandum of understanding (MOU) that clearly defines the scope, terms, and conditions under which one entity provides communication services to another. This agreement typically includes details such as the specific services offered (e.g., dispatching, data management, radio maintenance), performance expectations, cost-sharing arrangements, response times, and procedures for handling service interruptions or disputes. Service agreements ensure accountability, transparency, and alignment of expectations between parties, supporting seamless communication and operational effectiveness during routine and emergency situations.</p> <p>Law enforcement, fire, and EMS incident response statistics were not provided by all agencies (including agencies that filled out the questionnaire). To determine the approximate incident volume for these centers, the following calculations were assumed based on the agencies that did submit data:</p> <ul style="list-style-type: none"> <li>• The average number of incidents per person was calculated using the 2023 total combined law enforcement, fire, and EMS incident volume divided by the midpoint of the population range reported for the agency (e.g., if the agency's population range was reported as 10,000-30,000, the midpoint is 20,000).</li> <li>• The incidents per person for each reporting agency were then averaged to determine the statewide average incidents per person, which equals 1.33 incidents per person statewide. The 1.33 incidents per person is relative to Vermont's 647,464 residents reported by the United States (U.S.) Census Bureau in 2023.</li> <li>• For agencies not reporting data, their jurisdiction's population (as reported by the U.S. Census Bureau) was used to determine their population range to calculate the approximate number of law enforcement, fire, and EMS</li> </ul>

<sup>9</sup> [Job Specification Details | Department of Human Resources](#)

Framework Element	Assumption Description
	<p>incidents handled in 2023. For the University of Vermont, the 2023 student enrollment number was used instead of the population range.</p> <ul style="list-style-type: none"> <li>For an out-of-state dispatch center that provided incident volumes, 25% of their overall calculation is attributed to Vermont, and 75% to their home state.</li> </ul>
<b>Finance</b>	<p>Costs reported differ by agency depending on their budgeting structure and reporting capabilities. These include:</p> <ul style="list-style-type: none"> <li>Personnel costs (wages, overtime, benefits) for dispatchers, supervisors, administrative, technical, and management positions for the communications center only. It may include position/title and, if provided, salary and wage scales.</li> <li>Other costs may include maintenance costs for technology and any other miscellaneous recurring costs directly related to communication center operations.</li> <li>Overhead costs may include technology costs, other miscellaneous overhead, and capital improvement documentation directly related to communications center operations.</li> <li>When staffing increases are recommended, and budgets have been provided, the cost to increase staffing has been provided.</li> </ul> <p>To compensate for challenges where communications budgets are embedded within the total agency budget, a 25% cost contingency was added to the budgets.</p> <p>When calculating average budget assumptions, the PSAPs and dispatch center averages were calculated separately to account for the increased budgets necessary to accommodate both call taking and dispatching functions.</p> <p>For an out-of-state dispatch center that provided budget information, similar to the incident volume breakdown, 25% of the out-of-state dispatch center budget is attributed to Vermont, and 75% to their home state.</p> <p>Common variables used for calculating costs include calls received by telephone (emergency and/or non-emergency), incidents, and population. This number is divided by the budget to determine the cost per variable calculation.</p> <ul style="list-style-type: none"> <li>Even though a 25% cost contingency was added, only the actual reported budgets were used for cost per variable calculations. And then, cost per was only calculated for those agencies that reported budgets so as not to unintentionally inflate cost per calculations without verifiable data. <ul style="list-style-type: none"> <li>It is strongly recommended that those agencies that did not report their budgets do so to ensure their unique characteristics are properly captured.</li> </ul> </li> <li>Because when a caller dials 911, there can be a cost for processing these calls at both the PSAP when the call is received (single stage call</li> </ul>



Framework Element	Assumption Description
	<p>handling), and also when the call is transferred to the appropriate dispatch center (two stage call handling). The cost per 911 call for service calculations consider the budgets of both the PSAPs and the dispatch centers—resulting in a cost per call calculation that recognizes the duplication of labor than if only the PSAP budgets were used. (Appendix B)</p> <ul style="list-style-type: none"> <li>– Based on the graphic in Appendix B, the <b>only</b> costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.</li> <li>• The cost per population variable has been calculated with the midpoint of the population range (e.g., for an agency with a population of 10,000 – 30,000 and a cost per variable range of \$19.37 – \$58.11, the average cost per call of \$38.74 is used). <ul style="list-style-type: none"> <li>– Two centers (Williston and St. Johnsbury) reported extreme differences in population served of 500 for Fire/EMS services to 30,000 for law enforcement services. For these two centers, the 30,000-population served was used.</li> </ul> </li> </ul> <p>To accommodate the idiosyncrasies associated with each of these variables, the “average” cost per variable noted for each agency in Appendix A is the result of the average of at least two of the common variables.</p> <p>For agencies that did not provide data that could be used to calculate an average cost per, the average cost per of the 21 centers that reported their information was used.</p> <p>For the PSAPs, there are two types of disbursements. “Regular” refers to the reimbursement that is based on the PSAP’s call volume in the previous fiscal year and certain performance metrics. The second disbursement is for dedicated 911 call handling services, which is a separate agreement the State of Vermont Enhanced 911 Board has with three regional PSAPs (Hartford, Lamoille County, and St. Albans). All figures vary somewhat each year based on call volume and dedicated 911 hours.</p> <p>The dispatch centers (in state and out of state) are not eligible for disbursements from the Enhanced 911 Board because they do not provide 911 call handling services.</p>
<b>Leadership and Planning</b>	This area reflects the plans that the communications center has and any accreditations.
<b>Staffing and Workforce</b>	<p>Authorized strength represents the approved and budgeted number of full-time communications center personnel, and part-time as applicable.</p> <p>Vacancies represent the current openings within the authorized strength at the time of the questionnaire.</p>



Framework Element	Assumption Description
	<p>Retention is calculated over three years.</p> <p>Minimum staffing represents the minimum number of dispatchers needed on a shift. The industry standard (NFPA 1225<sup>10</sup>) requires “<i>a minimum of two qualified telecommunicators on duty and present in the communications center at all times.</i>” Staffing recommendations are provided to align with the standard when applicable.</p> <p>Staffing reviews are high level, based on the information provided in the respective survey response.</p> <p>NFPA 1225 states: “<i>Supervision shall be provided when more than two telecommunicators are on duty.</i>” It further states: “<i>Supervision shall be provided by personnel located within the communications center who are familiar with the operations and procedures of the communications center.</i>” Annex information notes: “<i>The supervisor position(s) in the communications center are provided in addition to the telecommunicators positions. Although supervisory personnel are intended to be available for problem solving, the supervisor position is permitted to be a working position.</i>”</p>
Operations	<p>Horizontal operational configuration means that dispatchers have separate call-taker and dispatcher functions during their shift. In Vermont this is also referred to as two-stage call handling.</p> <p>Vertical operational configuration means that dispatchers have combined call-taker and dispatcher functions during their shift. In Vermont this is also referred to as one-stage call handling.</p> <p>NFPA 1225 notes: “<i>Telecommunicators working in a vertical center are known to engage in multitasking that can inhibit their ability to perform assigned job functions. Routine evaluation of telecommunicator staffing, number of inbound emergency and nonemergency calls, and other operational statistics are necessary to allow a prompt receipt and processing of events.</i>”</p> <p>A structured QA program is a systematic, formalized process designed to evaluate, monitor, and improve the performance and effectiveness of call-taking, dispatching, and overall communication operations.</p> <p>For determining agencies that have or do not have a formal training program, agencies that did not provide an answer were assumed to have no training program or informal on-the-job training only.</p>
Technology Systems	<p>Local information technology (IT) support may not necessarily maintain the specialized technology (CAD, RMS, jail management system [JMS], logging recorder, and/or fire station alerting [FSA]) used within the communications centers.</p>

<sup>10</sup> National Fire Protection Association. (2022). *Standard for Emergency Services Communications*.

Framework Element	Assumption Description
<b>Facilities</b>	<p>For the eight agencies that did not complete the questionnaire, facility size (based on both personnel and equipment positions) and agency size were calculated based on the number of workstation positions and minimum staffing reported during data collection efforts.</p> <p>Expansion capabilities are applicable if additional workstations (the position housing call-taker/dispatcher equipment) could be outfitted within the space.</p> <p>Uninterrupted power supplies (UPSs) provide continual power for a short time when power is interrupted.</p>
<b>Appendix A</b>	<p>Provision of EFD<sup>11</sup>/EMD<sup>12</sup>/EPD<sup>13</sup></p> <p>Category 1: EFD/EMD/EPD is not provided upon initial call</p> <p>Category 2: EFD/EMD/EPD is available on initial call prior to call transfer from a PSAP; EFD/EMD/EPD are available for dispatch centers upon contact with a PSAP.</p>

<sup>11</sup> Emergency fire dispatch

<sup>12</sup> Emergency medical dispatch

<sup>13</sup> Emergency police dispatch

### 3 Trends and Insights

As shown below, Vermont's statewide MAPS average assessment score is [REDACTED] on a 10-point scale.



Figure 2: Vermont Statewide MAPS Blueprint

The inventory analysis and, specifically, the trends and insights articulated below establish a baseline for the State and participating PSAPs and dispatch centers to make more informed decisions going into the next phase of this project—planning workshops—with the intent to mitigate risk and minimize costs while maintaining the highest level of service delivery for staff, field responders, and the communities served, including visitors.



## Demographics

### State Trends and Insights –

The state of Vermont has a total population as reported by the United States (U.S.) Census Bureau of 647,464 in 2023 and covers a total area of 9,616 square miles (69.8 persons per square mile).<sup>14</sup> Of the total estimated population, of the agencies reporting:

- Seven communications centers providing EMS services serve populations over 30,000.
- Twelve communications centers providing fire dispatch services serve populations served between 10,000 – 30,000 and greater than 30,000, which are tied at six each.
- Eight communications centers providing law dispatch services serve populations between 10,000 – 30,000.

Total Population Served	Population Served EMS – Fire – Law			Total Agencies
< 500	1	1	0	0
500 – 1,000	0	0	2	0
1,000 – 2,500	0	0	1	1
2,500 – 5,000	1	1	2	0
5,000 – 10,000	4	3	1	4
10,000 – 30,000	5	6	8	7
>30,000	7	6	5	8
<b>Total Reporting</b>	<b>18</b>	<b>17</b>	<b>19</b>	<b>20</b>

- Based on the 28 centers that provided incident information, accommodating for the 25%/75% out-of-state incident volume adjustment, a total of 460,179 incidents were reported. If the average calls per dispatch center are spread across those centers that did not provide this information (based on their reported population [see assumptions for further]), a total of 541,279 incidents can be assumed. At this number, 11 centers (including two out-of-state dispatch centers) handle less than or equal to 1% each of the state's incident volume, another 18 (also including four out-of-state dispatch centers) handle less than or equal to 3% each. The five centers that handled the most incidents included one dispatch center at 6.56% and two municipal PSAPs at 6.58% and 6.62% and both VSP PSAPs with 7.79% and 13.04%.

<sup>14</sup> U.S. Census Bureau. (2023). Quick Facts: Vermont. <https://www.census.gov/quickfacts/fact/table/VT/INC110221>

Average	911 Line Volume	10-Digit Line Volume	Incident Volume
PSAPs	242,932	85,000 <sup>15</sup>	216,469
Dispatch Centers	N/A	400,972 <sup>16</sup>	324,810
<b>Total</b>	<b>242,932</b>	<b>485,972</b>	<b>541,279</b>

- Of the 37 communications centers:
  - Four centers (10.8%) do not operate on a 24/7 basis.
  - Eighteen centers (48.6%) have one or two primary workstations with seven (18.9%) having only one.
  - Thirty-three centers (89.2%) have a minimum staffing per shift of less than or equal to the recommended standard of two per shift with 22 (59.5%) having only one per shift.
    - Of the six PSAPs, 50% operate with no more than the minimum standard, with the remaining three (50%) reporting a minimum staffing of two per shift.
    - Of the six out-of-state centers that provide dispatch services, five (83.3%) operate with no more than the minimum standard, with two (33.3%) reporting a minimum staffing of one.
- Retention rates vary significantly across the agencies ranging from 16.7% to 100% with an average of 79% being assumed for those agencies that did not provide information. Ranging from 16.7% to 73.3%, nine centers (24.3%) have a staff retention rate of less than or equal to 75%.
- Based on the 2021 – 2023 average 911 line volume of 242,932 calls annually received by the state's six PSAPs, an average of 78,516 (32.3%) of those calls per year are transferred to dispatch centers.
  - The average percentage of outbound emergency call transfers to dispatch centers for each PSAP is as follows: Hartford (27%), Lamoille (17.5%), St. Albans (15.8%), Shelburne (12%), VSP Westminster (33.3%) and VSP Williston (48.6%).
  - Because the dispatch centers receive their emergency calls via inbound emergency call transfers, it can be assumed they receive over 75% of their emergency calls via inbound transfer.
- Based on the reported 2023 incident volume, the centers processed approximately 541,279 law enforcement, fire, and EMS incidents combined.
  - This equates to approximately one law enforcement, fire, or EMS incident per person per year (0.84 per person).

<sup>15</sup> Only one PSAP provided data. Others indicated unable to provide, unknown, or N/A.

<sup>16</sup> Only 9 of the 25 dispatch centers provided 10-digit call data, including one out-of-state dispatch center. Most do not track the data and/or are unable to provide.

- With the exception of the six PSAPs and one out-of-state center that provide EFD, EMD, and EPD, the remaining 30 (81.1%) do not directly provide these services and would have to contact one of the seven centers should EFD, EMD, or EPD be needed for calls not originating at a PSAP.
- Not including overflow or training workstations, there are a cumulative 116 primary workstations that are being maintained by the State or local agencies.
- Ten-digit line volume exceeding the 911 line volume only impacts the PSAPs and is not calculated for the dispatch centers. Only one of the six PSAPs reported its incoming 10-digit line volume, which exceeds the 911 line volume. Based on industry experience, MCP assumed that the remaining five would report the same. This can be updated should the data be provided.
- Budget information was not provided by 15 communications centers. To accommodate, when calculating average budget assumptions, the PSAPs and dispatch center averages were calculated separately to account for the increased budgets necessary to accommodate both call taking and dispatching functions. Total budget rough orders of magnitude (ROMs) range between \$20,810,384 and \$39,688,422 (see Trends and Insights Finance section for further details).
- Based on those centers reporting information, allowing the calculation of cost per variable, the average cost per 911 call<sup>17</sup>, incident, and population (range) across the state is \$55.95, \$54.71, and \$35.53 to \$73.72, respectively. The highest cost per call, incident, and population reported are \$60.59, \$90.58, and \$146.47.
- Across the 31 centers reporting their staffing numbers, a cumulative 282 full-time dispatchers are authorized. Nineteen centers reported being authorized to use part-time, which currently totals 82 dispatchers.
  - Across the 23 centers that provided information, allowing recommended staffing calculations, a total of 66 additional FTEs are recommended to meet national staffing standards.
  - Current vacancies across the reporting centers totals 30 openings (11.7%). When including staffing recommendations, this rises to 96 (27.6%).

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<sup>17</sup> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.



## *Governance and Organizational Structure*

### **National Trends and Insights –**

Management, administrative oversight, and governance of public safety communications operations and systems are separate matters. Management involves day-to-day communications center operations, administrative oversight involves policy that establishes and is accountable for overall municipal system performance, while governance involves an even higher level of supervision, generally in a multi-jurisdiction environment.

In a 911 system serving multiple jurisdictions, management, in whatever form it takes, must be able to allocate funds, prioritize operations, and generally carry out the communications center's mission and vision. To provide assurance that this is possible, some form of governance is necessary.

These factors become increasingly important as the nation moves away from analog technology toward a Next Generation 911 (NG911) environment where strategies for virtual regionalization focus on sharing data, services, and advanced capabilities that can lead to cost savings alongside, rather than in exchange for, operational efficiencies.

### **State Trends and Insights –**

The state of Vermont's 911 system is governed under a single statewide system that supports communications centers designated as PSAPs. This support includes requirements for elements such as training and compliance with call-handling protocols, as well as funding for required systems. However, these requirements and support only impact the state's six PSAPs and do not extend to the state's 25 dispatch centers or the six out-of-state dispatch centers that are governed by their respective state (Massachusetts – 1; New Hampshire – 4; New York – 1).

- The governance and organizational structures of Vermont communications centers vary widely—with 14 (48%) of the reporting agencies stating they operate under a formal governance agreement and 13 (45%) reporting they do not.
- A prevailing trend among organizations is the emphasis on local control and autonomy. Many agencies operate under the governance of local municipalities or police departments, with varying levels of oversight from state or regional authorities. However, there is a growing desire to shift away from a police-dominated system, aiming to establish a more equitable structure that prioritizes the safety of both responders and the communities they serve. This reflects a broader movement toward enhancing fairness and inclusivity in emergency response systems.
- A notable trend is the absence of standardized organizational frameworks among communications centers. Agencies exhibit wide variations in reporting structures, leadership roles, and staffing models. This lack of uniformity presents challenges in establishing consistent operational practices and hinders the ability to adopt statewide best practices effectively. Many agencies also face governance-related challenges, including unclear lines of authority, limited



resources, and the absence of formal policies and procedures. These issues can impede effective decision-making, strategic planning, and the overall functionality of communications center operations.

- The governance and organizational structures of Vermont communications centers showcase a mix of strengths and weaknesses. While some agencies benefit from strong leadership and robust strategic planning, others struggle with limited vision and inadequate governance frameworks. This disparity highlights the need for ongoing efforts to improve governance models and organizational capacity to ensure the long-term sustainability and effectiveness of communications center operations.
- The landscape of governance and organizational structures within communications centers is characterized by diverse practices and approaches. Addressing disparities in funding, promoting standardization, and enhancing leadership capabilities are critical steps toward building a more effective and equitable emergency response system. A concerted effort to address these challenges will better position communications centers to meet the evolving needs of their communities and ensure operational excellence.





## Finance

### National Trends and Insights –

Funding is a key area of concern for communications centers nationwide. Without appropriate funding, communications centers are not able to upgrade technology as required, schedule staffing appropriately, or complete day-to-day operations efficiently. Funding can be identified from multiple sources, but without adequate funding, communications centers become stagnant and the efficiency of the provision of 911 and emergency dispatch services suffers.

In many cases, communications centers have been forced to seek alternate sources of funding as local and/or state funding is not adequate to support operations. Grant funding, while not as plentiful as in years past, is a viable source of funding, especially for technology projects such as regionalization, system implementation, or radio system replacement. However, once the grant period of performance ends, agencies must be prepared to continue funding operations and maintenance.

Funding can also be in the form of cost savings, particularly from realizing economies of scale. A purchase made by multiple entities to benefit all (cost-sharing) tends to reduce the cost to each individual center versus purchases made separately. Cost savings can also be made by using existing contract vehicles, where appropriate, to reduce funding needs.

### State Trends and Insights –

Only 22 of the communications centers provided budget information and, in some cases, the information was not entirely complete because of how integrated the budgets are within their respective department budget.

The total budget information self-reported by agencies in the questionnaire, with the 25%/75% out-of-state adjustment and no assumptions applied, totals \$20,810,384 (PSAPs = \$13,542,736 and dispatch centers = \$7,267,648). Approximately \$19,590,402 of the total reported budgets is contributed to personnel costs. Budgets to accommodate various scenarios including the application of contingency costs and averages to accommodate those agencies that did not respond to the questionnaire are provided below.

	Total Self-Reported Budgets	Average Budget Assumption	Total Budgets with Assumptions Applied	Total Budgets
Total budgets not including contingency	\$20,810,384	PSAP = \$2,257,123 Dispatch Center = \$454,228	PSAP = \$13,542,736 Dispatch Center = \$13,626,840	\$27,169,576
Total budget including 25% contingency	\$26,429,400	PSAP = \$2,856,880	PSAP = \$17,141,282	\$34,556.502



		Dispatch Center = \$580,507	Dispatch Center = \$17,415,220	
Recommended Staffing Costs	N/A	N/A	PSAP= \$380,259 Dispatch Center = \$2,534,219	\$2,914,478
Total budget including 25% contingency and staffing recommendation adjustments	\$29,343,878	PSAP = \$17,521,541 Dispatch Center = \$22,166,881	PSAP = \$17,521,541 Dispatch Center = \$22,166,881	\$39,688,422

• Since most communications centers operate as a division under a law enforcement agency, their budgets are embedded into the law enforcement budgets, which makes it difficult to determine true operating expenses.

• Most agencies reported little overhead and other costs, with personnel costs totaling the largest portion of their overall operating budget expenses.

• All communications centers reported subsidizing operating budgets with general funds because the 911 funding only pays for the call-handling equipment (CHE) and basic training in PSAPs and does not pay for workforce expenses (dispatcher wages and benefits) and pays nothing for dispatch centers.

• Vermont does not specifically collect 911 surcharges. Rather, there is a Vermont Universal Service Fund (VUSF) that supports multiple programs including 911. Each year there is an appropriation from the VUSF to the Enhanced 911 Special Fund. In the 2023 FCC 15th Annual 911 report, Vermont reported expending \$4,587,898.00 in NG911 costs, which was the Enhanced 911 Board's appropriation from the VUSF for that fiscal year. In the last calendar year, the funding mechanism changed from the 2.4% charge on retail telecommunications charges to a \$0.72 charge per retail access line in service. This change will be effective in July 2025 and is expected to increase the revenue sufficiently to support all programs through at least 2029.

• The Enhanced 911 Board provides two types of disbursements to PSAPs for 911 call handling services.

- “Regular” refers to the reimbursement that is based on the PSAP’s call volume in the previous fiscal year and certain performance metrics.
- “Dedicated CT” refers to a disbursement for dedicated 911 call handling services. This is a separate agreement that is provided to three regional PSAPs—Hartford, Lamoille, and St. Albans.
- All figures vary somewhat each year based on call volume and dedicated 911 hours.
- In FY2024, Regular quarterly disbursements were made to Hartford (\$95,612.85), Lamoille (\$110,280.43), St. Albans (\$117,650.10), Shelburne



(\$92,133.88), VSP Westminster (~\$211,961.19) and VSP Williston (~\$269,768.78) for a total annual disbursement of \$897,407.24.

- In FY2024, Dedicated CT disbursements were made to Hartford (\$124,230.14), Lamoille (\$804.49), and St. Albans (\$11,815.33) for a total annual disbursement of \$136,849.96.
- Because of the variations in the way agencies reported their budgets, additional outreach to stakeholders to close gaps may be needed.
- Of the PSAP budget information that was reported, the range was \$49.23 per call to \$60.59 per call when the PSAP reported budget was divided by the number of calls. In MCP's experience, an optimal cost is less than \$30 per call. The overall total average cost per call when divided by the PSAPs reported budgets is \$55.95 per call. The average across all common variables when divided by the total reported budgets is \$50.82.

Variable	Number of Calls/Incidents	Average Cost Per	Average Adjusted Staffing Cost Per
Calls	242,932	\$55.95	\$58.39
Incidents	541,279	\$54.71	\$67.63
Population	647,464	\$35.53 – \$73.72	\$42.20 – \$88.33

- The maintenance costs for the Valcour CAD, covered by the State, are as follows:
  - FY22 \$850,000
  - FY23 \$867,000
  - FY24 \$884,340
  - FY25 \$902,027
  - FY26 \$920,067
- The financial trends across Vermont PSAPs and dispatch centers vary significantly, with some agencies maintaining well-defined budgets specific to communications, while others operate with budgets deeply embedded within overall department finances, often limited to reporting personnel salaries. This disparity highlights the diverse financial management practices among agencies, which can affect their ability to address specific operational needs and plan strategically for the future.
- A common trend is the emphasis on short-term planning and addressing immediate needs. Many agencies focus on resolving pressing operational challenges, such as staffing shortages or equipment upgrades, rather than developing comprehensive, long-term financial plans. This approach, while necessary to meet immediate demands, can hinder efforts to build sustainable financial models that support future growth and adaptation.
- Leadership support and its influence on budgetary decisions also vary widely among agencies. Some communications centers benefit from strong leadership



that effectively navigates the political landscape to secure funding for critical initiatives. In contrast, other agencies struggle to influence budgetary decisions, often facing challenges in securing the resources needed to maintain or improve operations. This inconsistency underscores the importance of cultivating skilled leadership to advocate for the financial needs of communications centers.

- Cost-sharing has emerged as a potential solution to address financial challenges, particularly in the context of regionalization. The idea of distributing the cost of infrastructure and services fairly among all agencies within a region is seen as a promising strategy, especially for smaller agencies that may struggle with limited resources. This approach could help reduce financial burdens while promoting collaboration and resource optimization.
  - Onsite interviews revealed that assistance for PSAPs and/or dispatch centers that wish to regionalize is desirable and would be highly beneficial financially. Neighboring states, as well as some states nationwide, have implemented funding mechanisms (including grant programs) to provide a percentage of the funding for these efforts. For example, Massachusetts provides 100% of funding for implementation and 100% of budgetary costs for the first three years.
  - Similar mechanisms could be considered by the state for agency consolidations also.
- Examining fiscal efficiency is another critical focus area, with a particular emphasis on the cost per call. This metric measures the expense of delivering services on a per-call basis, including both 911 and 10-digit line calls (dispatch centers). The same calculation has also been applied on a per incident as well as on a per-capita basis to provide additional insights into the financial efficiency of operations. Such analyses can inform efforts to streamline costs and ensure that resources are allocated effectively across the communications center network.
- Achieving equitable funding across the state has emerged as a significant focus. The current funding model is often described as a "patchwork" system, where agencies contribute to the state infrastructure without always receiving proportional benefits. There is a clear desire for a unified, statewide funding mechanism that ensures a baseline level of resources for all agencies, with the flexibility to scale up funding based on individual agency needs. This approach aims to address disparities and create a more sustainable financial foundation for communications center operations.





## Leadership and Planning

### National Trends and Insights –

Leadership training and planning (e.g., strategic planning) are still lacking in many centers throughout the country, especially as it relates to newly promoted supervisors. Both APCO and NENA have developed and offer entry-level supervisory training for staff at the supervisor and center manager levels. APCO also has developed a library of core competencies and minimum training standards for positions within an emergency communications agency, from entry level telecommunicator to supervisor or trainer, to communications director, and positions in between.

Effective leadership of an emergency communications organization involves a combination of proper oversight, governance, strategic planning, and leadership training. Nationally, emergency communications organizations are also starting to move away from management oversight by one of the public safety entities they dispatch for (fire department or law enforcement) and becoming independent agencies or becoming part of third/neutral party agencies such as emergency management; these entities are increasingly being staffed by career 911 professionals versus sworn officers or fire fighters.

### State Trends and Insights –

Leadership and planning trends among Vermont communications centers reveal a mix of strengths and challenges. While some leaders excel in executing initiatives and building relationships, others struggle due to limited authority and the absence of formal succession planning. A recurring theme is the difficulty of navigating the political landscape to secure the necessary resources. Budgetary constraints frequently impede efforts to address staffing shortages, upgrade technology, and implement comprehensive training programs, underscoring the pressing need for enhanced leadership support and strategic advocacy.

- Strategic planning practices vary widely across agencies. Some communications centers maintain well-defined plans that are regularly reviewed and updated, providing a roadmap for sustained growth and improvement. Conversely, others adopt a more reactive approach, addressing needs as they arise without a comprehensive long-term strategy. This short-term focus, often driven by immediate operational challenges such as staffing or equipment needs, limits the capacity for proactive development and future readiness.
- The lack of standardized leadership training tailored to public safety communications operations presents a significant challenge. While generic leadership courses and opportunities such as APCO conferences offer some benefits, they do not fully address the unique demands of managing dispatch services. Targeted leadership training programs could significantly enhance leaders' abilities to navigate the complexities of public safety communications and drive operational success.
- Collaborative leadership is highlighted as a key opportunity for addressing these challenges. Fostering communication and coordination between agencies and engaging with the community to build support for initiatives are essential steps



toward creating a more resilient public safety network. However, the varying levels of leadership support and influence on budgetary decisions present obstacles. Some agencies benefit from leaders who effectively advocate for funding, while others struggle to secure the necessary resources, reflecting a need for stronger leadership development across the sector.

- Approaches to change management also vary. While some agencies have formalized policies that provide structured guidance during periods of change, others rely on informal methods, such as email communication or staff meetings. This inconsistency can hinder the effective implementation of new initiatives and adaptations to evolving demands.
- Overall, the leadership and planning landscape in Vermont communications centers reflects significant variability. While some agencies demonstrate strong leadership and strategic planning, others face notable challenges in these areas. Addressing these disparities through targeted training, enhanced collaboration, and more consistent planning practices will be critical to ensuring the long-term sustainability and effectiveness of communications center operations.





## Personnel and Workforce

### National Trends and Insights –

While headway is slowly being made, the national staffing crisis persists and will continue to do so for the foreseeable future, which is placing a tremendous burden on communications centers and their personnel. Regionalization in the form of shared services, policy, and physical consolidation are contributing to successes. Technology advances in particular are easing the burden, driven by artificial intelligence (AI) and cloud-hosted solutions; however, they are not a panacea for all personnel and workforce challenges.

One of the most important factors in any successful organization is its people and, by association, the allocation of those resources. Many emergency communications centers across the country constantly struggle with staffing shortages. Tenured employees are retiring, while others simply leave for any number of reasons—shift work, the hours, childcare issues, stress, and better pay in the private sector.

More communications centers are regionalizing in some form. They are also increasingly shifting from under law enforcement or fire/EMS oversight for independent divisions of local government or becoming standalone entities, placing career 911 professionals in key roles.

Many organizations are clinging to antiquated recruiting and hiring practices (i.e., the “post and pray” method of recruiting, which has long been the standard). Organizations are getting more creative, modernizing the job application process, and offer enticements, such as remote work opportunities, to address the work-life balance while also improving continuity of operations.

Organizations need to streamline and shorten their hiring processes. It can take as long as six months for a candidate to receive a job offer—that’s far too long when competitors in the private sector can get it done in a month or less.

While public safety professionals continue to be passionate about their work, they are increasingly becoming frustrated with their working conditions, which are due primarily to staffing shortages, but secondarily to the fact that 911 and the emergency function take a back seat to additional duties.

Telecommunicators are beginning to be recognized in some states as the first responders that they are, but the acknowledgement often does not come with a commensurate increase in pay, so the gesture feels hollow.

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### State Trends and Insights –

Vermont’s communications centers face significant challenges with staffing shortages and high turnover rates. Vacancies often persist for six months or longer, creating substantial recruitment and retention difficulties. Competition from other agencies and the private sector further exacerbates these issues, as these alternatives frequently offer more attractive salaries, less demanding work schedules, and better work-life balance, making it harder for communications centers to maintain a stable workforce.



- The demanding nature of the job, coupled with the high-stress work environment, contribute to dispatcher burnout and attrition. These factors highlight the urgent need to reevaluate compensation, benefits, and work-life balance to attract and retain qualified personnel. Without addressing these foundational issues, the sustainability and effectiveness of dispatch services remain at risk.
- Efforts to mitigate these staffing challenges are critical to the success of a reliable, secure, and interoperable statewide public safety communications system. Strategies aimed at improving recruitment and retention, while also enhancing employee well-being, are essential for building a resilient workforce capable of delivering efficient and effective dispatch services. Investments in professional development, wellness programs, and competitive compensation packages could play a pivotal role in reversing workforce trends.
- The personnel trends across the communications centers in Vermont are varied. Some agencies, like Colchester, have experienced a period of stability with full staffing for seven months, the longest they have been fully staffed. However, they are still actively interviewing for a sixth position.
- The competition for dispatchers is often from local agencies, which may offer better salaries and/or work-life balance, or federal jobs. Some agencies, like Colchester, have a harder time hiring officers than dispatchers.
- The personnel trends in Vermont communications centers present a mixed picture. While some agencies have achieved stability, others continue to grapple with understaffing and high turnover rates. The competition for qualified dispatchers remains intense, prompting agencies to explore innovative strategies to attract and retain talent. These efforts are essential for ensuring effective and reliable public safety communications.
- Recruitment and hiring practices also vary significantly across Vermont's communications centers. Some agencies have established well-defined programs, while others rely on more informal approaches. A common trend is the use of social media platforms such as Facebook and Indeed to post job openings and reach a broader pool of candidates. This strategy allows agencies to leverage technology to connect with potential hires more effectively.
- Another trend is the emphasis on self-elimination, where agencies provide detailed information about job requirements and expectations upfront. This practice enables candidates to assess their suitability for the role, helping to streamline the hiring process by reducing applications from individuals unlikely to succeed in such demanding positions.
- Despite these innovations, challenges in recruiting and hiring persist. Many agencies struggle with staffing shortages, limited resources, and the absence of formalized policies and procedures. These obstacles hinder their ability to implement consistent and effective hiring practices, further exacerbating workforce instability.

- Overall, the recruiting and hiring trends in Vermont communications centers reflect a mix of progress and ongoing challenges. While some agencies have made strides in developing and implementing effective programs, others are still refining their approaches. Continued improvement in these areas is critical to building a strong, resilient workforce capable of delivering high-quality dispatch services across the state.
- During onsite interviews, staff expressed a desire to be classified as telecommunicators, regardless of employment at a PSAP or dispatch center.
  - This may require a legislative update to reclassify PSAP and dispatch center staff as public safety professionals; the Task Force should consult State legislative representation for clarification.



## Operations, Policies and Procedures

### National Trends and Insights –

Having an operational state that aligns workload and duty assignments with policies and procedures reduces agency liability. Policies, training, and efficiencies must exist that support the various roles, duties, and focus of the communications center. Routinely assessing the tasks and expectations of each communications center role, analyzing workload to identify the appropriate number of staff, and reducing—if not eliminating—all non-communications center functions (ancillary duties), should be in the forefront to create a favorable workload and avoid inherent risks.

In emergency communications, many communications center supervisors and telecommunicators are often overburdened, especially in centers with only one dispatcher on duty at a time, where they must juggle multiple responsibilities. NFPA 1225 emphasizes the importance of having more than one telecommunicator on duty to ensure effective operations. NFPA 1225 15.3.1 states: *“There shall be a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”*<sup>18</sup>

This highlights the need for agencies to maintain sufficient personnel to meet performance objectives, allowing flexibility to adjust staffing based on call volume, community needs, and operational demands. Insufficient staffing can overload already overworked personnel, potentially compromising critical tasks essential for communications center functionality.

Further, in regard to utilizing communications center staff for other nonemergency purposes (e.g., lobby window duties), NFPA Section 15.3.1.2 states: *“Where communications systems, computer systems, staff, or facilities are used for both emergency and nonemergency functions, the nonemergency use shall not degrade or delay emergency use of those resources.”*<sup>19</sup>

Larger communications centers can separate call-taker functions from dispatch functions and, in some instances, even separate 911 and administrative-line call-taking and other nonemergent functions—either by creating new positions or engaging AI solutions.

### State Trends and Insights –

The operational trends among Vermont communications centers highlight a dynamic landscape of challenges and opportunities. A significant issue across many centers is the lack of well-defined succession plans and standardized training programs, which has led to inconsistencies in operations and leadership transitions.

- Agencies report that outdated technology and the use of the Valcour “CAD” system, continues to hinder efficient dispatching and data analysis, further complicating operational effectiveness. This may be, in part, a result of a break down in information dissemination via existing communications methods (e.g., monthly Valcour program managers meetings, availability of on-line training).

<sup>18</sup> National Fire Protection Association. (2022). *Standard for Emergency Services Communications*.

<sup>19</sup> Ibid.



For example, awareness of information regarding existing or planned feature sets.

- The absence of comprehensive and standardized policies and procedures also affects efficiency and consistency across communications centers. The existence of multiple communication centers for different services has led to inefficiencies and occasional communication breakdowns, underscoring the need for greater integration and coordination within the system.
- Despite these challenges, a key trend is the growing reliance on technology and data-driven decision-making. Agencies are increasingly leveraging tools like ECaTS<sup>20</sup> data for performance assessments and exploring new systems to monitor and enhance operations. This shift reflects a broader effort to modernize operations and utilize data for informed decision-making.
- Efforts to standardize and improve operational processes are also gaining momentum. Initiatives to streamline call transfer procedures (to include the call transfer script on both ends of the call), update policies and procedures (including a standardized statewide dispatch script), and adopt advanced technologies such as simulcast systems demonstrate a commitment to enhancing efficiency and operational quality. These efforts are essential for fostering greater consistency and improving service delivery across the state.
- However, many agencies continue to face significant obstacles, including staffing shortages, resource constraints, and geographic isolation. High turnover rates and limited resources create operational pressures, while geographic challenges complicate communication and coordination efforts, particularly in more remote areas.
- Like communications centers across the country, because of the 24/7 service delivery requirements of the work, it is not uncommon for centers to end up being responsible for roles and responsibilities that are disconnected from the true purpose and mission of 911 and public safety dispatch, which is to provide emergency services to the communities. The following ancillary duties were reported by 29 of the communications centers.

Ancillary Duty Component	Number of Centers Reporting
Administration	29
EAS activation	12
Jail	3
Records	24

<sup>20</sup> Emergency Call Tracking System

Security (active camera and access monitoring)	29
Support municipal services	20
Vehicle release	4
Walk-up window	25
Warrants	25
<p>Other</p> <ul style="list-style-type: none"> <li>• Relief from Abuse Orders</li> <li>• Terminal Agency Coordinator (TAC)</li> <li>• Fire department radio box maintenance/alarm monitoring</li> <li>• Parking department</li> <li>• IT support/troubleshooting prior to going to vendor</li> <li>• Scheduling</li> <li>• In-house alarm registration records</li> <li>• Grants</li> </ul>	
<ul style="list-style-type: none"> <li>• Overall, the operational trends in Vermont communications centers reflect a mix of innovation, adaptation, and persistent challenges. Agencies are actively seeking ways to improve efficiency, enhance communication, and address workforce shortages while navigating the complexities of an evolving public safety landscape. These efforts are critical to ensuring that Vermont's public safety communications system is effective and resilient.</li> <li>• During onsite interviews, there was a reportable and observable lack of interagency and user communication that will require new processes to improve communications at the agency, interagency, regional, and statewide levels. <ul style="list-style-type: none"> <li>- Bi-monthly user meetings (e.g., dispatchers, supervisors, and managers), held in a regional town hall or similar style, would enhance communication statewide.</li> </ul> </li> </ul>	





## Training

### National Trends and Insights –

Effective core and leadership training for telecommunicators and supervisors are currently lacking nationwide, creating challenges today and potentially more significant problems in the future. Public safety telecommunicators face extremely demanding responsibilities, and the absence of proper training increases the risk of errors. Proper training significantly reduces these risks, helping assure telecommunicators are well-prepared for their roles.

Adopting training programs aligned with state and/or national standards is a key strategy for addressing this issue. Organizations such as APCO and NENA have established foundational and advanced training programs and core competencies for many emergency communication roles. Implementing standardized training programs, backed by these standards, ensures consistency in skillsets across all telecommunicators, enhancing overall performance and reliability.

Standardization can further be achieved through mandatory training for all personnel within the communications centers, not just PSAPs, creating a unified baseline of knowledge and competencies. Accreditation programs take this a step further by requiring agencies to meet rigorous criteria verified through external assessment, promoting continuous improvement.

Establishing an 80% trainee completion rate as a benchmark prepares new telecommunicators more effectively, instilling confidence and competence while fostering a knowledgeable, highly skilled workforce. Standardized, mandated training is essential for the professionalization of emergency communications and ensuring excellence in public safety services.

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### State Trends and Insights –

While many communications centers have formalized training programs, there is a lack of mandatory and standardized statewide training and certification for dispatchers in agencies that are not designated as a PSAP.

- The State of Vermont Enhanced 911 Board requires 911 call-takers working in a PSAP to meet the State's training requirements and has mechanisms in place to ensure minimum training requirements are carried out. This includes the requirement for EFD, EMD, and EPD.
  - The State requirement includes a 40-hour basic 911 call-taker certification course provided by the Enhanced 911 Board training and communications staff.
    - The course curriculum is solely based on call-taking and does not address dispatching of incidents.
    - The Vermont Criminal Justice Council offers a training course that teaches how to dispatch incidents but does not address 911 call-taking procedures. This course does not offer a certification/recertification option and is completely voluntary.



- While dispatchers from dispatch centers may attend the state's training, it may not meet their needs as it is primarily focuses on 911-specific topics including EMD certification and the use of APCO protocols.
  - The Enhanced 911 Board does not have purview over dispatch operations and does not provide call-handling protocols to non-PSAPs and does not State-certify non-PSAP personnel in EFD, EMD, or EPD.
- There is no statewide requirement for dispatcher certification at this point.
  - During onsite interviews, dispatch center staff from multiple centers showed an interest in a State mandate that requires all dispatchers within the state, including dispatch center staff, to obtain a basic statewide training certification that includes 911 call taking and incident dispatching skills and processes.
- Certified personnel are required to complete 12 hours of continuing education annually and recertify their cardiopulmonary resuscitation (CPR) certification bi-annually.
  - The certification/recertification requirements are specific to 911 call-takers and so do not extend to the dispatch centers; however, three dispatch centers indicated that they voluntarily follow the State requirements.
  - Three additional dispatch centers do not follow the state 911 certification requirements but stated they do certify their training staff through the State's certified training officer (CTO) program.
- Absent mandated recertification and continuing education requirements for certified 911 call-takers, most agencies—PSAPs and dispatch centers alike—do not include budgetary funds that allow for outside training/career development opportunities.
- There was a desire articulated during onsite interviews to standardize and formally memorialize all training statewide to ensure a standard/minimum level of service is provided to all citizens and field responders throughout the state.
- Access to professional development opportunities, including leadership training, is often limited by budget constraints and staffing levels.
- Training programs for dispatchers in Vermont vary significantly in terms of standardization, comprehensiveness, and certification. Some dispatch centers adhere to national standards like APCO certification, requiring specific training hours and ongoing professional development.
- There are a variety of training methods throughout the state: 37.9% of centers have a formal training program; 40.5% of centers utilize an internally developed or informal programs<sup>21</sup>; 21.6% of agencies indicated no training program.

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<sup>21</sup> Informal programs are often based on adaptations of state-provided training or models like the San Jose model (more commonly referred to as the Field Training Officer [FTO] program).

- This inconsistency results in a lack of uniformity in dispatcher skills, knowledge, and operational delivery across the state.

Formal Training Program	Informal Training Program	No Response
16	14	7

- Mental health training for dispatchers is often limited, with most communications centers providing only basic information during onboarding or through State-sponsored programs. While some dispatch centers incorporate mental health awareness into their training programs or offer access to peer support and employee assistance program (EAP) resources, there is a need for more comprehensive and standardized training in this area.
- The lack of a statewide, standardized training curriculum for dispatchers poses a challenge for ensuring consistent competency and professional development opportunities. Establishing a unified training framework that incorporates national standards, mental health awareness, and specialized skills training would enhance the overall effectiveness of Vermont's dispatch services.





## Quality Assurance and Performance Management

### National Trends and Insights –

Performance management, including QA, provides for holistic organizational success and includes everyone in a communications center from telecommunicators to managers and directors. The process is cyclical and is a means to assure that everyone understands their respective roles and responsibilities, has the resources to complete them, be successful, and meets expectations.

Key Performance Indicators (KPIs)—such as abandoned call rate, 911 call wait times, pick up to queue, queue to dispatch, non-emergency call-wait times, and total call processing times—can all be used to measure communications center performance.

QA is another way the performance management cycle can be applied. According to the American Society for Quality (ASQ), QA is “part of quality management focused on providing confidence that quality requirements will be fulfilled.” In a communications center, this equates to “all actions taken to ensure that standards and procedures are adhered to and that delivered products or services meet performance requirements.”

Other KPIs should be integrated into a QA program to monitor and improve the overall performance of personnel and the communications center. It is important to establish a standardized QA and effective feedback process for telecommunicators. This is a best practice that can identify areas that are consistently meeting agency expectations and those that are falling short. It can often be difficult for smaller centers to proactively perform QA and monitor other performance metrics because of limited support staff.

Where agencies are unable to meet the monitoring of 2% of all calls—due to that number being overly burdensome on staff or not having staff to perform QA—NFPA 1225 Section 5.3.1 also states the “Agency shall ensure a sufficient number of case reviews are conducted for both call-taking and radio dispatch responsibilities of a telecommunicator.”<sup>22</sup> AI supported innovation is also spurring the development of applications that can automate the QA process.

### State Trends and Insights –

The QA and performance management trends across Vermont communications centers are varied, with ten agencies reporting they have well-defined programs and 17 did not. However, the site visit interviews established that there may be confusion of what constitutes a structured QA program, relying on informal practices or a complaint workflow rather than QA.

- QA practices in Vermont's communications centers are primarily reactive, often triggered by complaints rather than proactive monitoring: 50% of agencies have reported no QA or performance management program (formal or informal).

<sup>22</sup> National Fire Protection Association. (2022). *NFPA 1225: Standard for emergency services communications systems* (2022 ed.). National Fire Protection Association. <https://www.nfpa.org>



No QA program	QA for complaints only	Informally review monthly	Formal QA program
17	13	3	2

- This lack of standardized QA programs and policies lead to inconsistencies in how call-handling, dispatching, and other operational aspects are evaluated and feedback provided to staff.
- Many communications centers lack dedicated QA personnel, relying on supervisors or managers to conduct reviews when time permits. This approach often results in limited call review and a focus on addressing immediate issues rather than identifying systemic trends or areas for improvement.
- The absence of comprehensive data analysis further hinders effective QA efforts. While some communications centers utilize basic statistics from their CAD systems, they often lack the tools or expertise to conduct in-depth analysis of call data to identify patterns, trends, or performance indicators.
- This reactive approach to QA and the lack of standardized procedures highlight the need for a more structured and proactive approach to quality management within Vermont's communications centers. Implementing formal QA programs, providing dedicated QA personnel, and leveraging data analysis would contribute to more effective identification and resolution of operational issues, ultimately enhancing the quality of dispatch services.
- A trend is the use of technology to support QA. Four centers reported they are using software like Frontline to conduct real-time QA and track trends.
- There are also challenges in implementing effective QA programs. Some agencies struggle with staffing shortages, limited resources, or a lack of formal policies and procedures.
- Overall, the QA/QI trends in Vermont communications centers reflect a mix of progress and challenges. Some agencies are making strides in implementing effective QA programs, while others are still developing their approaches. There is a need for continued improvement in QA/QI practices to ensure the quality and effectiveness of dispatch services.





## Technology and Systems

### National Trends and Insights –

Public safety dispatch operations are heavily dependent on IT infrastructure, computer systems, and multiple applications. Mission-critical systems include 911 CHE, CAD systems, radio dispatch consoles, GIS databases and mapping, and data/voice logging recorders. This IT infrastructure is critical to the daily public safety mission and provides interoperability with other communications centers and field responders.

Critical systems and infrastructure, especially when duplicated in the same geographic area, are very costly to acquire and maintain. Increasing technology costs have become a primary issue, often driving funding needs and dispatch regionalization efforts in the U.S.

Officials in many jurisdictions have pursued communications center regionalization to reduce capital expenditures and operating costs. Software maintenance agreements and upgrades increase the total cost of ownership over the life of a system. Reducing the number of communications centers often is intended to eliminate the need to purchase and maintain multiple systems within the same geographic area.

### State Trends and Insights –

Technology trends in Vermont communications centers highlight a combination of progress and persistent challenges, particularly as expressed by stakeholders and users, in the use of Valcour, which is provided by the State to both PSAPs and dispatch centers. Based on the questionnaire results, Valcour is used in all centers except six agencies that use CAD systems from different vendors including CSI, Spillman (Motorola Flex), Symposium, TriTech (CentralSquare), and Tyler.

- While most agencies rely on Valcour and refer to it as a CAD system, many stakeholders argue it is more accurately described as an RMS marketed as a CAD solution.
- It was clear from the results of the site visits and town hall meetings that this misalignment has led to widespread frustration and dissatisfaction among users, especially fire and EMS agencies because of reports by stakeholders that Valcour is a law enforcement-focused system.
  - However, there is a discrepancy between these findings and the results of the questionnaire's 28 respondents when asked if their CAD system met their operational needs. To that question, 21 responded in the affirmative; six of the seven negative responses are Valcour users.
- Whether perceived or fact, one common criticism of Valcour, expressed by stakeholders and users, is its lack of essential CAD features. Users report significant difficulties in pulling statistics, generating reports, and creating response plans, which are critical functions for efficient dispatch operations. The system's user interface has also been widely criticized for being ineffective and unfriendly, with issues such as frequent crashes, data loss, and an inability to perform basic customization tasks like resizing columns or reorganizing information. These shortcomings, whether perceived or real, have forced many



users to adopt workarounds, such as using notepad for CAD notes or external spreadsheets for data analysis, increasing workload and frustration for dispatchers. If it is shown that agencies are misinformed about Valcour's capabilities, this reinforces the finding that there is a need to improve communication within the public safety communications community. It also suggests that information discussed within the Valcour users group is not effectively reaching the end users, further identifying a need for improved communication and presenting an opportunity for training, or both.

- Compounding these issues is the fact that most Vermont communications centers are micro or small operations, typically with fewer than two workstations and responsible for tracking only a few field personnel at a time. For such agencies, a fully functional cross-disciplinary CAD system might be excessive for their needs. However, even a scaled-down CAD solution with functionalities that are viewed to equally serve law enforcement, fire, and EMS could vastly mitigate stakeholder frustration, improve efficiency and reduce dispatcher workload compared to Valcour.
- Beyond the Valcour system, which stakeholders brought up at every engagement event, technology trends across Vermont communications centers are characterized by a mix of modernization and setbacks. While some agencies are making strides in updating their equipment and adopting new technologies, others are struggling with outdated tools, limited resources, or a lack of technical expertise. Additionally, currently a critical gap exists with the transfer of automatic number identification (ANI)/automatic location identification (ALI) information from Vermont's 911 CHE (provided to PSAPs only) to some systems, which hinders efficient information sharing and disrupts workflows.
  - While requests for ANI/ALI information to be transmitted from the 911 CHE to Valcour had not been made previously, the feasibility is now being discussed with the appropriate vendors and authorities.
- Fourteen agencies report using some level of FSA to dispatch fire/EMS resources, including:
  - Tone/voice paging
  - Active (formerly known as Active911)
  - Bryx Station Alerting
  - U.S. Digital Designs Phoenix G2
  - Zetron paging system
  - RapidSOS
- Overall, while some agencies are modernizing their technology infrastructure, others face significant barriers to keeping pace with advancements. Continued investment in technology tailored to the specific needs of Vermont communications centers is essential to promoting efficiency, reliability, and effectiveness of dispatch services across the state.
- Agencies, both in- and out-of-state, reported cross-state informational sharing/exchange constraints. This leads to operational difficulties when dispatching agencies in or from neighboring jurisdictions. Technical restraints



could be removed or lessened to improve situational awareness with all in- and out-of-state entities.





## Facilities

### National Trends and Insights –

The public safety communications industry classifies communications centers in two ways—the number of equipment positions or the number of operational personnel.

- The National Highway Traffic Safety Administration's (NHTSA) National 911 Program groups communications centers into five sizes based on equipment positions as micro (1 – 2), small (3 – 5), medium (6 – 20), large (21 – 49), mega (50+).
- According to standards established by the Commission on Accreditation for Law Enforcement Agencies, Inc. (CALEA), APCO Project Retains groups communications into three sizes based on personnel – small (1 – 15), medium (16 – 75), and large (76+).

Given the advancement in technologies and infrastructure, the goal in facilities design today is redundancy and resiliency. Purpose-built public-safety facilities are typically heavy users of mission-critical technologies and enterprise-level IT systems and equipment. These critical systems, along with typical facility infrastructure (e.g., heating, ventilation, and air-conditioning [HVAC] systems, generators, and building automation systems [BAS]) are more vulnerable to cyberattacks today. National trends for facility design include not only improvements in physical security for the facility and infrastructure, but also improvements in cybersecurity.

Another trend centers around telecommunicator health and wellness. When designing and constructing communications centers, workforce wellness is a top consideration that, when applied thoughtfully, can improve recruiting and retention. Successful wellness design is multifaceted, including but not limited to the following:

- Architectural design — Ensuring that the operations room has proximity to food preparation, filtered water, and restroom facilities.
- Windows — Natural light from north-facing windows allows the body to adjust to the Circadian rhythms. This affects personnel physically, mentally, and behaviorally following a 24-hour cycle.
- Mechanical systems — High-efficiency particulate air (HEPA) filtration, shut-off ventilation, and touchless fixtures mean less transmission of viruses.
- Healthy areas — Properly equipped stress-reduction, lactation, and workout rooms matter, as do outdoor green spaces.
- Furniture — Reduce the likelihood of a multitude of ailments by filling your new facility with antibacterial surfaces, 24/7 ergonomically designed chairs, sit/stand desks, and more.
- Sight and sound — Reduce eyestrain and stress-triggers by leveraging building design and smart technology choices, and do not neglect natural light and outdoor space.
- Extra mile — Companion animals are proven to reduce stress and elevate mood; hundreds of facilities across the country have incorporated such animals



into their facilities. Good building design can facilitate cohabitation of furry and not-so-furry friends.

### **State Trends and Insights –**

The 37 communications centers serving Vermont can be grouped as follows:

- Equipment positions: 18 micro, 16 small, and 3 medium
- Personnel: 29 small, 8 medium
- Communications centers in Vermont face a range of facility challenges. Many centers operate in outdated buildings with limited space, impacting operational efficiency and employee comfort.
- These outdated facilities often lack adequate backup power solutions, posing risks during power outages. While some centers have backup generators, others rely on smaller UPS systems with limited runtime, potentially disrupting critical communications.
- Security is another concern, with some facilities lacking proper access control measures or secure areas for sensitive equipment. This vulnerability raises concerns about unauthorized access and potential security breaches.
- Of the communications centers, either in the questionnaire or in-person observation, 11 have capacity to expand their facilities and 18 have no capacity—meaning that if regionalization recommendations were adopted, it would likely require merging with one or more other communications centers at a location outside of their municipality.
  - Being chronically understaffed, a majority of centers also have limited capacity to handle overflow or significant call surges for any extended period of time and require additional staffed positions, which, even if approved, would have no ability to be accommodated in the current communications center space.
- Twenty of the agencies responding to the questionnaire indicated they had space in their equipment room to expand and add additional systems and racks and only nine said they could not. Addressing these facility deficiencies is crucial for ensuring the resilience and effectiveness of Vermont's dispatch services. Investing in modern, secure, and well-equipped facilities should be prioritized to provide dispatchers with a safe and efficient work environment.

Facility Room for Expansion	No Facility Room for Expansion	Equipment Room for Expansion	No Equipment Room for Expansion
11	18	20	9



- A small subset of dispatch centers may lie within a registered flood plain. As PSAPs and dispatch centers look toward possible consolidation and/or regionalization efforts, an evaluation of existing facilities must include a threat and hazard identification and risk assessment (THIRA)—or similar process—to identify possible natural, human-made, and technological hazards that may potentially affect a given location. This process would identify if an agency proposed as the host agency for a consolidation or regionalization effort lies within a recognized flood plain and, if so, what efforts would need to be undertaken to protect the facility from future floods. If a consolidation or regionalization effort identifies that a new facility should be constructed to house this future entity, as part of the construction site selection process, sites that are obviously within a flood plain should be eliminated from consideration if possible; this is the best practice across the public safety communications industry.



### National Trends and Insights –

Alternative response includes mental health, technical, operational, and policy driven approaches that improve operational efficiencies and create workload capacity. Whether the public safety sector, especially the 911 community, embraces AI or continues to be wary of it—and whether they proceed deliberately or rush to adopt it and other alternatives to sending traditional police, fire and EMS personnel to requests for service—it opens incredible possibilities for improving emergency response.

### State Trends and Insights –

There is a growing awareness and interest in implementing alternative response methods to address mental health calls and other non-emergency situations. However, the development and implementation of these initiatives are still in the early stages in many areas.

- The increasing use of alternative response methods include crisis hotlines, 211 services, and 988 suicide and crisis lifelines. These resources help alleviate workload on dispatchers and connect individuals with appropriate support.
- Dispatchers are receiving training on alternative response initiatives and new responsibilities associated with these evolving approaches. This training equips them to effectively utilize alternative resources and handle a wider range of situations.
- Collaboration with mental health providers and community responders is growing, with some dispatch centers establishing formal relationships and procedures for coordinating responses. This integrated approach aims to provide more comprehensive and appropriate care for individuals in crisis.
- While some communications centers have implemented online reporting systems for non-emergency situations, their adoption remains limited. Expanding the use of online reporting could further reduce the burden on dispatch centers and allow them to focus on critical incidents.





## Wireless Networks

### National Trends and Insights –

The widely accepted standard for wireless voice communications systems across the nation is Project 25 (P25) LMR. P25 is a suite of standards designed to improve interoperability and efficiency of communication, while also allowing for more flexibility in purchasing subscriber devices, as any P25-compliant subscriber device should work on any P25-compliant LMR system. P25 systems are digital systems that allow for encryption if desired, especially in law enforcement. Sections 5.13.1 and 5.13.1.1 of the Federal Bureau of Investigation's (FBI) Criminal Justice Information Services (CJIS) Security Policy requires LMR networks be encrypted with encryption keys that are a minimum of 128 bits if certain criminal justice information is to be broadcast across them. As long as dispatchers and end users are thoroughly trained in what information is and is not allowed to be broadcast across LMR, encryption would not be required; however, if certain types of criminal justice information, such as criminal history, is broadcast over an unencrypted LMR network it could violate the CJIS Security Policy.

Public safety use of commercial wireless broadband networks has increased significantly over the past several years. The advent of networks such as AT&T/FirstNet, Verizon, and T-Mobile offering priority service to public safety users has enabled public safety to leverage the data transmission capabilities of these networks to a much greater extent than they could when they had to compete with commercial users for bandwidth and throughput. Wireless broadband networks are excellent networks for data transmission and are complementary networks to LMR for voice communications. Due to the robust mission-critical voice capabilities of LMR as compared to broadband, broadband networks should not be relied upon to provide primary voice communications for first responders due to the limitations in providing all the components necessary for mission-critical voice communications. Examples of this include limitations in talking device to device when off network and point-to-multi-point communications.

To achieve robust public safety wireless communications across all agencies at all levels of government, in addition to utilizing industry standard technology, many states have established a comprehensive governance structure to promote cooperation and collaboration among all public safety stakeholders. At a minimum, a statewide interoperability communications board (SICB) should integrate LMR, wireless broadband, 911/dispatch, and emergency management, including the Integrated Public Alert and Warning System (IPAWS) technologies, through the voices of the various stakeholders at both the state and local level. Minnesota would be one such example of a high functioning SICB that works to achieve more efficient emergency communications across the state. There are other models across the country that also provide for similar collaboration.

The Broadband Equity and Deployment (BEAD) Program, administered under the National Telecommunications and Information Administration, could possibly provide an “outside the box” opportunity for fiber-optic infrastructure in rural areas. The program prioritizes the deployment of fiber-optic infrastructure to support high-speed internet service to currently unserved and underserved areas, which would obviously fall in the rural areas of the state.



### **State Trends and Insights –**

The public safety wireless environment within Vermont is fragmented across technology platforms and frequency bands. Likewise, due to the rural nature of the state and the mountainous topology, commercial cellular coverage is not robust across the state as reported by stakeholders.

- While there are some digital, P25-compliant LMR networks, most systems operating do so in analog mode in either the ultra-high frequency (UHF) band or the very-high frequency (VHF) band, with the vast majority of law enforcement agencies operating in UHF and the vast majority of fire and EMS agencies operating in VHF.
- The state system, which is the system primarily used by the VSP and the Fish and Wildlife Department, currently operates in analog UHF and VHF, but plans are underway to upgrade to a 10-zone digital simulcast system. The state system provides for a very good microwave backhaul system that could be leveraged for future, more robust statewide communications. The State also currently operates the VCOMM system, which is a statewide system established primarily for interoperability utilizing national UHF and VHF interoperability channels. There are challenges with the VCOMM system, which renders its current utility questionable.
- The State currently has a statewide public safety communications governance structure in place—the Emergency Communications Advisory Council—however, it is understood that it is not active at this time. The State currently has a statewide interoperability coordinator (SWIC) assigned to the DPS RTS. The SWIC should be an integral part of the statewide public safety communications governance.
- Additionally, the statutory environment currently creates confusion and complexity as to the process of executing memoranda of understanding (MOU) between state and local government entities to share infrastructure. In speaking with RTS staff, they related the challenge is determining who within state government has the authority to develop and execute an MOU. Apparently, it falls either between the Attorney General or the Governor's Office; it has also been delegated from the Governor's Office to IT, but even finding a contact person for MOU development has proven challenging. The sharing of infrastructure is a key component to establishing a more robust and efficient public safety communications environment.
- The Vermont Community Broadband Board (VCBB) under the Department of Public Service is administering the State's participation in the program. The state is in line to receive approximately \$229,000,000 in funding for deployment of infrastructure to support high-speed internet service to unserved and underserved areas. In addition to this fiber-optic infrastructure, Vermont also has existing fiber across the state, some of which could potentially be utilized in support of a future public safety communications system.





## Cybersecurity

### National Trends and Insights –

The rapid advancement of AI presents both opportunities and challenges in cybersecurity. While AI enhances threat detection and automates incident response, it also introduces new risks. Cybercriminals are leveraging AI to craft sophisticated phishing attacks, automate malware deployment, and evade detection by mimicking legitimate user behavior. Moreover, vulnerabilities in AI models, such as adversarial attacks, can be exploited to manipulate systems reliant on machine learning. Organizations must adopt proactive measures, including securing AI systems and understanding AI-driven threats, to stay ahead in this evolving landscape.

In today's complex threat environment, maintaining a static cybersecurity framework is insufficient. Organizations must adopt a dynamic approach that involves continuous evaluation and adjustment of their overall security posture. This includes implementing real-time monitoring, regular threat assessments, and adaptive strategies to address emerging vulnerabilities. Utilizing frameworks like zero trust, combined with automated response systems, ensures that security measures evolve alongside the threat landscape. A robust cybersecurity posture is no longer a one-time investment but an ongoing commitment to resilience and adaptability. In the recent CJIS updates, a need for regular vulnerability scanning and a risk mitigation program are examples of the focus on an ongoing security process.

With increasing reliance on third-party vendors, managing vendor risks has become critical to protecting sensitive data. Third-party breaches can expose vulnerabilities across interconnected systems, making thorough vetting and continuous monitoring of vendors essential. Simultaneously, the human element remains a significant factor in cybersecurity. Comprehensive end-user training can mitigate risks like phishing and social engineering attacks, empowering employees to recognize and respond to potential threats. Balancing robust vendor management with a well-informed workforce ensures a holistic approach to risk reduction, safeguarding the organization from external and internal threats alike.

### State System Trends and Insights –

Assessing the communications centers cybersecurity maturity across different areas shows that the current posture is in the formative to established stages, with average scores between █ and █ on a 5-point scale. This reflects a solid foundation of cybersecurity practices, but it also highlights clear opportunities to strengthen and build a more proactive and resilient security framework.

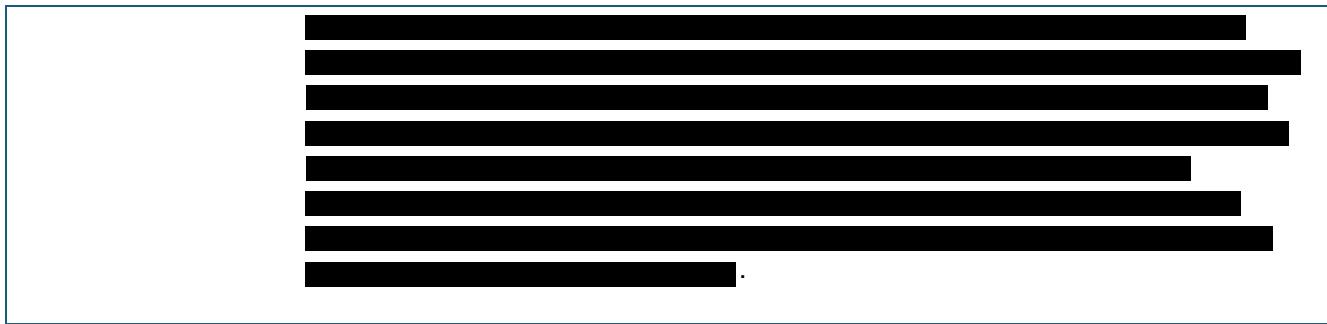
- Cybersecurity Awareness – Out of the 37 communications centers contacted, 15 responded to the cybersecurity assessment. This revealed a broader challenge: many agencies may lack the cybersecurity awareness or knowledge needed to effectively engage with such assessments. This highlights a critical gap in cybersecurity maturity and underscores the need for greater education and awareness to build a more resilient security culture.



- According to the [Cybersecurity Maturity Report 2023](#), the average cybersecurity maturity score across various industries was 2.4 out of 5. This places Vermont [REDACTED], presenting an opportunity to refine key areas and aim to meet or exceed industry standards. These national trends are on par with the public safety sector as well.
- Asset Management – [REDACTED]  
[REDACTED]. Without a clear understanding of what hardware and software components are in use, where they are located, and their status, it becomes challenging to ensure security, compliance, and operational efficiency. This gap presents an opportunity to build more comprehensive asset inventories that capture detailed information about all physical and virtual assets. These inventories should include attributes such as asset type, location, ownership, lifecycle status, and configuration. Additionally, implementing automated detection and monitoring systems can provide real-time insights into changes or anomalies in the asset environment.
- Continuous Monitoring – [REDACTED]. By adopting centralized monitoring solutions and refining incident escalation processes, situational awareness and responsiveness can be enhanced.
- Data Privacy – Data privacy shows a relatively stronger foundation, reflecting effective data governance practices. However, staying aligned with evolving privacy regulations through regular updates is crucial to maintaining compliance and security.
- Proactive Security Measures – Agencies are placing greater emphasis on proactive strategies, including continuous monitoring, automated threat detection, and integrating cybersecurity practices into daily operations, to better anticipate and address emerging cyber threats.
- Data Privacy Compliance – With stricter data protection regulations, there is a strong national push for robust data privacy practices, aligning well with the State's relatively higher score in this domain.
- Third-Party Risk Management – As supply chain attacks become more common, there is a growing emphasis on evaluating and mitigating risks tied to third-party vendors. Strengthening this area can help reduce vulnerabilities associated with external partnerships.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]





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## 4 Vermont Public Safety Answering Points (PSAP)

A PSAP is classified as “a physical or virtual entity where 9-1-1 calls are delivered by the 9-1-1 Service Provider.”<sup>23</sup> These centers answer calls coming in on 911 lines and provide dispatch services. There are six PSAPs in Vermont.

### 4.1 Hartford

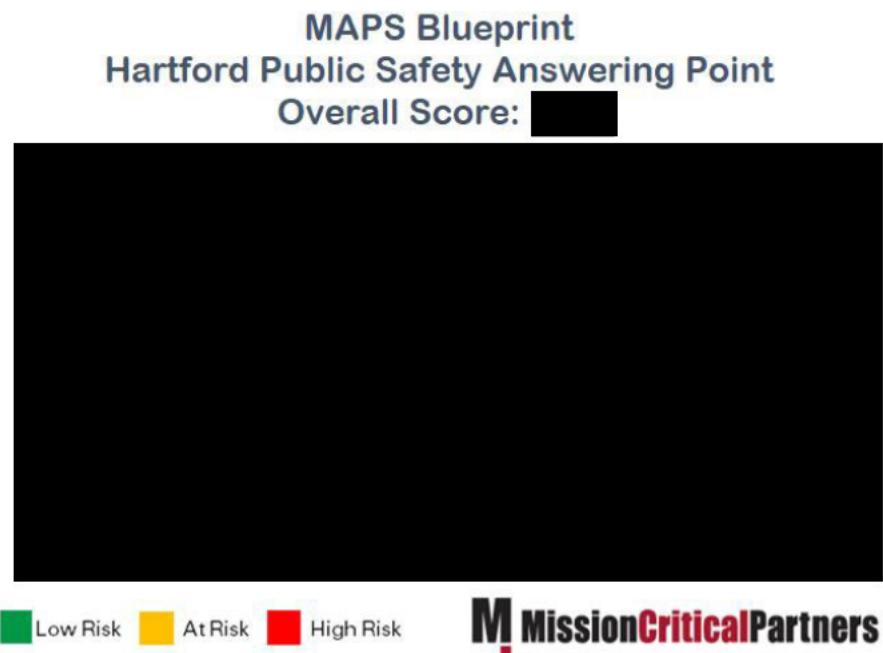


Figure 3: Hartford PSAP MAPS Blueprint

Based on the information provided and analyzed, Hartford’s areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges <sup>24</sup>	Agency-identified Challenges
No QA/QI program	♦
No formal change management process	♦

<sup>23</sup> National Emergency Number Association (NENA). (2024). NENA Knowledge Base. [https://kb.nena.org/wiki/PSAP\\_%28Public\\_Safety\\_Answering\\_Point%29](https://kb.nena.org/wiki/PSAP_%28Public_Safety_Answering_Point%29)

<sup>24</sup> Due to the number of cybersecurity assessments not completed, and the consistent cybersecurity challenges experienced by the agencies that did complete the assessment, cybersecurity is not listed as a challenge for any agency; a statement is made in Section 9 addressing this. This table for each agency will focus specifically on public safety communications-related challenges.

Informal recruitment process	♦
------------------------------	---

As a reminder, a ♦ indicates that the information was not provided by the communications center.

#### 4.1.1 Agency Demographic Information

##### 4.1.1.1 Governance

Component	Response
Agency location	812 VA Cutoff Rd. #2, Hartford, VT
Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis <sup>25</sup>	Annually
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

##### 4.1.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Ascutney Fire Department	Fire
Cavendish Fire/Rescue	Fire/EMS
Chester Ambulance	EMS
Chester Fire Department	Fire
Golden Cross Ambulance	EMS
Hartford Fire Department	Fire/EMS
Hartford Police Department	Law
Norwich Police Department	Law
Proctorsville Fire/Rescue Department	Fire/EMS

<sup>25</sup> Fire dispatch customers only

Reading Fire/Rescue Department	Fire/EMS			
Royalton Police Department	Law			
Sharon Fire Department	Fire			
South Royalton Fire Department	Fire			
South Royalton Rescue	EMS			
West Weathersfield Fire Department	Fire			
West Windsor Fire Department	Fire			
Windsor Ambulance	EMS			
Windsor Fire Department	Fire			
Windsor Police Department	Law			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	10,000 – 30,000	10,000 – 30,000+
Square Miles	80+	80+	80+	80+

#### 4.1.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless / VoIP	Unknown	Text-to-911	911 Transfers to Dispatch Centers	10-Digit	Outbound	Total
2,252	17,522	822	26	5,578	Unable to provide	Unable to provide	20,622
Average time to process calls from pick-up to disconnect (one month average)							
◆				N/A	Unable to provide	N/A	
<b>MCP Note:</b> The 911 transfers represent the calls transferred from the primary PSAP to dispatch centers across the state, not just the PSAP's primary catchment area as some calls roll over to other PSAPs.							

Annual Incident Volume and Processing Time 2023			
EMS	Fire	Law	Total
6,940	2,383	9,124	18,447
<b>Agency Note:</b> Used the 2023-2024 CAD data			
<b>Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)</b>			
Unable to provide	Unable to provide	Unable to provide	

#### 4.1.2 Finance

##### 4.1.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+1)
Salaries	*	\$703,544	*
Temporary personnel	*	\$15,000	
Education incentive (salaries)	*	\$4,500	
Holiday pay	*	\$41,795	*
OT – Grants	*	\$99,002	
Town FICA	*	\$60,231	*
Health insurance	*	\$121,680	*
HRA/ChoiceCare card	*	\$23,791	*
Dental	*	\$8,017	*
Life insurance	*	\$4,477	*
Workers' compensation	*	\$4,905	*
Retirement	*	\$59,664	*
Retiree health insurance	*	\$4,721	
<b>Subtotal</b>		<b>\$1,151,327</b>	<b>\$113,633</b>



**Agency Note:** Used FY 23/24 budget for communications, the budget for this coming FY 24/25 increased by over \$200,000; figure included in other expenses as a placeholder.

We have between \$20,000 – \$30,000 budgeted a year for future capital improvement projects; used \$30,000 in other expenses as a placeholder.

**MCP Note:** MCP calculated the average of the total full-time employee costs to determine the potential cost of one recommended full-time position.

Other Expenses	Amount	Total
Travel and meetings	\$2,000	
Membership dues	\$3,630	
Recruitment and training	\$4,500	
Contracted services	\$13,306	
Equipment operation/maintenance	\$8,398	
Equipment operation-communication	\$59,807	
Equipment maintenance-computers	\$39,041	
Materials and supplies	\$2,000	
Telephone	\$7,500	
Uniforms	\$750	
Building heat	\$2,345	
Electricity	\$6,496	
Increase in 2025 budget	\$200,000	
Future capital projects	\$30,000	
<b>Subtotal</b>		<b>\$379,773</b>
Total communications budget	See note	\$1,531,100
Total staffing recommendation adjusted budget	1 full-time dispatcher to meet industry standard (current part-time offsets needs by one)	\$1,644,733
Budget with cost contingency adjustment	25%	\$1,913,875

#### 4.1.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	26,059	\$58.76	\$63.12
10-digit calls	♦	-	-
Incidents	18,447	\$83.00	\$89.16
Population	10,000 – 30,000+	\$51.04 – \$153.11	\$54.82 – \$164.47
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 4.1.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund <sup>26</sup>	\$1,028,899	61.8%
State 911 disbursement – dedicated call-taker	\$124,230.14	7.5%
State 911 disbursement – regular	\$95,612.85	(5.7%)
Dispatch fees	\$417,072	25%
Other	N/A	N/A
<b>Total Funding</b>	<b>\$1,665,813.99</b>	<b>100%</b>

#### 4.1.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	No

<sup>26</sup> Use of the term "General fund" indicates a use of local (municipal) tax dollars and other local sources of municipal revenue

Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 4.1.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	10	10 full-time (also have 3 part-time that the jurisdictions does not include in its total authorized strength)
Number of vacancies	0	
Current retention	100%	No separations within the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour	
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	1	
<p><b>Recommended Staffing:</b> Twelve (full-time or full-time and part-time equivalents to maintain two on duty) dispatchers for 24/7 operations to meet industry standard.</p> <p>Hartford operates a primary PSAP, with call answering responsibility for two dispatch centers as well as overflow for the other PSAPs in the state. Hartford operates on 10-hour shifts.</p>		



The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”

Maintaining the minimum staffing level, with an average annual leave usage of 480 hours, requires a minimum of ten personnel—Hartford’s authorized strength is ten full-time and three part-time dispatchers, which just meets the baseline.

Maintaining two personnel on duty 24/7, aligning with the industry standard, requires a minimum of 12 personnel,

#### 4.1.5 Operations

##### 4.1.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Dedicated	The PSAP director is the sole supervisor, working Monday through Friday
Number of workstations	3	Dual call-taking and dispatching

#### 4.1.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Each console shares / assists with calls for all agencies.
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	10	3 Police, 6 Fire, and 1 Town Highway Hartford & Norwich Police share frequency, Windsor & Royalton Police separate frequencies Repeater Frequency has 6 fire agencies, 2 EMS, and 3 fast squads Hartford Fire/EMS Sharon/S Royalton Fire & EMS Chester Fire/EMS Cavendish & Proctorsville Fire (responds to EMS calls) Hartford Town Highway
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 4.1.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% –20%
EAS activation	1% – 10%
Jail	N/A
Records	10% – 20%
Security (active camera and access monitoring)	1% – 10%



Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	1% – 10%
Warrants	10% – 20%

#### 4.1.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	APCO standard

#### 4.1.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD) <sup>27</sup>	Yes	APCO

#### 4.1.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	NFPA
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

<sup>27</sup> Provided by DPS and required for use on incoming emergency phone lines only

## 4.1.6 Technology Systems

### 4.1.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Spillman	2014	♦	No	MDTs Protocols NCIC/Nlets ANI/ALI	Yes	No

Enhancements/Functionality: [REDACTED]

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Spillman	2014	♦	Yes	No
JMS	Spillman	2014	♦	Yes	No
Logging Recorder	Equature		Equature		No
Telephone (CHE or Administrative)			Local staff		
FSA	US Digital Designs/Phoenix G2 Automated Dispatching				No
GIS Mapping					

### 4.1.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- RapidSOS
- Active Alert

#### 4.1.6.3 Non-Call Processing and Dispatch Systems

Non-Call Processing and Dispatch Systems Ancillary Systems	

#### 4.1.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Room for another workstation
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Some open rack space but room itself is tight
Adjacent rooms are available to the center	Yes	Restroom, kitchen, supervisor's office
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

#### 4.1.8 Communication Networks

##### 4.1.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenanc e Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Burlington Comm's	Town of Hartford, Town of Norwich, Town of Sharon/S Royalton, Town of Chester,	UHF & VHF	No	No



			Town of Cavendish/ Proctorsville, Ascutney Repeater Association			
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

#### 4.1.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comm's	Town of Hartford, Town of Norwich, Town of Sharon/S Royalton, Town of Chester, Town of Cavendish/ Proctorsville, Ascutney Repeater Association	VHF& UHF		

Radio dispatch console system has had a hardware refresh in the last 2 years	
Radio dispatch console system has had a software refresh in the last 2 years	

#### 4.1.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	VHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 4.1.8.4 Broadband

Broadband	
Does your agency currently utilize broadband data?	Yes
What provider is used for broadband data?	Verizon

#### 4.1.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Bad
Comments on VCOMM: N/A	

#### 4.1.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 4.2 Lamoille County

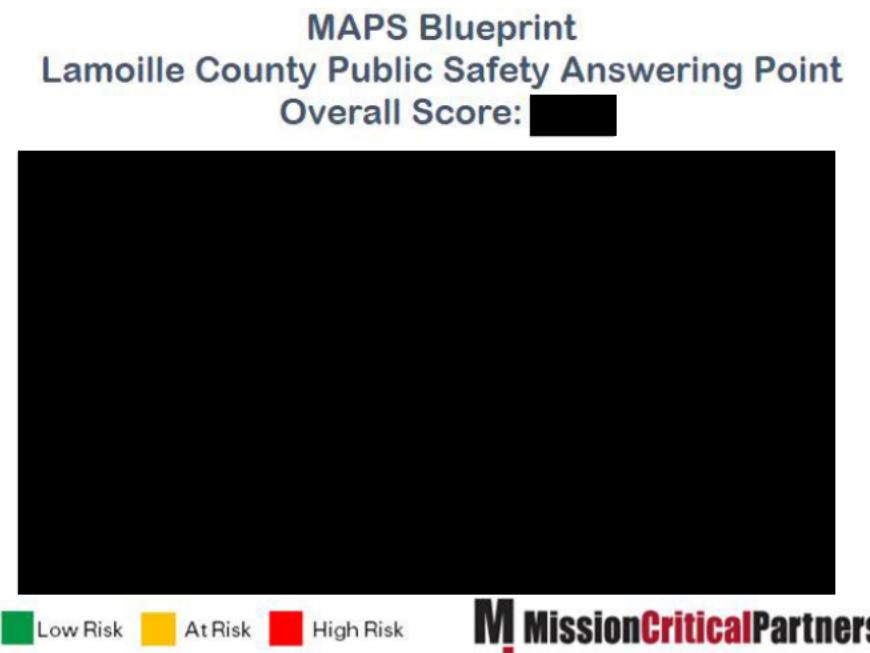


Figure 4: Lamoille County PSAP MAPS Blueprint

Based on the information provided and analyzed, Lamoille County's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and succession planning	Retaining employees
Quality assurance and performance management	Radio coverage
Technological limitations	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 4.2.1 Agency Demographics Information

#### 4.2.1.1 Governance

Component	Response
Agency location	162 Commonwealth Ave., Hyde Park, VT

Management and organizational structure	Division of the Sheriff's Office
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Yes (annually)
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 4.2.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Barre Town EMS	EMS
Barre Town Fire Department	Fire
Barre Town Police Department	Law
Cambridge Fire Department	Fire
Cambridge Rescue	EMS
Elmore Fire Department	Fire
Greensboro Fire Department	Fire
Hardwick Fire Department	Fire
Hardwick Police Department	Law
Hardwick Rescue	EMS
Hyde Park Fire Department	Fire
Johnson Fire Department	Fire
Lamoille County SO	Law
Morristown EMS	EMS
Morristown Police Department	Law
Morrisville Fire Department	Fire
North Hyde Park-Eden Fire Department	Fire
Northern EMS	EMS

Stowe Rescue	EMS			
Stowe Fire Department	Fire			
Stowe Mountain Rescue	Rescue			
Stowe Police Department	Law			
Wolcott Fire Department	Fire			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	80+	80+	80+	80+

#### 4.2.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless / VoIP	Unknown	Text-to-911	911 Transfers to Dispatch Centers	10-Digit	Outbound	Total
2,358	18,248	722	37	3,736	Unknown	Unknown	21,365
Average time to process calls from pick-up to disconnect (one month average)							
♦				N/A	Unknown	N/A	
<b>MCP Note:</b> The 911 transfers represent the calls transferred from the primary PSAP to dispatch centers across the state, not just the PSAP's primary catchment area as some calls roll over to other PSAPs.							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
8,874	1,588	25,156	35,620
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
2 hrs 23 min	2 hrs 27 min	46 min	N/A



## 4.2.2 Finance

### 4.2.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Management (2 supervisors)	\$127,000 \$133,000	\$260,000	
Dispatchers (8)	\$106,000 \$84,000 \$79,000 \$78,000 \$73,000 \$65,000 \$63,000 \$62,000	\$610,000	N/A
<b>Subtotal</b>		<b>\$870,000</b>	
Other Expenses		Amount	Total
Maintenance		\$121,000	
Overhead		\$197,000	
<b>Subtotal</b>			<b>\$318,000</b>
Total communications budget			<b>\$1,188,000</b>
Total staffing recommendation adjusted budget		N/A	N/A
Budget with cost contingency adjustment		25%	<b>\$1,485,000</b>

#### 4.2.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	21,511	\$55.23	N/A
10-digit calls	♦	-	-
Incidents	35,620	\$33.35	N/A
Population	10,000 – 30,000+	\$39.60 – \$118.80	N/A
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 4.2.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund		100%
State 911 disbursement – dedicated call-taker	\$804.49	
State 911 disbursement – regular	\$110,280.43	N/A
User fees	N/A	N/A
Other	N/A	N/A
Total Funding	\$111,084.92	100%
<b>MCP Note:</b> Center reported 100% of budget coming from general funds.		

#### 4.2.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No

COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	APCO

#### 4.2.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	10	8 dispatchers, 2 supervisors
Number of vacancies	0	
Current retention	100%	No separations within the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Appropriately staffed for current operations – 12 (full-time or full-time and part-time equivalents) dispatchers to maintain two on duty for 24/7 operations to meet industry standard.</p> <p>Lamoille County operates a primary PSAP, with call answering responsibility for the county itself as well as overflow for the other PSAPs in the state. Lamoille County operates on 12-hour shifts.</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”</p> <p>Maintaining the minimum staffing level, with an average annual leave usage of 257 hours, requires a minimum of ten personnel—Lamoille County’s current authorized strength.</p>		



Maintaining two personnel on duty 24/7, aligning with the industry standard, requires a minimum of 12 personnel, [REDACTED]

#### 4.2.5 Operations

##### 4.2.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	4	3 call-taking and dispatch, 1 dispatch only

##### 4.2.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Dual call-taking and dispatch at all positions
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	15	24 agencies dispatched
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		



#### 4.2.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% – 30%
EAS activation	N/A
Jail	N/A
Records	20% – 30%
Security (active camera and access monitoring)	20% – 30%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	1% – 10%
Warrants	20% – 30%

#### 4.2.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Structured	
Training program certified by state/industry organization		CTO certification Follows State training standards

#### 4.2.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	Yes	Not provided

#### 4.2.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	Provided by 911 Board
QA program (structured)	No



Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

#### 4.2.6 Technology Systems

##### 4.2.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2014	♦	No	MDTs	Yes	No
<b>Enhancements/Functionality:</b> [REDACTED]							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2014	♦	Yes	No
JMS	N/A	N/A	♦	N/A	N/A
Logging Recorder	Nice	2025			No
Telephone (CHE or Administrative)					
FSA	N/A				
GIS Mapping					
<b>Note:</b> IT support is local and SymQuest					

##### 4.2.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- ActiveAlert

#### 4.2.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 4.2.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Additional space in current room with re-configuring or expand into adjacent room
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Potentially for one more rack
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

#### 4.2.8 Communication Networks

##### 4.2.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola L3 Harris EF Johnson Tait	Analog & Digital	Burlington Comm's	Lamoille County Sheriff's Department Town of Stowe, Town of Hardwick	VHF & UHF	No	No



Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage	
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs	
Radio system(s) provide adequate coverage inside wood-constructed residences	
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 4.2.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comm	Lamoille County Sheriff's Department Town of Stowe, Town of Hardwick	VHF & UHF	4	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 4.2.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	VHF & UHF

Does your paging system provide adequate coverage for your operational needs?	Yes
---	-----

#### 4.2.8.4 *Broadband*

Broadband	
Does your agency currently utilize broadband (e.g., FirstNet/AT&T, Verizon, T-Mobile, etc.) for mission-critical voice communications?	Yes
If your agency currently utilizes broadband for either voice or data communications, identify the provider(s):	Verizon

#### 4.2.8.5 *VCOMM*

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Good
Comments on VCOMM: N/A	

#### 4.2.9 *Cybersecurity*

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	



#### 4.3 Shelburne

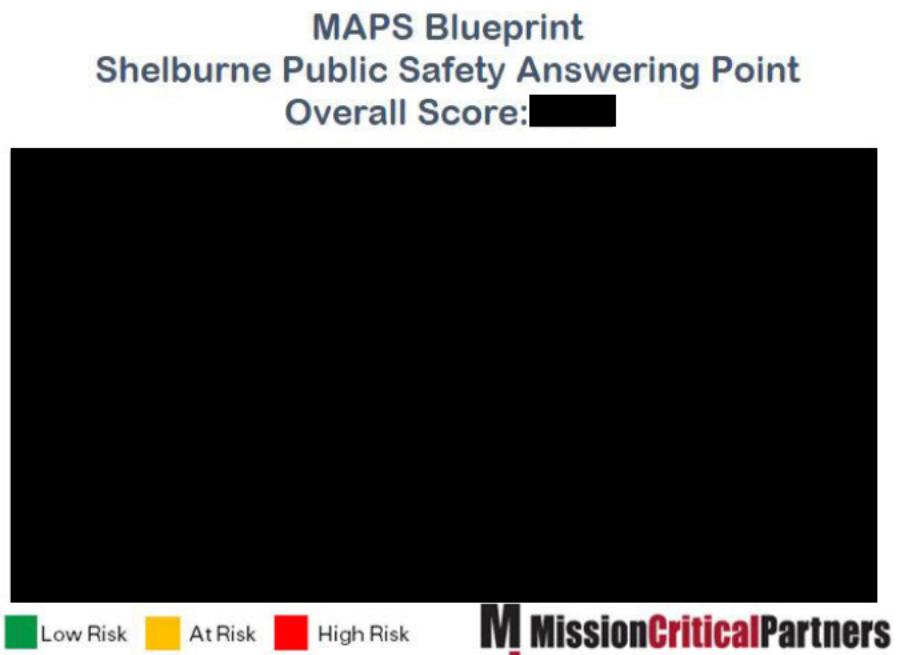


Figure 5: Shelburne PSAP MAPS Blueprint

Based on the information provided and analyzed, Shelburne's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and retention	Staffing
Governance and leadership gaps	Budget
Technological and infrastructure needs	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

##### 4.3.1 Agency Demographics Information

###### 4.3.1.1 Governance

Component	Response
Agency location	5420 Shelburne Rd., Shelburne, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Annually
Gaps/issues are present with the existing governance model/agreement that need to be addressed	Yes

#### 4.3.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Addison Fire Department	Fire
Alburgh Fire Department	Fire
Alburgh Rescue	EMS
Bolton Fire Department	Fire
Bridport Fire Department	Fire
Bristol Fire Department	Fire
Charlotte Fire Department	Fire
Charlotte Rescue	EMS
Ferrisburgh Fire Department	Fire
Ferrisburgh First Response	EMS
Grand Isle Fire Department	Fire
Grand Isle Rescue	EMS
Hinesburg Fire Department	Fire
Hinesburg First Response	EMS
Hinesburg Police Department	Law
Isle LaMotte First Response	Fire/EMS
Lincoln Fire Department	Fire
Lincoln First Response	EMS

Monkton Fire Department	Fire			
Monkton First Response	EMS			
New Haven Fire Department	Fire			
New Haven First Response	EMS			
North Hero Fire Department	Fire			
Richmond Fire Department	Fire			
Richmond Rescue	EMS			
Ripton Fire Department	Fire			
Ripton First Response	EMS			
Shelburne Fire Department	Fire			
Shelburne Police Department	Law			
Shelburne Rescue	EMS			
Starksboro Fire Department	Fire			
Starksboro First Response	EMS			
Town Line First Response	EMS			
Vergennes Fire Department	Fire			
Whiting Fire Department	Fire			
Whiting First Response	EMS			
Williston Fire Department	Fire			
Williston Rescue	EMS			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	30,000+	30,000	10,000 – 30,000	10,000 – 30,000+
Square Miles	80+	80+	80+	80+

#### 4.3.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless / VoIP	Unknown	Text-to-911	911 Transfers to Dispatch Centers	10-Digit	Outbound	Total
3,001	18,972	621	49	2,707	85,000	♦	107,643
Average time to process calls from pick-up to disconnect (one month average)							
♦				N/A	♦	N/A	

**MCP Note:** The 911 transfers represent the calls transferred from the primary PSAP to dispatch centers across the state, not just the PSAP's primary catchment area as some calls roll over to other PSAPs.

Average Annual Incident Volume and Processing Time 2021 - 2023			
EMS	Fire	Law	Total
6,410	2,242	5,186	13,838
<b>Agency Note:</b> Two years of data provided for law enforcement			
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

#### 4.3.2 Finance

##### 4.3.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+2)
Salaries	*	\$667,169	N/A
OT and Double-time		\$108,972	
Recruiting and Retention Program		\$25,000	
Benefits	*	\$239,505	



Training		\$2,500	
<b>Subtotal</b>		<b>\$1,043,146</b>	<b>\$169,691</b>

**Note:** Information pulled from 2023 Annual Report; FY 2024-25 Budget (Public Safety & Dispatch)

**MCP Note:** The subtotal to add two full-time dispatchers is based on the Personnel subtotal, less the recruiting program cost, divided by the authorized strength of 12 (which includes part-time staff), to determine the cost per. This number is likely high. The uniform costs below are based on the total amount divided by 12 to determine the cost per.

Other Expenses	Amount	Total
Office expense	\$5,000	
Uniforms	\$3,500	\$583
Uniform cleaning	\$100	\$17
Capital improvements	\$20,000	
Dispatch radio equipment maintenance contract	\$18,000	
Telephones	\$2,500	
Technology management fee	\$5,000	
Computer use	\$15,000	
<b>Subtotal</b>		<b>\$69,100</b>
Total communications budget	See note	\$1,112,246
Total staffing recommendation adjusted budget	Adding 2 full-time dispatchers to meet industry standard (current part-time offsets needs by one)	\$1,282,537
Budget with cost contingency adjustment	25%	\$1,603,171



#### 4.3.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	22,593	\$49.23	\$56.74
10-digit calls	85,000	\$13.09	\$15.08
Incidents	13,838	\$80.38	\$92.64
Population	30,000+	\$37.07 – \$111.22	\$42.73 – \$128.19

#### 4.3.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund		55%
State 911 disbursement – dedicated call-taker	N/A	
State 911 disbursement – regular	\$92,133.88	N/A
User fees (dispatch contracts)	\$319,000	N/A
Other (alarm permits)	\$10,000	N/A
Total Funding	\$421,133.88	100%
<b>Note:</b> Revenue amounts are pulled from 2023 Annual Report; FY 2025 2024-25 Revenue (Police & Emergency Dispatch)		

#### 4.3.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	

Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 4.3.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	12	2 supervisors, 7 full-time, 3 part-time
Number of vacancies	1	1 part-time call taker/dispatcher
Current retention	79.17%	5 separations in last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	Hybrid	8-hour and 12-hour shifts; 40-hour workweeks
Number of training staff not assigned to the operations floor	N/A	
Number of quality assurance staff not assigned to the operations floor	N/A	
<p><b>Recommended Staffing:</b> Twelve (full-time or full-time and part-time equivalents to maintain two on duty) dispatchers for 24/7 operations to meet industry standard.</p> <p>Shelburne operates a primary PSAP, with call answering responsibility for its jurisdiction as well as overflow for the other PSAPs in the state. Shelburne operates on a hybrid of 8-hour and 12-hour shifts, with staff working 40-hours a week. [REDACTED]</p> <p>[REDACTED] The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”</p>		



Shelburne did not provide information on leave time to more accurately establish a staffing baseline. However, using a leave average of 200 hours, staffing one position 24/7 on 8-hour and 12-hour shifts requires a minimum of six personnel. Staffing two positions on 8-hour shifts requires the equivalent of 11 to 12 full-time personnel, while staffing two positions on 12-hour shifts requires a minimum of 10 to 12 personnel. These numbers can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

The combined (police, fire, and EMS) incident volume for which dispatchers are responsible averages less than two an hour and the 911 call volume averages slightly over 2.5 an hour. [REDACTED]

Maintaining two personnel on duty 24/7, aligning with the industry standard, requires a minimum of 12 personnel, [REDACTED].

#### 4.3.5 Operations

##### 4.3.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	3	2 call-taking and dispatching, 1 dispatching

##### 4.3.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Position 1 and 2 – 911 call-taking and dispatching Position 3 – 7-digit call-taking and dispatching
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations		



Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)	
---	--

#### 4.3.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	N/A
Jail	N/A
Records	1% – 10%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	10% – 20%
Warrants	1% – 10%

#### 4.3.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	APCO standard

#### 4.3.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	Yes	APCO

#### 4.3.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

#### 4.3.6 Technology Systems

##### 4.3.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2022	♦	No	MDTs NCIC/Nlets	No	♦
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2022	♦	No	♦
JMS	N/A	N/A	♦	N/A	N/A
Logging Recorder	Equature				
Telephone (CHE or Administrative)					
FSA	N/A				
GIS Mapping					
IT support is local and outsourced to Calkins Networks					



#### 4.3.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- ActiveAlert
- First Due

#### 4.3.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 4.3.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Limited open rack space; approximately 12 x 14
Adjacent rooms are available to the center	Yes	Restroom, training room, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



#### 4.3.8 Communication Networks

##### 4.3.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola, L3Harris, JVC-Kenwood	Analog & Digital	Burlington Comm's	See agency note in Section 4.3.8.2	UHF & VHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						
Upgrades Planned: Adding mobile console system						

##### 4.3.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comms	See note below	VHF & UHF	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



**Agency Note:** Shelburne Police Department owns the Dispatch Console and Base Radio equipment at the [REDACTED] sites to access the repeater systems that are owned by the other individual agencies that are dispatched by Shelburne. Repeaters that are owned by other agencies are Shelburne Fire, Charlotte Fire and Rescue, Ferrisburgh Fire, Addison-Bridport Fire, Hinesburg Fire, Monkton-Starksboro Fire, Lincoln Fire, Bristol Fire, New Haven Fire, Ripton Fire, Whiting Fire, Orwell Fire, and Underhill-Jericho Fire.

#### 4.3.8.3 Paging System

Paging System	
Does your agency utilize a paging system?	Yes
What frequency band does your paging system operate in?	◆
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 4.3.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for data communications?	Yes
What broadband service is currently used?	FirstNet/ AT&T

#### 4.3.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Bad
Comments on VCOMM: N/A	



#### 4.3.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

#### 4.4 St. Albans

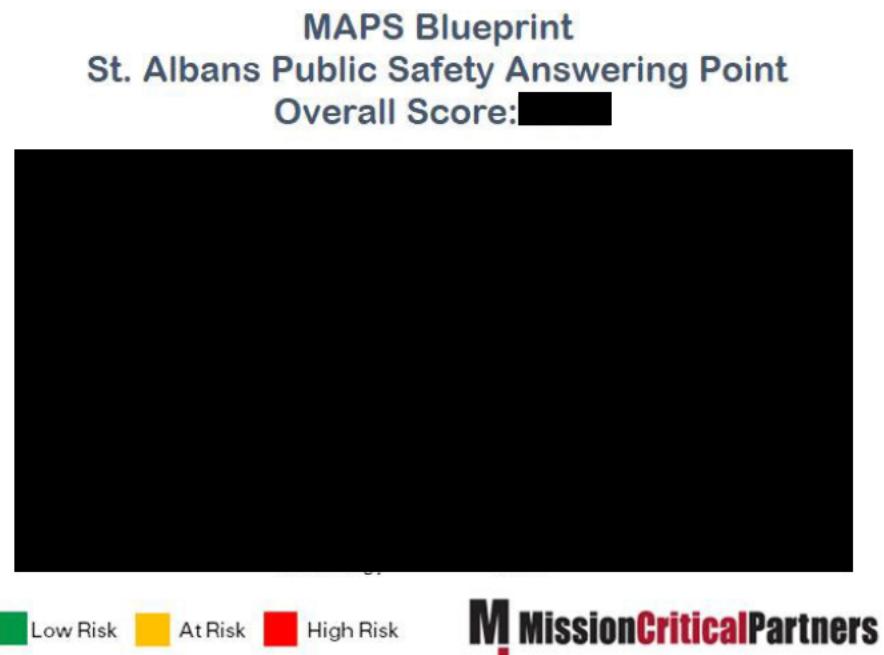


Figure 6: St. Albans PSAP MAPS Blueprint

Based on the information provided and analyzed, St. Albans' areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and succession planning	Staffing
Quality assurance and performance management	Retention
Operational and technological limitations	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

##### 4.4.1 Agency Demographic Information

###### 4.4.1.1 Governance

Component	Response
Agency location	142 S. Main St., St. Albans, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Monthly
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 4.4.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Amcare	EMS
Bakersfield Fire/Rescue	Fire
Berkshire Fire Department	Fire
Enosburgh Ambulance	EMS
Enosburgh Falls Fire Department	Fire
Fairfax Fire Department	Fire
Fairfax Rescue	EMS
Fairfield Fire Department	Fire
Franklin County Sheriff's Office	Law
Franklin Fire Department	Fire
Georgia Fire/Rescue	Fire
Highgate Fire Department	Fire
Milton Fire Department	Fire
Milton Police Department	Law
Milton Rescue	EMS
Missiquoi Valley Rescue	EMS
Montgomery Fire/Rescue	Fire
Richford Ambulance	EMS



Richford Fire Department	Fire			
St. Albans Fire Department	Fire			
St. Albans Police Department	Law			
St. Albans Town Fire Department	Fire			
Sheldon Fire Department	Fire			
Swanton Fire Department	Fire			
Swanton Police Department	Law			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	30,000+	30,000+
Square Miles	80+	80+	80+	80+

#### 4.4.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless / VoIP	Unknown	Text-to-911	911 Transfers to Dispatch Centers	10-Digit	Outbound	Total
2,897	21,431	798	65	3,978	Unable to provide	Unable to provide	25,191
Average time to process calls from pick-up to disconnect (one month average)							
◆			N/A		Varies	N/A	
<b>MCP Note:</b> The 911 transfers represent the calls transferred from the primary PSAP to dispatch centers across the state, not just the PSAP's primary catchment area as some calls roll over to other PSAPs.							

Average Annual Incident Volume and Processing Time 2022 – 2023			
EMS	Fire	Law	Total
9,316	2,484	24,047	35,847



**Agency Note:** Used 2022 and 2023 data

Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

Varies	Varies	Varies	
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#### 4.4.2 Finance

##### 4.4.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+1)
Salaries	*	\$707,324	*
Part-time personnel	*	\$19,518	
Overtime/Part-time personnel	*	\$47,798	
Health benefits	*	\$224,865	*
FICA/MEDI	*	\$61,818	*
Prudential Retirement	*	\$11,400	*
VMERS	*	\$52,859	*
Workers' Comp		\$3,413	
Unemployment		\$1,510	
Training		\$2,000	
<b>Subtotal</b>		<b>\$1,132,505</b>	<b>\$96,835</b>

**MCP Notes:** Used 2025 proposed budget for Dispatch Department; spreadsheet notes the proposed budget at \$1,500,134. The \$2 difference is likely the result of rounding in Excel.

MCP calculated the average of the total full-time employee costs to determine the potential cost of one recommended full-time position.

Other Expenses	Amount	Total
Uniforms	\$4,000	
Other professional services	\$21,240	



IT support services	\$28,000	
Building cleaning	\$5,760	
Snow removal	\$2,500	
Rentals	\$4,000	
Travel	\$1,000	
Operating supplies	\$7,000	
Water/Sewer	\$1,500	
Trash removal	\$1,502	
Communications	\$45,000	
Gas heat	\$2,500	
Electricity	\$6,800	
Building lease and operations	\$124,000	
R & M building	\$4,000	
Radar base	\$10,000	
R & M communications	\$5,000	
Miscellaneous equipment	\$3,000	
Miscellaneous expense	\$500	
Dispatch building fit up debt	\$33,925	
Dispatch tower debt	\$56,404	
<b>Subtotal</b>	<b>\$367,631</b>	
Total communications budget	See note	\$1,500,136
Total staffing recommendation adjusted budget	1 full-time dispatcher to meet industry standard (current part-time offsets needs by one)	\$1,596,971
Budget with cost contingency adjustment	25%	\$1,875,168

#### 4.4.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	25,551	\$59.70	\$62.51
10-digit calls	♦	-	-
Incidents	35,847	\$41.85	\$44.55
Population	30,000+	\$50.00	\$53.24
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 4.4.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$535,832	35.4%
Dispatch service contracts	\$848,202	56%
State 911 disbursement – dedicated call-taker	\$11,815.33	0.78%
State 911 disbursement – regular	\$117,650.10	7.8%
Total Funding	\$1,513,499.43	100%

#### 4.4.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	APCO

#### 4.4.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	13	1 supervisor, 10 full-time, 2 part-time
Number of vacancies	2	2 part-time
Current retention	60.00%	14 separations in last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	3 shifts – Morning, Swing, Night
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Twelve (full-time or full-time and part-time equivalents) dispatchers for 24/7 operations to meet industry standard.</p> <p>St. Albans operates a primary PSAP, with call answering responsibility for its jurisdiction as well as overflow for the other PSAPs in the state. St. Albans operates on three 12-hour shifts, one being a swing shift.</p> <p>Maintaining two personnel on duty 24/7, aligning with the industry standard, with an average annual leave usage of 273 hours, requires a minimum of 12 full-time personnel—this number can be offset by the effective use of part-time personnel. This staffing number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p>		




#### 4.4.5 Operations

##### 4.4.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Dedicated	
Number of workstations	3	Dual call-taking and dispatching

##### 4.4.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Each position handles law, fire, EMS and 911, non admin calls
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations		
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

##### 4.4.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% – 30%
EAS activation	N/A
Jail	N/A
Records	50%+



Security (active camera and access monitoring)	1% – 10%
Support municipal services	N/A
Vehicle release	N/A
Walk-up window	50%+
Warrants	50%+

#### 4.4.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		State standards CTO certification

#### 4.4.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	Yes	APCO

#### 4.4.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	NENA
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

## 4.4.6 Technology Systems

### 4.4.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2013	♦	Yes	MDTs Call-handling protocols NCIC/Nlets ANI/AI	Yes	No
<b>Enhancements/Functionality:</b>		[REDACTED]					

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2013	♦	Yes	No
JMS	N/A	N/A	♦	N/A	N/A
Logging Recorder	Eventide Nexlog				No
Telephone (CHE or Administrative)					
FSA	Active 911 RapidSOS (Sheldon Fire)				No
GIS Mapping					
IT support by local and outsourced to Symquest.					

### 4.4.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- RapidSOS

- IamResponding
- ActiveAlert

#### 4.4.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 4.4.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room, quiet room, gym, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

#### 4.4.8 Communication Networks

##### 4.4.8.1 Voice and Data Radio Infrastructure

##### Wireless Radio Communication Network

Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Avtec	Analog & Digital	Burlington Comm's	St. Albans PD	VHF & UHF	Yes	No



Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage	
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs	
Radio system(s) provide adequate coverage inside wood-constructed residences	
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 4.4.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comm's	St. Albans Police	VHF & UHF	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 4.4.8.3 Paging System

Paging System	
Is a paging system used?	Yes
What frequency band does the paging system operate in?	VHF & UHF
Does the paging system coverage meet operational needs?	Yes



#### 4.4.8.4 *Broadband*

Broadband	
Is broadband used to support voice communications?	Yes
Is broadband used to support data communications?	Yes
What provider is used for broadband services?	Comcast

#### 4.4.8.5 *VCOMM*

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 4.4.9 *Cybersecurity*

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	


## 4.5 Vermont State Police – Westminster

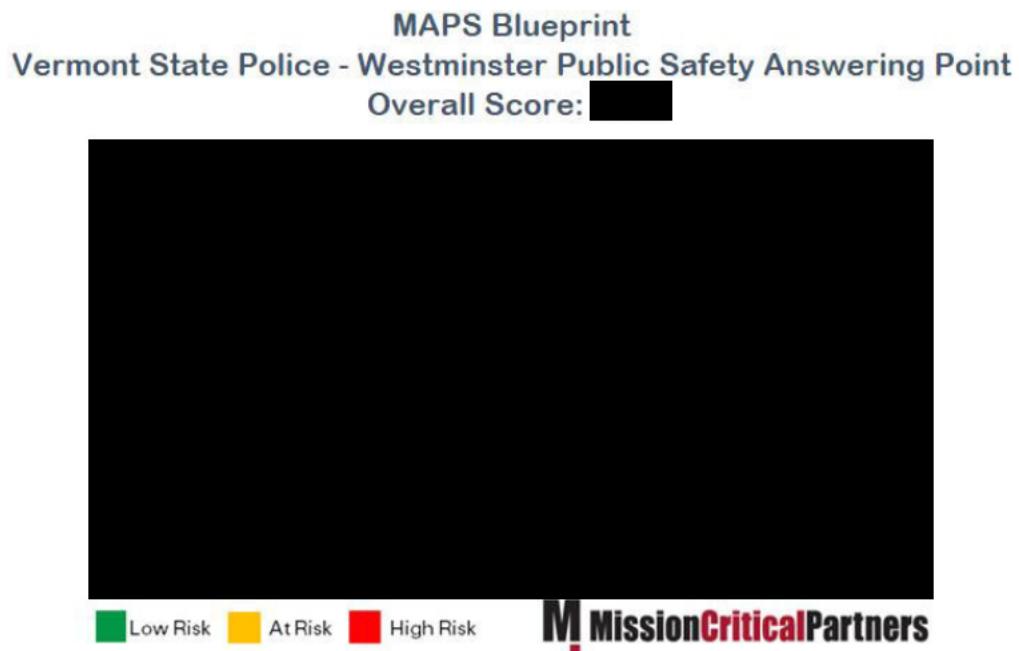


Figure 7: VSP – Westminster PSAP MAPS Blueprint

Based on the information provided and analyzed, VSP Westminster's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and recruitment challenges	Equipment
Technological limitations	Staffing
Quality assurance and operational gaps	Workload

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 4.5.1 Agency Demographic Information

#### 4.5.1.1 Governance

Component	Response
Agency location	1330 Westminster Heights Rd., Westminster, VT

Management and organizational structure	Division of Vermont State Police
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 4.5.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Arlington Rescue	EMS
Barnard Fire Department	Fire
Benson Town Fire Department	Fire
Bethel Fire Department	Fire
Brandon Area Rescue	EMS
Brandon Fire Department	Fire
Brandon Police Department	Law
Bristol Police Department	Law
Broadbrook Fire Department & Barnard Fire Department	Fire
Castleton Fire Department	Fire
Castleton Police Department	Law
Chelsea Fire Department	Fire
Chester Police Department	Law
Chittenden Fire Department	Fire
Chittenden First Response	EMS
Clarendon Fire Department	Fire
Danby-Mount Tabor Fire Department	Fire
East Wallingford Fire Department	Fire



Fair Haven Police Department	Law
Fair Haven Rescue	EMS
First Branch Ambulance	EMS
Granville Fire Department	Fire
Hancock Fire Department	Fire
Hubbardton Fire Department	Fire
Ira EMS	EMS
Ira Fire Department	Fire
Killington Fire Department	Fire
Killington First Response	EMS
Mount Holly Fire Department	Fire
Mount Holly Rescue Squad	EMS
New Haven VSP	Law
Pittsfield Fire Department	Fire
Pittsford Fire Department	Fire
Pittsford First Response	EMS
Proctor Fire Department	Fire
Rochester Fire Department	Fire
Royalton VSP	Law
Rutland Town Fire Department	Fire
Rutland VSP	Law
Shaftsbury Fire Department	Fire
Shaftsbury VSP	Law
Shrewsbury Fire Department	Fire
Stockbridge Fire Department	Fire
Tinmouth Fire Department	Fire

Tunbridge Fire Department	Fire			
Vergennes Police Department	Law			
Wallingford Fire Department	Fire			
Wallingford Rescue	EMS			
West Haven Fire Department	Fire			
West Rutland Fire Department	Fire			
Westminster VSP	Law			
White River Valley Ambulance	EMS			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	30,000+	30,000+
Square Miles	80+	80+	80+	80+

#### 4.5.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless / VoIP	Unknown	Text-to-911	911 Transfers to Dispatch Centers	10-Digit	Outbound	Total
7,597	55,015	389	152	21,002	N/A	Unable to provide	63,153
Average time to process calls from pick-up to disconnect (one month average)							
♦				N/A	N/A	N/A	
<b>MCP Note:</b> The 911 transfers represent the calls transferred from the primary PSAP to dispatch centers across the state, not just the PSAP's primary catchment area as some calls roll over to other PSAPs.							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
5,414	2,138	34,588	42,140
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
1 hr 14 mins	1 hr 39 mins	1 hr 58 mins	N/A

#### 4.5.2 Finance

##### 4.5.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
PSAP Director (Placeholder / no benefits costs included)	Pay Grade 29	\$150,000	N/A
Management (2 – see note)	Pay Grades 24 and 27	\$159,696	N/A
Administrative (1 – VOWS Coordinator)	Pay Grade 21	\$51,131	N/A
Supervisors (4)	Pay Grade 25	\$480,721	N/A
Dispatchers (31 full, 4 temp)	Pay Grades 20, 21, and 23	\$1,611,252	*
State Share Dental Insurance (all)	0.44%	\$15,654	*
State Share EAP (all)	0.02%	\$813	*
State Share Group Life Insurance (all)	0.23%	\$8,024	*
State Share Medical Insurance (all)	12.34%	\$437,187	*
State Share Long Term Disability	0.00%	\$57	*
State Share Social Security (all)	4.80%	\$170,039	*
State Share VSER/RT (all)	17.15%	\$607,533	*
<b>Subtotal</b>		<b>\$3,692,107</b>	

**MCP Note:** Includes two management positions, PSAP administrator and training coordinator; one appears to be partial year.

Annual salary totals include all pay categories, including OT and premium pay.

Other Expenses	Amount	Total
Avtec software maintenance (split equally with VSP Williston)	\$125,000	\$125,000
<b>Subtotal</b>		<b>\$125,000</b>
Total communications budget	See note	\$3,817,107
Total staffing recommendation adjusted budget		
Budget with cost contingency adjustment	25%	\$4,771,384

#### 4.5.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	63,001	\$60.59	N/A
10-digit calls	N/A	N/A	
Incidents	42,140	\$90.58	N/A
Population	30,000+	\$127.24	N/A
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 4.5.2.3 Funding Sources

Funding Source	Amount	Percentage
State general fund	\$3,549,910	88.1%

State 911 disbursement – dedicated call-taker	N/A	
State 911 disbursement – regular	\$211,961.19	5.3%
User fees	N/A	
Other – Universal Service Funds	\$267,197	6.6%
<b>Total Funding</b>	<b>\$4,029,068.19</b>	<b>100%</b>

#### 4.5.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	Yes
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 4.5.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	34	4 supervisors and 24 dispatchers full-time, and 4 dispatchers and 2 911 call-takers part-time
Number of vacancies	3	
Current retention	70.44%	22 separations in last 3 years
Minimum staffing needed for each shift		



Number of dispatchers assigned to a shift	[REDACTED]	
Number of shift supervisors assigned to a shift	[REDACTED]	
Shift supervisor span of control per shift	[REDACTED]	
Length of operational shifts	12-hour	3 shifts: 0600 – 1800 1200 – 0000 1800 – 0600
Number of training staff not assigned to the operations floor	1	Training coordinator is shared between Westminster and Williston PSAPs
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Appropriate authorized strength for 24/7 operations — 28 (full-time or full-time and part-time equivalents) supervisors and dispatchers for 24/7 operations.</p> <p>Preferred: Four supervisors (dedicated) and 28 (full-time or full-time and part-time equivalents) dispatchers for 24/7 operations.</p> <p>VSP Westminster operates a primary PSAP, with call answering responsibility for 12 dispatch centers as well as overflow for the other PSAPs in the state. VSP Westminster operates on three 12-hour shifts. [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>		
<p>Maintaining the minimum staffing levels, with an average annual leave usage of 224 hours, requires 28 full-time personnel (or the equivalent thereof). This staffing number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>Currently, VSP Westminster has a full-time authorized strength of 28 (four supervisors and 24 dispatchers)—the minimum needed.</p> <p>That said, the industry standard requires supervision when more than two telecommunicators are on duty. While VSP Westminster aligns with this standard, the supervisors are working—meaning they are actively answering calls and dispatching responders in addition to their supervisory responsibilities. While this is permissible within the constraints of the standard, it makes it more difficult to provide oversight. Consideration should be given to dedicated supervisory personnel (still four). If this is pursued, then dispatcher authorized</p>		



strength would need to increase to 28—placing VSP Westminster understaffed by four.

[REDACTED]

[REDACTED]

#### 4.5.5 Operations

##### 4.5.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	10	

##### 4.5.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Position 1 – Overflow/ Dispatch only Position 2 – Dispatch / Call-taking Position 3 – Dispatch / Call-taking Position 4 – Dispatch / Call-taking Position 5 – Dispatch / Call-taking Position 6 – Dispatch / Call-taking Position 7 – Dispatch / Call-taking Position 8 – Dispatch / Call-taking Position 9 – Overflow / Dispatch only Position 10 – Administrative / Dispatch only
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations		
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		



#### 4.5.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	1% – 10%
Jail	N/A
Records	10% – 20%
Security (active camera and access monitoring)	10% – 20%
Support municipal services	20% – 30%
Vehicle release	N/A
Walk-up window	1% – 10%
Warrants	10% – 20%
Other – Relief from Abuse Orders	10% – 20%

#### 4.5.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Hybrid	Use state certification academy followed by on-the-job training
Training program certified by state/industry organization	CTO	State standards

#### 4.5.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	Yes	APCO
<b>MCP Note:</b> PSAP also has electronic protocols through Virtual Academy and guide cards at each position		



#### 4.5.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	Reviews when there are issues

#### 4.5.6 Technology Systems

##### 4.5.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2021	Crosswinds and ADS	No	MDTs NCIC/Nlets	No	♦
Enhancements/Functionality:							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2021	Crosswinds and ADS	No	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	NextLog MediaWorks Plus				
Telephone (CHE or Administrative)					Yes
FSA	N/A				



GIS Mapping					
IT support is local and outsourced.					

#### 4.5.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- RapidSOS
- IamResponding

#### 4.5.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 4.5.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	Yes	Kitchen, kitchenette, locker space within PSAP, supervisor's office
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 4.5.8 Communication Networks

### 4.5.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	DPS & Burlington Comm's	Vermont DPS	UHF & VHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						
Planned Upgrades: DPS states that they have plans to implement a new phone system and new radio hardware.						

### 4.5.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	DPS & Burlington Comm's	Vermont DPS	VHF & UHF	Refer to Wireless Report	



Radio dispatch console system has had a hardware refresh in the last 2 years	
Radio dispatch console system has had a software refresh in the last 2 years	

#### 4.5.8.3 Paging System

Paging System
Westminster does not use a paging system.

#### 4.5.8.4 Broadband

Broadband
Westminster does not use broadband communications for voice or data.

#### 4.5.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 4.5.9 Cybersecurity

Cybersecurity
Cybersecurity assessment complete
Existence of documented cybersecurity Incident Response Plan
Existence of cybersecurity insurance policy

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 4.6 Vermont State Police – Williston

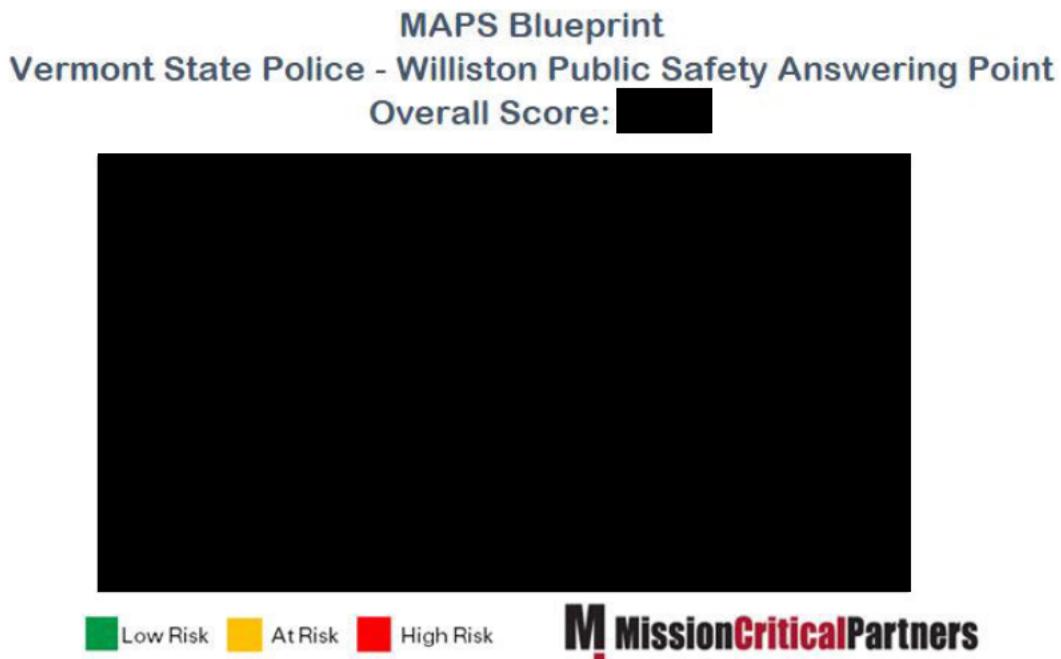


Figure 8: VSP – Williston MAPS Blueprint

Based on the information provided and analyzed, VSP Williston's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and retention	Short staffing
Technology limitations	Aging equipment
Operational standardization and training	Dispatch workload

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 4.6.1 Agency Demographic Information

#### 4.6.1.1 Governance

Component	Response
Agency location	3294 Saint George Rd., Williston, VT

Management and organizational structure	Division of Vermont State Police
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 4.6.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Berlin Police Department		Law		
Bradford Police Department		Law		
Conservation/Wildlife		Law		
Essex County Sheriff's Office		Law		
Glover Ambulance		EMS		
Grand Isle Sheriff's Office		Law		
Lyndonville Police Department		Law		
Northfield Police Department		Law		
Richmond Police Department		Law		
Swanton Police Department		Law		
Thetford Police Department		Law		
Vermont Department of Motor Vehicles		Law		
Vermont Fish and Wildlife		Law		
Vermont State Police		Law		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	< 500 – 1000	< 500 – 1000	30,000+	< 500 – 30,000+
Square Miles	40 – 60	< 3 – 5	80+	< 3 – 80+



#### 4.6.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless / VoIP	Unknown	Text-to-911	911 Transfers to Dispatch Centers	10-Digit	Outbound	Total
10,050	73,416	756	316	41,047	Unknown	Unable to provide	84,538
Average time to process calls from pick-up to disconnect (one month average)							
♦				N/A	Unknown	N/A	
<b>Agency Note:</b> Unable to track 10-digit calls on analog lines <b>MCP Note:</b> The 911 transfers represent the calls transferred from the primary PSAP to dispatch centers across the state, not just the PSAP's primary catchment area as some calls roll over to other PSAPs.							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
265	N/A	70,312	70,577
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
2 hrs 10 mins	N/A	1 hr 58 mins	

#### 4.6.2 Finance

##### 4.6.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Management (1)	Pay Grades 24 and 27	\$122,906	
Administrative (1 – VOWS Coordinator)	Pay Grade 21	\$114,487	
Supervisors (3)	Pay Grade 25	\$442,067	

Dispatchers (31 full, 7 temp.)	Pay Grades 20, 21, and 23	\$2,199,095	N/A
State Share Dental Insurance (all)	0.51%	\$14,772	
State Share EAP (all)	0.03%	\$919	
State Share Group Life Insurance (all)	0.33%	\$9,530	
State Share Medical Insurance (all)	13.01%	\$374,382	
State Share Social Security (all)	8.53%	\$245,578	
State Share VSER/RT (all)	25.90%	\$745,411	
<b>Subtotal</b>		<b>\$4,269,147</b>	

**Note:** Annual salary totals include all pay categories, including OT and premium pay.

Other Expenses	Amount	Total
Avtec software maintenance (split equally with VSP Westminster)	\$125,000	\$125,000
<b>Subtotal</b>		<b>\$125,000</b>
Total communications budget	See note	\$4,394,147
Total staffing recommendation adjusted budget	N/A	
Budget with cost contingency adjustment	25%	\$5,492,684

#### 4.6.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	84,217	\$52.18	N/A
10-digit calls	N/A	N/A	N/A
Incidents	70,577	\$62.26	N/A
Population	30,000+	\$146.47	N/A

**MCP Note:** Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.

#### 4.6.2.3 Funding Sources

Funding Source	Amount	Percentage
State general fund	\$4,086,557	87.6%
State 911 disbursement – dedicated call-taker	N/A	
State 911 disbursement – regular	\$269,768.78	5.8%
User fees	N/A	
Other (Enhanced 911 Special Fund)	\$307,590	6.6%
Total Funding	\$4,663,915.78	100%

#### 4.6.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	Yes
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	CALEA



#### 4.6.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	50	4 supervisors and 32 dispatchers full-time, and 9 dispatchers and 5 911 call-takers part-time
Number of vacancies	8	
Current retention	68.97%	28 separations in last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	0700 – 1900 1900 – 0700 1100 – 2300 1500 – 0300
Number of training staff not assigned to the operations floor	1	Training coordinator is shared between Westminster and Williston PSAPs
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Appropriate authorized strength for 24/7 operations — Four supervisors and 32 (full-time or full-time and part-time equivalents) dispatchers for 24/7 operations.</p> <p>VSP Williston operates a primary PSAP, with call answering responsibility for 12 dispatch centers as well as overflow for the other PSAPs in the state. VSP Williston operates on four 12-hour shifts, two being power shifts. Staffing varies based on the time of day (as shown above).</p> <p>[REDACTED]</p> <p>[REDACTED]</p>		



[REDACTED] the industry standard that requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”

VSP Williston reported an authorized strength of 32 dispatchers and four supervisors (full-time) and 14 part-time dispatchers and call-takers. There are currently eight vacancies.

Maintaining the minimum staffing levels reported, which fluctuate and are likely due to the vacancies, with an average annual leave usage of 265 hours, requires a baseline of 28 to 32 full-time personnel (or the equivalent thereof)—which (32) is the authorized full-time strength. This staffing number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

The industry standard requires supervision when more than two telecommunicators are on duty. While VSP Williston aligns with this standard, the supervisors are working—meaning they are actively answering calls and dispatching responders in addition to their supervisory responsibilities. While this is permissible within the constraints of the standard, it makes it more difficult to provide oversight. Consideration should be given to dedicated supervisory personnel (still four) when dispatcher authorized strength is reached (i.e., current vacancies are filled).

## 4.6.5 Operations

### 4.6.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	12	12 dispatch-capable 8 911-capable

### 4.6.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Primary Dispatch: 5 (see below) Primary 911: 2 Overflow: 1



		Courtwork/911: 1 As Assigned: 3
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations		Williston – 5 channels St Albans – 5 channels Berlin – 6 channels St. Johnsbury – 7 channels Derby – 7 channels
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 4.6.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	1% – 10%
Jail	N/A
Records	10% – 20%
Security (active camera and access monitoring)	10% – 20%
Support municipal services	10% – 20%
Vehicle release	N/A
Walk-up window	1% – 10%
Warrants	10% – 20%
Other – Relief from Abuse Orders	10% – 20%



#### 4.6.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Hybrid	Use State certification academy followed by on-the-job training
Training program certified by state/industry organization	CTO	State standards

#### 4.6.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	Yes	APCO

#### 4.6.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	Review when there are issues

### 4.6.6 Technology Systems

#### 4.6.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2021	♦	Used by all law agencies in VT except Hartford	MDTs NCIC/Nlets	No	♦



**Enhancements/Functionality:**

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2021	♦	No	♦
JMS	Valcour	2021	♦	Yes	♦
Logging Recorder	Eventide NexLog				
Telephone (CHE or Administrative)					Yes – analog dispatch phones to VoIP
FSA	N/A				
GIS Mapping					
IT support provided locally and by Vermont Agency of Digital Services.					

**4.6.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software**

**Over-the-Top – Integrated Applications – Software**  
Call Processing and Dispatch Systems

- RapidSOS

**4.6.6.3 Non-Call Processing and Dispatch Systems**

**Non-Call Processing and Dispatch Systems**  
Ancillary Systems



#### 4.6.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Pockets of open space on the floor that is estimated at a total of 50 square feet depending on code.
Adjacent rooms are available to the center	Yes	Supervisor's office, PSAP administrator's office, director's office, locker room
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

#### 4.6.8 Communication Networks

##### 4.6.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	Vermont DPS & Burlington Comm's	Vermont DPS	UHF & VHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						



Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)

Frequency of experiencing radio interference (noise or other unknown sources)

Frequency of radio system outages

Center is notified in advance of scheduled radio system maintenance outages

Center receives/monitors alarms from any of the radio systems

Planned Upgrades: DPS is planning on upgrading their telephone system to VoIP and planning a hardware upgrade to the Avtec dispatch consoles.

#### 4.6.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Vermont DPS & Burlington Comm's	Vermont DPS	UHF & VHF		
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 4.6.8.3 Paging System

Paging System
Williston does not use a paging system.

#### 4.6.8.4 Broadband

Broadband
Williston does not use broadband for voice or data communications.

#### 4.6.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 4.6.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5 Dispatch Centers

Vermont has 25 dispatch centers that receive transferred emergency calls from the primary PSAPs; these agencies do not receive 911 calls directly.

### 5.1 Barre City

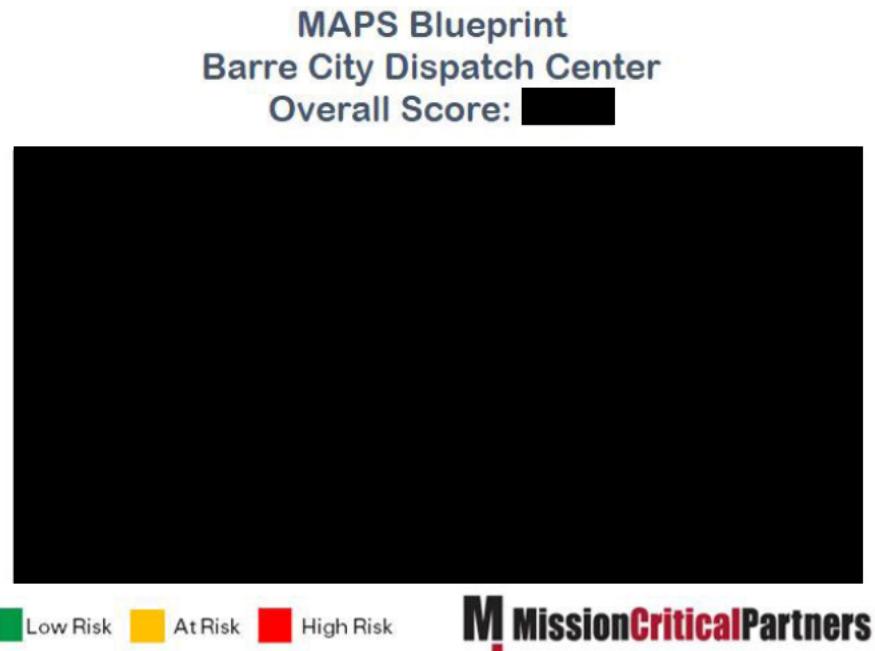


Figure 9: Barre City Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Barre City's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and supervisory deficiencies	Staffing
Operational and policy gaps	No Communications supervisor
Limited quality assurance and training programs	Lack of written SOPs specific to Communications

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 5.1.1 Agency Demographic Information

### 5.1.1.1 Governance

Component	Response
Agency location	15 Fourth St., Barre, VT
Management and organizational structure	Division of the Police Department
Center operates under a formal governance agreement	Yes <sup>28</sup>
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

### 5.1.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Barre City Fire and EMS Department	EMS
Barre City Police Department	Law
Brookfield Fire Department	Fire
East Randolph Fire	Fire
Orange County Sheriff's Department	Law
Randolph Center Fire	Fire
Randolph Police Department	Law
Randolph Village Fire	Fire
Washington County Sheriff's Department	Law
Washington Fast Squad	EMS
Washington Fire Department	Fire
Williamstown Fire Department	Fire

<sup>28</sup> Fire dispatch customers only

Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000
Square Miles	20 – 40	20 – 40	20 – 40	20 – 40

#### 5.1.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
425	2,544	462	7	N/A	Unable to provide	Unable to provide	3,456 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A			N/A	N/A	Unable to provide	N/A	
<b>Agency Note:</b> 10-digit data not capable within the facility <b>MCP Note:</b> 911 calls that fall into the Unknown category = 18							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
3,038	2,937	13,340	19,315
<b>Agency Note:</b> Barre City Fire and EMS and Washington Fire / Fast Squad have combined fire/EMS stats <b>Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)</b>			
31 minutes	24 minutes	30 minutes	



## 5.1.2 Finance

### 5.1.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+4)
Dispatchers (6 full-time)	\$73,738 (avg)	\$442,427	\$294,952
Dispatchers (Part-time)	\$11,838 (avg)	\$35,514	
OT and Training	\$16,378 (avg for 6)	\$98,267	\$65,512
FICA	\$7,308 (avg for 6)	\$43,850	\$43,848
Life Insurance	\$583 (avg for 6)	\$3,500	\$2,332
Dental	\$405 (avg for 6)	\$2,427	\$1,620
Vision	\$117 (avg for 6)	\$700	\$468
Health insurance	\$7,568 (avg for 6)	\$45,408	\$30,272
Retirement plan	\$8,369 (avg for 6)	\$50,215	\$33,476
<b>Subtotal</b>		<b>\$722,308</b>	<b>\$472,480</b>

**Note:** FY25 Template Budget. The averages in the amount column are calculated specifically to determine an estimate for additional staffing. MCP acknowledges that not all employees may participate in a respective benefit and the actual costs may vary.

Other Expenses	Amount	Total
Computer Access – PowerDMS	\$21,000	
Office Machine Contract and Maintenance	\$4,500	
Radio Maintenance	\$3,000	
Tower Rental Fees	\$2,087	
Office Supplies	\$1,500	
Dispatch Capital Transfer	\$25,000	
<b>Subtotal</b>		<b>\$57,087</b>
Total communications budget	See note	\$779,395

Total staffing recommendation adjusted budget	Adding 4 full-time dispatchers to meet industry standard (current part-time offsets needs by one)	\$1,251,875
Budget range with cost contingency adjustment	25%	\$974,244 – \$1,564,844

#### 5.1.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	19,315	\$40.35	\$64.81
Population	5,000 – 10,000	\$77.94 – \$155.88	\$125.19 – \$250.38
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.1.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund – assumed for remainder of budget	\$655,688	84.13%
State funding		
Dispatch contract – Washington County Sheriff (2024)	\$8,778 + \$35,166	1.25% plus a per call cost for a cumulative of calls and 25% of traffic stops for preceding year
Dispatch contract – Orange County Sheriff (2024) – phone answering services only	\$4,800	
Dispatch contract – Town of Randolph (2024)	\$8,778	1.25%
Dispatch contract – Williamstown Fire Department (2024)	\$10,101	

Dispatch contract – Williamstown Ambulance (2024)	\$12,507	
Dispatch contract – Washington Fire Department / Fast Squad	\$8,941	
Dispatch contract – Washington County Sheriff (2024)	\$34,636	
Total Funding	\$779,395	

### 5.1.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

### 5.1.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	9	6 full-time, 3 part-time
Number of vacancies	0	
Current retention	92.6%	1 separation in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		



Length of operational shifts	8-hour	0800 – 1600 1600 – 0000 0000 – 0800
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<b>Recommended Staffing:</b> Eleven to 12 (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.		
Barre City operates a 24/7 dispatch center operating on three 8-hour shifts; [REDACTED] [REDACTED] [REDACTED] [REDACTED]		
Using 361 hours of leave, the average annual leave usage among Barre City personnel, staffing [REDACTED] 24/7 on 8-hour shifts requires a minimum of six personnel; currently there are six full-time dispatchers and three part-time dispatchers.		
The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which, for Barre City, requires the equivalent of 11 to 12 full-time (or equivalent thereof) staff. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.		
For dispatch centers with low incident volumes, such as Barre City, this staffing level is often cost-prohibitive.		

## 5.1.5 Operations

### 5.1.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	Dispatchers call-take and dispatch simultaneously
Supervisors (working or dedicated)	Dedicated	
Number of workstations	3	2 primary for call-taking and dispatch services; 1 backup for overflow



#### 5.1.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	Law, Fire, and EMS at each position	Each position dispatches for all agencies. See note below
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	11	Barre City Police, Orange County Sheriff's Department, Washington County Sheriff's Department, and Randolph Police Department Barre City Fire/ Barre City EMS, Washington Fire/ Washington Fast Squad, Williamstown Fire/Williamstown Fast Squad, Randolph Village Fire, Randolph Center Fire, East Randolph Fire, Brookfield Fire  Also have access to: Barre City Public Works frequency. VT State 2 frequency Barre Town PD frequency Fire Aud frequency Public safety frequency Scramble channel
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.1.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	N/A
Jail	N/A
Records	10% – 20%
Security (active camera and access monitoring)	20% – 30%
Support municipal services	10% – 20%
Vehicle release	10% – 20%



Walk-up window	10% – 20%
Warrants	10% – 20%
TAC	20%

#### 5.1.5.4 Training

Component	Response	Notes
Structured or unstructured training program		CTO is setting up a training program
Training program certified by state/industry organization	APCO	Basic 40-hour Telecommunicator CTO course for trainers

#### 5.1.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.1.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	



## 5.1.6 Technology Systems

### 5.1.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	N/A	N/A		N/A	N/A	N/A	N/A
<b>Agency Note:</b> No true CAD system; use RMS							
<b>Enhancements/Functionality:</b> [REDACTED]							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2016	♦	Yes	♦
JMS	NA	NA	NA	NA	NA
Logging Recorder	Equature				Yes
Telephone (CHE or Administrative)					
FSA	Active 911				
GIS Mapping					
IT support is provided locally and outsourced.					

### 5.1.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

None



### 5.1.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.1.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Minimal space
Adjacent rooms are available to the center	Yes	Restroom, kitchen, records
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.1.8 Communication Networks

#### 5.1.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Tait	Analog / Digital Mix	Burlington Communications	City of Barre	UHF & VHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						



Radio system(s) provide adequate coverage inside wood-constructed residences	
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	
Planned Upgrades: The Department states that planned upgrades include the implementation of a Master Logging Recorder System and a Video Security System.	

#### 5.1.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Communications	City of Barre	VHF & UHF	3 Console Positions	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.1.8.3 Paging System

Paging System
Barre City does not use a paging system.

#### 5.1.8.4 Broadband

Broadband
Barre City uses FirstNet / AT&T for broadband data.

#### 5.1.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: Barre City stated it does not have a need for VCOMM	

#### 5.1.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.2 Bennington

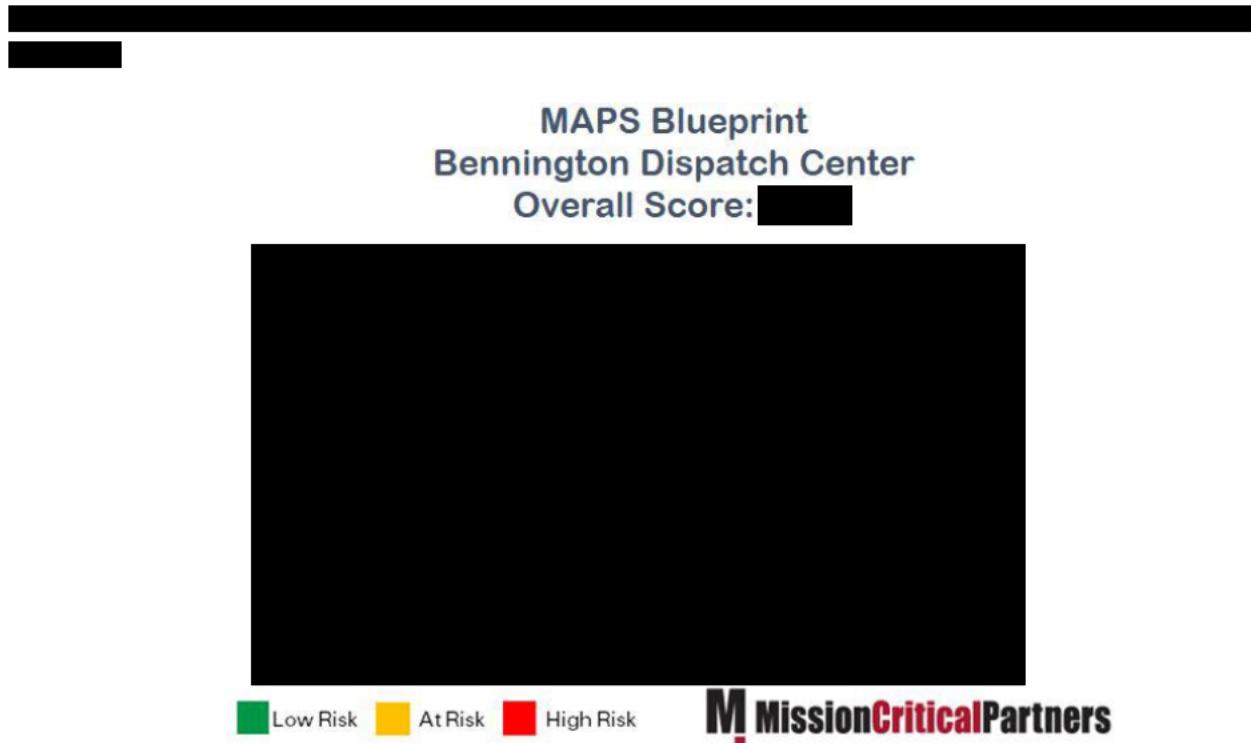


Figure 10: Bennington Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Bennington's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Understaffed and no dispatch supervisor	♦
Lack of funding for PowerDMS	♦
Inability for multiple people to enter remarks in a CAD incident simultaneously	♦

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 5.2.1 Agency Demographic Information

### 5.2.1.1 Governance

Component	Response
Agency location	118 South St., Bennington, VT
Management and organizational structure	Division of the Police Department
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

### 5.2.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Bennington Fire Department		Fire		
Bennington Police Department		Law		
Bennington Rescue		EMS		
Bennington Rural Fire Department		Fire		
North Bennington Fire Department		Fire		
Pownal Fire Department		Fire		
Pownal Rescue Squad		EMS		
Bennington Rescue				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles				



### 5.2.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
503	3,767	1,296	1	N/A	♦	♦	5,597 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	N/A	♦	N/A	N/A	
MCP Note: 911 calls that fall into the Unknown category = 30							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	13,000+	
Agency Note: Bennington Police is expected to exceed 13,000 incidents in 2024			
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

### 5.2.2 Finance

#### 5.2.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	N/A
Benefits	♦	♦	N/A
<b>Subtotal</b>			
<b>Note:</b>			



Other Expenses	Amount	Total
	♦	
<b>Subtotal</b>		
Total communications budget		♦
Total staffing recommendation adjusted budget		N/A
Budget with cost contingency adjustment	25%	

#### 5.2.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	♦		
Population	10,000 – 30,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.2.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	

Total Funding		
---------------	--	--

### 5.2.3 Leadership and Planning

Component	Response
Policy and procedure manual	On paper
Strategic plan	As part of the Police Department's plan required by the City
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

### 5.2.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	12	6 full-time; 6 part-time
Number of vacancies	♦	
Current retention	♦	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift	♦	
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	



Number of quality assurance staff not assigned to the operations floor	♦	
<b>Recommended Staffing:</b> [REDACTED]		
[REDACTED] From the onsite interview, [REDACTED]		
[REDACTED] the industry standard, which states "a minimum of two qualified telecommunicators on duty and present in the communications center at all times."		
Generally, staffing two positions on 12-hour shifts requires the equivalent of 10 to 12 full-time staff. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.		
In this case, staffing two positions on 8-hour or 10-hour shifts requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.		
For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.		

## 5.2.5 Operations

### 5.2.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	

### 5.2.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)	♦	



#### 5.2.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦
Walk-up window	♦
Warrants	♦

#### 5.2.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	No	

#### 5.2.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.2.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	♦



Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

## 5.2.6 Technology Systems

### 5.2.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	♦	♦	♦	♦	♦	♦
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	Equature		City IT		
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping	E911 Viewer				

### 5.2.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

♦



### 5.2.6.3 Non-Call Processing and Dispatch Systems

Non-Call Processing and Dispatch Systems Ancillary Systems	
◆	

### 5.2.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	Building is outgrown as a whole
Space exists for equipment room expansion and/or addition of systems and racks	◆	
Adjacent rooms are available to the center	◆	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.2.8 Communication Networks

#### 5.2.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
◆	◆	◆	◆	◆	◆	◆
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						



Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 5.2.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.2.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 5.2.8.4 Broadband

Broadband	
♦	



#### 5.2.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM: ♦	

#### 5.2.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

### 5.3 Brattleboro

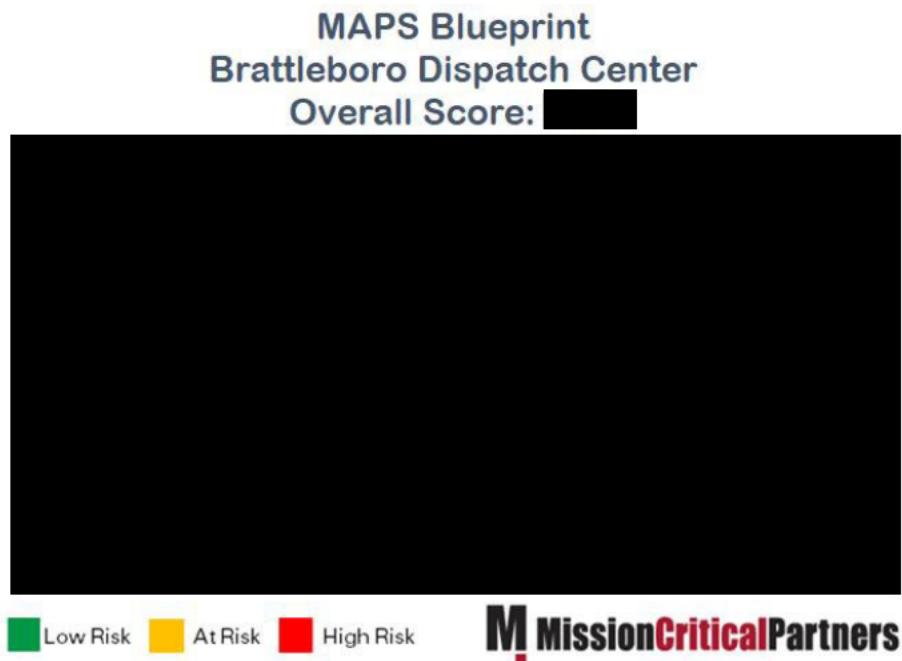


Figure 11: Brattleboro Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Brattleboro's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Approximate 50% new-hire training pass rate	Hiring
Leadership not actively developing professional relationships	Retention
QA/QI program not defined in policies	Budget

As a reminder, a ♦ indicates that the information was not provided by the communications center.

#### 5.3.1 Agency Demographic Information

##### 5.3.1.1 Governance

Component	Response
Agency location	62 Black Mountain Rd., Brattleboro, VT

Management and organizational structure	Division of the Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

#### 5.3.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Brattleboro Fire Department		Fire/EMS		
Brattleboro Police Department		Law		
Public Works		Other		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	20 – 40	20 – 40	20 – 40	20 – 40

#### 5.3.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
612	1,942	1,629	3	N/A	55,786	♦	60,000 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Notes: 911 calls that fall into the Unknown category = 28							
The 10-digit call volume provided by the dispatch center (60,000) has been reduced by the number of 911 calls as they are received on 10-digit lines.							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
	4,000	11,000	15,000
<b>Agency Note:</b> Fire and EMS incident volume combined is 4,000			
<b>Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)</b>			
♦	♦	♦	♦

### 5.3.2 Finance

#### 5.3.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+2)
Dispatchers (10)	\$50,000	\$500,000	\$100,000
<b>Subtotal</b>		<b>\$500,000</b>	<b>\$100,000</b>
<b>Note:</b> Personnel costs noted as one sum			
Other Expenses		Amount	Total
Maintenance		\$20,000	
<b>Subtotal</b>			<b>\$20,000</b>
Total communications budget		See note	\$520,000
Total staffing recommendation adjusted budget		Adding 2 dispatchers	\$620,000
Budget range with cost contingency adjustment		25%	\$650,000 – \$775,000

### 5.3.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	60,000	\$8.67	\$10.33
Incidents	15,000	\$34.67	\$41.33
Population	10,000 – 30,000	\$17.33 – \$52.00	\$20.67 – \$62.00
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

### 5.3.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$520,000	100%
State funding		
User fees		
Other		
Total Funding	\$520,000	

### 5.3.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	Yes
Change management policy	No
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 5.3.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	Authorized not provided but actual staffing was 10 in 2024
Number of vacancies	♦	
Current retention	29.2%	17 separations in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	0600 – 1800 1800 – 0600
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Twelve (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.</p> <p>Brattleboro operates a 24/7 dispatch center on four 12-hour shifts [REDACTED] the industry standard that requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.” Brattleboro did not provide information on leave time to more accurately establish a staffing baseline. However, using a leave average of 200 hours, staffing one position 24/7 on 12-hour shifts requires a minimum of six personnel, while staffing two positions 24/7 on 12-hour shifts requires a minimum of 10 to 12 dispatchers.</p> <p>This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p>		



While an authorized dispatcher strength was not provided, for this exercise, ten was assumed, which was the actual staffing at the time of this report. While ten is the minimum necessary, a minimum of 12 is recommended due to the high turnover, call volume, and ancillary duties.

### 5.3.5 Operations

#### 5.3.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	3	All have call-taking and dispatching capabilities

#### 5.3.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Each position works together handling whatever comes in, all positions can handle fire or law incidents
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	9	Monitoring up to 9 channels between fire, police, DPW, and area agencies
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.3.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% - 30%
EAS activation	N/A



Jail	1% – 10%
Records	30% – 40%
Security (active camera and access monitoring)	10% – 20%
Support municipal services	10% – 20%
Vehicle release	N/A
Walk-up window	30% – 40%
Warrants	30% – 40%

#### 5.3.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		State standards

#### 5.3.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.3.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	Yes
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	



## 5.3.6 Technology Systems

### 5.3.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2022	♦	♦	MDTs NCIC/Nlets	Yes	♦
<b>Enhancements/Functionality</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2022	♦	Yes	♦
JMS	Peopleforms	2015	♦	No	♦
Logging Recorder	Eventide				
Telephone (CHE or Administrative)					
FSA	Pre-tone to alert the station				
GIS Mapping					
IT support is provided locally and outsourced to CCI Managed Services					

### 5.3.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems
<ul style="list-style-type: none"> <li>• IamResponding</li> <li>• First Due</li> </ul>



### 5.3.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.3.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Room for additional consoles
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Extra square footage and open racks
Adjacent rooms are available to the center	Yes	Restroom, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.3.8 Communication Networks

#### 5.3.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital Mix	Joe Newton – Brattleboro FD	Town of Brattleboro	VHF & UHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						



Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	
Planned Upgrades: The Town's planned upgrades include the addition of a new dispatch console system and new security cameras.	

#### 5.3.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Joe Newton – Brattleboro FD	Town of Brattleboro	VHF & UHF	3 Console Positions	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.3.8.3 Paging System

Paging System
Brattleboro does not operate a paging system.

#### 5.3.8.4 Broadband

Broadband
Brattleboro uses Verizon for broadband services.

### 5.3.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: Brattleboro stated it does not have a need for VCOMM	

### 5.3.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 5.4 Burlington

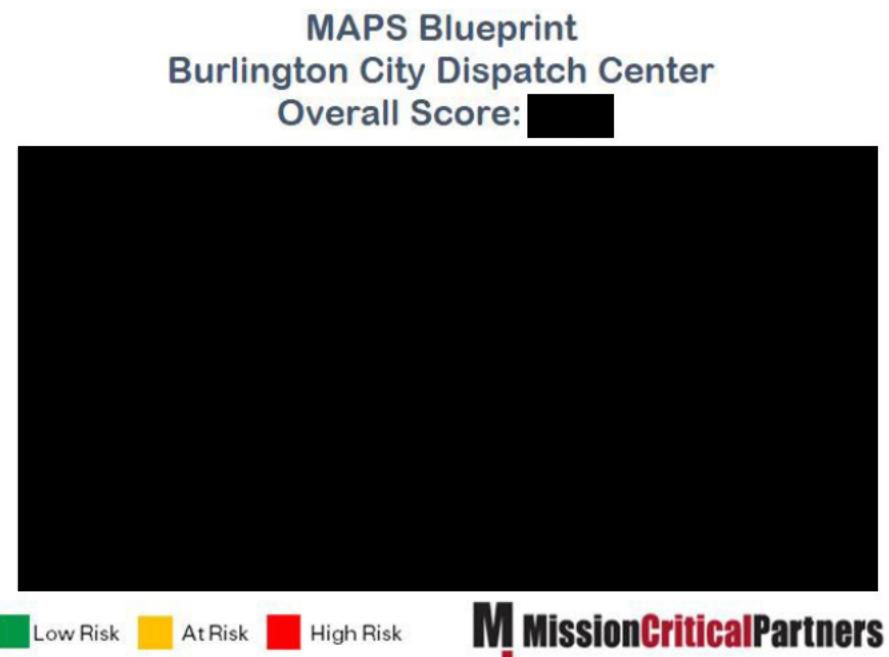


Figure 12: Burlington Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Burlington's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and leadership gaps	Staffing retention
Technological limitations and infrastructure issues	Recruiting qualified applicants
Operational inefficiencies and lack of strategic inclusion	Training officer burnout

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.4.1 Agency Demographic Information

#### 5.4.1.1 Governance

Component	Response
Agency location	1 North Ave., Burlington, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

#### 5.4.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched			Agency Type	
Burlington Fire Department			Fire/EMS	
Burlington Police Department			Law	
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	30,000+	30,000+
Square Miles	10 – 20	10 – 20	10 – 20	10 – 20

#### 5.4.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
1,213	10,637	1,649	46	N/A	♦	♦	13,736 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 191							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
6,688	3,038	25,782	35,508



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

36 min 42 sec

18 min 43 sec

♦

## 5.4.2 Finance

### 5.4.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	N/A
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses		Amount	Total
		♦	
<b>Subtotal</b>			
Total communications budget			
Total staffing recommendation adjusted budget		N/A	N/A
Budget with cost contingency adjustment		25%	

### 5.4.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		



Incidents	35,508		
Population	30,000+		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.4.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	
Total Funding		

#### 5.4.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦



#### 5.4.4 Staffing and Workforce

## 5.4.5 Operations

### 5.4.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	♦	
Number of workstations	5	Four regular stations equipped for both call-taking and dispatching with both business line and 911 phone at each station; one backup that does not have a dedicated 911 phone, but the ability to conference in on other user's 911 line if needed.

### 5.4.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Police 1: PD channel 1 (digital) PD channel 5 (analog), with ability to switch to Fire/Medical channels 1, 3, & 4.
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	6	Police 2: PD channel 1 (digital) PD channel 5 (analog), with ability to switch to Fire/Medical channels 1, 3, & 4. Police 3: PD channel 1 (digital) PD channel 5 (analog), with ability to switch to Fire/Medical channels 1, 3, & 4. Fire 1: Fire/Medical channel 1, 3, & 4 (digital) with ability to switch over to PD channel 1 & 5. Police/Fire/Backup/Training Desk (5th terminal): PD channel 1 (digital) PD channel 5 (analog), with ability to switch to Fire/Medical channels 1, 3, & 4. No dedicated 911 phone.



Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)

#### 5.4.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	N/A
Jail	1% – 10%
Records	10% – 20%
Security (active camera and access monitoring)	10% – 20%
Support municipal services	10% – 20%
Vehicle release	N/A
Walk-up window	N/A
Warrants	10% – 30%
Fire department radio box maintenance/alarm monitoring	25%

#### 5.4.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		

#### 5.4.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.4.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	No
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

#### 5.4.6 Technology Systems

##### 5.4.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD (Police)	Valcour (Police)	2011	Valcour	♦	MDTs	Yes	No
CAD (Fire/EMS)	Tyler	♦	Tyler	♦	♦	Yes	No
Enhancements/Functionality:							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2011	♦	Yes	No
JMS	♦	♦	♦	♦	♦
Logging Recorder	Equature and Media Works		In-house		No
Telephone (CHE or Administrative)			In-house		
FSA	Bryx				No
GIS Mapping					



#### 5.4.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

#### 5.4.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.4.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	Only 10 – 15 feet
Adjacent rooms are available to the center	Yes	But not for expansion
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 5.4.8 Communication Networks

### 5.4.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	Digital	Burlington Communications	Burlington Police	UHF	Yes	No
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

### 5.4.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Communications	Burlington Police Department	UHF	4 Primary Positions and 1 Back-up	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 5.4.8.3 Paging System

Paging System
Burlington does not operate a paging system.

#### 5.4.8.4 Broadband

Broadband
Burlington uses Verizon Broadband for data communications.

#### 5.4.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: Burlington stated it does not have a need for VCOMM	

#### 5.4.9 Cybersecurity

Cybersecurity
Cybersecurity assessment complete
Existence of documented cybersecurity Incident Response Plan
Existence of cybersecurity insurance policy

## 5.5 Colchester

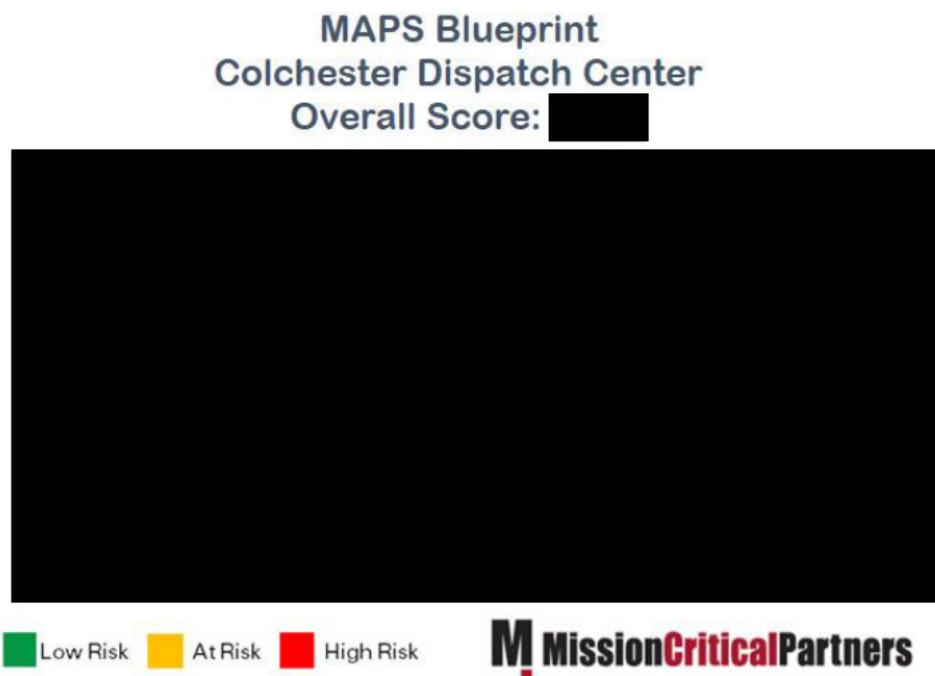


Figure 13: Colchester Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Colchester's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and retention	Staffing/Pay (Personnel)
Governance and leadership gaps	Camera system (Technology)
Policy and operational standardization	Phone/Radio equipment compatibility with headsets (Technology)

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.5.1 Agency Demographic Information

#### 5.5.1.1 Governance

Component	Response
Agency location	835 Blakely Rd., Colchester, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 5.5.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Colchester Rescue Squad <ul style="list-style-type: none"> <li>All of Colchester except for the southern area along the VT Route 15 corridor</li> </ul>		EMS		
Colchester Fire Department		Fire		
Colchester Police Department		Law		
Colchester Technical Rescue Squad		Tech Rescue		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	40 – 60	40 – 60	40 – 60	40 – 60

#### 5.5.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
246	2,291	425	9	N/A	43,085	577	46,694 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	53.3 seconds	N/A		
Agency Note: 10-digit call-processing average is likely thrown off by numerous quick calls that are spam/wrong number dials, etc. that would be difficult to weed out from the calculation.							



**MCP Notes:** 911 calls that fall into the Unknown category = 61

The 10-digit call volume provided by the dispatch center (46,117) has been reduced by the number of 911 calls as they are received on 10-digit lines.

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
2,096	726	10,579	13,401
<b>Agency Note:</b> Complete fire incident data not available for 2021 and 2022			
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

## 5.5.2 Finance

### 5.5.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+5)
Management (1)	\$65,000/year	\$65,000	N/A
Management Disability/Life	\$99/month	\$1,188	N/A
Dispatchers (6)	\$57,631/year	\$345,786	\$288,155
Dispatchers Disability/life	\$69/month	\$4,968	\$4,140
Dental (7)	\$62.10/month	\$5,216	\$3,726
Health insurance (7)	\$1,528.36/month	\$128,382	\$91,702
Retirement plan	6.75% of wages	\$27,728	\$6,190
<b>Subtotal</b>		<b>\$578,268</b>	<b>\$393,913</b>
<b>Note:</b> Dispatcher salaries are broken down into 35 steps in labor agreement (Contract attachment C). For purposes of this document used Step 10 for FY25.			



Other Expenses	Amount	Total
Radio service contract	\$577/month	\$6,924
<b>Subtotal</b>		<b>\$6,924</b>
Total communications budget	See note	\$585,192
Total staffing recommendation adjusted budget	Adding 5 dispatchers to meet industry standard	\$972,181
Budget range with cost contingency adjustment	25%	\$731,490 – \$1,215,226

#### 5.5.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	46,117	\$12.69	\$21.23
Incidents	13,401	\$43.37	\$73.06
Population	10,000 – 30,000	\$19.51 – \$58.52	\$32.64 – \$97.91
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			
<b>Agency Note:</b> It's hard to specify any costs that relate directly to the communications center as they come out of the whole department's budget			

#### 5.5.2.3 Funding Sources

### 5.5.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	No

Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	None reported
Agency Note:	

#### 5.5.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	6	6 full-time; no limit on part-time
Number of vacancies	0	
Current retention	66.7%	7 separations in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour; hybrid	
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	1	
<b>Recommended Staffing:</b> Eleven to 12 (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.		
Colchester operates a 24/7 dispatch. [REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		



[REDACTED]. However, the industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 11 to 12 full-time staff (or the equivalent thereof) for 24/7 operations. [REDACTED]

## 5.5.5 Operations

### 5.5.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	Dispatchers handling incoming calls and dispatch simultaneously
<b>Supervisors (working or dedicated)</b>	N/A	
Number of workstations	3	Dual purpose phones and radio

### 5.5.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	Fire/Rescue Law	All fire and EMS personnel Police officers
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	2	Fire/Rescue Law Another 6 are available through the console
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)	[REDACTED]	[REDACTED]

### 5.5.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	N/A



Jail	N/A
Records	1% – 10%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	N/A
Vehicle release	N/A
Walk-up window	1% – 10%
Warrants	1% – 10%

#### 5.5.5.4 Training

Component	Response	Notes
Structured or unstructured training program	CTO	Adheres to state standards
Training program certified by state/industry organization	No	

#### 5.5.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	N/A

#### 5.5.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	Local Ordinances NFPA
QA program (structured)	No
Percentage of calls that receive a QA review	N/A
Frequency that QA assessments are completed and returned to staff	N/A



## 5.5.6 Technology Systems

### 5.5.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2013	Valcour/ Crosswinds Technologies	All agencies with Valcour	MDTs NCIC/NLETS	Yes	N/A
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2013	Valcour/ Crosswinds Technologies	Yes	♦
JMS	JailTracker	Unknown		Yes	♦
Logging Recorder	Equature				
Telephone (CHE or <u>Administrative</u> )			TwinState Technologies		
FSA	Active 911				Moving to First Due
GIS Mapping	Valcour		TwinState Technologies		

### 5.5.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- Active Alert



### 5.5.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.5.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	2 open racks
Adjacent rooms are available to the center	Yes	Restroom
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.5.8 Communication Networks

#### 5.5.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Avtec	Analog (Fire/EMS) Digital P25 (Law)	Burlington Comms.	Colchester PD	UHF/VHF	Yes (Law)	Radio repeaters
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						



Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs	
Radio system(s) provide adequate coverage inside wood-constructed residences	
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	
Planned Upgrades: Colchester states that planned upgrades include an upgrade to the Avtec Dispatch Console System and the addition of new repeaters.	

#### 5.5.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comms.	Colchester PD	UHF/VHF	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.5.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
Does not operate a paging system				
Paging system provides adequate coverage for operational needs				N/A



#### 5.5.8.4 *Broadband*

Broadband	
Agency currently utilizes broadband (e.g., FirstNet/AT&T, Verizon, T-Mobile, etc.) for mission-critical voice communications	Verizon
Agency currently utilizes broadband for data communications	Yes

#### 5.5.8.5 *VCOMM*

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Fair
Comments on VCOMM: Colchester reports a lack of coverage	

#### 5.5.9 *Cybersecurity*

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.6 Dover

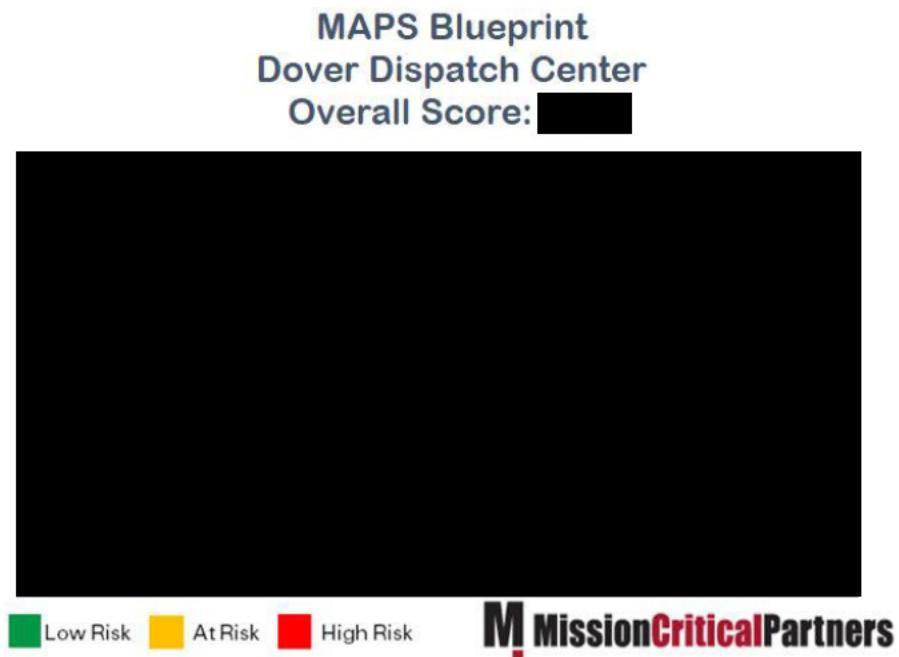


Figure 14: Dover Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Dover's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Single dispatcher agency – dispatch only functions 40 hours per week	◆
No dispatch policies and procedures	◆
No dispatch training process	◆

As a reminder, a ◆ indicates that the information was not provided by the communications center.

### 5.6.1 Agency Demographic Information

#### 5.6.1.1 Governance

Component	Response
Agency location	246 VT Route 100, West Dover, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

#### 5.6.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched				Agency Type
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	N/A	N/A	1,000 – 2,500	1,000 – 2,500
Square Miles	N/A	N/A	40 – 60	40 – 60

#### 5.6.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
28	142	6	0	N/A	Not tracked	Not tracked	178 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	No way to track	N/A		
MCP Note: 911 calls that fall into the Unknown category = 2							

Average Annual Incident Volume and Processing Time 2021 – 2023				
EMS	Fire	Law	Total	
N/A	N/A	759	759	



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

N/A	N/A	♦	
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## 5.6.2 Finance

### 5.6.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Dispatcher	\$52,416	\$52,416	None
<b>Subtotal</b>		<b>\$52,416</b>	
<b>Note:</b> Not a 24/7 operation			
Other Expenses		Amount	Total
		♦	
<b>Subtotal</b>			
Total communications budget			<b>\$52,416</b>
Total staffing recommendation adjusted budget		N/A	
Budget with cost contingency adjustment	25%		<b>\$65,520</b>

### 5.6.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	759	\$69.06	



Population	1,000 – 2,500	\$20.97 – \$52.42	
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.6.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund (Town budget)	\$52,416	100%
State funding	N/A	
User fees	N/A	
Other	N/A	
<b>Total Funding</b>	<b>\$52,416</b>	

#### 5.6.3 Leadership and Planning

Component	Response
Policy and procedure manual	N/A
Strategic plan	N/A
Change management policy	N/A
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 5.6.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	1	
Number of vacancies	0	
Current retention	100%	No separations within the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour	
Number of training staff not assigned to the operations floor	N/A	
Number of quality assurance staff not assigned to the operations floor	N/A	
<p><b>Recommended Staffing:</b> Appropriately staffed for current operations – [REDACTED] (full-time or full-time and part-time equivalents) for part-time operations.</p> <p>Dover operates its dispatch center part-time, Sunday through Wednesday from 0700 to 1700. The law enforcement incident volume, an average of four a day when operating, is such that it is easily handled [REDACTED]</p> <p>While the industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times”—adherence to which is always recommended for 24/7 operations—it is not fiscally responsible for a dispatch center that operates part-time and whose staff is more administrative in nature than a dispatcher.</p> <p>If Dover elected to transition to 24/7 operations, minimum dispatcher staffing would be 10 to 12 (full-time or full-time and part-time equivalents) to maintain two dispatchers on duty 24/7. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>For dispatch centers with a low incident volume, such as Dover, this staffing level is often cost-prohibitive.</p>		



## 5.6.5 Operations

### 5.6.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	♦	
Number of workstations	1	

### 5.6.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	Police	Everything police-related
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	2	Primary agency channel; Dover town-wide channel
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.6.5.3 Ancillary Duties

Component	Percentage of Time
Administration	50%+
EAS activation	N/A
Jail	N/A
Records	N/A
Security (active camera and access monitoring)	N/A
Support municipal services	10% – 20%
Vehicle release	N/A



Walk-up window	30% – 40%
Warrants	N/A

#### 5.6.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		No standards

#### 5.6.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 5.6.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

### 5.6.6 Technology Systems

#### 5.6.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2021	♦	Yes; VSP-Westminster	MDTs NCIC/Nlets	Yes	No



**Enhancements/Functionality:**

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2021	♦	Yes	No
JMS	Valcour	2021	♦	Yes	No
Logging Recorder	N/A				
Telephone (CHE or Administrative)					
FSA	N/A				
GIS Mapping					
IT support is provided locally and outsourced to a local vendor.					

**5.6.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software**

**Over-the-Top – Integrated Applications – Software**  
Call Processing and Dispatch Systems

N/A

**5.6.6.3 Non-Call Processing and Dispatch Systems**

**Non-Call Processing and Dispatch Systems**  
Ancillary Systems

**5.6.7 Facilities**

Component	Response	Notes
Room exists for center expansion	No	

Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

## 5.6.8 Communication Networks

### 5.6.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	R&R Communications	Dover PD	VHF	No	No
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						



#### 5.6.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	R&R Communications	Dover PD	VHF	1	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.6.8.3 Paging System

Paging System
Dover does not operate a paging system.

#### 5.6.8.4 Broadband

Broadband
Dover does not use broadband for data communications.

#### 5.6.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.6.9 Cybersecurity

Cybersecurity
Cybersecurity assessment complete
Existence of documented cybersecurity Incident Response Plan
Existence of cybersecurity insurance policy



## 5.7 Essex



Figure 15: Essex Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Essex's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Being a colocated dispatch center with differing dispatch methods, pay, and benefits	Staffing
Lack of call guides or protocol usage	Call volume
Essex Fire/Rescue does not use Valcour CAD	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.7.1 Agency Demographic Information

#### 5.7.1.1 Governance

Component	Response
Agency location	145 Maple St., Essex Junction, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.7.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
City of Essex Fire Department		Fire		
Essex Police Department		Law		
Essex Rescue		EMS		
Town of Essex Fire Department		Fire		
Westford Fire Department		Fire		
Williston Police Department		Law		
Public Works		Other		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	40 – 60	20 – 40	20 – 40	20 – 60

#### 5.7.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
325	2,916	730	5	N/A	Not tracked	Not tracked	4,000 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	3 – 5 min	N/A		



**MCP Note:** 911 calls that fall into the Unknown category = 24

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
3,009	1,174	9,184	13,367
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
60 – 75 min	30 – 45 min	30 – 45 min	

## 5.7.2 Finance

### 5.7.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+1)
Dispatchers (8 full-time, 3 part-time)	*	\$630,075	*
<b>Subtotal</b>		<b>\$630,075</b>	
<b>Note:</b> Data provided is from 2023; used \$50,000 for maintenance costs even though range provided			
Other Expenses		Amount	Total
		\$10,000 – \$50,000	\$50,000
<b>Subtotal</b>			<b>\$50,000</b>
Total communications budget	See note		\$680,075
Total staffing recommendation adjusted budget	Adding 1 full-time dispatcher to meet industry standard		*
Budget with cost contingency adjustment	25%		\$850,094



### 5.7.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	13,367	\$50.88	*
Population	10,000 – 30,000	\$22.67 – \$68.01	*
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

### 5.7.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$680,075	100%
State funding	N/A	N/A
User fees	N/A	N/A
Other	N/A	N/A
Total Funding	\$680,075	

### 5.7.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	N/A
Change management policy	N/A
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 5.7.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	13	2 supervisors (1 for Essex and 1 for Williston), 8 full-time and 3 part-time dispatchers  Dispatcher staffing is split between Essex and Williston — 4 full-time for each side  3 part-time for Essex
Number of vacancies	0	
Current retention	62.2%	12 separations in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour	
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Twelve (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations.</p> <p>Essex operates a 24/7 dispatch center on 10-hour shifts. [REDACTED] the industry standard that requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.” The assumption is that Essex and Williston operations are separate based on the staffing numbers for each. It is not known if staff are cross-trained for operations on either side.</p> <p>Using 583 hours of leave, the average annual leave usage among Essex personnel, staffing one position 24/7 on 10-hour shifts requires a minimum of six personnel; staffing two positions (the minimum) requires 12 to 13</p>		



dispatchers, statistically. These numbers can be affected by the schedule (days on/days off), operational configuration, responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

With working supervisors placing the full-time complement at ten, the part-time staff is not enough to place Essex appropriately staffed overall (the equivalent of 11 full-time).

While the overall incident volume is low—less than two incidents an hour for law, fire, and EMS combined—the incoming call volume and number of talkgroups being monitored simultaneously are not known. These could increase the workload and dispatcher stress.

Without knowing more about Essex's operational configuration, it is difficult to determine which "side" may need additional staff. The recommendation is at least one additional full-time dispatcher, which, with the part-time staff, equates to about 12 full-time staff. Again, this number is affected by the above parameters and Essex may determine it needs two additional or is appropriately staffed for current operations.

## 5.7.5 Operations

### 5.7.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	2	Call-taking and dispatching at both

### 5.7.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Dispatch #1 – PD, Fire, RSQ, PW, Phones, Lobby Traffic, Cameras Dispatch #2 – Same as #1
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		



#### 5.7.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	1% – 10%
Jail	N/A
Records	1% – 10%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	1% – 10%
Walk-up window	1% – 10%
Warrants	1% – 10%

#### 5.7.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		CTO certifications

#### 5.7.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.7.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No



Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

## 5.7.6 Technology Systems

### 5.7.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2022	♦	No	MDTs NCIC/Nlets	Yes	No
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2022	♦	Yes	No
JMS	N/A	N/A	♦	N/A	♦
Logging Recorder	Equature				No
Telephone (CHE or Administrative)					
FSA	No				
GIS Mapping					
IT support is provided locally.					

### 5.7.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- IamResponding



### 5.7.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.7.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Portions of server racks in radio and server room
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room, gym, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.7.8 Communication Networks

#### 5.7.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	Essex PD – Alex Caron	Essex Police Dept.	UHF and VHF	Yes	No
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						



Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 5.7.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Essex PD – Alex Caron	Essex Police Dept.	UHF and VHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.7.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 5.7.8.4 Broadband

Broadband	
FirstNet / AT&T and Verizon are used to support broadband data.	

#### 5.7.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Good
Comments on VCOMM: N/A	

#### 5.7.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.8 Ludlow

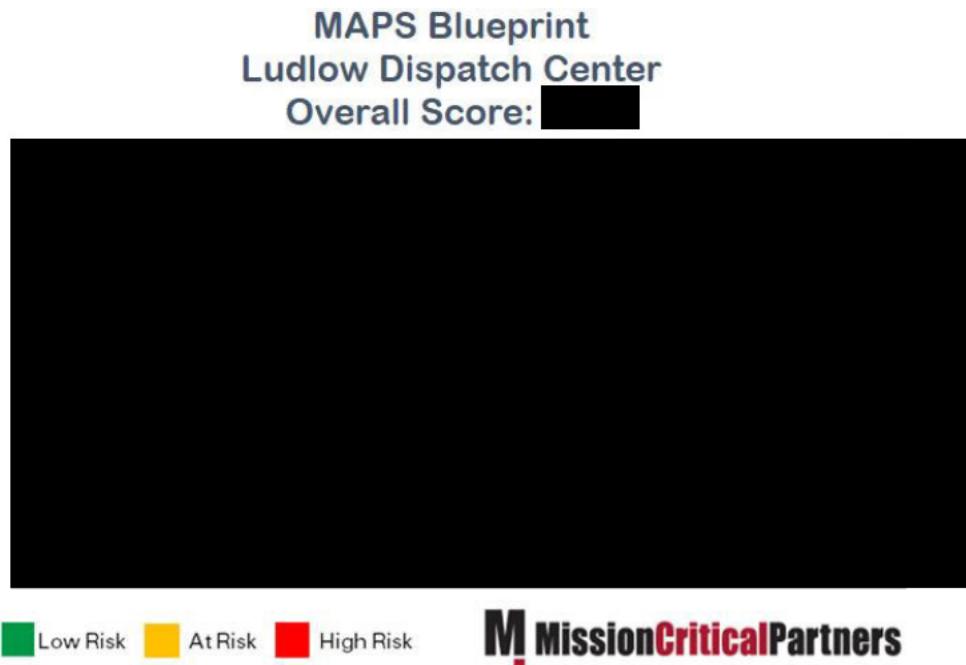


Figure 16: Ludlow Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Ludlow's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Lack of consistent dispatcher training	Retaining manpower
Relying on field responders for breaks	Area growth
No routine or standing meetings with external partners	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.8.1 Agency Demographic Information

### 5.8.1.1 Governance

Component	Response
Agency location	19 West Hill, Ludlow, VT

Management and organizational structure	Division of a Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 5.8.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Ludlow Ambulance		EMS		
Ludlow Fire Department		Fire		
Ludlow Police Department		Law		
Plymouth Fire Department		Fire		
Public Works		Other		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	♦	♦	♦	

#### 5.8.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
111	448	102	0	N/A	♦	♦	666 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 5							



Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
900	350	3,000	4,250
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	N/A

## 5.8.2 Finance

### 5.8.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+6)
Dispatchers (4 full-time, 2 part-time)	\$66,250 (full-time) \$10,000 (part-time)	\$285,000	\$397,500
<b>Subtotal</b>		<b>\$285,000</b>	<b>\$397,500</b>
<b>Note:</b>			
Other Expenses	Amount	Total	
Computer services	\$12,000	\$12,000	
Telephone	\$5,000	\$5,000	
<b>Subtotal</b>		<b>\$17,000</b>	
Total communications budget		\$302,000	
Total staffing recommendation adjusted budget	Adding 6 full-time dispatchers to meet industry standard (current part-time offsets needs by one)	699,500	
Budget range with cost contingency adjustment	25%	\$377,500 – \$874,375	

#### 5.8.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	4,250	\$71.06	\$164.59
Population	10,000 – 30,000	\$10.07 – \$30.20	\$23.32 – \$69.95
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.8.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$286,900	95%
State funding	N/A	N/A
User fees	\$15,100	5%
Other	N/A	N/A
Total Funding	\$302,000	100%

#### 5.8.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

#### 5.8.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	6	4 full-time, 2 part-time
Number of vacancies	0	
Current retention	100%	No separations within the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	8-hour	3 shifts: 0700 – 1500 1500 – 2300 2300 – 0700
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	
<p><b>Recommended Staffing:</b> Eleven (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.</p> <p>Ludlow did not provide information on leave time to more accurately establish a staffing baseline. However, using a leave average of 200 hours, staffing one position 24/7 on 8-hour shifts requires a minimum of six personnel. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>The law enforcement incident volume, about eight a day on average, [REDACTED] The fire and EMS volume is equally low—about one a day for fire on average and less than three a day for EMS on average. [REDACTED]</p>		



The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 11 to 12 full-time staff.

For dispatch centers with low incident volumes, such as Ludlow, this staffing level is often cost-prohibitive.

## 5.8.5 Operations

### 5.8.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	2	1 call-taking and dispatch, 1 call-taking only – working on a full second call-taking and dispatching position

### 5.8.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.8.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	1% – 10%
Jail	N/A



Records	10% – 20%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	10% – 20%
Warrants	1% – 10%

#### 5.8.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		CTO – State standards

#### 5.8.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 5.8.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	Yes
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	



## 5.8.6 Technology Systems

### 5.8.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2016	♦	♦	MDTs	Yes	♦
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2016	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	Active911				
GIS Mapping					
IT support is local staff					

### 5.8.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

♦

### 5.8.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems



## 5.8.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	275 sq ft
Space exists for equipment room expansion and/or addition of systems and racks	Yes	6 x 14 storage room; open racks
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

## 5.8.8 Communication Networks

### 5.8.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	♦	Town of Ludlow	UHF	No	New Console
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						



Center is notified in advance of scheduled radio system maintenance outages

Center receives/monitors alarms from any of the radio systems

Planned Upgrades: Planned upgrades include the addition of a new dispatch console.

#### 5.8.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	♦	Town of Ludlow	UHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.8.8.3 Paging System

##### Paging System

Ludlow does not operate a paging system.

#### 5.8.8.4 Broadband

##### Broadband

Ludlow does not use broadband service.

#### 5.8.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	



### 5.8.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.9 Mad River Valley Ambulance Service

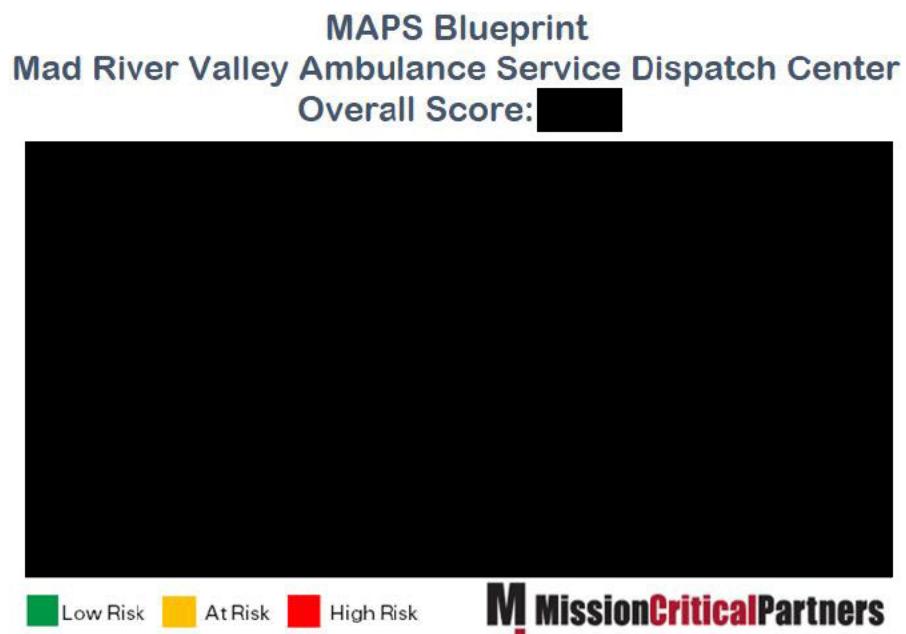


Figure 17: Mad River Valley Ambulance Service Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Mad River Valley's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and retention	◆
Operational and training limitations	◆
Technology and infrastructure gaps	◆

As a reminder, a ◆ indicates that the information was not provided by the communications center.

### 5.9.1 Agency Demographic Information

#### 5.9.1.1 Governance

Component	Response
Agency location	4177 Main St., Waitsfield, VT

Management and organizational structure	Non-profit Volunteer Service
Center operates under a formal governance agreement	N/A
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 5.9.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched				Agency Type
Mad River Valley Ambulance				EMS
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	2,500 – 5,000	N/A	N/A	2,500 – 5,000
Square Miles	80+	N/A	N/A	80+

#### 5.9.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
133	226	11	1	N/A	N/A	N/A	374 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A		N/A	N/A		
MCP Note: 911 calls that fall into the Unknown category = 3							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
583	N/A	N/A	583



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

♦	N/A	N/A	N/A
---	-----	-----	-----

## 5.9.2 Finance

### 5.9.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Dispatchers	Volunteer Service	N/A	N/A
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses		Amount	Total
N/A			
<b>Subtotal</b>			
Total communications budget			N/A
Total staffing recommendation adjusted budget			N/A
Budget with cost contingency adjustment	25%		N/A

### 5.9.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	
10-digit calls	N/A	N/A	



Incidents	N/A	N/A	
Population	N/A	N/A	
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.9.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	N/A	N/A
State funding	N/A	N/A
User fees	N/A	N/A
Other	N/A	N/A
Total Funding		

#### 5.9.3 Leadership and Planning

Component	Response
Policy and procedure manual	N/A
Strategic plan	N/A
Change management policy	N/A
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A



#### 5.9.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	15 – 17	All volunteer staff
Number of vacancies	0	
Current retention	N/A	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	
Number of training staff not assigned to the operations floor	N/A	
Number of quality assurance staff not assigned to the operations floor	1	
<b>Recommended Staffing:</b> Mad River Valley Ambulance Service is a non-profit, all volunteer, service. No changes are needed.		

#### 5.9.5 Operations

##### 5.9.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	N/A	

##### 5.9.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	N/A	



Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	N/A	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.9.5.3 Ancillary Duties

Component	Percentage of Time
Administration	N/A
EAS activation	N/A
Jail	N/A
Records	N/A
Security (active camera and access monitoring)	N/A
Support municipal services	N/A
Vehicle release	N/A
Walk-up window	N/A
Warrants	N/A

#### 5.9.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		No standards

#### 5.9.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

### 5.9.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	P25
QA program (structured)	N/A
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

### 5.9.6 Technology Systems

#### 5.9.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	N/A	N/A	N/A	N/A	N/A
JMS	N/A	N/A	N/A	N/A	N/A
Logging Recorder	Komutel				
Telephone (CHE or Administrative)					
FSA	N/A				
GIS Mapping					
IT support by local staff and outsourced.					



#### 5.9.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems
N/A

#### 5.9.6.3 Non-Call Processing and Dispatch Systems

Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.9.7 Facilities

Component	Response	Notes
Room exists for center expansion	N/A	
Space exists for equipment room expansion and/or addition of systems and racks	N/A	
Adjacent rooms are available to the center	N/A	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 5.9.8 Communication Networks

### 5.9.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
				Analog & Digital		
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

### 5.9.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
			Analog & Digital		
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 5.9.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
Mad River Valley Ambulance does not operate a paging system.				

#### 5.9.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for data communications?	No

#### 5.9.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Good
Comments on VCOMM: N/A	

#### 5.9.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.10 Manchester

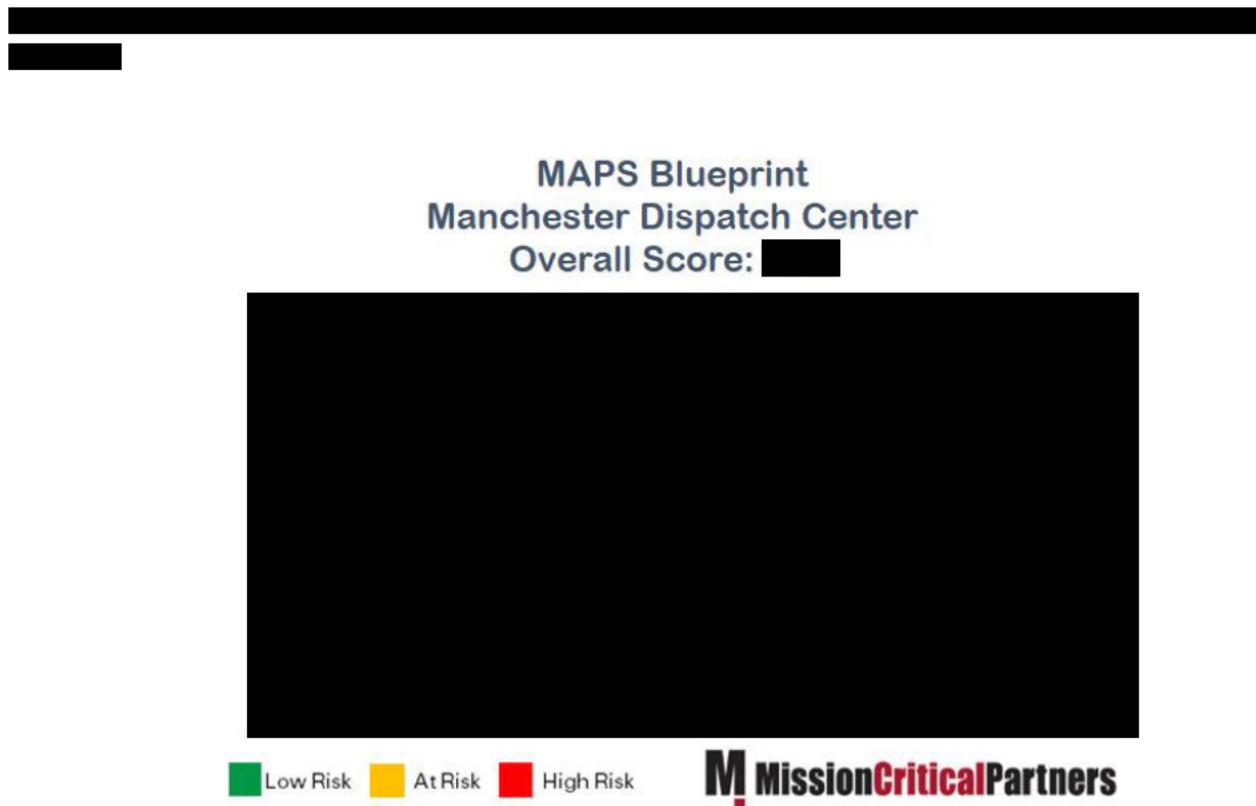


Figure 18: Manchester Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Manchester's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Lack of supervision and formalized QA processes	♦
Technological and system limitations	♦
Training and mental health support deficiencies	♦

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 5.10.1 Agency Demographics Information

### 5.10.1.1 Governance

Component	Response
Agency location	60 Jeff Williams Way, Manchester, VT
Management and organizational structure	♦
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

### 5.10.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Arlington Fire Department		Fire		
Manchester Fire Department		Fire		
Manchester Police Department		Law		
Northshire Rescue Squad		EMS		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	♦	♦	♦	
Square Miles	♦	♦	♦	

### 5.10.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
201	851	323	1	N/A	♦	♦	1,384 (see note)



Average time to process calls from pick-up to disconnect (one month average)					
N/A	N/A	N/A	♦	N/A	
MCP Note: 911 calls that fall into the Unknown category = 8					

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	♦	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

## 5.10.2 Finance

### 5.10.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	N/A
Benefits	♦	♦	N/A
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		
<b>Subtotal</b>			
Total communications budget			♦
Total staffing recommendation adjusted budget			N/A
Budget with cost contingency adjustment	25%		



#### 5.10.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	♦		
Population	♦		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.10.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	♦
State funding	♦	♦
User fees	♦	♦
Other	♦	♦
Total Funding		

#### 5.10.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

#### 5.10.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	
Number of vacancies	♦	
Current retention	♦	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	

##### Recommended Staffing:

The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”

Generally, staffing two positions on 12-hour shifts for 24/7 operations requires the equivalent of 10 to 12 full-time staff, minimally. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

In this case, staffing two positions on 8-hour or 10-hour shifts for 24/7 operations requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.

For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.



## 5.10.5 Operations

### 5.10.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	

### 5.10.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.10.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦



Walk-up window	♦
Warrants	♦

#### 5.10.5.4 Training

Component	Response	Notes
Structured or unstructured training program	♦	
Training program certified by state/industry organization		

#### 5.10.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 5.10.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	♦
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

#### 5.10.6 Technology Systems

##### 5.10.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	♦	♦	♦	♦	♦	♦	
Enhancements/Functionality:							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					

#### 5.10.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

♦

#### 5.10.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.10.7 Facilities

Component	Response	Notes
Room exists for center expansion	♦	
Space exists for equipment room expansion and/or addition of systems and racks	♦	
Adjacent rooms are available to the center	♦	
Center has backup power		



Center is in a secure facility
A backup facility exists for the center

## 5.10.8 Communication Networks

### 5.10.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	♦	♦	♦	♦	♦	♦
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

### 5.10.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	♦
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 5.10.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 5.10.8.4 Broadband

Broadband	
♦	

#### 5.10.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM:	♦

#### 5.10.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.11 Middlebury

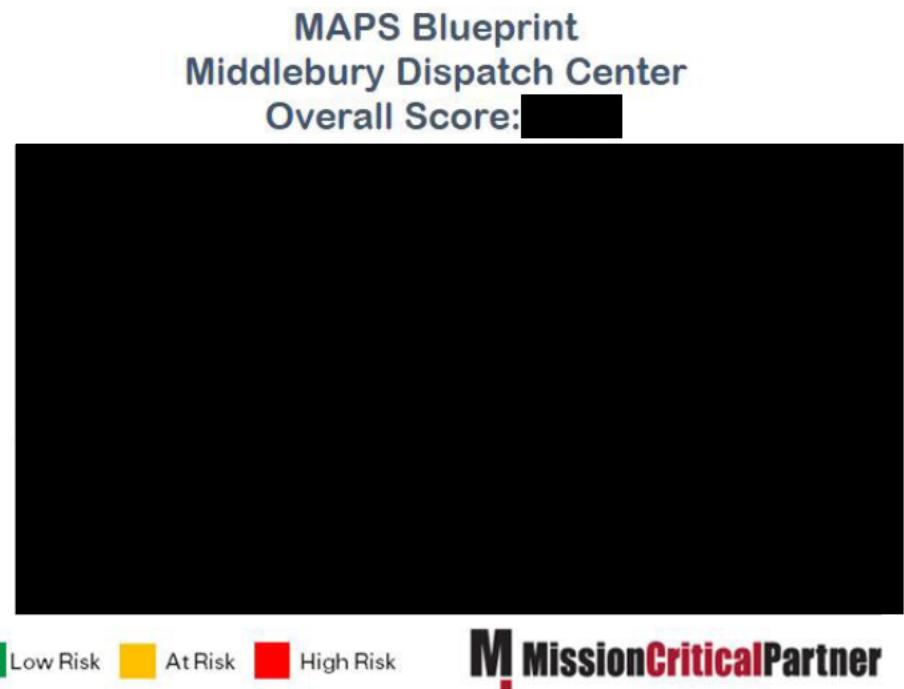


Figure 19: Middlebury Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Middlebury's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Technological deficiencies	Obtaining more dispatch positions to allow 24/7 operations
Staffing and training limitations	Updated desks/equipment
Lack of a formal QA/QI program	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 5.11.1 Agency Demographics Information

### 5.11.1.1 Governance

Component	Response
Agency location	1 Lucius Shaw Ln., Middlebury, VT
Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

### 5.11.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Addison County Sheriff's Department (part-time)		Law		
Middlebury Fire Department (part-time)		Fire		
Middlebury Police Department (part-time)		Law		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	N/A	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000
Square Miles	N/A	20 – 40	20 – 40	20 – 40

### 5.11.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
63	558	97	0	N/A	11,629	3,153	15,507 (see note)



Average time to process calls from pick-up to disconnect (one month average)					
N/A	N/A	N/A	1 min 34 secs	N/A	
<b>MCP Notes:</b> 10-digit and outbound call volume approximated based on data provided for a partial year.					
911 calls that fall into the Unknown category = 7					
The 10-digit call volume provided by the dispatch center (12,354) has been reduced by the number of 911 calls as they are received on 10-digit lines.					

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
N/A	258	4,455	4,713
<b>Agency Note:</b>			
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
N/A	20 – 30 mins	10 – 15 mins	N/A

## 5.11.2 Finance

### 5.11.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Dispatchers	\$40,764	*	N/A
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses		Amount	Total
		♦	
<b>Subtotal</b>			
Total communications budget			♦

Total staffing recommendation adjusted budget	N/A	N/A
Budget with cost contingency adjustment	25%	\$50,955

#### 5.11.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	12,354	\$3.30	N/A
Incidents	4,713	\$8.65	N/A
Population	5,000 – 10,000	\$4.08 – \$8.15	N/A
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.11.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	Yes	
State funding	♦	
User fees (dispatch fees)	Yes	
Other	♦	
Total Funding		
<b>Agency Note:</b> Approximately 1%		

### 5.11.3 Leadership and Planning

Component	Response
Policy and procedure manual	No; agency has a policy and procedure manual for police department as a whole; no separate manual exists for dispatch
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

### 5.11.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	7	1 senior dispatcher/supervisor, 1 full-time and 5 part-time dispatchers
Number of vacancies	0	
Current retention	88.9%	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	8-hour	Only 2 shifts: 0600 – 1400 1400 – 2200
Number of training staff not assigned to the	N/A	



operations floor		
Number of quality assurance staff not assigned to the operations floor	N/A	
<b>Recommended Staffing:</b> Appropriately staffed for current operations — two full-time and five part-time dispatchers.		
Middlebury operates its dispatch center part-time on two 8-hour shifts (1 <sup>st</sup> and 2 <sup>nd</sup> ). There is no overnight shift. The law enforcement incident volume, less than one an hour on average, and the fire incident volume, less than one a day on average, are easily handled [REDACTED] each shift.		
While the industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times”—adherence to which is always recommended for 24/7 operations—it is not fiscally responsible for a dispatch center that operates part-time and whose staff is more administrative in nature than a dispatcher.		
Staffing for Middlebury’s current configuration requires a minimum of four telecommunications, full-time or full-time and part-time equivalents, which is essentially what Middlebury has with its two full-time and five part-time staff.		
If Middlebury elected to transition to 24/7 operations, minimum dispatcher staffing would be 10 to 12 (full-time or full-time and part-time equivalents) to maintain two dispatchers on duty 24/7. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.		
For dispatch centers with a low incident volume, such as Middlebury, this staffing level is often cost-prohibitive.		

## 5.11.5 Operations

### 5.11.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	2	2 dispatch-only positions

### 5.11.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	Law/Fire	



Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	2 channels	1 fire agency and 2 law enforcement agencies
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.11.5.3 Ancillary Duties

Component	Percentage of Time
Administration	30% – 40%
EAS activation	10% – 20%
Jail	N/A
Records	♦
Security (active camera and access monitoring)	50%+
Support municipal services	20% – 30%
Vehicle release	20% – 30%
Walk-up window	50%
Warrants	30% – 40%

#### 5.11.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Yes	State CTO program (San Jose model)
Training program certified by state/industry organization		

#### 5.11.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

### 5.11.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

### 5.11.6 Technology Systems

#### 5.11.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2013	♦	N/A	MDTs NCIC/Nlets	Yes	No
<b>Enhancements/Functionality</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2013	♦	Yes	No
JMS	♦	♦	♦	♦	♦
Logging Recorder	Equature				No
Telephone (CHE or Administrative)	Avaya VoIP				
FSA	No				
GIS Mapping					
IT support is in-house (police department) and Top Floor.					



#### 5.11.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems	
N/A	

#### 5.11.6.3 Non-Call Processing and Dispatch Systems

Non-Call Processing and Dispatch Systems Ancillary Systems	

#### 5.11.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	12 x 17 but able to convert an adjacent room or move to a larger room
Space exists for equipment room expansion and/or addition of systems and racks	Yes	8 x 12, open racks
Adjacent rooms are available to the center	Yes	Restroom, conference room, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

#### 5.11.8 Communication Networks

##### 5.11.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance	System	Frequency	Encryption	Upgrade



		Provider	Owner(s)	Band(s)		Planned
Motorola	Analog	Bearcom - Plattsburgh	Middlebury Police Dept.	VHF & UHF	No	No
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						
Planned Upgrades: Middlebury Regional EMS stated on the survey that they have planned upgrades. These include purchasing additional and updated radio equipment and allowing the capability of transmitting and receiving on additional channels. Current channels allow them to receive only. They will be adding antenna systems at two different tower sites.						

#### 5.11.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Bearcom - Plattsburgh	Middlebury Regional EMS	VHF & UHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 5.11.8.1 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	VHF / UHF
Paging system provides adequate coverage for operational needs	Yes

#### 5.11.8.2 Broadband

Broadband	
Does your agency currently utilize broadband for data communications?	Yes
If your agency currently utilizes broadband for either voice or data communications, identify the provider(s):	Verizon

#### 5.11.8.3 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.11.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	



Middlebury EMS requested additional redaction of financial information based on their status as a non-profit 501(c)(3) organization.

## 5.12 Middlebury Regional EMS

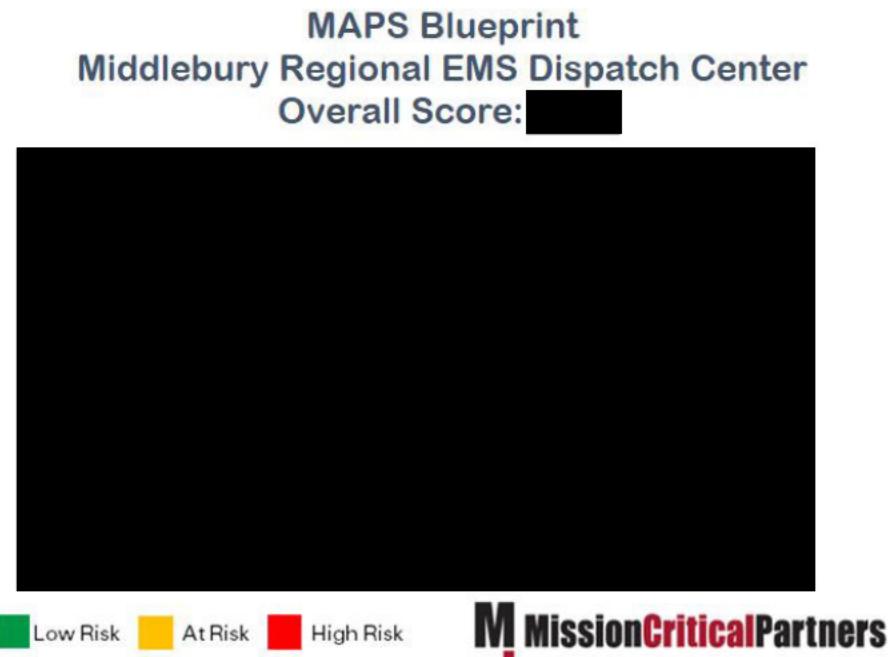


Figure 20: Middlebury Regional EMS Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Middlebury Regional's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and training	◆
Operational and technological constraints	◆
Governance and succession planning	◆

As a reminder, a ◆ indicates that the information was not provided by the communications center.

### 5.12.1 Agency Demographics Information

#### 5.12.1.1 Governance

Component	Response
Agency location	55 Collins Dr., Middlebury, VT

Management and organizational structure	Division of EMS Agency
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦
<b>MCP Note:</b> Middlebury Regional EMS also provides after-hours message services for doctors' offices.	

#### 5.12.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Bristol Rescue		EMS		
Cornwall Fire Department / First Response		Fire		
Middlebury Regional EMS		EMS		
Orwell Fire Department/First Response		Fire		
Salisbury Fire Department		Fire		
Shoreham Fire/First Response		Fire		
Weybridge Fire		Fire		
Counseling Service of Addison County (after hours, weekends, and holidays)		Other		
Mapleview Oral Surgery (after hours, weekends, and holidays)		Other		
Middlebury Family Health (after hours, weekends, and holidays)		Other		
Mountain Community Health (after hours, weekends, and holidays)		Other		
Porter Medical Center (after hours, weekends, and holidays)		Other		
Rainbow Pediatrics (after hours, weekends, and holidays)		Other		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	N/A	30,000+
Square Miles	80+	80+	N/A	80+



Middlebury EMS requested additional redaction of financial information based on their status as a non-profit 501(c)(3) organization.

#### 5.12.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
476	1,238	584	1	N/A	17,359	3,614	23,312 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	40 secs	N/A			
<b>MCP Notes:</b> 911 calls that fall into the Unknown category = 40 The 10-digit call volume provided by the dispatch center (19,698) has been reduced by the number of 911 calls as they are received on 10-digit lines.							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
8,453	278	N/A	8,731
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
17 min 31 secs	46 mins	N/A	

#### 5.12.2 Finance

##### 5.12.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Dispatchers (1 supervisor, 3 full-time, 2 part-time, and 2 per diem dispatchers)			
Health insurance	*		
Retirement plan	*		
Workers' Compensation	*		



<b>Subtotal</b>	■■■	■■■
■■■	■■■	■■■
Other Expenses	Amount	Total
Software and Computer IT	■■■	■■■
Depreciation	■■■	■■■
<b>Subtotal</b>		■■■
Total communications budget	■■■	■■■
Total staffing recommendation adjusted budget	■■■ ■■■	■■■
Budget range with cost contingency adjustment	■■■	■■■

#### 5.12.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls			
Incidents			
Population			

**MCP Note:** Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.



### 5.12.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	N/A	N/A
State funding	N/A	N/A
User fees (dispatch fees)	Varies monthly	
Other (MREMS subsidizes)	Varies monthly	
Total Funding		

### 5.12.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

### 5.12.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	8	1 supervisor, 3 full-time, 2 part-time and 2 per diem dispatchers
Number of vacancies	1	
Current retention		
Minimum staffing needed for each shift		



Number of dispatchers assigned to a shift	[REDACTED]	
Number of shift supervisors assigned to a shift	[REDACTED]	
Shift supervisor span of control per shift	[REDACTED]	
Length of operational shifts	12-hour	
Number of training staff not assigned to the operations floor	1	
Number of quality assurance staff not assigned to the operations floor	0	
<b>Recommended Staffing:</b> [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]		
Middlebury Regional EMS operates a 24/7 dispatch center on 12-hour shifts; [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]		
Using 56 hours of leave, the average annual leave usage among Middlebury Regional EMS personnel (which is very low), [REDACTED].		
The industry standard requires "a minimum of two qualified telecommunicators on duty and present in the communications center at all times," [REDACTED] [REDACTED] This staffing figure can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.		
[REDACTED] [REDACTED] [REDACTED] [REDACTED]		
For dispatch centers with low call and incident volumes, such as Middlebury Regional EMS, this staffing level is often cost-prohibitive.		

## 5.12.5 Operations

### 5.12.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	

Supervisors (working or dedicated)	Working	
Number of workstations	3	2 call-taking and dispatching, 1 call-taking/training

#### 5.12.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	Position 1 Position 2 Admin	Admin – call-taking, training, and administrative
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	15	Positions 1 and 2
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.12.5.3 Ancillary Duties

Component	Percentage of Time
Administration	40% – 50%
EAS activation	N/A
Jail	N/A
Records	N/A
Security (active camera and access monitoring)	50%+
Support municipal services	N/A
Vehicle release	N/A
Walk-up window	N/A
Warrants	N/A



#### 5.12.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Unstructured	
Training program certified by state/industry organization		No standards

#### 5.12.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.12.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	♦
Percentage of calls that receive a QA review	100% (for billing purposes)
Frequency that QA assessments are completed and returned to staff	Frequently

### 5.12.6 Technology Systems

#### 5.12.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	TriTech	2016	♦	No	N/A	Yes	♦
<b>Enhancements/Functionality:</b>							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	N/A	N/A	N/A	N/A	N/A
JMS	N/A	N/A	N/A	N/A	
Logging Recorder	Eventide Nexlog				
Telephone (CHE or Administrative)					
FSA	Tones Active911				
GIS Mapping					
IT support is in-house and outsourced to Siloway Networks.					

#### 5.12.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- ActiveAlert

#### 5.12.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.12.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	

Space exists for equipment room expansion and/or addition of systems and racks	Yes	Space on the current rack, additional room for additional rack
Adjacent rooms are available to the center	No	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

## 5.12.8 Communication Networks

### 5.12.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog	Burlington Communications	Middlebury Regional EMS	VHF & UHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						
Planned Upgrades: Middlebury Regional EMS stated on the survey that they have planned upgrades. These include purchasing additional and updated radio equipment and allowing the capability of transmitting and receiving on additional channels. Current channels allow them to receive only. They will be adding antenna systems at two different tower sites.						



#### 5.12.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Zetron	Burlington Communications	Middlebury Regional EMS	VHF & UHF	3 Positions (2 call-taking and dispatch, 1 call-taking and training)	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.12.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
Does your agency currently utilize a paging system?				No

#### 5.12.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for data communications?	No

#### 5.12.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	



### 5.12.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.13 Montpelier

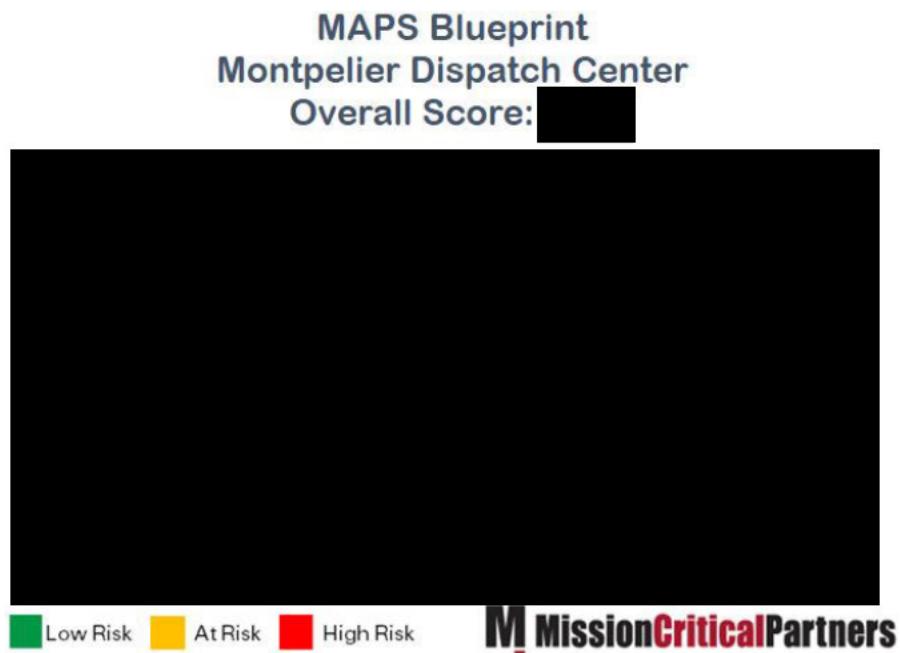


Figure 21: Montpelier Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Montpelier's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
No meetings with external partners	♦
CAD does not allow integration of resources that are used daily (e.g., RapidSOS)	♦
Lack of a dedicated QA/QI staff member	♦

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.13.1 Agency Demographics Information

#### 5.13.1.1 Governance

Component	Response
Agency location	1 Pitkin Ct., Montpelier, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes <sup>29</sup>
The governance committee, board, or other group meets on a regular basis	Yes
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.13.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Berlin Fire Department	FIRE
Cabot Ambulance	EMS
Cabot Fire Department	Fire
Capitol Police Department	Law
East Montpelier Fire & EMS Department	Fire/EMS
Marshfield Fire Department	Fire
Middlesex Fire Department	Fire
Montpelier Fire & Ambulance Department	Fire/EMS
Montpelier Police Department	Law
Moretown Fire Department	Fire
Northfield Ambulance	EMS
Northfield Fire Department	Fire
Plainfield Fire Department	Fire
Roxbury Volunteer Fire Department	Fire
Waitsfield-Fayston Fire Department	Fire
Walden Fire Department	Fire
Waterbury Ambulance Service	Ems

<sup>29</sup> Fire dispatch customers only

Waterbury Fire Department	Fire			
Woodbury Fire Department	Fire			
Worcester Fire-Rescue	Fire			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	10,000 – 30,000	10,000 – 30,000+
Square Miles	80+	80+	10 - 20	10 – 80+

#### 5.13.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
875	2,477	575	6	469	♦	♦	3,955 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 22							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	7,451	Montpelier: 9,184 Capitol: 886	17,521
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	



## 5.13.2 Finance

### 5.13.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+3)		
Personnel (92.4%, see note)	\$121,321 (avg for 8 personnel)	\$970,570	\$363,963		
<b>Subtotal</b>	<b>\$970,570</b>		<b>\$363,963</b>		
<b>Note:</b> Figures based on graphics representing the budget and expenditures by type. Only 99.9% represented in graph. \$1,050 unaccounted for in percentages.					
Personnel average is likely high as the overall personnel budget is for one supervisor and seven dispatchers.					
Other Expenses	Amount	Total			
Operating costs	5.8%	\$60,923			
Other costs	1.7%	\$17,857			
<b>Subtotal</b>	<b>\$78,780</b>				
Total communications budget	See note	\$1,050,400			
Total staffing recommendation adjusted budget	Adding 3 full-time dispatchers to meet industry standard		\$1,414,363		
Budget range with cost contingency adjustment	25%	\$1,313,000 – \$1,767,954			

### 5.13.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	17,521	\$59.95	\$80.72
Population	10,000 – 30,000+	\$35.01 – \$105.04	\$47.15 – \$141.44

**MCP Note:** Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.

#### 5.13.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$618,542.23	
State funding	♦	
User fees	\$414,906 \$12,500	
Other	♦	
Total Funding	\$1,045,984.23	

**Agency Note:** The user fees are from the Capitol FD and Capitol PD contracts, respectively.

#### 5.13.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	Yes
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	APCO



#### 5.13.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	8	1 supervisor, 7 dispatchers
Number of vacancies	0	
Current retention	100%	No separations in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour	0400 – 1400 0800 – 1800 1400 – 2400 1800 – 0400 2200 – 0800
Number of training staff not assigned to the operations floor	0	Training occurs on the floor
Number of quality assurance staff not assigned to the operations floor	0	QA occurs on the floor
<p><b>Recommended Staffing:</b> Eleven (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.</p> <p>Montpelier operates a 24/7 dispatch center on 10-hour shifts. [REDACTED] [REDACTED] the industry standard that requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.” [REDACTED]</p> <p>Maintaining this staffing level, with an average annual leave usage of 319 hours, requires a minimum of nine personnel—Montpelier’s authorized strength is eight, including the supervisor. This places Montpelier understaffed by one.</p> <p>Maintaining two personnel on duty 24/7, aligning with the industry standard, requires a minimum of 11 personnel, placing Montpelier understaffed by three. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>As the non-emergency call volume was not provided, it is not possible to determine if a third position should be</p>		



staffed, but it appears unlikely. [REDACTED] the call volumes are likely low and the incidents average two an hour, [REDACTED]  
 [REDACTED]  
 [REDACTED]

## 5.13.5 Operations

### 5.13.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	3	

### 5.13.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Positions do not have designated disciplines. Each desk dispatches for law, fire and EMS
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	7	Monitors seven frequencies for two police departments and 19 fire and EMS departments combined.
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		[REDACTED]

### 5.13.5.3 Ancillary Duties

Component	Percentage of Time
Administration	30% – 40%
EAS activation	N/A
Jail	N/A
Records	50%



Security (active camera and access monitoring)	1% – 10%
Support municipal services	10% – 20%
Vehicle release	N/A
Walk-up window	20% – 30%
Warrants	1% – 10%
Other – Parking Department	10%

#### 5.13.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		

#### 5.13.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.13.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	Yes
Percentage of calls that receive a QA review	3 calls per a person per a month
Frequency that QA assessments are completed and returned to staff	Monthly



## 5.13.6 Technology Systems

### 5.13.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2013	◆	All agencies with Valcour	MDTs NCIC/Nlets	Yes	No
<b>Enhancements/Functionality:</b> [REDACTED]							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2013	◆	Yes	No
JMS	Valcour	2013	◆	Yes	No
Logging Recorder	Equature		Equature		Yes
Telephone (CHE or Administrative)					
FSA	Active911				
GIS Mapping					
IT support by VC3, CNSVT, and The Final Connection					

### 5.13.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems
<ul style="list-style-type: none"> <li>• RapidSOS</li> <li>• ActiveAlert</li> </ul>



### 5.13.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.13.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Building can go up another floor
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Entire room off-site for servers
Adjacent rooms are available to the center	Yes	Restroom
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.13.8 Communication Networks

#### 5.13.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Burlington Comm's	Capital Fire MA System	VHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						



Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	
Planned Upgrade: Planned upgrades include an upgrade to the Equature Logging Recorder System.	

#### 5.13.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comm's	Capital Fire MA System	VHF	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.13.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	VHF
Does your paging system provide adequate coverage for your operational needs?	No

#### 5.13.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for data communications?	No



#### 5.13.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Fair
Comments on VCOMM: Not well coordinated on the designation of channels	

#### 5.13.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.14 Newport

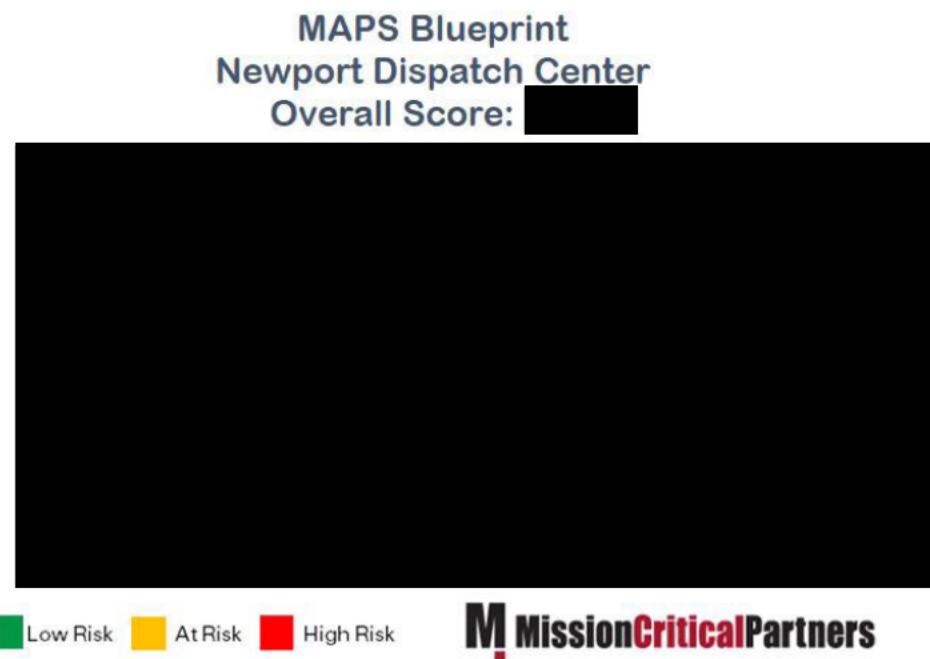


Figure 22: Newport Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Newport's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and succession planning	Radio coverage
Technology limitations	Special needs and upgraded equipment
Operational and training gaps	More staffing – busy with ancillary duties

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.14.1 Agency Demographics Information

#### 5.14.1.1 Governance

Component	Response
Agency location	222 Main St., Newport City, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.14.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Albany Fire Department	Fire
Brighton Fire Department	Fire
Charleston Fire Department	Fire
Craftsbury Fire Department	Fire
Derby Line Fire Department	Fire
Glover Fire Department	Fire
Irasburg Fire Department	Fire
Jay Fire Department	Fire
Lowell Fire Department	Fire
Newport Ambulance	EMS
Newport Center Fire Department	Fire
Newport City Fire Department	Fire
Newport Police Department	Law
North Troy Fire Department	Fire
Orleans Ambulance	EMS
Orleans County Sheriff (part-time)	Law
Orleans Fire Department	Fire
Troy Fire Department	Fire
Westmore Fire	Fire

Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	80+	80+	80+	80+

#### 5.14.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
870	1,774	689	2	N/A	♦	♦	3,378 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	♦	N/A			
MCP Note: 911 calls that fall into the Unknown category = 43							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
4,729	786	4,436	9,951
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
1 hr 17 mins	47 mins	50 mins	

#### 5.14.2 Finance

##### 5.14.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+4)
Salaries	♦	♦	
Benefits	♦	♦	



<b>Subtotal</b>		
<b>Note:</b>		
<b>Other Expenses</b>	<b>Amount</b>	<b>Total</b>
	♦	
<b>Subtotal</b>		
Total communications budget		♦
Total staffing recommendation adjusted budget	Adding 4 full-time dispatchers to meet industry standard (current part-time offsets needs by two)	
Budget with cost contingency adjustment	25%	

#### 5.14.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	9,951		
Population	10,000 – 30,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.14.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	N/A	N/A
State funding	N/A	N/A

User fees (dispatch fees)	♦	
Other	N/A	N/A
Total Funding		

#### 5.14.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

#### 5.14.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	8	1 dispatch supervisor, 4 full-time and 3 part-time dispatchers
Number of vacancies	0	
Current retention	89.8%	6 separations within the last 3 years for the entire police department
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		



Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Ten dispatchers (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations, plus the supervisor, to meet industry standard.</p> <p>Newport did not provide information on leave time to more accurately establish a staffing baseline. However, using a leave average of 200 hours, staffing one position 24/7 on 12-hour shifts requires a minimum of six personnel. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>The law enforcement incident volume averages about 12 a day on average, while fire and EMS average two and 13 a day, respectively. While the incident volume is low, [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 10 to 12 full-time staff for 12-hour shifts. The three part-time dispatchers offset the full-time dispatchers to eight.</p> <p>For dispatch centers with low incident volumes, such as Newport, this staffing level is often cost-prohibitive.</p>		

## 5.14.5 Operations

### 5.14.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	2	Call-taking and dispatching



#### 5.14.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	Dispatch 1 and 2	Both dispatch consoles are set up the same; receive 911 calls from PSAP call-taker for Law, Fire and EMS and dispatch appropriately.  Dispatchers receive directly non E911 calls and dispatch accordingly.
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	10	Monitor Newport frequency, Orleans County Sheriff Dept and VSP Derby.  Monitor District 2 EMS Channel and dispatch two EMS agencies. Six town fire departments have their own radio channel, and nine town fire Departments share one county fire channel.
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.14.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% – 30%
EAS activation	N/A
Jail	N/A
Records	20% – 30%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	10% – 20%
Warrants	20% – 30%



#### 5.14.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Unstructured	
Training program certified by state/industry organization		

#### 5.14.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.14.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	Yes
Percentage of calls that receive a QA review	Reviews when there is an issue
Frequency that QA assessments are completed and returned to staff	

### 5.14.6 Technology Systems

#### 5.14.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2016	♦	♦	MDT NCIC/Nlets RapidSOS	No	♦
<b>Enhancements/Functionality:</b>							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2016	♦	Yes	♦
JMS	Valcour	♦	♦	No	♦
Logging Recorder	Acorn		Equature		
Telephone (CHE or Administrative)			Comcast Business Voice Edge		
FSA	♦				
GIS Mapping					
<b>Agency Note:</b> Upgrades planned included evidence storage, infrastructure, tasers, and radio repeaters. IT support is by local staff and Tech Group.					

#### 5.14.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### **Over-the-Top – Integrated Applications – Software** Call Processing and Dispatch Systems

- RapidSOS

#### 5.14.6.3 Non-Call Processing and Dispatch Systems

##### **Non-Call Processing and Dispatch Systems** Ancillary Systems



### 5.14.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	Yes	Restroom, kitchen, patrol room
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.14.8 Communication Networks

#### 5.14.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	Radio North Group	Newport PD	VHF & UHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						



Center receives/monitors alarms from any of the radio systems

Planned Upgrades: Planned upgrades include Evidence Storage, Infrastructure Upgrades, Tasers, and additional Radio Repeaters.

#### 5.14.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Radio North Group	Newport PD	VHF & UHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.14.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
Does your agency currently utilize a paging system?				
What frequency band does your paging system operate in?				
Does your paging system provide adequate coverage for your operational needs?				

#### 5.14.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for data communications?	Yes
What provider is used for broadband data?	FirstNet / AT&T



#### 5.14.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.14.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## 5.15 Randolph

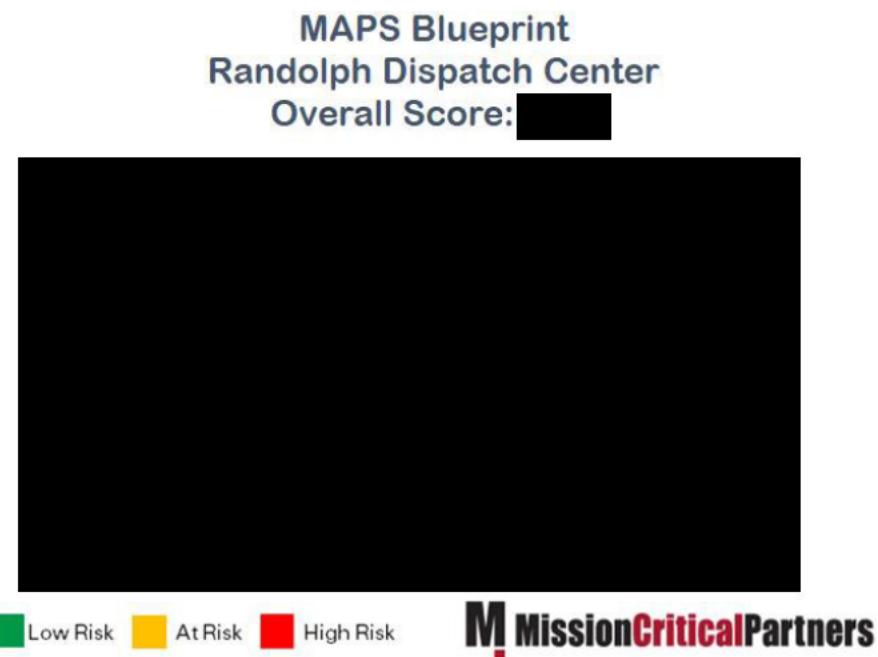


Figure 23: Randolph Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Randolph's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Fragmented and inconsistent dispatch operations	Outdated building
Limited training and QA/QI processes	Outdated radio console
Technology and staffing limitations	Lack of space

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.15.1 Agency Demographics Information

#### 5.15.1.1 Governance

Component	Response
Agency location	6 Salisbury St., Randolph, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.15.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched				Agency Type
Randolph Police Department (part-time)				Law
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	N/A	N/A	1,000 – 2,500	1,000 – 2,500
Square Miles	N/A	N/A	< 3 – 5	< 3 – 5

#### 5.15.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
1	1	1	0	N/A	♦	♦	3
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		

Average Annual Incident Volume and Processing Time 2021 – 2023				
EMS	Fire	Law	Total	
N/A	N/A	1,843	1,843	
Agency Note: Incidents estimated on data for a partial year.				



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

N/A	N/A	♦	
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## 5.15.2 Finance

### 5.15.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Office Administrator (Dispatcher)		\$55,702	N/A
Benefits		\$2,400	
<b>\$58,102</b>			

**Note:**

Other Expenses	Amount	Total
Barre City after hours dispatch	\$12,500	
IDEOMIA service agreements	\$4,000	
Office equipment service agreements	\$2,000	
Phone system upgrade	\$5,000	
<b>Subtotal</b>		<b>\$23,500</b>
Total communications budget		<b>\$81,602</b>
Total staffing recommendation adjusted budget	N/A	N/A
Budget with cost contingency adjustment	25%	<b>\$103,003</b>



### 5.15.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	1,843	\$44.28	N/A
Population	1,000 – 2,500	\$32.64 – \$81.60	N/A
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

### 5.15.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$81,602	100%
State funding	N/A	N/A
User fees	N/A	N/A
Other	N/A	N/A
Total Funding	\$81,602	100%

### 5.15.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	



Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 5.15.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	1	
Number of vacancies	0	
Current retention	N/A	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	6-hour	0800 – 1600, Monday through Friday
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	

**Recommended Staffing:** Appropriately staffed for current operations — One (full-time or full-time and part-time equivalents) for part-time operations to meet industry standard.

Randolph operates its dispatch center part-time, Monday through Friday from 0800 to 1600. The law enforcement incident volume, an average of seven a day when operating, is such that it is easily handled. ■■■■■

While the industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times”—adherence to which is always recommended for 24/7 operations—it is not fiscally responsible for a dispatch center that operates part-time and whose staff is more administrative in nature than a dispatcher.

If Randolph elected to transition to 24/7 operations, minimum dispatcher staffing would be 10 to 12 (full-time or full-time and part-time equivalents) to maintain two dispatchers on duty 24/7. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.



For dispatch centers with a low incident volume, such as Randolph, this staffing level is often cost-prohibitive.

## 5.15.5 Operations

### 5.15.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	1	

### 5.15.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	N/A	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	N/A	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.15.5.3 Ancillary Duties

Component	Percentage of Time
Administration	50%+
EAS activation	N/A
Jail	1% – 10%
Records	50%+
Security (active camera and access monitoring)	50%+
Support municipal services	1% – 10%



Vehicle release	N/A
Walk-up window	50%+
Warrants	50%+

#### 5.15.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		CTO; no standards

#### 5.15.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	N/A	

#### 5.15.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	Yes
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

### 5.15.6 Technology Systems

#### 5.15.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2023	♦	VSP	MDTs	Yes	♦

				Barre City Dispatch	NCIC/Nlets		
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2023	♦	Yes	♦
JMS	Valcour	2023	♦	Yes	♦
Logging Recorder	N/A				
Telephone (CHE or Administrative)					Yes
FSA	N/A				
GIS Mapping					
<b>Agency Note:</b> Plan to upgrade internet					
IT support is local and Tech Group.					

#### 5.15.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

N/A

#### 5.15.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems



### 5.15.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	Yes	Restroom, conference room
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.15.8 Communication Networks

#### 5.15.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	Burlington Comm's	Randolph PD	VHF & UHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						



Center receives/monitors alarms from any of the radio systems

Planned Upgrades: Upgrades are planned for the telephone system and the internet system.

#### 5.15.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Burlington Comm's	Randolph PD	VHF & UHF	1	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.15.8.3 Paging System

Paging System
Randolph PD does not currently utilize a paging system.

#### 5.15.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for voice and data communications?	Yes
What provider is used for broadband data?	FirstNet / AT&T

#### 5.15.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	



### 5.15.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.16 Rutland City

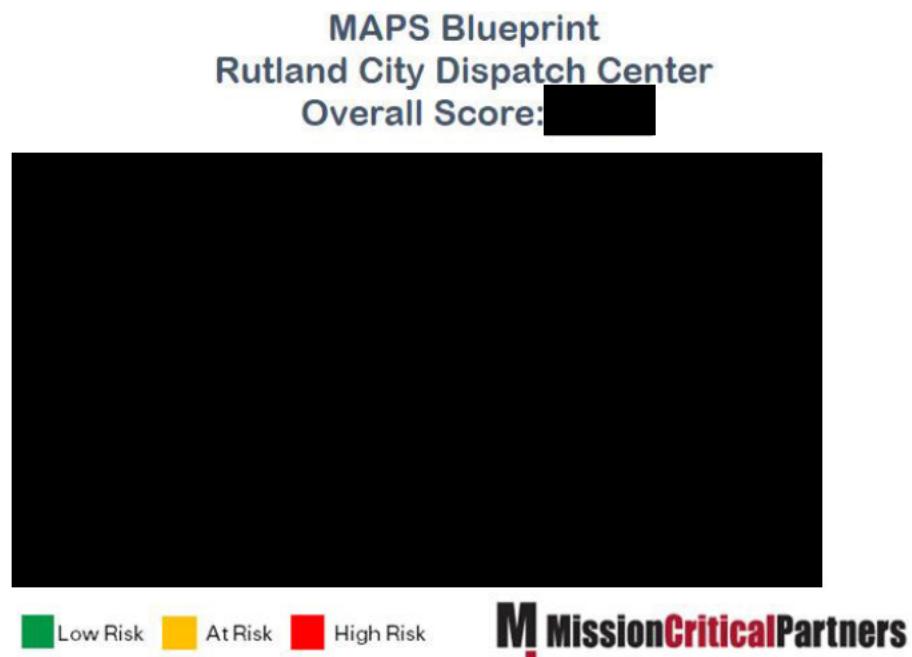


Figure 24: Rutland City Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Rutland City's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Informal dispatch agency governance	Turnover/Staffing levels
Unaware of national training standards	Call volume/Burnout
Understaffed for operation; need staffing study	Employee wellness

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.16.1 Agency Demographics Information

#### 5.16.1.1 Governance

Component	Response
Agency location	108 Wales St., Rutland, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.16.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched			Agency Type	
Rutland City Fire Department			Fire	
Rutland City Police Department			Law	
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	N/A	10,000 – 30,000	10,000 – 30,000	10,000 – 30,000
Square Miles	N/A	5 – 10	5 – 10	5 – 10

#### 5.16.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
215	3,128	285	8	N/A	♦	♦	3,661 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 25							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
N/A	709	10,855	11,564



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

N/A	♦	♦	
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## 5.16.2 Finance

### 5.16.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+5)
Dispatchers (6 full-time)	\$24.57 – \$31.17 (range) \$81,267 (average) plus fringe benefits	\$487,602	\$406,335 (plus fringe benefits, which are not included in these calculations)
<b>Subtotal</b>			<b>\$487,602</b>
<b>Note:</b>			
Other Expenses	Amount	Total	
No direct communication center expenses (Equipment upgrades to center in 2023 were \$80,000)			
<b>Subtotal</b>			<b>\$0.00</b>
Total communications budget			<b>\$487,602</b>
Total staffing recommendation adjusted budget	Adding 5 full-time dispatchers to meet industry standard (current part-time offsets needs by one)		<b>\$893,937</b>
Budget range with cost contingency adjustment	25%		<b>\$609,503 – \$1,117,421</b>



### 5.16.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	11,564	\$42.17	\$77.30
Population	10,000 – 30,000	\$16.25 – \$48.76	\$29.80 – \$89.39
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

### 5.16.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	
Total Funding		

### 5.16.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

#### 5.16.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	8	6 full-time, 2 part-time
Number of vacancies	0	
Current retention	77.8%	4 separations in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour	0600 – 1800 1200 – 0000 1800 – 0600
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	

**Recommended Staffing:** Twelve (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.

Rutland City operates a 24/7 dispatch center on 12-hour shifts; [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The incoming call volume is not known.

Using 384 hours of leave, the average annual leave usage among Rutland City personnel, staffing [REDACTED] 24/7 on 12-hour shifts requires a minimum of six personnel; currently there are six full-time dispatchers.

The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which, for Rutland City, requires the equivalent of 12 full-time (or



equivalent thereof) staff. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

For dispatch centers with low incident volumes, such as Rutland City, this staffing level is often cost-prohibitive.

## 5.16.5 Operations

### 5.16.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	3	

### 5.16.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Mirrored workstations; fire and police at each workstation (2 agencies total)
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations		
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.16.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	N/A
Jail	N/A



Records	30% – 40%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	10% – 20%
Warrants	30% – 40%

#### 5.16.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	Dispatcher	State standards

#### 5.16.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.16.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	



## 5.16.6 Technology Systems

### 5.16.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2022	♦	No	MDTs NCIC/Nlets	Yes	No
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2022	♦	Yes	No
JMS	♦	♦	♦	♦	♦
Logging Recorder	Equature				No
Telephone (CHE or Administrative)					
FSA	Zetron paging system				
GIS Mapping					
Cameras			Royal Group		
IT support by local and VC3.					

### 5.16.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- RapidSOS
- IamResponding



### 5.16.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.16.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Adequate rack space
Adjacent rooms are available to the center	Yes	Restroom, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.16.8 Communication Networks

#### 5.16.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog	Central Vermont Comm's	Rutland PD	UHF	No	No
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures						



constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 5.16.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Zetron	Central Vermont Comm's	Rutland PD	UHF	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.16.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
what frequency band does your paging system operate in?	UHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 5.16.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for voice and data communications?	Yes
What provider is used for broadband data?	Verizon

#### 5.16.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.16.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.17 South Burlington

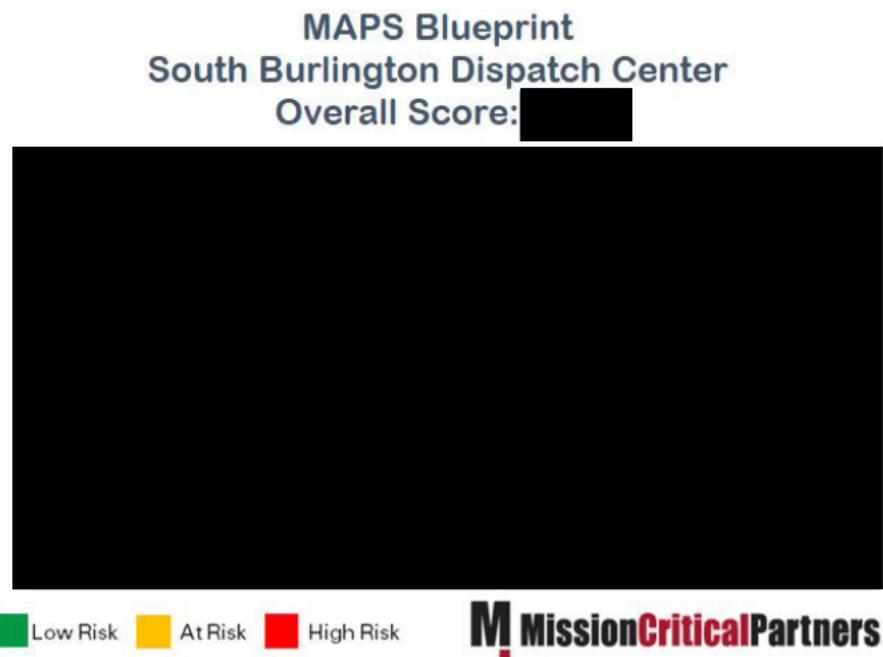


Figure 25: South Burlington Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, South Burlington's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Meetings with external communications centers does not occur (unless project specific)	No supervisor
Lack of a quality assurance program	Lack of dispatch standards
Inclusion of dispatchers in debriefings	Better training for trainers

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.17.1 Agency Demographics Information

#### 5.17.1.1 Governance

Component	Response
Agency location	19 Gregory Dr., South Burlington, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.17.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched			Agency Type	
South Burlington Fire Department			Fire/EMS	
South Burlington Police Department			Law	
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population				10,000 – 30,000
Square Miles				20 – 40

#### 5.17.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
433	4,091	1,301	6	N/A	♦	♦	5,873 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 42							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
4,641	1,481	11,583	17,705



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

27 mins 11 secs

20 mins 17 secs

♦

## 5.17.2 Finance

### 5.17.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+4)
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses		Amount	Total
		♦	
<b>Subtotal</b>			
Total communications budget			♦
Total staffing recommendation adjusted budget	Adding 4 full-time dispatchers to meet industry standard		
Budget with cost contingency adjustment	25%		

### 5.17.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		



Incidents	17,705		
Population	10,000 – 30,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.17.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	N/A	N/A
User fees	N/A	N/A
Other (Municipal)	♦	
Total Funding		

#### 5.17.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦



#### 5.17.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	8	
Number of vacancies	2	
Current retention	♦	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour	3 shifts: 0600 – 1600 1300 – 2300 2100 – 0700
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Twelve (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.</p> <p>South Burlington operates a 24/7 dispatch center on 10-hour shifts; [REDACTED]  [REDACTED]  [REDACTED]  [REDACTED]. The incoming call volume is not known.</p> <p>Using 515 hours of leave, the average annual leave usage among South Burlington personnel, staffing [REDACTED] 24/7 on 10-hour shifts requires a minimum of six personnel; currently there are eight dispatchers.</p> <p>The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which, for South Burlington, requires the equivalent of 12 full-time staff. This number can be affected by the schedule (days on/days off), operational configuration, responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>For dispatch centers with low incident volumes, such as South Burlington, this staffing level is often cost-prohibitive.</p>		



## 5.17.5 Operations

### 5.17.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	♦	
Number of workstations	4	

### 5.17.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Dual call-taking and dispatching at each position
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.17.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	N/A
Jail	N/A
Records	N/A
Security (active camera and access monitoring)	1% – 10%
Support municipal services	N/A
Vehicle release	N/A



Walk-up window	1% – 10%
Warrants	10% – 20%

#### 5.17.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		CTO; no standards

#### 5.17.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.17.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	When need arises

#### 5.17.6 Technology Systems

##### 5.17.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2012	♦	Yes – Fire CAD	MDTs NCIC/Nlets	Yes	♦



**Enhancements/Functionality:**

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2012	♦	Yes	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	Eventide MediaWorks				
Telephone (CHE or Administrative)					
FSA	Zetron				Yes – Station alerting
GIS Mapping					
IT support is local and outsourced.					

*5.17.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software*

**Over-the-Top – Integrated Applications – Software**  
Call Processing and Dispatch Systems



*5.17.6.3 Non-Call Processing and Dispatch Systems*

**Non-Call Processing and Dispatch Systems**  
Ancillary Systems



## 5.17.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Enough space for one additional workstation
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Small amount
Adjacent rooms are available to the center	Yes	Restroom, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

## 5.17.8 Communication Networks

### 5.17.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Digital	Radio North Group	City of South Burlington	VHF & UHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						



Center receives/monitors alarms from any of the radio systems

Planned Upgrades: Upgrades planned for include the implementation of a new Fire Station Alerting System for FD.

#### 5.17.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola Avtec Zetron	Radio North Group	City of South Burlington	VHF & UHF	4	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.17.8.3 Paging System

Paging System	
The City of South Burlington does not utilize a paging system.	

#### 5.17.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for voice and data communications?	Yes
What provider is used for broadband data?	Verizon

#### 5.17.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	



### 5.17.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	



## 5.18 Springfield



Figure 26: Springfield Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Springfield's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Short staffed; employees working multiple roles	Staffing/Scheduling
No QA/QI program	Collateral duties/responsibilities
Hardware up to date, software is out of date	Radio/Cell coverage in town

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.18.1 Agency Demographics Information

#### 5.18.1.1 Governance

Component	Response
Agency location	201 Clinton St., Springfield, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 5.18.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched			Agency Type	
Springfield Fire Department			Fire/EMS	
Springfield Police Department			Law	
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000	5,000 – 10,000
Square Miles	40 – 60	40 – 60	40 – 60	40 – 60

#### 5.18.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
165	614	75	1	N/A	34,231	23,562	58,655 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A		N/A		3 mins	N/A
<b>MCP Notes:</b> 911 calls that fall into the Unknown category = 7 The 10-digit call volume provided by the dispatch center (35,093) has been reduced by the number of 911 calls as they are received on 10-digit lines.							

#### Average Annual Incident Volume and Processing Time 2021 – 2023



EMS	Fire	Law	Total
2,699	5,944	8,643	
<b>Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)</b>			
60 mins	60 mins		

## 5.18.2 Finance

### 5.18.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+5)
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
Surveillance cameras	♦		
Building maintenance/upgrades	♦		
<b>Subtotal</b>			
Total communications budget			♦
Total staffing recommendation adjusted budget	Adding 5 full-time dispatchers to meet industry standard (current part-time offsets needs by one)		
Budget with cost contingency adjustment	25%		



#### 5.18.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	35,093		
Incidents	8,643		
Population	5,000 – 10,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.18.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	100%
State funding	N/A	N/A
User fees	N/A	N/A
Other	N/A	N/A
Total Funding		

#### 5.18.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	

Physical security policy/plan	
Agency accreditations	N/A

#### 5.18.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	7	5 full-time, 2 part-time
Number of vacancies	0	
Current retention	73.3%	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	8-hour	3 shifts
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	

**Recommended Staffing:** Eleven to 12 (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.

Springfield operates a 24/7 dispatch center on 8-hour shifts; [REDACTED] The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”

With an average leave usage of 256 hours, staffing [REDACTED] requires a minimum of six full-time dispatchers (or the equivalent thereof) on 8-hour shifts, which is currently Springfield’s authorized dispatcher strength. Staffing [REDACTED] 24/7 on 8-hour shifts requires a minimum of 11 to 12 full-time (or equivalent thereof) dispatchers. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

While the overall incident volume handled by the dispatch center is low—on average a total of 24 law, fire, and EMS incidents a day—[REDACTED]



## 5.18.5 Operations

### 5.18.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	2	

### 5.18.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		<p>Dual call-taking and dispatching</p> <p>Single Dispatcher most days and most shifts</p> <p>Secondary dispatcher 4 days per week, split shift</p> <p>Each dispatcher covers Police/Fire/EMS calls</p>
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	5	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.18.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% – 30%
EAS activation	1% – 10%
Jail	N/A
Records	20% – 30%



Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	10% – 20%
Warrants	10% – 20%
IT support / troubleshooting prior to going outside to vendor	♦

#### 5.18.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		CTO; no standards

#### 5.18.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.18.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	Yes
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	Only when issues arise



## 5.18.6 Technology Systems

### 5.18.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2016	♦	No	MDTs NCIC/Nlets ANI/ALI	Yes	♦
<b>Enhancements/Functionality</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2016	♦	Yes	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	Equature				
Telephone (CHE or Administrative)					
FSA	Pre-tone all incidents by fiber-optic line				
GIS Mapping					
IT support in-house and outsourced to Vermont Digital.					

### 5.18.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- ActiveAlert



#### 5.18.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.18.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Dispatch room was previously wired for a third workstation
Space exists for equipment room expansion and/or addition of systems and racks	Yes	The dispatch room is full but could be easily redesigned for an additional workstation. The room where much of the computer hardware is stored has been moved out of that room to a different location inside the PD, leaving room for additional racks of hardware.
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 5.18.8 Communication Networks

### 5.18.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Avtec	Burlington Comm's	Town of Springfield	VHF & UHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

### 5.18.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comm's	Town of Springfield	VHF & UHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 5.18.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
what frequency band does your paging system operate in?	VHF & UHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 5.18.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for voice and data communications?	No
What provider is used for broadband data?	Verizon

#### 5.18.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Good
Comments on VCOMM: N/A	

#### 5.18.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	




## 5.19 St. Johnsbury

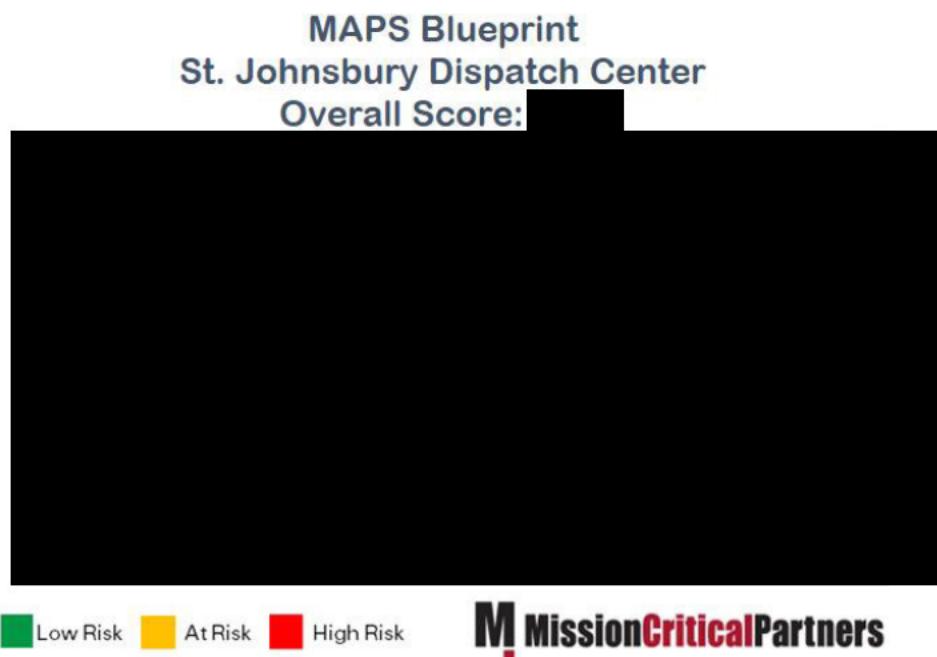


Figure 27: St. Johnsbury Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, St. Johnsbury's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing and supervisory deficiencies	Updated location/building
Operational and technological gaps	Updated equipment
Training and policy limitations	More user-friendly CAD system for use with agencies besides police

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.19.1 Agency Demographics Information

#### 5.19.1.1 Governance

Component	Response
Agency location	1187 Main St., St Johnsbury, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.19.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Calex Ambulance Service		EMS		
Concord Fire Department		Fire		
Danville Fire Department		Fire		
East Burke Fire Department		Fire		
Lyndon Rescue		EMS		
Lyndonville Fire Department		Fire		
Newark Fire Department		Fire		
Peacham Fire Department		Fire		
St. Johnsbury Fire Department		Fire		
St. Johnsbury Police Department		Law		
Sheffield-Wheelock Fire Department		Fire		
Sutton Fire Department		Fire		
Waterford Fire Department		Fire		
West Burke Fire Department		Fire		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	< 500 – 1,000	< 500 – 30,000
Square Miles	80+	80+	< 3 – 5	< 3 – 80+



### 5.19.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
741	2,207	576	5	N/A	138,283	Unable to provide	141,835 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	N/A	N/A	N/A	N/A	
<b>MCP Notes:</b> 911 calls that fall into the Unknown category = 23 The 10-digit call volume provided by the dispatch center (141,835) has been reduced by the number of 911 calls as they are received on 10-digit lines.							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
4,485		4,963	9,448
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦		N/A	

### 5.19.2 Finance

#### 5.19.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Regular salaries	*	\$380,523	N/A
Overtime pay	*	\$40,000	
Social Security	*	\$32,170	
Group insurance	*	\$93,056	
HBA expense		\$9,000	



Workers' Compensation		\$1,246	
401A retirement contribution	*	\$26,564	
VMERS	*	\$25,497	
Unemployment compensation	*	\$1,365	
<b>Subtotal</b>		<b>\$609,421</b>	

**Note:** Used 2024-25 Budget figures; there is a \$1 addition error on the provided spreadsheet

Other Expenses	Amount	Total
Office supplies	\$3,500	
Training supplies	\$1,000	
Postage	\$100	
Advertising	\$400	
New equipment	\$10,000	
Gas, oil, and mileage	\$250	
Uniforms	\$9,800	
Telephone	\$2,000	
Contracted services	\$21,000	
Equipment reserve	\$10,000	
Repair and maintenance services	\$15,000	
<b>Subtotal</b>		<b>\$73,050</b>
Total communications budget	See note	<b>\$682,471</b>
Total staffing recommendation adjusted budget	N/A	
Budget with cost contingency adjustment	25%	<b>\$853,089</b>



#### 5.19.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	141,835	\$4.81	
Incidents	9,448	\$72.23	
Population	10,000 – 30,000	\$22.75	
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.19.2.3 Funding Sources

Funding Source	Amount	Percentage
Dispatch fees	\$652,110	92%
Alarm monitoring fees	\$40,000	6%
DOC contract	\$18,000	2%
Fairlee contract	\$800	<0.1%
Total Funding	\$710,910	100%

#### 5.19.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	[REDACTED]
Physical security policy/plan	[REDACTED]
Agency accreditations	♦

#### 5.19.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	10	
Number of vacancies	5	
Current retention	95.8%	No dispatcher separations
Minimum staffing needed for each shift		[REDACTED]
Number of dispatchers assigned to a shift		[REDACTED]
Number of shift supervisors assigned to a shift		[REDACTED]
Shift supervisor span of control per shift		[REDACTED]
Length of operational shifts	10-hour	0700 – 1700 1100 – 2100 2100 – 0700 1400 – 0000
Number of training staff not assigned to the operations floor	1	
Number of quality assurance staff not assigned to the operations floor	1	

**Recommended Staffing:** Authorized strength appears appropriate for current operations — 10 to 11 (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.

St. Johnsbury operates on 10-hour shifts in its 24/7 operation. On average, staff use approximately 304 hours of leave each annually. Considering this, staffing [REDACTED] 24/7 on 10-hour shifts requires a minimum of five personnel. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

The law enforcement incident volume, less than one an hour on average, is such that [REDACTED] is sufficient. The fire/EMS incident volume is similar. [REDACTED]



The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 10 to 11 full-time staff. [REDACTED]  
[REDACTED]

St. Johnsbury’s authorized strength of ten is appropriate to maintain [REDACTED] 24/7. When fiscal resources allow, and current staffing reaches authorized strength, St. Johnsbury may wish to authorize an eleventh dispatcher position if overtime costs increase to fill time off.

## 5.19.5 Operations

### 5.19.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	3	2 dual call-taking and dispatching, 1 call-taking/training/admin

### 5.19.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Every dispatcher is responsible for every radio channel while working.
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	2	Fire alarm for all FD/EMS units and PD frequency.
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		[REDACTED]

### 5.19.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% – 30%
EAS activation	1% – 10%



Jail	N/A
Records	20% – 30%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	20% – 30%
Warrants	10% – 20%

#### 5.19.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	APCO

#### 5.19.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.19.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	



## 5.19.6 Technology Systems

### 5.19.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2016	♦	♦	N/A	No	Yes
<b>Enhancements/Functionality:</b> [REDACTED]							
<b>Agency Note:</b> We plan to have demonstrations and further discussions about moving to a different CAD/RMS system for all the departments we dispatch. The current CAD/RMS system hinders the call process for dispatchers and all FD/EMS processes; we're forced to take multiple steps or create multiple cards for a single incident. [REDACTED]							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2016	♦	Yes	♦
JMS	N/A	N/A	N/A	N/A	B/A
Logging Recorder	N/A				
Telephone (CHE or Administrative)					
FSA	House bells and PA system (St. Johnsbury FD)				
GIS Mapping					
IT support is local staff; a new contract has been initiated with Symquest.					

### 5.19.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- IamResponding

### 5.19.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.19.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	♦	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.19.8 Communication Networks

#### 5.19.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
L3Harris EF Johnson Kenwood	Analog & Digital	Burlington Comm's	St. Johnsbury PD	VHF & UHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						



Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)

Frequency of experiencing radio interference (noise or other unknown sources)

Frequency of radio system outages

Center is notified in advance of scheduled radio system maintenance outages

Center receives/monitors alarms from any of the radio systems

Planned Upgrades: The City is currently considering a new CAD/RMS system for all departments they dispatch. The current CAD/RMS system hinders the call process for dispatchers and all FD/EMS processes; multiple steps are required to create multiple cards for a single incident. Procurement of a new system will help dispatchers process the call volume.

#### 5.19.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
EF Johnson	Burlington Comm's	St. Johnsbury PD	VHF & UHF	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.19.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	VHF
Does your paging system provide adequate coverage for your operational needs?	♦

#### 5.19.8.4 Broadband

Broadband	
St. Johnsbury does not currently utilize broadband communications.	



#### 5.19.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.19.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.20 Saint Michaels College Fire/Rescue



Figure 28: Saint Michaels Rescue Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Saint Michaels College's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Funding to remain competitive and for more positions	◆
Lack of standard operating procedures to ensure consistent processes	◆
Communications with partner agencies	◆

As a reminder, a ◆ indicates that the information was not provided by the communications center.

### 5.20.1 Agency Demographics Information

#### 5.20.1.1 Governance

Component	Response
Agency location	220 College Parkway, Colchester, VT

Management and organizational structure	Division of the College
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

#### 5.20.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Saint Michaels College Fire/Rescue		Fire		
Saint Michaels College Public Safety		Law		
Colchester Fire (only to campus)		Fire		
Winooski Fire (only to campus)		Fire		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	5,000 – 10,000	5,000 – 10,000	< 500 – 1,000	5,000 – 10,000
Square Miles	5 – 10	20 – 40	< 3 – 5	< 3 – 40

#### 5.20.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023									
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total		
61	874	273	0	N/A	4,788 – 5,788	♦	6,000 – 7,000 (see note)		
Average time to process calls from pick-up to disconnect (one month average)									
N/A		N/A	N/A	♦	N/A				
MCP Notes: 911 calls that fall into the Unknown category = 4									
The 10-digit call volume provided by the dispatch center (6,000 – 7,000) has been reduced by the number of 911 calls as they are received on 10-digit lines.									



Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	♦	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

## 5.20.2 Finance

### 5.20.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+5)
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		
<b>Subtotal</b>			
Total communications budget		♦	
Total staffing recommendation adjusted budget	Adding 5 full-time dispatchers to meet industry standard		
Budget with cost contingency adjustment	25%		



#### 5.20.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A		
10-digit calls	6,000 – 7,000		
Incidents	◆		
Population	5,000 – 10,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.20.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	◆	
State funding	◆	
User fees	◆	
Other	◆	
Total Funding		

#### 5.20.3 Leadership and Planning

Component	Response
Policy and procedure manual	◆
Strategic plan	◆
Change management policy	◆
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	

Physical security policy/plan

Agency accreditations

#### 5.20.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	7	1 supervisor, 6 full-time
Number of vacancies	1	
Current retention	16.7%	10 separations in 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	8-hour	3 shifts: 0000 – 0800 0800 – 1600 1600 – 0000
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	
<p><b>Recommended Staffing:</b> Eleven to 12 (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.</p> <p>Saint Michaels College Fire/Rescue did not provide information on incidents or leave time to more accurately establish a staffing baseline. However, using a leave average of 200 hours, staffing [REDACTED] 24/7 requires a minimum of six personnel for 8-hour shifts. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, actual amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 11 to 12 full-time staff. [REDACTED].</p> <p>[REDACTED]</p> <p>For dispatch centers with low call and incident volumes, this staffing level is often cost-prohibitive.</p>		



## 5.20.5 Operations

### 5.20.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	♦	
Number of workstations	1	

### 5.20.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Switchboard and dispatching
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	4	Public Safety, 2 fire, 1 EMS
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.20.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	1% – 10%
Jail	N/A
Records	N/A
Security (active camera and access monitoring)	10% – 20%
Support municipal services	N/A
Vehicle release	N/A



Walk-up window	1% – 10%
Warrants	N/A

#### 5.20.5.4 Training

Component	Response	Notes
Structured or unstructured training program		No dispatchers
Training program certified by state/industry organization		

#### 5.20.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.20.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	NFPA
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	Only when issues

### 5.20.6 Technology Systems

#### 5.20.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Enhancements/Functionality:							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Omnigo	♦	♦	♦	♦
JMS	N/A	N/A	N/A	N/A	N/A
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					
Cameras and Doors			Royal Group		
IT support is Saint Michaels College IT.					

#### 5.20.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- ActiveAlert

#### 5.20.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems



## 5.20.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	
Adjacent rooms are available to the center	Yes	Restroom, training, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

## 5.20.8 Communication Networks

### 5.20.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Kyle Wentzel, kwentzel@sm cvt.edu Jeff Favreau, jfavreau@sm cvt.edu	Saint Michaels College Fire/Rescue	UHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						



Center is notified in advance of scheduled radio system maintenance outages

Center receives/monitors alarms from any of the radio systems

Upgrades Planned: Planned upgrades include implementing a radio system digital upgrade.

#### 5.20.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Kyle Wentzel, kwentzel@smcvt.edu Jeff Favreau, jfavreau@smcvt.edu	Saint Michaels College Fire/Rescue	UHF	One for everything	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.20.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	UHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 5.20.8.4 Broadband

Broadband	
Saint Michaels College Fire/Rescue does not currently utilize broadband communications for voice or data.	



#### 5.20.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.20.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.21 University of Vermont

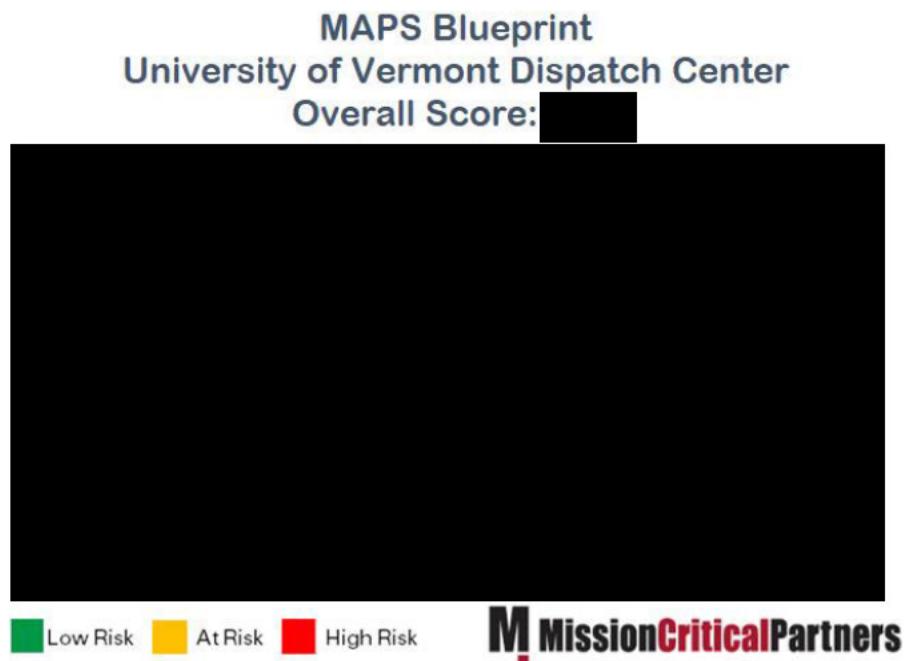


Figure 29: University of Vermont Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, the University of Vermont's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Lack of succession planning	Staffing
Limited dispatcher training	Adequate facility
Informal quality assurance reviews	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.21.1 Agency Demographics Information

#### 5.21.1.1 Governance

Component	Response
Agency location	284 East Avenue, Burlington, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 5.21.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Champlain College Public Safety		Private Security		
University of Vermont Police Services		Law		
University of Vermont Rescue		Fire		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population				10,000 – 30,000
Square Miles				< 3 – 5

#### 5.21.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
1	208	17	2	N/A	Unable to determine	Unable to determine	231 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	2 mins	N/A		
MCP Note: 911 calls that fall into the Unknown category = 3							



Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
1,834	N/A	9,219	11,053
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
26 mins	N/A	21 mins	

## 5.21.2 Finance

### 5.21.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+3)
Management (Sr Dispatcher)	\$84,175	\$84,175	
Dispatchers (5)	\$53,561 (avg)	\$267,807	\$160,683
Fringe Benefits (all 6)	\$25,695 (avg)	\$154,169	\$77,085
<b>Subtotal</b>		<b>\$506,151</b>	<b>\$237,768</b>
Other Expenses		Amount	Total
Telephone/Networking Services		\$15,000	
Radio Maintenance		\$5,500	
Dispatch System License		\$85,075	
Workstations (2)		\$20,000	
Motorola Dispatch System		\$48,994	
Motorola Dispatch System		\$118,115	
Insulated File Cabinet		\$7,500	
Dispatch Monitoring/Recording System		\$11,506	
<b>Subtotal</b>			<b>\$311,660</b>
Total communications budget			<b>\$817,811</b>

Total staffing recommendation adjusted budget	Adding 3 full-time dispatchers to meet industry standard	\$1,055,579
Budget range with cost contingency adjustment	25%	\$1,022,264 – \$1,329,474

#### 5.21.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	11,053	\$73.99	\$95.50
Population	10,000 – 30,000	\$27.26 – \$81.78	\$35.19 – \$105.56
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.21.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$817,811	100%
State funding	N/A	N/A
User fees	N/A	N/A
Other	N/A	N/A
<b>Total Funding</b>	<b>\$817,811</b>	<b>100%</b>

### 5.21.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	CALEA

### 5.21.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	7	6 full-time, 1 part-time
Number of vacancies	1	1 full-time
Current retention	55.6%	8 separations in 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	8-hour, 10-hour, 12-hour	8-hour shifts: 0700 – 1500 1500 – 2300 2300 – 0700  10-hour shifts: 0700 – 1700 1500 – 0100 2100 – 0700



		12-hour shifts: 0700 – 1900 1900 – 0700
Number of training staff not assigned to the operations floor	0	All trainers assigned to the floor
Number of quality assurance staff not assigned to the operations floor	N/A	
<p><b>Recommended Staffing:</b> Nine to 10 (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.</p> <p>The University of Vermont operates a 24/7 dispatch center with a variety of shift lengths. The law enforcement incident volume, an average of 26 a day, is such that [REDACTED] is sufficient. The EMS incident is even lower, with an average of five a day. [REDACTED]  [REDACTED]  [REDACTED]</p> <p>The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 9 to 10 full-time staff (or the equivalent thereof) for 24/7 operations. [REDACTED]  [REDACTED]</p> <p>This staffing figure can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>For dispatch centers with low call and incident volumes, such as the University of Vermont, this staffing level may be cost-prohibitive, particularly when the student population is low.</p>		

## 5.21.5 Operations

### 5.21.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	3	2 call-taking and dispatching, 1 overflow



#### 5.21.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations		UVM Police UVM Rescue Capacity, plus system for UVM non-emergency services Champlain College Public Safety Two radios scanning frequencies for Chittenden County
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 5.21.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	1% – 10%
Jail	N/A
Records	10% – 20%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	N/A
Vehicle release	1% – 10%
Walk-up window	1% – 10%
Warrants	10% – 20%



#### 5.21.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	APCO standards

#### 5.21.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.21.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	N/A
QA program (structured)	No
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

### 5.21.6 Technology Systems

#### 5.21.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2013	♦	No	MDTs NCIC/Nlets	Yes	No
<b>Enhancements/Functionality:</b>							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2013	♦	Yes	No
JMS	N/A	N/A	N/A	N/A	N/A
Logging Recorder	Equature Viewpoint				No
Telephone (CHE or Administrative)					
FSA	N/A				
GIS Mapping					
IT support is University staff.					

#### 5.21.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- ActiveAlert

#### 5.21.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.21.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	No	



Adjacent rooms are available to the center	Yes	Kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		
<b>Agency Note:</b> Full overhaul / plans to move the dispatch center		

## 5.21.8 Communication Networks

### 5.21.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Radio North Group	University of Vermont Police Services	UHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						
Upgrades Planned: Planned upgrades include a full overhaul and relocation of the current dispatch center						

#### 5.21.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Radio North Group	University of Vermont Police Services	UHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.21.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	UHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 5.21.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for voice and data communications?	Yes
What provider is used for broadband data?	FirstNet / AT&T

#### 5.21.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	



### 5.21.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	



## 5.22 Wilmington

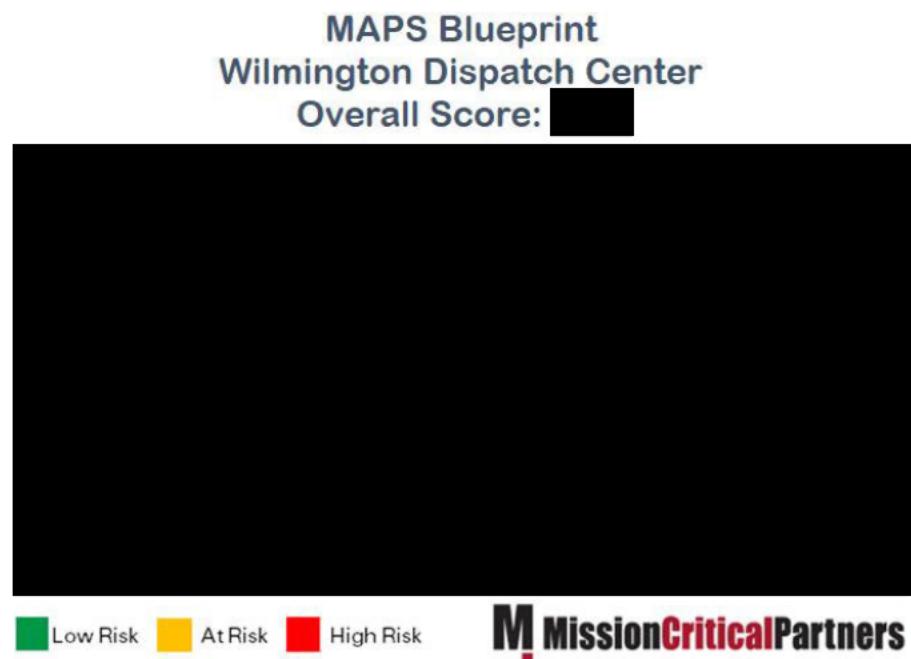


Figure 30: Wilmington Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Wilmington's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Communications with other dispatch centers and PSAPs	Funding
Radio communications and support	
Vermont tax money going outside the state	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 5.22.1 Agency Demographics Information

#### 5.22.1.1 Governance

Component	Response
Agency location	40 Beaver St., Wilmington, VT

Management and organizational structure	Division of Police Department
Center operates under a formal governance agreement	No
The governance committee, board, or other group meets on a regular basis	N/A
Gaps/issues are present with the existing governance model/agreement that need to be addressed	N/A

#### 5.22.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched				Agency Type
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	N/A	N/A	2,550 – 5,000	2,500 – 5,000
Square Miles	N/A	N/A	40 – 60	40 – 60

#### 5.22.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
35	209	12	0	N/A	♦	♦	258 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A		N/A	4 mins	N/A	
MCP Note: 911 calls that fall into the Unknown category = 2							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
N/A	N/A	2,705	2,705



Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)

N/A	N/A	30 mins	N/A
-----	-----	---------	-----

## 5.22.2 Finance

### 5.22.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Dispatchers (2) and Benefits	*	\$203,072	None
<b>Subtotal</b>		<b>\$203,072</b>	
<b>Note:</b>			
Other Expenses		Amount	Total
Maintenance, licensing, and software		\$17,600	
<b>Subtotal</b>			<b>\$17,600</b>
Total communications budget			\$220,672
Total staffing recommendation adjusted budget		N/A	
Budget with cost contingency adjustment	25%		\$275,840

### 5.22.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	2,705	\$81.58	N/A



Population	5,000 – 10,000	\$44.13 – \$88.27	N/A
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.22.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	\$220,672	100%
State funding	N/A	N/A
User fees	N/A	N/A
Other	N/A	N/A
<b>Total Funding</b>	<b>\$220,672</b>	<b>100%</b>

#### 5.22.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 5.22.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	3	2 full-time, 1 part-time
Number of vacancies	1	
Current retention	66.7%	1 separation
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	10-hour, hybrid	2 shifts:  Dispatcher 1: Sun 0800 – 1700 Mon-Tues 0700 – 1700 Wed 0800 – 1200  Dispatcher 2: Wed 1100 – 1700 Thurs-Sat 0800 – 1700
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	
<p><b>Recommended Staffing:</b> Appropriately staffed for current operations — 2 to 3 (full-time or full-time and part-time equivalents) for part-time operations.</p> <p>Wilmington operates its dispatch center part-time, Monday through Sunday from 0700 or 0800 to 1700. The law enforcement incident volume, less than one an hour on average for the hours of operation, is such that [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>If Wilmington elected to transition to 24/7 operations, minimum dispatcher staffing would be 11 to 12 (full-time or full-time and part-time equivalents). This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p>		



For dispatch centers with low call and incident volumes, such as Wilmington, this staffing level is often cost-prohibitive.

## 5.22.5 Operations

### 5.22.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	N/A	
Number of workstations	3	

### 5.22.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		2 mirrored – call-taking and dispatching 1 overflow/training with call-taking and dispatching capabilities
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	4	Wilmington PD Channel, VSP B1, KMA KCF415, KMA KDX768
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.22.5.3 Ancillary Duties

Component	Percentage of Time
Administration	40% – 50%
EAS activation	1% – 10%
Jail	N/A
Records	50%+
Security (active camera and access monitoring)	1% – 10%



Support municipal services	1% – 10%
Vehicle release	N/A
Walk-up window	20% – 30%
Warrants	1% – 10%
Other – Scheduling	1% – 10%
Other – In-house alarm registration records	1% – 10%
Other – Grants	1% – 10%

#### 5.22.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	State standards

#### 5.22.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.22.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	NFPA
QA program (structured)	Yes
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	Annual review; when issues arise



## 5.22.6 Technology Systems

### 5.22.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2021	♦	Yes – VSP	MDTs NCIC/Nlets	Yes	No
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2021	♦	Yes	No
JMS	N/A	N/A	N/A	N/A	No
Logging Recorder	Eventide Media Works				No
Telephone (CHE or Administrative)					
FSA	N/A				
GIS Mapping					
IT support is provided locally and by Vermont Geeks and Burlington Communications.					

### 5.22.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems
N/A



### 5.22.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.22.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	There is additional space in the current dispatch office with the third workstation. However, noise level would need to be considered.
Space exists for equipment room expansion and/or addition of systems and racks	Yes	3 open racks with approximately 5 sq ft of space
Adjacent rooms are available to the center	Yes	Restroom, conference room, training room, quiet room, gym, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.22.8 Communication Networks

#### 5.22.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Burlington Comm's	Wilmington Police Department	VHF & UHF	No	No



Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs
Radio system(s) provide adequate coverage inside wood-constructed residences
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)
Frequency of experiencing radio interference (noise or other unknown sources)
Frequency of radio system outages
Center is notified in advance of scheduled radio system maintenance outages
Center receives/monitors alarms from any of the radio systems

#### 5.22.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Avtec	Burlington Comm's	Wilmington Police	VHF & UH	3	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.22.8.3 Paging System

Paging System
Wilmington does not use a paging system.



#### 5.22.8.4 Broadband

Broadband	
Does your agency currently utilize broadband for voice and data communications?	Yes
What provider is used for broadband data?	Verizon

#### 5.22.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	Yes
Rate the experience with VCOMM	Fair
Comments on VCOMM: N/A	

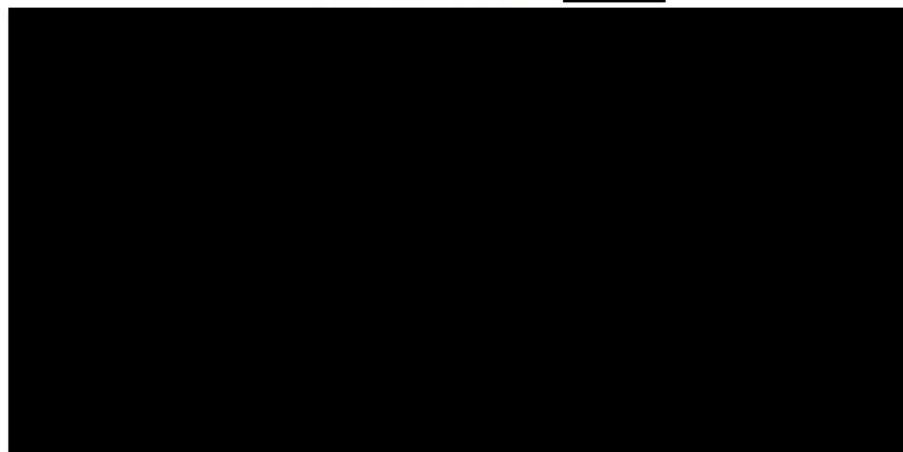
#### 5.22.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

A

## 5.23 Windham County

### MAPS Blueprint Windham County Dispatch Center Overall Score: [REDACTED]



Low Risk   At Risk   High Risk

**M** MissionCriticalPartners

Figure 31: Windham County Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Windham County's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Informal dispatch agency governance	Staffing
Lack formal dispatch policies	Redundancy with nearby communications centers
No formal QA/QI program	Radio service due to mountains and valleys

As a reminder, a ♦ indicates that the information was not provided by the communications center.

#### 5.23.1 Agency Demographics Information

##### 5.23.1.1 Governance

Component	Response
Agency location	185 Old Ferry Rd., Brattleboro, VT

Management and organizational structure	Division of Sheriff's Office
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Annually
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 5.23.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Bellows Falls Police (Nights and Weekends)		Law		
Bennington County Sheriff		Law		
Windham County Sheriff		Law		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	N/A	N/A	30,000+	30,000+
Square Miles	N/A	N/A	80+	80+

#### 5.23.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
7	26	9	0	N/A	44,958	♦	45,000
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: The 10-digit call volume provided by the dispatch center (45,000) has been reduced by the number of 911 calls as they are received on 10-digit lines.							



Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
N/A	N/A	13,900	13,900
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
N/A	N/A	♦	

## 5.23.2 Finance

### 5.23.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+4)
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		
<b>Subtotal</b>			
Total communications budget		♦	
Total staffing recommendation adjusted budget	Adding 4 full-time dispatchers to meet industry standard		
Budget with cost contingency adjustment	25%		



### 5.23.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	70,000		
Incidents	13,900		
Population	30,000+		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

### 5.23.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund		♦
State funding	N/A	N/A
User fees (dispatch fees)		♦
Other	N/A	N/A
Total Funding		

### 5.23.3 Leadership and Planning

Component	Response
Policy and procedure manual	Yes
Strategic plan	Yes
Change management policy	Yes
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	[REDACTED]
Physical security policy/plan	[REDACTED]
Agency accreditations	♦

#### 5.23.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	7	
Number of vacancies	0	
Current retention	82.2%	3 separations in the last 3 years
Minimum staffing needed for each shift		[REDACTED]
Number of dispatchers assigned to a shift		[REDACTED]
Number of shift supervisors assigned to a shift		[REDACTED]
Shift supervisor span of control per shift		[REDACTED]
Length of operational shifts	8-hour	3 shifts
Number of training staff not assigned to the operations floor	N/A	
Number of quality assurance staff not assigned to the operations floor	1	

**Recommended Staffing:** Eleven (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard.

Windham County did not provide information on leave time to more accurately establish a staffing baseline. However, using a leave average of 200 hours, staffing [REDACTED] 24/7 on 8-hour shifts requires a minimum of six personnel. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

The law enforcement incident volume, less than two an hour on average, is such that [REDACTED]  
[REDACTED]

That said, the industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times,” which requires the equivalent of 11 to 12 full-time staff. [REDACTED]  
[REDACTED]  
[REDACTED]



For dispatch centers with low call and incident volumes, such as Windham County, this staffing level is often cost-prohibitive.

## 5.23.5 Operations

### 5.23.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	4	Law enforcement

### 5.23.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Law enforcement dispatch Town highway department
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	9	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 5.23.5.3 Ancillary Duties

Component	Percentage of Time
Administration	20% – 30%
EAS activation	N/A
Jail	N/A
Records	10% – 20%
Security (active camera and access monitoring)	20% – 30%
Support municipal services	1% – 10%



Vehicle release	N/A
Walk-up window	20% – 30%
Warrants	10% – 20%

#### 5.23.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Yes	Four-phase new-hire training Annual continuing education for all staff
Training program certified by state/industry organization	CTO	State standards

#### 5.23.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 5.23.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	No
Percentage of calls that receive a QA review	A few a week
Frequency that QA assessments are completed and returned to staff	



## 5.23.6 Technology Systems

### 5.23.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Valcour	2014	♦	♦	MDTs NCIC/Nlets	Yes	♦
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Valcour	2014	♦	Yes	♦
JMS	N/A	N/A	N/A	N/A	N/A
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					
IT support is local staff and Europa IT.					

### 5.23.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems



### 5.23.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.23.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Utilize an additional workstation for radio and gateway equipment
Adjacent rooms are available to the center	Yes	Restroom, kitchen
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.23.8 Communication Networks

#### 5.23.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Pittsfield Comm's	Windham County	VHF & UHF	Yes	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						



Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	
Planned Upgrades: The County's goal is to modernize its system to add fire and EMS agencies to its operation.	

#### 5.23.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Pittsfield Comm's	Windham County	VHF & UHF	2	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.23.8.3 Paging System

Paging System
Windham County does not currently use a paging system.

#### 5.23.8.4 Broadband

Broadband
Windham County does not currently use a broadband service.



#### 5.23.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 5.23.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.24 Winooski



Figure 32: Winooski Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Winooski's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Staffing, as reliant on outside department for recruiting	◆
No systematic process for quality assurance	◆
Notifications with other dispatch centers on multi-jurisdictional incidents are inconsistent	◆

As a reminder, a ◆ indicates that the information was not provided by the communications center.

## 5.24.1 Agency Demographics Information

### 5.24.1.1 Governance

Component	Response
Agency location	27 W Allen St., Winooski, VT
Management and organizational structure	♦
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/Issues are present with the existing governance model/agreement that need to be addressed	♦

### 5.24.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched			Agency Type
Winooski Fire Department			Fire
Winooski Police Department			Law
Population and Square Miles Served			
	EMS	Fire	Law
Population	♦	♦	♦
Square Miles	♦	♦	♦

### 5.24.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
155	1,111	91	7	N/A	♦	♦	1,373 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 9							



Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	♦	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	N/A

## 5.24.2 Finance

### 5.24.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		
<b>Subtotal</b>			
Total communications budget			♦
Total staffing recommendation adjusted budget			
Budget with cost contingency adjustment	25%		

#### 5.24.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A		
10-digit calls	♦		
Incidents	♦		
Population	5,000 – 10,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.24.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund		♦
State funding		♦
User fees		♦
Other		♦
Total Funding		

#### 5.24.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	



Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

#### 5.24.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	
Number of vacancies	♦	
Current retention	♦	
Minimum staffing needed for each shift	♦	
Number of dispatchers assigned to a shift	♦	
Number of shift supervisors assigned to a shift	♦	
Shift supervisor span of control per shift	♦	
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	

**Recommended Staffing:** As Winooski [REDACTED]

The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”

Generally, staffing two positions on 12-hour shifts for 24/7 operations requires the equivalent of 10 to 12 full-time staff, minimally. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

In this case, staffing two positions on 8-hour or 10-hour shifts for 24/7 operations requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.

For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.



## 5.24.5 Operations

### 5.24.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	

### 5.24.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)	♦	

### 5.24.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦



Walk-up window	♦
Warrants	♦

#### 5.24.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	State standards

#### 5.24.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 5.24.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	♦
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

#### 5.24.6 Technology Systems

##### 5.24.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	♦	♦	♦	♦	♦	♦	♦
Enhancements/Functionality:							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					

#### 5.24.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

#### 5.24.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 5.24.7 Facilities

Component	Response	Notes
Room exists for center expansion	♦	
Space exists for equipment room expansion and/or addition of systems and racks	♦	
Adjacent rooms are available to the center	♦	
Center has backup power		



Center is in a secure facility	
A backup facility exists for the center	

## 5.24.8 Communication Networks

### 5.24.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	♦	♦	♦	♦	♦	♦
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

### 5.24.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	♦
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 5.24.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 5.24.8.4 Broadband

Broadband
♦

#### 5.24.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM: ♦	

#### 5.24.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 5.25 Woodstock

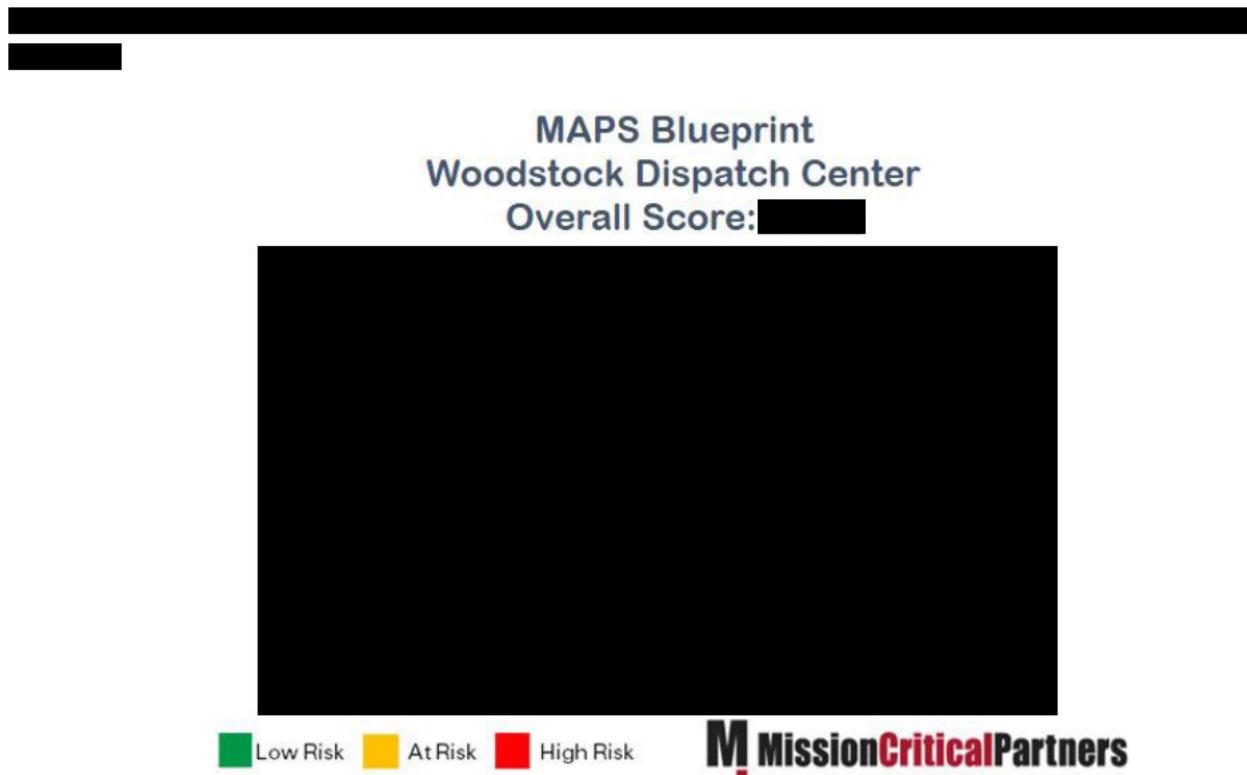


Figure 33: Woodstock Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Woodstock's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Lack of structured training and planning	♦
Technology and infrastructure deficiencies	♦
Minimal QA and peer support programs	♦

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 5.25.1 Agency Demographics Information

### 5.25.1.1 Governance

Component	Response
Agency location	454 Woodstock Rd., Woodstock, VT
Management and organizational structure	♦
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

### 5.25.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Bridgewater Fast Squad		EMS		
Bridgewater Fire Department		Fire		
Pomfret Emergency Service-EMS		EMS		
Pomfret Emergency Service-FIRE		Fire		
Woodstock Ambulance		EMS		
Woodstock Fire Department		Fire		
Woodstock Police Department		Law		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	♦	♦	♦	2,500 – 5,000
Square Miles	♦	♦	♦	



### 5.25.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
171	432	153	0	N/A	♦	♦	762 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	N/A	♦	N/A	N/A	
MCP Note: 911 calls that fall into the Unknown category = 6							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	♦	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	N/A

### 5.25.2 Finance

#### 5.25.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		

<b>Subtotal</b>		
Total communications budget		♦
Total staffing recommendation adjusted budget		
Budget with cost contingency adjustment	25%	

#### 5.25.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A		
10-digit calls	♦		
Incidents	♦		
Population	2,500 – 5,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 5.25.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	
Total Funding		

### 5.25.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

### 5.25.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	
Number of vacancies	♦	
Current retention	♦	
Minimum staffing needed for each shift	♦	
Number of dispatchers assigned to a shift	♦	
Number of shift supervisors assigned to a shift	♦	
Shift supervisor span of control per shift	♦	
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	
<b>Recommended Staffing:</b> As Woodstock [REDACTED] [REDACTED]. The industry standard requires "a minimum of two qualified telecommunicators on duty and present		



in the communications center at all times."

Generally, staffing two positions on 12-hour shifts for 24/7 operations requires the equivalent of 10 to 12 full-time staff, minimally. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

In this case, staffing two positions on 8-hour or 10-hour shifts for 24/7 operations requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.

For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.

## 5.25.5 Operations

### 5.25.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	

### 5.25.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)	♦	



#### 5.25.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦
Walk-up window	♦
Warrants	♦

#### 5.25.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	State standards

#### 5.25.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 5.25.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	♦



Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

## 5.25.6 Technology Systems

### 5.25.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	♦	♦	♦	♦	♦	♦	♦
<b>Enhancements/Functionality:</b> [REDACTED]							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					

### 5.25.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

♦



### 5.25.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 5.25.7 Facilities

Component	Response	Notes
Room exists for center expansion	♦	
Space exists for equipment room expansion and/or addition of systems and racks	♦	
Adjacent rooms are available to the center	♦	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 5.25.8 Communication Networks

#### 5.25.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	♦	♦	♦	♦	♦	♦
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						



Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 5.25.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	♦
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 5.25.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 5.25.8.4 Broadband

Broadband	
♦	



#### 5.25.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM: ♦	

#### 5.25.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 6 Out-of-State Dispatch Centers

Six dispatch centers in neighboring states support some first responder agencies in Vermont.

### 6.1 Colebrook, New Hampshire

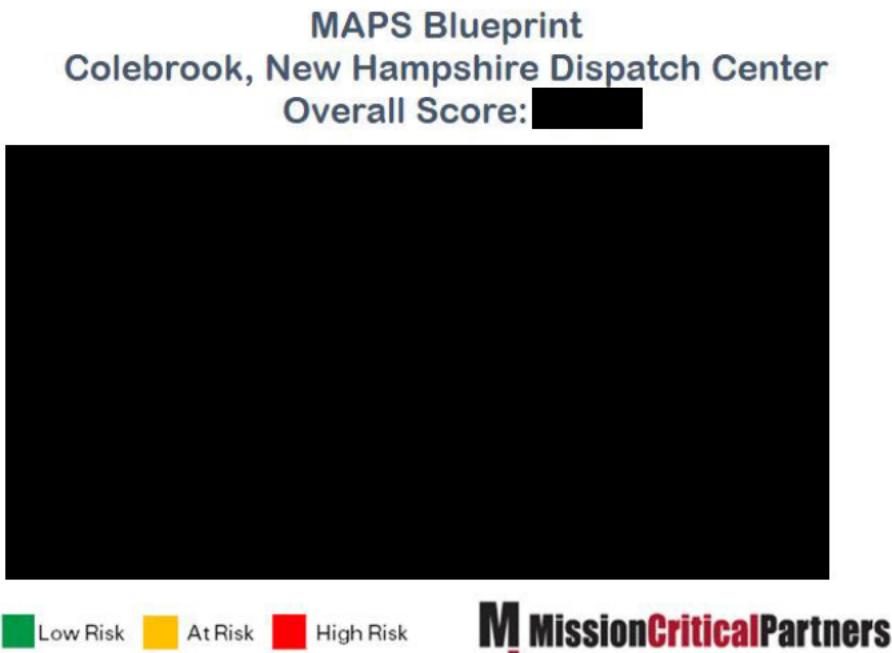


Figure 34: Colebrook Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Colebrook's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Heavy reliance on grant funding	Too much land with not enough radio coverage
Dispatchers not trained on protocols; information relayed to Vermont callers for medical is inconsistent	Money to pay for upgrades
Lack of a staffing study to identify needs	

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 6.1.1 Agency Demographics Information

### 6.1.1.1 Governance

Component	Response
Agency location	17 Bridge St., Colebrook, NH
Management and organizational structure	Independent Board of Directors
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Monthly
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

### 6.1.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
45th Parallel EMS		EMS		
Beecher Falls Fire Department		Fire		
Colebrook Fire Department		Fire		
Colebrook Police Department		Law		
Errol Fire Department		Fire		
Errol Ambulance		EMS		
Pittsburg Fire Department		Fire		
Pittsburg Police Department		Law		
Public Works		Other		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	2,500 – 5,000	5,000 – 10,000	5,000 – 10,000	2,500 – 10,000
Square Miles	80+	80+	80+	80+



#### 6.1.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
46	43	6	0	N/A	♦	♦	98 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	N/A	♦	N/A	N/A	
MCP Note: 911 calls that fall into the Unknown category = 3							

Annual Incident Volume and Processing Time 2023			
EMS	Fire	Law	Total
3,196	1,525	4,654	9,375
Agency Note: 2023 data; three years not provided			
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

#### 6.1.2 Finance

##### 6.1.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments (+6)
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			

Other Expenses	Amount	Total
	♦	
<b>Subtotal</b>		
Total communications budget		♦
Total staffing recommendation adjusted budget	Adding 6 full-time dispatchers to meet industry standard (current part-time offsets need by one)	
Budget with cost contingency adjustment	25%	

#### 6.1.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	9,375		
Incidents	9,375		
Population	2,500 – 10,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 6.1.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees – dispatch fees	♦	

Other	♦	
Total Funding		

### 6.1.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	Yes
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

### 6.1.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	5	3 full-time; 2 part-time
Number of vacancies	1	1 part-time
Current retention	100%	No separations for the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	Hybrid	8-hour and 12-hour shifts
Number of training staff not assigned to the operations floor	1	

Number of quality assurance staff not assigned to the operations floor	♦	
<b>Recommended Staffing:</b> Ten (full-time or full-time and part-time equivalents to maintain two on duty) for 24/7 operations to meet industry standard		
Colebrook operates a 24/7 dispatch center with 8-hour and 12-hour shifts; [REDACTED]		
[REDACTED]		
[REDACTED]		
[REDACTED]		
Using 146 hours of leave, the average annual leave usage among Colebrook personnel, staffing [REDACTED] 24/7 on 8-hour or 12-hour shifts requires a minimum of five to six personnel; currently Colebrook has three full-time dispatchers and two part-time, which is less than the required minimum.		
The industry standard requires "a minimum of two qualified telecommunicators on duty and present in the communications center at all times," which, for Colebrook, requires the equivalent of 10 to 12 full-time (or equivalent thereof) staff. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.		
For dispatch centers with low incident volumes, such as Colebrook, this staffing level is often cost-prohibitive.		

## 6.1.5 Operations

### 6.1.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	2	1 call-taking/dispatch, 1 call-taking only

### 6.1.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		Phone and radio from one position
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring	8	1 law channel, 7 fire/EMS channels



during normal operations		
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 6.1.5.3 Ancillary Duties

Component	Percentage of Time
Administration	50%+
EAS activation	N/A
Jail	N/A
Records	50%+
Security (active camera and access monitoring)	50%
Support municipal services	N/A
Vehicle release	N/A
Walk-up window	50%+
Warrants	50%+

#### 6.1.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		No standards

#### 6.1.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	Yes	IAED

#### 6.1.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	NFPA
QA program (structured)	♦
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

#### 6.1.6 Technology Systems

##### 6.1.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	IMC	1980's	♦	No	MDTs	No	Yes
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	IMC	♦	♦	No	Yes
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	2-tone paging				
GIS Mapping					
<b>Agency Note:</b> Hoping to update IMC system to CSI Technology Group					
IT support provided locally and outsourced to Secured Network Services.					



#### 6.1.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- eDispatch

#### 6.1.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 6.1.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	1 open rack
Adjacent rooms are available to the center	Yes	Restroom
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 6.1.8 Communication Networks

### 6.1.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola EF Johnson Kenwood	Analog & Digital	Tac-2 Comm's	Northern Borders Dispatch	VHF	No	Yes
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						
Planned Upgrades: Northern Borders Dispatch is hoping to update their IMC system to the CSI Technology Group.						

### 6.1.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
EF Johnson	Tac-2 Comm's	Northern Borders Dispatch	VHF	2	



Radio dispatch console system has had a hardware refresh in the last 2 years

Radio dispatch console system has had a software refresh in the last 2 years

#### 6.1.8.3 *Paging System*

##### Paging System

Northern Borders Dispatch does not currently use a paging system.

#### 6.1.8.4 *Broadband*

##### Broadband

Northern Borders Dispatch does not currently utilize a broadband service.

#### 6.1.8.5 *VCOMM*

##### VCOMM

Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 6.1.9 *Cybersecurity*

##### Cybersecurity

Cybersecurity assessment complete

Existence of documented cybersecurity Incident Response Plan

Existence of cybersecurity insurance policy

## 6.2 Grafton County, New Hampshire

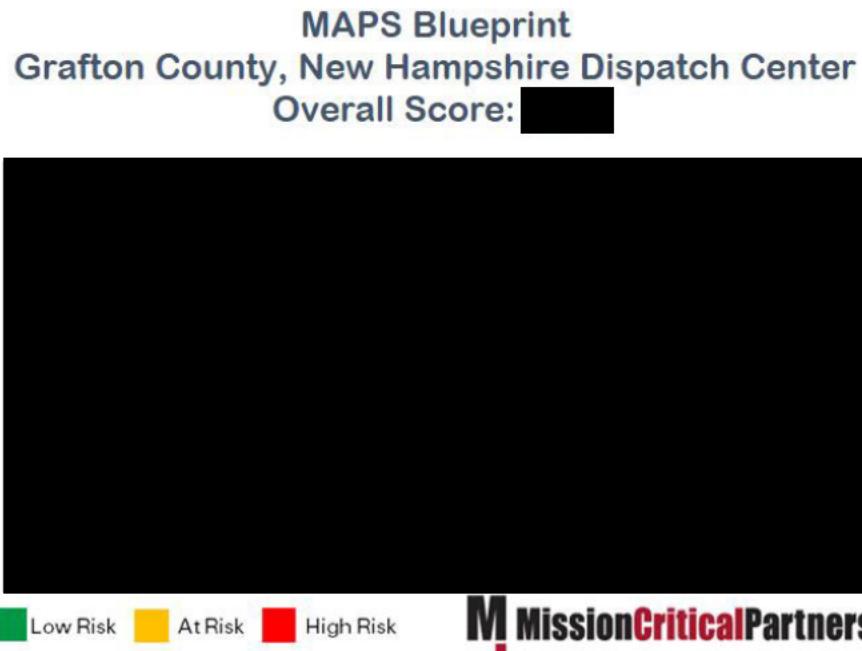


Figure 35: Grafton County Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Grafton County's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Recruitment and staffing challenges	Staffing
Training and QA/QI limitations	Funding
Operational and technological inefficiencies	Cybersecurity

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 6.2.1 Agency Demographics Information

#### 6.2.1.1 Governance

Component	Response
Agency location	3785 Dartmouth College Hwy., North Haverhill, NH

Management and organizational structure	Division of Sheriff's Office
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Monthly
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 6.2.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Barnet EMS	EMS
Barnet Fire Department	Fire
Bath Police Department	Law
Bethlehem Police Department	Law
Franconia Police Department	Law
Gilman EMS	EMS
Grafton County Sheriff's Department	Law
Groton Fire Department	Fire
Groton/Ryegate EMS	EMS
Groveton (NH) Ambulance	EMS
Haverhill Police Department	Law
Lancaster (NH) Ambulance	EMS
Lancaster Police Department	Law
Lisbon Police Department	Law
Littleton Police Department	Law
Lunenburg Fire Department	Fire
Newbury EMS	EMS
Newbury Fire Department	Fire



Northumberland Police Department	Law			
Piermont Police Department	Law			
Ryegate Fire Department	Fire			
Sugar Hill Police Department	Law			
Warren Police Department	Law			
Waterville Valley Police Department	Law			
Wells River Fire Department	Fire			
Wentworth Police Department	Law			
West Newbury Fire Department	Fire			
Whitefield Police Department	Law			
Woodsville (NH) Ambulance	EMS			
Department of Corrections				
Probation/Parole				
US Forest Service				
<b>Franconia Police Department</b>				
	EMS	Fire	Law	Total
Population	10,000 – 30,000	10,000 – 30,000	30,000+	10,000 – 30,000+
Square Miles	80+	80+	80+	80+

#### 6.2.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
209	236	80	0	N/A	Unknown	Unknown	530 (see note)

Average time to process calls from pick-up to disconnect (one month average)					
N/A	N/A	N/A	Data not available	N/A	
MCP Note: 911 calls that fall into the Unknown category = 5					

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
11,000 – 12,000		44,000 – 48,000	55,000 – 60,000
Agency Note: Police account for 80% of volume approximately with Fire/EMS at 20% approximately			
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
Data not available			

## 6.2.2 Finance

### 6.2.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Management (Director and Deputy Director)	\$74,084 \$69,480	\$143,564	None
Dispatchers (2 supervisors, 9 full-time, multiple part-time)		\$799,102	
Dispatcher OT		\$43,000	
Health insurance (all staff)		\$371,563	
Retirement plan (all staff)		\$130,515	
Social Security (all staff)		\$76,138	
<b>Subtotal</b>		<b>\$1,563,882</b>	
<b>Note:</b>			

Other Expenses	Amount	Total
Leased Communications Equipment	\$61,000	
Equipment Repair and Maintenance	\$71,000	
Education and Conferences	\$13,000	
Reference Materials	\$400	
Office Supplies	\$3,800	
Postage	\$300	
Telephone	\$19,200	
Vehicle Repair and Maintenance	\$6,000	
Vehicle Fuel and Oil	\$900	
IT costs	\$4,000	
MDT replacement (capital costs)	\$25,000	
<b>Subtotal</b>		<b>\$204,600</b>
Total communications budget		\$1,768,482
Total staffing recommendation adjusted budget	N/A	
Budget with cost contingency adjustment	25%	\$2,210,603

#### 6.2.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	14,375	\$30.76	N/A
Population	10,000 – 30,000	\$14.74 – \$44.21	N/A

**MCP Notes:** Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.

For out-of-state dispatch centers that provided incident volumes, 25% of their overall calculation is attributed to Vermont, and 75% to their home state for cost per calculations.

#### 6.2.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund		
State funding		
User fees (dispatch fees)	♦	
Other		
Total Funding		

#### 6.2.3 Leadership and Planning

Component	Response
Policy and procedure manual	No
Strategic plan	No
Change management policy	No
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A



#### 6.2.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	18	3 supervisors, 15 dispatchers
Number of vacancies	1	Dispatcher
Current retention	86.7%	7 separations in 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	8-hour shifts	6 shifts; staggered starts and ends
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Authorized strength seems appropriate for current operations — 15 dispatchers and three supervisors.</p> <p>Grafton operates a 24/7 dispatch center operating on six staggered 8-hour shifts. [REDACTED] [REDACTED] the industry standard that requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.” The assumption is that fire/EMS and law enforcement dispatch are handled on separate positions. Grafton did not provide information on leave time to more accurately establish a staffing baseline.</p> <p>Without a leave time factor, staffing [REDACTED] 24/7 on 8-hour shifts requires a minimum of 5 to 6 dispatchers, while staffing [REDACTED] (the minimum) requires 9 to 10 dispatchers, statistically. Using a leave average of 200 hours, staffing [REDACTED] 24/7 on 8-hour shifts requires a minimum of 11 to 12 dispatchers; 15 dispatchers are necessary to staff [REDACTED] 24/7, which is likely Grafton’s configuration. These numbers can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching. In Grafton’s case, the incident volumes are relatively low.</p> <p>[REDACTED] [REDACTED]</p> <p>Without knowing more about Grafton’s operational configuration, it appears that the authorized strength is appropriate.</p>		



## 6.2.5 Operations

### 6.2.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	6	5 in communications center; 1 in EOC

### 6.2.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	8	Two separate fire channels (Twin State and Norpac) and six separate police channels (Grafton South, Grafton North, Grafton West, Littleton, Lisbon and Coos)
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 6.2.5.3 Ancillary Duties

Component	Percentage of Time
Administration	1% – 10%
EAS activation	1% – 10%
Jail	N/A
Records	1% – 10%
Security (active camera and access monitoring)	1% – 10%
Support municipal services	1% – 10%



Vehicle release	N/A
Walk-up window	N/A
Warrants	1% – 10%

#### 6.2.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization	CTO	NH Association

#### 6.2.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 6.2.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	Yes
Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

### 6.2.6 Technology Systems

#### 6.2.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	CSI InfoCAD	2022	♦	Yes	MDTs	Yes	No

					NCIC/Nlets ANI/ALI ActiveResponse / Active911 Temsis		
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**Enhancements/Functionality:**

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	CSI InfoSHARE	2022	♦	Yes	No
JMS	♦	Unknown	♦	Yes	No
Logging Recorder	Exacom Hindsight				No
Telephone (CHE or Administrative)	NH 911				
FSA	Active Response and Active911				No
GIS Mapping					
IT support provided locally and outsourced to Secured Network Services.					

**6.2.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software**

**Over-the-Top – Integrated Applications – Software**  
Call Processing and Dispatch Systems

- RapidSOS

### 6.2.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 6.2.7 Facilities

Component	Response	Notes
Room exists for center expansion	No	
Space exists for equipment room expansion and/or addition of systems and racks	Yes	Open racks
Adjacent rooms are available to the center	Yes	Restroom, training room, kitchen, EOC
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 6.2.8 Communication Networks

#### 6.2.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
Motorola	Analog & Digital	Ossipee Mountain Electronics	Grafton County SO	VHF	No	No
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						



Radio system(s) provide adequate coverage inside wood-constructed residences	
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials	
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)	
Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 6.2.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
Motorola	Ossipee Mountain Electronics	Grafton County Sheriff.	VHF	6	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 6.2.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
What frequency band does your paging system operate in?	VHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 6.2.8.4 *Broadband*

Broadband	
Does your agency currently utilize broadband for data communications?	Yes
What provider is used for broadband data?	FirstNet / AT&T

#### 6.2.8.5 *VCOMM*

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 6.2.9 *Cybersecurity*

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

### 6.3 Hanover, New Hampshire

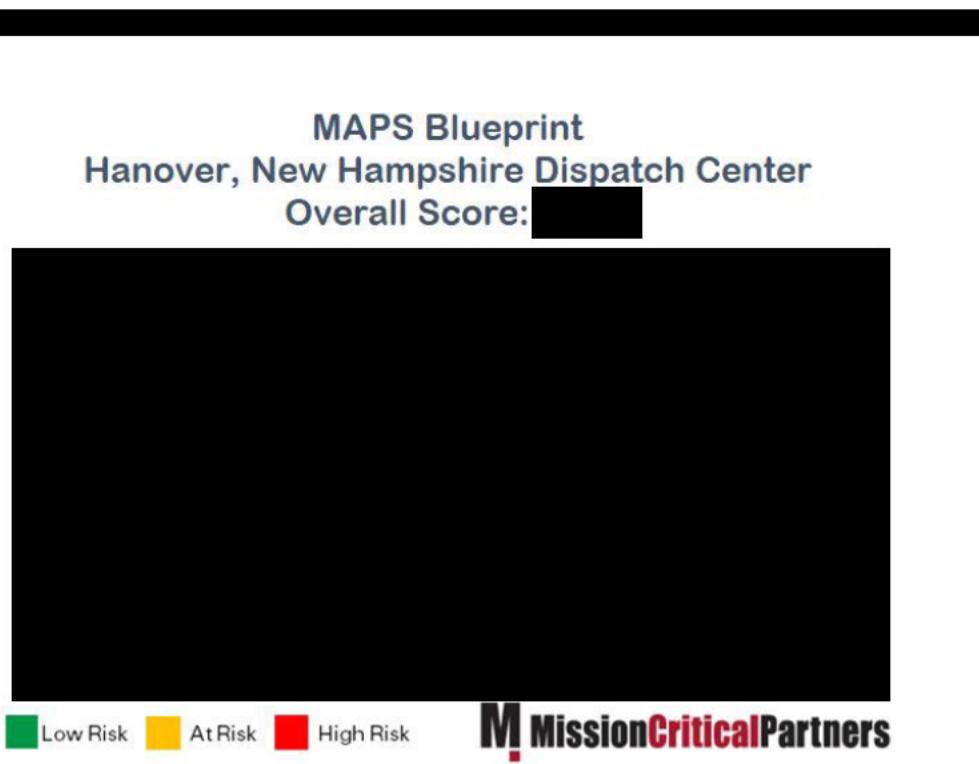


Figure 36: Hanover Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Hanover's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Lack of funding from the State of Vermont	◆
Vermont's training is behind New Hampshire's	◆
External relationships with Vermont communications centers	◆

As a reminder, a ◆ indicates that the information was not provided by the communications center.

### 6.3.1 Agency Demographics Information

#### 6.3.1.1 Governance

Component	Response
Agency location	46 Lyme Rd., Hanover, NH
Management and organizational structure	♦
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

#### 6.3.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Bradford Fast Squad	EMS
Bradford Volunteer Fire Department	Fire
Corinth-Topsham Fast Squad	EMS
East Corinth Volunteer Fire Department	Fire
Fairlee Fire Department	Fire
Hanover Fire Department	EMS
Norwich Fire Department	Fire
Strafford Fast Squad	EMS
Strafford Fire Department	Fire
Thetford Fire Department	Fire
Tri-Village Fire Department	Fire
Upper Valley Ambulance	EMS
Vershire Fire-Rescue-EMS	EMS
Vershire Fire-Rescue-FIRE	Fire

West Fairlee Volunteer Fire Department				Fire
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population	♦	♦	♦	10,000 – 30,000
Square Miles	♦	♦	♦	

#### 6.3.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
452	650	409	0	N/A	♦	♦	1,523 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	♦	N/A		
MCP Note: 911 calls that fall into the Unknown category = 12							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	♦	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	



## 6.3.2 Finance

### 6.3.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	N/A
Benefits	♦	♦	N/A
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses		Amount	Total
		♦	
<b>Subtotal</b>			
Total communications budget			♦
Total staffing recommendation adjusted budget			N/A
Budget with cost contingency adjustment	25%		

### 6.3.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	♦		
Population	10,000 – 30,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			



### 6.3.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	
Total Funding		

### 6.3.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	Yes, as part of overall department
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

### 6.3.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	
Number of vacancies	1	
Current retention		
Minimum staffing needed for each shift		



Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	
<p><b>Recommended Staffing:</b> As Hanover [REDACTED].</p> <p>The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”</p> <p>Generally, staffing two positions on 12-hour shifts for 24/7 operations requires the equivalent of 10 to 12 full-time staff, minimally. This number can be affected by the schedule (days on/days off) operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.</p> <p>In this case, staffing two positions on 8-hour or 10-hour shifts for 24/7 operations requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.</p> <p>For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.</p>		

### 6.3.5 Operations

#### 6.3.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	



#### 6.3.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

#### 6.3.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦
Walk-up window	♦
Warrants	♦

#### 6.3.5.4 Training

Component	Response	Notes
Structured or unstructured training program	Structured	Team of 3
Training program certified by state/industry organization	N/A	APCO PST1 CTOs – APCO certified



### 6.3.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

### 6.3.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	Informal
Percentage of calls that receive a QA review	A few a month
Frequency that QA assessments are completed and returned to staff	Monthly

### 6.3.6 Technology Systems

#### 6.3.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned	
CAD	CSI	♦	♦	♦	Solacom Valor (to see ProQA)	♦	♦	
Enhancements/Functionality								

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	Equature				Going to Exacom
Telephone (CHE)					



or Administrative)					
FSA	♦				
GIS Mapping	Done locally				

#### 6.3.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

- RapidSOS with AXON cameras for responders
- Prepared

#### 6.3.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 6.3.7 Facilities

Component	Response	Notes
Room exists for center expansion	♦	
Space exists for equipment room expansion and/or addition of systems and racks	♦	
Adjacent rooms are available to the center	♦	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 6.3.8 Communication Networks

### 6.3.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	♦	♦	♦	♦	♦	♦
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

### 6.3.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 6.3.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 6.3.8.4 Broadband

Broadband
♦

#### 6.3.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM:	♦

#### 6.3.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 6.4 North Adams, Massachusetts

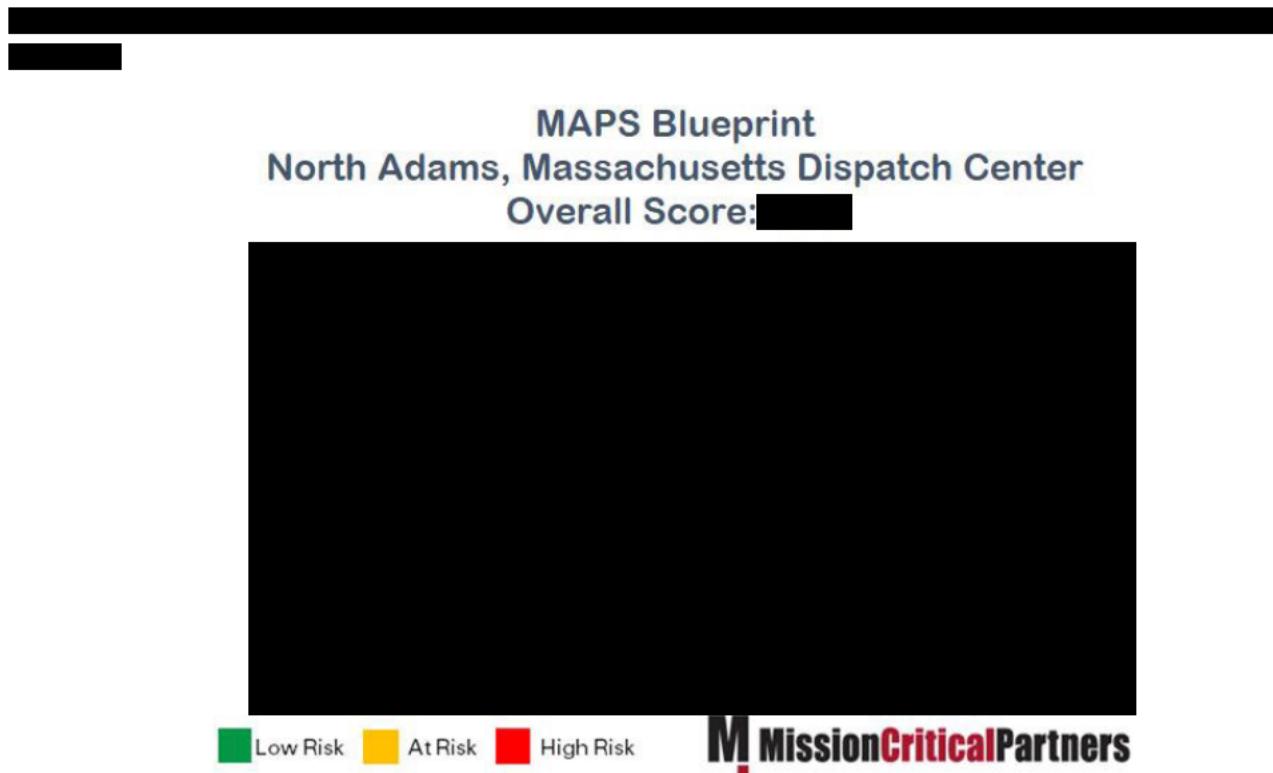


Figure 37: North Adams Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, North Adams' areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Have never conducted a staffing study; perpetual staff vacancies	♦
Currently not performing QA/QI (open staff position)	♦
No formal change management process	♦

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 6.4.1 Agency Demographic Information

### 6.4.1.1 Governance

Component	Response
Agency location	21 Holden St., North Adams, MA
Management and organizational structure	♦
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

### 6.4.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched			Agency Type	
North Adams Ambulance Service-Stamford			EMS	
Stamford Fire Department			Fire	
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	♦	♦	♦	10,000 – 30,000
Square Miles	♦	♦	♦	♦

### 6.4.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
23	6	2	0	N/A	♦	♦	32 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A		N/A		♦	N/A
MCP Note: 911 calls that fall into the Unknown category = 1							



Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	N/A	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	N/A	

## 6.4.2 Finance

### 6.4.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		
<b>Subtotal</b>			
Total communications budget			♦
Total staffing recommendation adjusted budget			
Budget with cost contingency adjustment	25%		

#### 6.4.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	♦		
Population	10,000 – 30,000		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 6.4.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	
Total Funding		

#### 6.4.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	

Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

#### 6.4.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	
Number of vacancies	♦	
Current retention	♦	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	

##### Recommended Staffing:

The industry standard requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”

Generally, staffing two positions on 12-hour shifts for 24/7 operations requires the equivalent of 10 to 12 full-time staff, minimally. This number can be affected by the schedule (days on/days off) operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

In this case, staffing two positions on 8-hour or 10-hour shifts for 24/7 operations requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.

For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.



## 6.4.5 Operations

### 6.4.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	

### 6.4.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		

### 6.4.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦



Walk-up window	♦
Warrants	♦

#### 6.4.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		

#### 6.4.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 6.4.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	♦
Percentage of calls that receive a QA review	♦
Frequency that QA assessments are completed and returned to staff	♦

#### 6.4.6 Technology Systems

##### 6.4.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	♦	♦	♦	♦	♦	♦	
<b>Enhancements/Functionality:</b>							



System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					

#### 6.4.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

##### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

♦

#### 6.4.6.3 Non-Call Processing and Dispatch Systems

##### Non-Call Processing and Dispatch Systems Ancillary Systems

#### 6.4.7 Facilities

Component	Response	Notes
Room exists for center expansion	♦	
Space exists for equipment room expansion and/or addition of systems and racks	♦	
Adjacent rooms are available to the center	♦	
Center has backup power		



Center is in a secure facility	
A backup facility exists for the center	

#### 6.4.8 Communication Networks

##### 6.4.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	♦	♦	♦	♦	♦	♦
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						
Frequency of experiencing radio interference (noise or other unknown sources)						
Frequency of radio system outages						
Center is notified in advance of scheduled radio system maintenance outages						
Center receives/monitors alarms from any of the radio systems						

##### 6.4.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	♦
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					



#### 6.4.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 6.4.8.4 Broadband

Broadband
♦

#### 6.4.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM: ♦	

#### 6.4.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 6.5 Southwest Fire Mutual Aid, New Hampshire



Figure 38: Southwest Fire Mutual Aid Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Southwest Fire's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
Contracted radio services	Staffing
Lack of a defined succession plan	Equipment replacement
Voted radio frequencies	Lack of funding sources for equipment

As a reminder, a ♦ indicates that the information was not provided by the communications center.

### 6.5.1 Agency Demographics Information

#### 6.5.1.1 Governance

Component	Response
Agency location	32 Vernon St., Keene, NH

Management and organizational structure	Independent Board of Directors
Center operates under a formal governance agreement	Yes
The governance committee, board, or other group meets on a regular basis	Monthly
Gaps/issues are present with the existing governance model/agreement that need to be addressed	No

#### 6.5.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched	Agency Type
Bellows Falls Fire Department	Fire
Deerfield Valley Rescue	EMS
East Dover Volunteer Fire Department	Fire
Grafton Fire & Rescue	Fire
Guilford Volunteer Fire Department	Fire
Halifax Fire Company	Fire
Jamaica Fire & Rescue	Fire
Londonderry Fire Department	Fire
Londonderry Vol Rescue Squad	EMS
Marlboro Volunteer Fire Company	Fire
Newbrook Fire & Rescue	Fire
Peru Fire Department	Fire
Putney Fire and Rescue	Fire
Readsboro Fire Department	Fire
Rescue Inc	EMS
Rockingham Volunteer Fire Department	Fire
Saxtons River Volunteer Fire Department	Fire
South Londonderry Fire Department	Fire
Stratton Mountain Rescue	EMS

Stratton Mountain Volunteer Fire Company	Fire			
Townshend Volunteer Fire Department	Fire			
Vernon Fire Department	Fire			
Wardsboro Fire & Rescue	Fire			
West Dover Fire Department	Fire			
West Dummerston Fire Department	Fire			
Westminster Fire & Rescue	Fire			
Weston Volunteer Fire Department	Fire			
Whitingham Fire Department	Fire			
Wilmington Fire Department	Fire			
Windham Volunteer Fire Company	Fire			
Winhall Fire Department	Fire			
Winhall Rescue	EMS			
<b>Population and Square Miles Served</b>				
	EMS	Fire	Law	Total
Population				30,000+
Square Miles				80+

#### 6.5.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
1,026	2,009	698	1	N/A	Not tracked	Not tracked	3,797 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A		N/A	N/A	Not easily obtained	N/A		
MCP Note: 911 calls that fall into the Unknown category = 63							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
Not easily obtained	Not easily obtained	N/A	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
Not easily obtained		N/A	

## 6.5.2 Finance

### 6.5.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	\$374,040	\$374,040	N/A
Benefits	\$168,047	\$168,047	
<b>Subtotal</b>		<b>\$542,087</b>	
<b>Note:</b>			
Other Expenses		Amount	Total
General Fund		\$225,191	
IT maintenance		\$15,200	
IT network support		\$5,000	
CAD IT support		\$36,000	
Overhead		\$80,000	
<b>Subtotal</b>			<b>\$361,391</b>
Total communications budget			<b>\$903,478</b>
Total staffing recommendation adjusted budget		N/A	N/A

Budget with cost contingency adjustment	25%	\$1,129,348
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#### 6.5.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	♦		
Population	30,000+	\$7.53	

#### 6.5.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	N/A	N/A
State funding	N/A	N/A
User fees (Dispatch fees)		97%
Other – Digitize (alarm monitoring)		3%
Total Funding		

#### 6.5.3 Leadership and Planning

Component	Response
Policy and procedure manual	N/A
Strategic plan	N/A
Change management policy	N/A
COOP plan	



Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	N/A

#### 6.5.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	23	12 full-time, 11 part-time
Number of vacancies	0	
Current retention	83.8%	12 separations in the last 3 years
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	12-hour 8-hour	0530 – 1730 every day – 2 1730 – 0530 every day – 2 0700 – 1500 Mon-Fri – 1 1500 – 2300 Mon-Fri – 1 0800 – 1600 Sat-Sun – 1 1600 – 2400 Sat-Sun – 1
Number of training staff not assigned to the operations floor	0	
Number of quality assurance staff not assigned to the operations floor	0	
<p><b>Recommended Staffing:</b> Authorized strength appears appropriate for current operations — 12 full-time and 11 part-time.</p> <p>Southwest Fire Mutual Aid operates a 24/7 dispatch center on 12-hour shifts (primary) supported by 8-hour shifts. Southwest Fire Mutual Aid provided leave information but was not able to provide call and incident volume information. [REDACTED] the industry standard that requires “a minimum of two qualified telecommunicators on duty and present in the communications center at all times.”</p> <p>Using a leave average of 246 hours, the average annual leave usage among Southwest Fire Mutual Aid personnel, staffing [REDACTED] 24/7 requires a minimum of 5 to 6 personnel. Staffing [REDACTED] requires a</p>		

minimum of 10 to 12, while staffing [REDACTED] 24/7 requires a minimum of 16. These numbers can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

Without knowing more about Southwest Fire Mutual Aid's operational configuration, it appears that the authorized strength is appropriate, which with 11-part-time staff is the equivalent of 15, if not, more, full-time staff.

## 6.5.5 Operations

### 6.5.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	Vertical	
Supervisors (working or dedicated)	Working	
Number of workstations	7	5 in dispatch center, 1 in training, 1 in office for admin/overflow

### 6.5.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)		1 – supervisor/call-taker/dispatcher 2 – call-taker/dispatcher 2 – overflow/storm/callback All have access to all channels
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	10	10 frequencies, 96 agencies
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)	[REDACTED]	



#### 6.5.5.3 Ancillary Duties

Component	Percentage of Time
Administration	10% – 20%
EAS activation	N/A
Jail	N/A
Records	N/A
Security (active camera and access monitoring)	1% – 10%
Support municipal services	N/A
Vehicle release	N/A
Walk-up window	N/A
Warrants	N/A

#### 6.5.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		No standards

#### 6.5.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	No	

#### 6.5.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	NFPA
QA program (structured)	Yes, outsourced



Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

## 6.5.6 Technology Systems

### 6.5.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	Symposium	2007	Symposium	No	MDTs	Yes	Yes
<b>Enhancements/Functionality:</b>							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	Symposium	2007	Symposium	Yes	♦
JMS	N/A	N/A	♦	N/A	♦
Logging Recorder	Exacom				
Telephone (CHE or Administrative)					
FSA	Tone-alerting software				
GIS Mapping					
IT support provided by SymQuest.					



#### 6.5.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems
<ul style="list-style-type: none"><li>• RapidSOS</li><li>• IamResponding</li><li>• Spotted Dog</li><li>• Sinirji</li><li>• Edispatches</li></ul>

#### 6.5.6.3 Non-Call Processing and Dispatch Systems

Non-Call Processing and Dispatch Systems Ancillary Systems

#### 6.5.7 Facilities

Component	Response	Notes
Room exists for center expansion	Yes	Entire upstairs – about 2,000 sq ft
Space exists for equipment room expansion and/or addition of systems and racks	Yes	About 50 sq ft in IT room
Adjacent rooms are available to the center	Yes	Restroom, kitchen, radio shop, uplifting bays, IT room/quiet room, training room, conference room, multiple extra rooms upstairs
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		



## 6.5.8 Communication Networks

### 6.5.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network							
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned	
Motorola	Analog	Joe Sangermano	Refer to Wireless Report	VHF & UHF	No	Yes	
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage							
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs							
Radio system(s) provide adequate coverage inside wood-constructed residences							
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials							
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)							
Frequency of experiencing radio interference (noise or other unknown sources)							
Frequency of radio system outages							
Center is notified in advance of scheduled radio system maintenance outages							
Center receives/monitors alarms from any of the radio systems							
Planned Upgrade: Upgrades planned include a complete upgrade of the radio system, CAD system, and IT hardware.							

### 6.5.8.2 Radio Consoles

Radio Consoles						
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned	
Motorola	Joe Sangermano	Refer to Wireless Report	VHF & UHF	5		
Radio dispatch console system has had a hardware refresh in the last 2 years						
Radio dispatch console system has had a software refresh in the last 2 years						



#### 6.5.8.3 Paging System

Paging System	
Does your agency currently utilize a paging system?	Yes
what frequency band does your paging system operate in?	VHF
Does your paging system provide adequate coverage for your operational needs?	Yes

#### 6.5.8.4 Broadband

Broadband	
Does your agency currently use broadband services for voice communications?	Yes
Does your agency currently use broadband services for data communications?	Yes
What broadband provider is used?	AT&T / FirstNet & Verizon

#### 6.5.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	No
Rate the experience with VCOMM	N/A
Comments on VCOMM: N/A	

#### 6.5.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	



## 6.6 Washington County Department of Public Safety, New York



Figure 39: Washington County Department of Public Safety Dispatch Center MAPS Blueprint

Based on the information provided and analyzed, Washington County's areas of greatest opportunity are related to the following:

MCP-identified Top Three Challenges	Agency-identified Challenges
State-built towers and competitive grants replaced with consortium of 14 counties	♦
Only charge Vermont for PSAP services (statewide funding and agencies within county do not pay)	♦
911 calls transferred to 10-digit line with no ANI/ALI	♦

As a reminder, a ♦ indicates that the information was not provided by the communications center.

## 6.6.1 Agency Demographics Information

### 6.6.1.1 Governance

Component	Response
Agency location	383 Broadway – Building B, Fort Edward, NY
Management and organizational structure	♦
Center operates under a formal governance agreement	♦
The governance committee, board, or other group meets on a regular basis	♦
Gaps/issues are present with the existing governance model/agreement that need to be addressed	♦

### 6.6.1.2 Agencies Dispatched, Populations and Square Miles Served

Agencies Dispatched		Agency Type		
Dorset Fire Department		Fire		
East Dorset Fire Department		Fire		
Fair Haven Fire Department		Fire		
Middletown Springs Fire Department		Fire		
Pawlet Fire Department		Fire		
Poultney Hose Co 1		Fire		
Poultney Rescue Squad		EMS		
Rupert Fire Department		Fire		
West Pawlet Fire Department		Fire		
Population and Square Miles Served				
	EMS	Fire	Law	Total
Population	30,000+	30,000+	N/A	30,000+
Square Miles	♦	♦	N/A	



#### 6.6.1.3 Call and Incident Volumes and Processing Times

Average Annual Call Volumes 2021 – 2023							
Wireline	Wireless	VoIP	Text-to-911	Transfers	10-Digit	Outbound	Total
217	620	193	0	N/A	♦	♦	1,038 (see note)
Average time to process calls from pick-up to disconnect (one month average)							
N/A	N/A	N/A	♦	N/A			
MCP Note: 911 calls that fall into the Unknown category = 8							

Average Annual Incident Volume and Processing Time 2021 – 2023			
EMS	Fire	Law	Total
♦	♦	♦	
Average time of an EMS, Fire, and Law incident from time of dispatch to time clear of scene (one month average)			
♦	♦	♦	

#### 6.6.2 Finance

##### 6.6.2.1 Personnel, Maintenance and Overhead Costs

Personnel	Amount	Annual Total (rounded)	Staffing Recommendation Adjustments
Salaries	♦	♦	
Benefits	♦	♦	
<b>Subtotal</b>			
<b>Note:</b>			
Other Expenses	Amount	Total	
	♦		

<b>Subtotal</b>		
Total communications budget		♦
Total staffing recommendation adjusted budget		
Budget with cost contingency adjustment	25%	

#### 6.6.2.2 Cost Per Variables

Variable	Number of Calls/Incidents	Cost Per (excluding cost contingency)	Adjusted Staffing Cost Per (excluding cost contingency)
911 calls	N/A	N/A	N/A
10-digit calls	♦		
Incidents	♦		
Population	30,000+		
<b>MCP Note:</b> Based on the graphic in Appendix B, the only costs considered when a caller uses 911 (911 call) to request assistance are the costs associated with the activities contained within the red dotted lines that encompass either single or two stage call handling.			

#### 6.6.2.3 Funding Sources

Funding Source	Amount	Percentage
General fund	♦	
State funding	♦	
User fees	♦	
Other	♦	
Total Funding		

### 6.6.3 Leadership and Planning

Component	Response
Policy and procedure manual	♦
Strategic plan	♦
Change management policy	♦
COOP plan	
Evacuation plan	
Cybersecurity policy/plan	
Physical security policy/plan	
Agency accreditations	♦

### 6.6.4 Staffing and Workforce

Component	Response	Notes
Total authorized strength	♦	
Number of vacancies	♦	
Current retention	♦	
Minimum staffing needed for each shift		
Number of dispatchers assigned to a shift		
Number of shift supervisors assigned to a shift		
Shift supervisor span of control per shift		
Length of operational shifts	♦	
Number of training staff not assigned to the operations floor	♦	
Number of quality assurance staff not assigned to the operations floor	♦	
<b>Recommended Staffing:</b> [REDACTED]		
[REDACTED] The industry standard requires "a minimum of two qualified telecommunicators on duty and present"		



in the communications center at all times."

Generally, staffing two positions on 12-hour shifts for 24/7 operations requires the equivalent of 10 to 12 full-time staff, minimally. This number can be affected by the schedule (days on/days off), operational configuration (positions normally staffed), responsibilities of each position (e.g., multiple talkgroups), combined call-taking and dispatching responsibilities, amount of leave time used as well as other factors such as the call and incident volumes and duties not related to call-taking and dispatching.

■ staffing two positions on 8-hour or 10-hour shifts for 24/7 operations requires the equivalent of 11 to 12 full-time staff and can be affected by the same parameters.

For dispatch centers with low call and incident volumes, these staffing levels are often cost-prohibitive.

## 6.6.5 Operations

### 6.6.5.1 Operational Configuration

Component	Response	Notes
Operational configuration (horizontal or vertical)	♦	
Supervisors (working or dedicated)	♦	
Number of workstations	♦	

### 6.6.5.2 Dispatch Position Workload

Component	Response	Notes
Responsibilities of each dispatch workstation identified by name (e.g., FIRE 1, LAW 2)	♦	
Number of talkgroups, frequencies, channels dispatchers are actively responsible for monitoring during normal operations	♦	
Average number of units per dispatch workstation (e.g., officers on duty, fire apparatus, ambulances, etc.)		



#### 6.6.5.3 Ancillary Duties

Component	Percentage of Time
Administration	♦
EAS activation	♦
Jail	♦
Records	♦
Security (active camera and access monitoring)	♦
Support municipal services	♦
Vehicle release	♦
Walk-up window	♦
Warrants	♦

#### 6.6.5.4 Training

Component	Response	Notes
Structured or unstructured training program		
Training program certified by state/industry organization		

#### 6.6.5.5 Emergency Protocols

Component	Response	Provider
Use of structured call-handling protocols (e.g., EFD, EMD, EPD)	♦	

#### 6.6.5.6 Quality Assurance

Component	Response
Existing service level benchmarks, metrics, or adopted national and/or state standards (NFPA, NENA, Vermont standards, etc.).	♦
QA program (structured)	♦



Percentage of calls that receive a QA review	
Frequency that QA assessments are completed and returned to staff	

## 6.6.6 Technology Systems

### 6.6.6.1 Mission Critical Systems

System	Manufacturer	Year Installed	Maintained By	CAD-to-CAD Capability	CAD Interfaces in Use	Meets Operational Needs	Upgrade Planned
CAD	♦	♦	♦	♦	♦	♦	♦
<b>Enhancements/Functionality:</b> [REDACTED]							

System	Manufacturer	Year Installed	Maintained By	Meets Operational Needs	Upgrade Planned
RMS	♦	♦	♦	♦	♦
JMS	♦	♦	♦	♦	♦
Logging Recorder	♦				
Telephone (CHE or Administrative)					
FSA	♦				
GIS Mapping					

### 6.6.6.2 Over-the-Top, Integrated Applications and Call Processing Dispatch Software

#### Over-the-Top – Integrated Applications – Software Call Processing and Dispatch Systems

♦



### 6.6.6.3 Non-Call Processing and Dispatch Systems

#### Non-Call Processing and Dispatch Systems Ancillary Systems

### 6.6.7 Facilities

Component	Response	Notes
Room exists for center expansion	♦	
Space exists for equipment room expansion and/or addition of systems and racks	♦	
Adjacent rooms are available to the center	♦	
Center has backup power		
Center is in a secure facility		
A backup facility exists for the center		

### 6.6.8 Communication Networks

#### 6.6.8.1 Voice and Data Radio Infrastructure

Wireless Radio Communication Network						
Manufacturer	Analog/ Digital	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption	Upgrade Planned
♦	♦	♦	♦	♦	♦	♦
Radio system(s) provide adequate mobile radio (radio mounted in vehicle) coverage						
Radio system(s) provide adequate portable radio coverage outdoors to meet operational needs						
Radio system(s) provide adequate coverage inside wood-constructed residences						
Radio system(s) provide adequate coverage inside commercial buildings or other structures constructed of steel, concrete, or other masonry materials						
Frequency of inability to transmit because the system is busy (e.g., another user is trying to transmit on the channel at the same time)						

Frequency of experiencing radio interference (noise or other unknown sources)	
Frequency of radio system outages	
Center is notified in advance of scheduled radio system maintenance outages	
Center receives/monitors alarms from any of the radio systems	

#### 6.6.8.2 Radio Consoles

Radio Consoles					
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Number	Upgrade Planned
♦	♦	♦	♦	♦	
Radio dispatch console system has had a hardware refresh in the last 2 years					
Radio dispatch console system has had a software refresh in the last 2 years					

#### 6.6.8.3 Paging System

Paging System				
Manufacturer	Maintenance Provider	System Owner(s)	Frequency Band(s)	Encryption
♦	♦	♦	♦	♦

#### 6.6.8.4 Broadband

Broadband	
♦	



#### 6.6.8.5 VCOMM

VCOMM	
Is the VCOMM system used?	♦
Rate the experience with VCOMM	♦
Comments on VCOMM: ♦	

#### 6.6.9 Cybersecurity

Cybersecurity	
Cybersecurity assessment complete	
Existence of documented cybersecurity Incident Response Plan	
Existence of cybersecurity insurance policy	

## 7 Wireless Communications

A brief overview of the wireless communications assessment is provided below. The full report is provided in the Wireless Communications Report companion document.

The public safety LMR environment within Vermont contains a mixture of analog VHF, analog UHF, and digital P25 UHF systems, plus a very small amount of 800 megahertz (MHz) analog. In general, with a few exceptions, law enforcement operates in the UHF band and fire and EMS operate in the VHF band.

Operating in mixed technology modes and multiple RF bands can create significant interoperability issues by inhibiting agencies on different systems from communicating directly with one another.

DPS RTS provided a great deal of information concerning the overall LMR environment within the state, and specifically for the current UHF/VHF analog system that RTS operates and maintains. RTS currently wants to add ten sites to the system utilizing a Community Oriented Policing Services (COPS) grant from the United States Department of Justice. RTS also wants to move to a digital system utilizing ten simulcast zones aligned within each of the ten current VSP zones.

MCP collected all required data from RTS to perform propagation studies for the current state system. Most of the local systems are maintained by local radio shops, with most systems maintained by either Burlington Communications or Radio North. Attempts were made to obtain requisite data to develop propagation maps including site locations, transmit and receive antenna heights, and effective radiated power (ERP). MCP learned that this information is not readily available and would take significant effort to obtain; extensive propagation of local systems was not possible. MCP is open to conducting further propagation modeling of local systems if the requisite data can be made available.

MCP collected publicly available information from the FCC concerning the licenses. Conducting propagation maps from this data is not entirely reliable as information may have changed and not be reflected on the current license; MCP discovered licenses that indicated they had actually expired. In addition, receive antenna information is not contained in the license data so propagation can only be conducted for outbound traffic from dispatch and not inbound.

Even in the absence of propagation maps, feedback from the surveys and town hall meetings revealed that there are a large number of areas across the state with LMR coverage deficiencies. In addition to coverage, users reported experiencing interference issues, which is a common problem in the VHF band if the channels are not very closely coordinated. Vermont has the additional problem of proximity to Canada, where some of the same frequencies are in use in Quebec province and the city of Montreal, which will cause interference to Vermont users.

MCP was unable to define precise boundaries for the dispatch centers across the state as it is not uncommon for multiple dispatch centers to serve an individual town for dispatching emergency resources. Some towns are served by three different dispatch centers—one to dispatch law enforcement, another to dispatch fire services, and a third to dispatch EMS.

MCP found that there are currently 122 VHF channels in use across the state where each channel is utilized by only one agency and 235 other VHF channels in use across the state that are shared by multiple agencies. There are currently 243 unique UHF channels licensed to individual entities. Unlike VHF, where there is a high number of shared channels across the state, only 34 UHF channels are shared by multiple agencies.

MCP obtained data from the FCC on the number of fixed radio sites within the state. After scrubbing the data to remove duplicate entries, entries from outside the state, etc., MCP determined there are 986 fixed radio sites

within Vermont. The tables in Appendix E of the Wireless Communications report breaks down the sites by tower and unknown type structures—566 total—and sites affiliated with or attached to buildings—420 total.

The generally accepted goal for a public safety communications system is to provide radio coverage at 95% reliability for a specified service area. Radio coverage reliability is based upon statistical modeling and provides information about how reliably a user in the field can be expected to communicate with the dispatcher or other field personnel. For example, a reliability factor of 95% indicates that the radio user should have a 95% probability of successful communications at various locations throughout a region.

Telecommunications Industry Association (TIA)/Electronic Industries Alliance (EIA) Technical Service Bulletin (TSB)-88 defines delivered audio quality (DAQ), which is a numeric rating of speech intelligibility, as listed in the following table:

DAQ Numeric Ratings	
DAQ 1.0	Unusable. Speech is present but not understandable.
DAQ 2.0	Speech is understandable with considerable effort. Requires frequent repetition due to noise/distortion.
DAQ 3.0	Speech is understandable with slight effort. Requires occasional repetition due to noise/distortion.
DAQ 3.4	Speech is understandable without repetition. Some noise/distortion is present.
DAQ 4.0	Speech is easily understood. Occasional noise/distortion present.

For public safety systems such as the VSP, the recommendation is that communication systems be designed to achieve a service area reliability of 95% for radios operating outdoors.

The minimum acceptable audio quality for analog systems is DAQ 3.0. Vendors providing analog systems typically guarantee coverage at DAQ 3.0. Vendors guarantee coverage at DAQ 3.4 for digital systems.

A 95% radio coverage reliability requirement, the performance benchmark for public safety systems, is recommended for VSP. This requirement may necessitate a greater number of sites than a system designed for 90% reliability. On a per-site basis, the radio coverage footprint associated with a site in a system designed for 90% reliability is larger than the coverage footprint for a system designed for higher reliability. Therefore, in a system with 95% reliability, the user is more likely to communicate from any given point when compared to a system designed with 90% or lower reliability. Communications on the periphery of the coverage footprint are more problematic for a system designed for 90% reliability than a system with 95% reliability.

Coverage predictions for the existing VSP UHF system—when all system elements, including antennas, backhaul interconnectivity, and subscriber radios and their accessories are operating correctly—are provided in the companion document. The analysis was performed for mobile radios and portable radios on-street. The portable configuration is assumed to be on the hip with a remote speaker-microphone attachment for talk-out (i.e., dispatch to portable radios in the field) ■ talk-in (i.e., field to dispatch) scenarios.

DPS RTS also operates and maintains VCOMM, which was built a number of years ago and is designed to be a statewide LMR network to provide interoperability capabilities between agencies that currently utilize disparate LMR systems. The system utilizes nationwide interoperability channels within the VHF and UHF radio frequency (RF) spectrum bands, known as the VTAC and UTAC channels. Based on the information provided by RTS



staff, the system, as currently situated, does not provide a practical platform for communications for a variety of reasons (explained below). From a background perspective, MCP provides a high-level explanation of the assignment and use of RF channels for public safety.

In this country, the FCC is responsible for regulating the use of RF spectrum. RF is divided into a number of spectrum bands that are utilized for a wide variety of purposes. Public safety has been allotted RF spectrum in the VHF, UHF, and 700/800 MHz bands for use in LMR. Whenever public safety implements an LMR network, one of the first issues to be addressed is determining the frequency band the system will use, and then a process is begun to identify specific channels within that band that can be used. Once potential channels have been identified, a coordination effort must occur to ensure the use of those channels can be utilized on the system in accordance with the system design without causing interference to other licensed users of the same channels. This coordination effort must also take place with Canada for geographic regions of the U.S. that fall north of what is known as Line A. Line A is a virtual line that was established as part of an agreement in 1965 that spans the country from Washington state to Maine and is approximately 75 miles south of the Canadian border. In Vermont, approximately the entire northern half of the state falls north of Line A. The VHF band is not as well organized as far as channel spacing and other characteristics as the 700/800 MHz band is, and therefore it is subjected to more interference than the other bands.

Additionally, the propagation characteristics of VHF due to its larger wavelength than the other bands allow it to have a range of transmission greater than the other bands, especially over mountainous terrain. This characteristic enhances the potential for interference within the band caused by interfering signals from distant transmitters. To license channels for the system for use north of Line A, many sites within that geography have to use directional transmit antennas, which restricts the transmissions to a specific sector that does not radiate toward Canada. Additionally, many base stations have to be set to transmit at a very low power output of 5 watts. In an ideal system, the transmit antennas utilized are omni antennas, which broadcast in a 360-degree radius of the site and the power output would be set at 100 watts. This current VCOMM system configuration greatly reduces the coverage footprint of the system.

The last item concerning interference is that the State has licensed and configured the system so as not to interfere with entities in Canada, but there is unfortunately some significant interference VCOMM experiences from entities within Canada—specifically, taxi drivers within the city of Montreal.

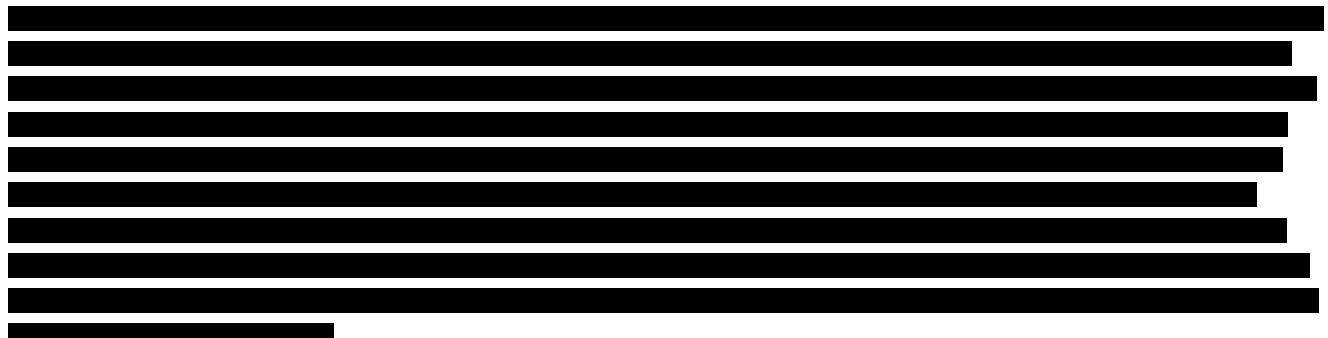
As to VCOMM's current operating posture, the system itself exists in a dormant state until it is activated. To activate the system, an end user has to enter a specific dual-tone multiple frequency (DTMF) signal to activate the site(s) they need to utilize. The vast majority of the potential system users across the state do not have the knowledge to be able to do this. Once the system is activated, however, the user will use either a VHF or UHF "calling" channel to talk on the system. In addition to the calling channels, there are other VTAC and UTAC channels that are programmed into the radios of a number of agencies/entities across the state. The VHF channels are simplex in nature, which means the same channel is used to communicate back and forth to an end user, as opposed to duplex channels that utilize different frequencies to talk from dispatch to the field than what is used for the field to dispatch. The UHF channels are repeater using two frequencies, but users have the ability to talk in the simplex mode on the repeater output frequency, allowing users to bypass the repeater system. The UHF repeater output frequencies, including the calling channels, can be used to communicate in "talkaround" mode in the field; this means one field unit can talk directly to another field unit without actually using the network to transport the voice traffic. According to RTS staff, this is an issue that also inhibits the use of VCOMM and requires the system to be in dormant status until manually activated. Many field users regularly use the channels to communicate with each other, which creates a great deal of unnecessary voice traffic because the conversations often are not of an official nature and can continue for an extended amount of time. If the calling channels were to be left activated at the dispatch centers, this would create a lot of unnecessary



“chatter” for the dispatchers to deal with, which would probably result in the dispatchers turning the channel off or the volume down to zero.

MCP also collected information pertaining to existing fiber-optic infrastructure within the state that could possibly be utilized in a future public safety communications system. This effort also included examining the state’s status in the BEAD program being administered by the NTIA. The State established the VCB in 2021 under the Department of Public Service to administer the state’s participation in the BEAD program. Vermont is in line to receive approximately \$229,000,000 in funding from NTIA for the deployment of high-speed internet service to currently unserved and underserved areas. The priority of the program is the deployment of fiber infrastructure to support internet service. The State will be working in 2025 to complete the process required under the program to receive the money and begin the deployment process. This effort will result in the further deployment of fiber in rural areas, which could possibly be utilized in support of a future public safety communications system.

## 8 Cybersecurity

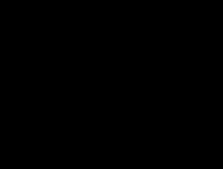
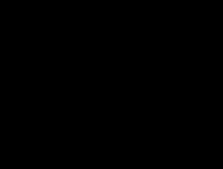


The controls come from the [Secure Controls Framework](#) (SCF), an open-source, comprehensive and unified set of cybersecurity and privacy controls designed to simplify compliance and risk management across various regulatory and industry standards. It provides a structured approach to implementing and managing security measures, ensuring that organizations can meet multiple compliance requirements efficiently. SCF consolidates best practices from numerous frameworks, such as the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF), the International Organization for Standardization (ISO) 27001, and General Data Protection Regulation (GDPR), offering a flexible and scalable solution to protect sensitive information, manage risks, and maintain regulatory compliance in a dynamic threat landscape.

The SCF includes over 1,200 controls categorized into 33 total domains; however, only 15 domains are represented in the report as MCP prioritized the list of controls to the top 77, irrespective of domain. Scores of each domain were calculated based solely on the controls assessed. Since not all maturity levels apply to every control, the [REDACTED]

Cybersecurity Category Scores	
AST: Asset Management	
BCD: Business Continuity & Disaster Recovery	
CFG: Configuration Management	
MON: Continuous Monitoring	
CRY: Cryptographic Protections	
DCH: Data Classification & Handling	
END: Endpoint Security	
IAC: Identification & Authentication	
IRO: Incident Response	
MNT: Maintenance	
NET: Network Security	
PRI: Data Privacy	



Cybersecurity Category Scores	
SAT: Security Awareness & Training	
TPM: Third-Party Management	
VPM: Vulnerability & Patch Management	



## 9 Summary

This inventory and assessment report offers a comprehensive overview of Vermont's public safety communications ecosystem, which includes 37 public safety communications centers. Among these centers:

- Six centers are PSAPs that handle 911 call-taking for the Vermont Enhanced 911 Board and provide dispatch services for partner agencies.
- Twenty-five centers are dispatch-only communications centers that serve one or more municipalities.
- Six centers are out-of-state dispatch facilities that provide dispatch services to Vermont emergency responders.

These centers are supported by a variety of mission-critical and ancillary technologies, wireless communication systems, and cybersecurity frameworks.

MCP's analysis highlights trends and insights regarding the critical role of effective communication in ensuring public safety and outlines the challenges and opportunities facing the state's current public safety communications infrastructure. MCP's findings underscore the need for a collaborative approach to address the challenges faced by many communications centers, including staffing shortages, outdated technology, and limited resources. The report further highlights the importance of addressing the State's fragmented wireless communications system and the need for robust cybersecurity measures to protect sensitive data and ensure the continued operation of critical communication systems.

MCP's conclusion that the state's public safety communications system needs significant improvement is supported by several key areas of concern highlighted in the report:

- Lack of a cohesive statewide system: The findings validate the significant gap in the absence of a comprehensive and coordinated reliable, secure, and interoperable statewide public safety communications system. This lack of a unified system hinders the ability to effectively address the challenges faced by public safety agencies across Vermont. The findings align with the State's vision to develop a comprehensive plan that outlines a clear roadmap for achieving a reliable, secure, and interoperable statewide public safety communications system.

- **Operational inefficiencies and lack of strategic inclusion:** Operational inefficiencies and a lack of strategic inclusion are a key area for improvement. Adhering to standards, implementing best practices, and fostering collaboration among public safety agencies to enhance operational efficiency and promoting inclusion of stakeholders in decision-making processes are needed.
- **Staffing shortages and inefficiencies:** Staffing shortages and inefficiencies are a major challenge for public safety agencies. The industry standard requires a minimum of two qualified telecommunicators on duty at all times, [REDACTED]. The findings support the need for a robust staffing strategy for adequate staffing levels to meet operational demands and maintain efficient service delivery.
- **Training gaps and dispatcher health and wellness:** A need for effective statewide training requirements for both PSAPs and dispatch centers to equip public safety communications personnel with the necessary skills and knowledge to effectively provide call-taking and dispatch services was identified. Strategies to address dispatcher health and wellness, such as providing adequate support and resources, are needed.
- **Technological limitations and infrastructure issues:** Technological limitations and infrastructure issues are significant barriers to effective communication. The findings support investing in modern technology and infrastructure upgrades to enhance the reliability, security, and interoperability of the public safety communications system.
- **Lack of failover/backup capabilities:** [REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED] The findings support a statewide minimum standard for failover and backup capabilities to allow for appropriate continuity of operations during normal day-to-day operations and times of disaster.

- **Fragmented public safety wireless environment:** Systems are operating across various technology platforms and frequency bands. While some digital, P25-compliant LMR networks exist, the majority of systems operate in analog mode, primarily in the UHF band for law enforcement and the VHF band for fire and EMS agencies. Limitations of commercial cellular coverage in rural and mountainous areas of the state contribute to the identified challenges.
- **Cybersecurity vulnerabilities:** A critical need for a dynamic cybersecurity posture to protect sensitive data and ensure the resilience of the public safety communications system was identified. The evolving threat landscape highlights the need for continuous evaluation and adjustment of security measures. The findings support implementing real-time monitoring, regular threat assessments, and adaptive strategies to address emerging vulnerabilities.

Addressing the findings in this report as part of the development of a system plan for the desired reliable, secure, and interoperable statewide public safety communications system will require a collaborative approach, involving stakeholders from various agencies and organizations.

The next steps include a series of planning workshops to analyze and evaluate potential statewide public safety communications dispatch and subsequently develop preliminary and final system design models for developing a reliable, secure, and interoperable statewide public safety communications system.



This inventory and assessment should serve as a valuable resource for policymakers, agency leaders, and other stakeholders involved in public safety communications, providing a comprehensive overview of the current state of the system and outlining a roadmap for future efforts. In addition to leveraging the contents of this report, MCP urges stakeholders to prioritize their participation when opportunities to contribute to the development and implementation of a reliable, secure, and interoperable statewide public safety communications system are presented.



## Appendix A: Regionalization Benchmark Criteria Roadmap

If a communications center **does not provide 24/7 service, has six or more Category One attributes (55%), or a combination of Category One and Two attributes that exceeds eight (73%)**, in MCP's experience, these centers meet the criteria to strongly recommend exploring a physical consolidation and alliance with a neighboring communications center. This is not to say that a communications center that meets this benchmark should be absorbed by another communications center as there could be numerous factors, including available opportunities for facility expansion, available funding, and others that could drive such decisions away from what, on the surface, may appear simple.

Hashed cells indicate the data was not provided and MCP made assumptions to reasonably determine the data. Cells with a background color indicate that value meets either the Category One or Two criteria and shares the same background color.

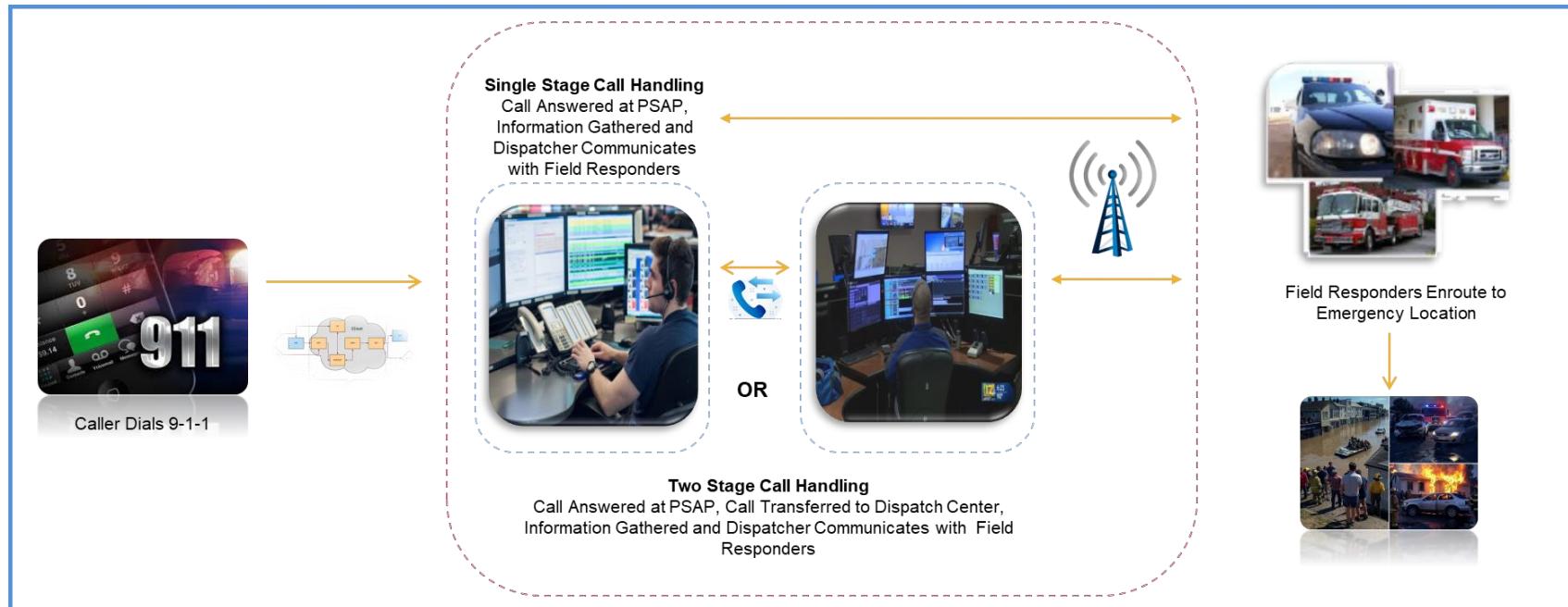
PSAP /Dispatch Center Location	24 X 7 Operations	Population	Statewide Incident Volume	Average Cost per Variable	Primary Workstations	Min. Staffing Per Shift	Retention	Outbound Emergency Transfers	Inbound Emergency Transfers	EFD/EMD/EPD	Admin Call Volume	Total Number of Category One & Two Criteria Met
<b>Category One Criteria</b>	Ø	≤30k	≤1%	≥\$40	≥2	≥2	≤75%	≥25%	≥75%	Ø	≥911 Vol.	
<b>Category Two Criteria</b>	Ø	≤50k	≤3%	≥\$30	≤4	≤4	≤80%	≥25%	≥75%	xfer.	≥911 Vol.	
<b>Inventory Section Reference</b>		3-5.X.1.1	3-5.X.1.3	3-5.X.2.2	3-5.X.5.1	3-5.X.4	3-5.X.4	3-5.X.1.3	3-5X.5.5			
Wilmington	No	5,000-10,000	0.50%	\$71.33	2	1	66.7%	n/a	100%	xfer	n/a	9
Dover	No	1,000-2,500	0.14%	\$47.48	1	1	100%	n/a	100%	xfer	n/a	8
Middlebury	No	5,000-10,000	0.87%	\$50.82	2	1	88.9%	n/a	100%	xfer	n/a	8
Randolph	No	1,000-2,500	0.34%	\$52.84	1	1	100%	n/a	100%	xfer	n/a	8
Springfield	Yes	5,000-10,000	1.60%	\$50.82	2	1	73.3%	n/a	100%	xfer	n/a	8
Manchester	Yes	2,500-5,000	1.00%	\$50.82	1	1	79%	n/a	100%	xfer	n/a	8

PSAP /Dispatch Center Location	24 X 7 Operations	Population	Statewide Incident Volume	Average Cost per Variable	Primary Workstations	Min. Staffing Per Shift	Retention	Outbound Emergency Transfers	Inbound Emergency Transfers	EFD/EMD/EPD	Admin Call Volume	Total Number of Category One & Two Criteria Met
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Category Two Criteria	Ø	≤50k	≤3%	≥\$30	≤4	≤4	≤80%	≥25%	≥75%	xfer.	≥911 Vol.	
Inventory Section Reference		3-5.X.1.1	3-5.X.1.3	3-5.X.2.2	3-5.X.5.1	3-5.X.4	3-5.X.4	3-5.X.1.3	3-5X.5.5			
St. Michael Rescue	Yes	10,000-30,000	0.20%	\$50.82	1	1	16.7%	n/a	100%	xfer	n/a	8
Essex	Yes	10,000-30,000	2.47%	\$47.18	2	2	62.2%	n/a	100%	xfer	n/a	8
University of Vermont	Yes	10,000-30,000	2.04%	\$61.01	2	1	55.6%	n/a	100%	xfer	n/a	8
Winooski	Yes	5,000-10,000	2.00%	\$50.82	2	1	79%	n/a	100%	xfer	n/a	8
Woodstock	Yes	2,500-5,000	2.15%	\$50.82	2	1	79%	n/a	100%	xfer	n/a	8
Colchester	Yes	10,000-30,000	2.48%	\$33.60	3	1	66.7%	n/a	100%	xfer	n/a	8
Rutland City	Yes	10,000-30,000	2.14%	\$35.73	3	1	77.8%	n/a	100%	xfer	n/a	8
Colebrook, NH	Yes	5,000-10,000	1.73%	\$50.82	1	1	100%	n/a	100%	yes	n/a	7
Hanover, NH	Yes	2,500-5,000	0.50%	\$50.82	4	2	83.8%	n/a	100%	xfer	n/a	7
Bennington	Yes	10,000-30,000	5.32%	\$50.82	2	1	79%	n/a	100%	xfer	n/a	7
Ludlow	Yes	10,000-30,000	0.79%	\$37.11	1	1	100%	n/a	100%	xfer	n/a	7

PSAP /Dispatch Center Location	24 X 7 Operations	Population	Statewide Incident Volume	Average Cost per Variable	Primary Workstations	Min. Staffing Per Shift	Retention	Outbound Emergency Transfers	Inbound Emergency Transfers	EFD/EMD/EPD	Admin Call Volume	Total Number of Category One & Two Criteria Met
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Category Two Criteria	Ø	≤50k	≤3%	≥\$30	≤4	≤4	≤80%	≥25%	≥75%	xfer.	≥911 Vol.	
Inventory Section Reference		3-5.X.1.1	3-5.X.1.3	3-5.X.2.2	3-5.X.5.1	3-5.X.4	3-5.X.4	3-5.X.1.3		3-5X.5.5		
Newport	Yes	10,000-30,000	1.84%	\$50.82	2	1	89.8%	n/a	100%	xfer	n/a	7
St. Johnsbury	Yes	10,000-30,000	1.75%	\$33.27	2	1	95.8%	n/a	100%	xfer	n/a	7
Southwest Fire Mutual Aide, NH	Yes	30,000+	0.50%	\$50.82	3	1	79%	n/a	100%	xfer	n/a	7
Brattleboro	Yes	10,000-30,000	2.77%	\$28.17	3	2	29.2%	n/a	100%	xfer	n/a	7
South Burlington	Yes	10,000-30,000	3.27%	\$50.82	4	1	79%	n/a	100%	xfer	n/a	7
North Adams, MA	Yes	10,000-30,000	1.33%	\$50.82	5	2	79%	n/a	100%	xfer	n/a	7
Mad River Valley Ambulance	Yes	2,500 – 5,000	.11%	\$0	1	1	100%	n/a	100%	xfer	n/a	6
Barre City	Yes	5,000-10,000	3.57%	\$91.39	3	2	92.6%	n/a	100%	xfer	n/a	6
Middlebury Regional EMS	Yes	30,000+	1.61%	\$19.81	2	1	73.3%	n/a	100%	xfer	n/a	6
Hartford (PSAP)	Yes	30,000+	3.41%	\$86.48	3	2	79%	27%	n/a	yes	yes	6
Windham County	Yes	30,000+	2.57%	\$50.82	4	1	82.2%	n/a	100%	xfer	n/a	6

PSAP / Dispatch Center Location	24 X 7 Operations	Population	Statewide Incident Volume	Average Cost per Variable	Primary Workstations	Min. Staffing Per Shift	Retention	Outbound Emergency Transfers	Inbound Emergency Transfers	EFD/EMD/EPD	Admin Call Volume	Total Number of Category One & Two Criteria Met
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Inventory Section Reference		3-5.X.1.1	3-5.X.1.3	3-5.X.2.2	3-5.X.5.1	3-5.X.4	3-5.X.4	3-5.X.1.3	3-5X.5.5			
Washington County PS, NY	Yes	30,000+	2.00%	\$50.82	7	4	79%	n/a	100%	xfer	n/a	6
Shelburne (PSAP)	Yes	30,000+	2.56%	\$58.20	3	2	79%	12%	n/a	yes	yes	6
Burlington	Yes	30,000+	6.56%	\$50.82	5	2	65.1%	n/a	100%	xfer	n/a	5
Montpelier	Yes	30,000+	3.24%	\$66.67	3	2	100%	12%	100%	xfer	n/a	5
VSP – Westminster (PSAP)	Yes	30,000+	7.79%	\$92.80	10	4	79%	33.3%	n/a	yes	yes	5
Lamoille County (PSAP)	Yes	30,000+	6.58%	\$61.74	4	2	79%	17.5%	n/a	yes	yes	5
St. Albans (PSAP)	Yes	30,000+	6.62%	\$50.52	4	3	79%	15.8%	n/a	yes	yes	5
Grafton County, NH	Yes	30,000+	2.66%	\$29.90	6	2	86.7%	n/a	100%	xfer	n/a	4
VSP – Williston (PSAP)	Yes	30,000+	13.04%	\$86.97	12	6	79%	48.6%	n/a	yes	yes	4

## Appendix B: Single and Two Stage Call Handling



## Appendix C: Stakeholder Engagement Schedule

PSAP Onsite Visits	
Agency	Date / Time
Hartford Police Department	August 7, 2024 9:00 A.M. – 12:00 P.M.
Lamoille City Sheriff's Office	August 1, 2024 09:30 A.M. – 12:30 P.M.
Shelburne Police Department	July 16, 2024 8:00 A.M. – 11:00 A.M.
St Albans Police Department	July 31, 2024 09:30 A.M. – 12:30 P.M.
Vermont State Police – Westminster	August 15, 2024 10:00 A.M. – 1:00 P.M.
Vermont State Police – Williston	July 17, 2024 10:00 A.M. – 1:00 P.M.

Dispatch Center Onsite Visits	
Agency	Date / Time
Barre City Police Department	August 7, 2024 8:00 A.M. – 11:00 A.M.
Bennington Police Department	September 18, 2024 8:00 A.M. – 11:00 A.M.
Brattleboro Police Department	August 13, 2024 2:00 P.M. – 5:00 P.M.
Burlington City Police Department	July 19, 2024 8:00 A.M. – 11:00 A.M.
Colchester Police Department	July 15, 2024 9:00 A.M. – 12:00 P.M.
Dover Police Department	August 14, 2024 9:00 A.M. – 12:00 P.M.



### Dispatch Center Onsite Visits

Agency	Date / Time
Essex Police Department	July 23, 2024 2:30 P.M. – 5:30 P.M.
Ludlow Police Department	September 17, 2024 2:30 P.M. – 5:30 P.M.
Mad River Valley Ambulance Service	August 5, 2024 9:00 A.M. – 12:00 P.M.
Manchester Police Department	August 13, 2024 9:30 A.M. – 12:30 P.M.
Middlebury Police Department	July 30, 2024 2:30 P.M. – 5:30 P.M.
Middlebury Regional EMS	July 30, 2024 9:30 P.M.- 12:30 P.M.
Montpelier Police Department	July 24, 2024 10:30 A.M. – 1:30 P.M.
Newport Police Department	July 18, 2024 10:00 A.M. – 1:00 P.M.
Randolph Police Department	August 8, 2024 9:00 A.M. – 11:00 A.M.
Regional EMS <sup>30</sup>	August 6, 2024 3:30 P.M. – 6:30 P.M.
Rutland City Police Department	August 6, 2024 9:00 A.M. – 12:00 P.M.
South Burlington Police Department	July 23, 2024 9:00 A.M. – 12:00 P.M.
Springfield Police Department	August 8, 2024 11:00 A.M. – 2:00 P.M.
St Johnsbury Police Department	August 7, 2024 2:30 P.M. – 5:30 P.M.

<sup>30</sup> Agency was determined not to have a dispatch operation; on site visit cut short after speaking with management

### Dispatch Center Onsite Visits

Agency	Date / Time
St Michaels Rescue	July 22, 2024 8:00 A.M. – 11:00 A.M.
UVM Police Department	September 11, 2024 9:30 – 12:30 P.M.
Wilmington Police Department	September 18, 2024 1:30 P.M. – 4:30 P.M.
Windham City Sheriff's Office	August 13, 2024 8:30 A.M. – 11:30 A.M.
Winooski Police Department	July 22, 2024 2:30 P.M. – 5:30 P.M.
Woodstock Police Department	August 8, 2024 11:00 A.M. – 2:00 P.M.

### Out-of-state Dispatch Center Onsite Visits

Agency	Date / Time
Colebrook Police Department, NH	September 10, 2024 11:00 A.M. – 2:00 P.M.>
Grafton City Sheriff's Office, NH	August 6, 2024 9:30 A.M. – 12:30 P.M.
Hanover Police Department, NH	September 16, 2024 8:00 A.M. – 11:00 A.M.
Southwest Fire Mutual Aide, NH	September 19, 2024 9:00 A.M. – 12:00 P.M.
N Adams Police Department, MA	August 15, 2024 9:30 A.M. – 12:30 P.M.
Washington County Department of Public Safety, NY	September 16, 2024 2:30 P.M. – 5:30 P.M.



Town Hall Meetings		
Event	Location	Date / Time
Northeast	NVRH Conference Room	September 17, 2024 8:00 A.M. – 10:00 A.M.
Northwest	Swanton Town Hall	September 11, 2024 5:00 P.M. – 7:00 P.M.
Southeast	Springfield Parent Child Center	September 19, 2024 5:00 P.M. – 7:00 P.M.
Southwest	Pittsford Fire Academy	September 12, 2024 12:00 P.M. – 2:00 P.M.

Community Listening Sessions		
Event	Location	Date / Time
Session #1	Virtual	October 22, 2024 11:30 A.M. – 1:00 P.M.
Session #2	Virtual	October 24, 2024 6:00 P.M. – 7:30 P.M.
Session #3 (Targeted toward stakeholders for whom English is a second language)	Virtual	December 6, 2024 11:30 A.M. – 1:00 P.M.



## Appendix D: Cybersecurity Assessment Agency Engagement

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
PSAPs				
Hartford Police Department				
Lamoille County Sheriff's Office				
Shelburne Police Department				
St Albans Police Department				

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
VSP – Westminster				
VSP – Williston				
<b>Dispatch Centers</b>				
Barre City Police Department				
Bennington Police Department				
Brattleboro Police Department				

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
Burlington City Police Department				
Colchester Police Department				
Essex Police Department				
Ludlow Police Department				
Manchester Police Department				

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
Middlebury Regional EMS				
Montpelier Police Department				
Newport Police Department				
Mad River Valley Ambulance Service				
Regional Ambulance Service				
Rutland City Police Department				

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
South Burlington Police Department				
Springfield Police Department				
St Johnsbury Police Department				
St Michaels Rescue				
UVM Police Department				

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
Windham County Police Department				
Winooski Police Department				
Woodstock Police Department				
Dover Police Department				
Middlebury Police Department				
Randolph Police Department				
Wilmington Police Department				

Agency	First Contact	Second Contact	Third Contact	Additional Contacts
<b>Out-of-State Dispatch Centers</b>				
Colebrook (NH) Police Department				
Grafton County (NH) Sheriff's Office				
Hanover (NH) Police Department				
Southwest Fire Mutual Aide (Keene, NH)				
North Adams (MA) Police Department				
Washington County (NY) Department of Public Safety				

## Appendix E: Wireless Information Summary

Dispatch Organization	Public Safety Radio System Details
<b>PSAPs</b>	
Hartford Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Lamoille City Sheriff's Office	<ul style="list-style-type: none"> <li>• Motorola/L3Harris/EFJ Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Shelburne Police Department	<ul style="list-style-type: none"> <li>• Motorola/Harris/EFJ consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
St Albans Police Department	<ul style="list-style-type: none"> <li>• Avtec consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Vermont State Police – Westminster	<ul style="list-style-type: none"> <li>• Motorola consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Vermont State Police – Williston	<ul style="list-style-type: none"> <li>• Motorola consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
<b>Dispatch Centers</b>	
Barre City Police Department	No details provided
Base Defense OPS Center (same as VT ANG Fire Department)	No details provided
Bennington Police Department	No details provided
Brattleboro Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Town of Brattleboro</li> </ul>
Burlington City Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>

Dispatch Organization	Public Safety Radio System Details
Burlington City Police Department	<ul style="list-style-type: none"> <li>• Avtec consoles</li> <li>• UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Colchester Police Department	<ul style="list-style-type: none"> <li>• Avtec consoles</li> <li>• UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Essex Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Essex Police Department</li> </ul>
Southwest Fire Mutual Aide (Keene, NH)	No details provided
Ludlow Police Department	No details provided
Mad River Valley Ambulance	No details provided
Manchester Police Department	No details provided
Middlebury Central Communications	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Bearcomm</li> </ul>
Montpelier Police Department	No details provided
Newport Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Radio North</li> </ul>
Randolph Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF LMR</li> <li>• Maintained by Burlington Comms</li> </ul>
Red Phones	No details provided
Rutland City Police Department	<ul style="list-style-type: none"> <li>• Motorola, UHF, Central Vermont Comms</li> </ul>
South Burlington Police Department	<ul style="list-style-type: none"> <li>• Motorola, V/U, Radio North</li> </ul>
Springfield Fire Department	No details provided
Springfield Police Department	No details provided
St Johnsbury Police Department	No details provided
St Michael's Rescue	<ul style="list-style-type: none"> <li>• Motorola consoles</li> </ul>

Dispatch Organization	Public Safety Radio System Details
	<ul style="list-style-type: none"> <li>• UHF LMR</li> <li>• Maintained by St. Michael's College</li> </ul>
Swanton Police Department/Williston VSP - PSAP	No details provided
University of Vermont Police Department	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF/UHF</li> <li>• Maintained by Radio North</li> </ul>
Vt ANG Fire Dept/same as Base OPS Center	No details provided
Windham County Sheriff's Office	No details provided
<b>Out-of-State Dispatch Centers</b>	
Colebrook Police Department, NH	No details provided
Grafton City Sheriff's Office, NH	<ul style="list-style-type: none"> <li>• Motorola Consoles</li> <li>• VHF LMR</li> <li>• Maintained by Ossipee Mountain Electronics</li> </ul>
Hanover Police Department, NH	No details provided
Southwest Fire Mutual Aide, NH	No details provided
North Adams Police Department, MA	No details provided
Washington County Department of Public Safety, NY	No details provided



## Appendix F: Industry Standards and Accrediting Organizations

Throughout the country, communications centers adopt and use industry standards and best practices to assure the effectiveness of the center and that the best possible service is provided to citizens and first responders. Measurable standards create an objective view of 911 operations and provide for consistent interactions with the public and first responders.

Standards and best practices most often used in communications centers are from APCO, NENA, and NFPA, each an American National Standards Institute (ANSI)-accredited standards development organization (SDO). A few of the more pertinent standards are referenced below. Responder accrediting associations that publish standards with applicable sections to communications centers include CALEA, the Commission on Fire Accreditation International (CFAI), and the Commission on Accreditation of Ambulance Services (CAAS).

### Standards Organizations

APCO “is the world’s oldest and largest organization of public safety communications professionals … The Association supports its members – and the general public – by providing industry expertise, professional development, technical assistance, advocacy, and outreach.”<sup>31</sup> APCO has undertaken many projects over the years. Two notable projects are P25, the development of standards for digital telecommunications technology, and Project 33, development of a telecommunications training standard. In Project 33, APCO collaborated with NENA to evaluate standardized training programs across the country. The information gathered helped APCO build the foundation for the *Minimum Training Standards for Public Safety Telecommunicators*®, which is the minimum standard used today.<sup>32</sup>

NENA, a non-profit corporation, is dedicated to a “public made safer and more secure through universally available state-of-the-art 9-1-1 systems and trained 9-1-1 professionals.”<sup>33</sup> NENA’s mission is to improve “9-1-1 through research, standards development, training, education, outreach, and advocacy.”<sup>34</sup> NENA has several topic-specific committees that develop communications center-related recommendations and standards and other information documents pertaining to communications center operations. NENA recommendations and standards give centers the tools needed to maintain a consistent level of service and work in relation to their peers in neighboring counties and states.

NENA-STAA-020.1-2020, *NENA Standard for 9-1-1 Call Processing*, states, “Ninety percent (90%) of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) SHALL be answered within (≤ ) fifteen (15) seconds. Ninety-five (95%) of all 9-1-1 calls SHOULD be answered within (≤ ) twenty (20) seconds.”<sup>35</sup>

NFPA is a self-funded nonprofit that “strives to help save lives and reduce loss with information, knowledge, and passion.”<sup>36</sup> NFPA 1225, *Standard for Emergency Services Communications*, 2022 version, states “Ninety- [sic] percent of events received on emergency lines shall be answered within 15 seconds, and 95 percent of events shall be answered within 20 seconds.”<sup>37</sup>

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<sup>31</sup> <https://www.apcointl.org/community/about/>

<sup>32</sup> <https://www.apcointl.org/~documents/standard/31032-2015-public-safety-telecommunicator/?layout=default> .

<sup>33</sup> <https://www.nena.org/page/Mission>

<sup>34</sup> Ibid.

<sup>35</sup> “NENA Standard for 9-1-1 Call Processing” March 31, 2020, page 8 of 26.

<sup>36</sup> <https://www.nfpa.org/news-blogs-and-articles/Blogs/2024/11/06/history-of-nfpa>

<sup>37</sup> “NFPA 1225, *Standard for Emergency Services Communications*,” National Fire Protection Association, 2019, section 15.4.1.

NFPA 1225 further defines call processing times, which begin when the call is answered and end when dispatch begins. Section 15.4.3 states, “Call processing time shall include the time from call answer to initial notification of the responding ERU<sup>38</sup>(s).”

Section 15.4.4 states, “Emergency event processing for the highest prioritization level emergency events listed in 15.4.4.1 through 15.4.4.2 shall be completed within 60 seconds, 90 percent of the time.

Section 15.4.4.1 states, “The following types of calls where there is an imminent threat to life shall be included in the highest prioritization level:

- (1) Trauma (e.g., penetrating chest injury)
- (2) Neurologic emergencies (e.g., stroke, seizure)
- (3) Cardiac-related events
- (4) Unconscious/unresponsive patients
- (5) Allergic reactions
- (6) Patient not breathing
- (7) Choking
- (8) Other calls as determined by the AHJ”

Section 15.4.4.2 states, “The following types of calls where significant property loss/damage is likely or actively occurring shall be included in the highest prioritization level:

- (1) Fire involving or potentially extending to a structure(s)
- (2) Explosion
- (3) Other calls as determined by the AHJ”

NFPA 1225 does not address law enforcement call processing and dispatching times, allowing jurisdictions to “determine time frames allowed for completion of dispatch.”

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, provides time standards that include processing times (applicable to the communications center) as well as turnout, travel, and total response times (applicable to the responding organization). While the communications is not responsible for the organization’s response times, it does contribute to the Total Response Time, defined as the “time interval from the receipt of the alarm at the primary PSAP to when the first emergency response unit is initiating action or intervening to control the incident.”<sup>39</sup>

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<sup>38</sup> Emergency response unit

<sup>39</sup> [NFPA 1710 Standard Development](#)

Note: While NFPA 1710 references NFPA 1221 for alarm answering and processing times, the standards no longer align. NFPA 1221 was combined with NFPA 1061 into NFPA 1225, which was published in 2022. NFPA 1710, with the current edition of 2020, is being consolidated into NFPA 1750. Thus NFPA 1225 is applicable for the PSAP's call answering and processing times while NFPA 1710 is applicable for the response organization's times, which are shown in the graphic to the right  
(excerpted from Section 4.1.2.1).

- (2) 80 seconds turnout time for fire and special operations response and 60 seconds turnout time for EMS response
- (3)\* 240 seconds or less travel time for the arrival of the first engine company at a fire suppression incident
- (4) 360 seconds or less travel time for the arrival of the second company with a minimum staffing of 4 personnel at a fire suppression incident
- (5) For other than high-rise, 480 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident
- (6) For high-rise, 610 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident
- (7) 240 seconds or less travel time for the arrival of a unit with first responder with automatic external defibrillator (AED) or higher-level capability at an emergency medical incident
- (8) 480 seconds or less travel time for the arrival of an advanced life support (ALS) unit at an emergency medical incident, where this service is provided by the fire department provided a first responder with an AED or basic life support (BLS) unit arrived in 240 seconds or less travel time

NFPA 1225, Chapter 15, sets forth the standards for Operations; Section 1 addresses management.

15.1.1 states, "All system operations shall be under the control of a manager, director, or supervisor of the jurisdiction served by the system.

15.1.3 states, "Personnel in supervisory roles shall receive supervisory training as defined by the AHJ." (AHJ is defined as the Authority Having Jurisdiction.)

15.1.4 states, "The AHJ shall be responsible for initial and ongoing training in supervisory skills of personnel in supervisory roles."

Chapter 15, Section 3, addresses staffing.

15.3.1 states, "There shall be a minimum of two qualified telecommunicators on duty and present in the communications center at all times."

15.3.4 states, "Supervision shall be provided when more than two telecommunicators are on duty."

Annex A provides further explanation. A.15.3.4 states, "The supervisor position(s) in the communications center are provided in addition to the telecommunicators [sic] positions. Although supervisory personnel are intended to be available for problem solving, the supervisor position is permitted to be a working position."

15.3.4.1 states, "Supervision shall be provided by personnel located within the communications center who are familiar with the operations and procedures of the communications center."

15.3.4.2 states, "The supervisor shall be allowed to provide short-term relief coverage for a telecommunicator, provided that the telecommunicator does not leave the communications center and is available for immediate recall as defined in the policies and procedures of the AHJ."

## Accrediting Organizations

Accrediting organizations also develop standards with which agencies applying for respective accreditation must comply.

APCO's Agency Training Program Certification, an initiative of Project 33®, provides a way for public safety agencies to certify that their training programs meet APCO American National Standards (ANS). An agency's curriculum, training materials and supporting documentation are reviewed and checked for compliance.<sup>40</sup>

CALEA, a "credentialing authority through the joint efforts of law enforcement's major executive associations"<sup>41</sup> accredits law enforcement agencies and communications centers. CALEA's accreditation programs each "promulgates standards that reflect best practices for public safety agencies."<sup>42</sup>

CALEA standards define what needs to be done, not how agencies are to accomplish it.

CALEA accreditation for law enforcement requires active participation from the respective communications center serving the agency as there is an entire chapter (Chapter 81) dedicated to communications.<sup>43</sup>

CALEA accreditation for communications centers was developed jointly with APCO and contains 208 standards related to the organization; direction and supervision; human resources; recruitment, selection, and promotion; training; operations; and critical incident, special operations, and homeland security.

CFAI administers the Center for Public Safety Excellence (CPSE)'s accreditation program for fire and emergency service organizations. The mission of the CPSE, a nonprofit corporation, is to "lead the fire and emergency service to excellence through the continuous quality improvement process of accreditation, credentialing, and education."<sup>44</sup> The CFAI has noted that its accreditation process provides a well-defined benchmark system to measure the quality of fire and emergency services.

There is a substantial connection between a community's Insurance Services Office (ISO)<sup>45</sup> Public Protection Classification (PPC) rating and their commercial and residential insurance rates.

The Fire Suppression Rating Schedule (FSRS), previously under the ISO, evaluates four primary categories of fire suppression: fire department, emergency communications, water supply, and community risk reduction. The FSRS "measures the major elements of a community's fire protection system and develops a numerical grading called a Public Protection Classification."<sup>46</sup> Ten points are available for emergency communications. The review focuses on the community's facilities and support for handling and dispatching alarms for structure fires.

Verisk notes:

*We base our evaluations on nationally recognized standards developed by the Association of Public-Safety Communication Officials International (APCO) and the National Emergency Number Association (NENA). Verisk works very closely with APCO, NENA, the National Fire Protection Association (NFPA), county coordinators, directors, and staff at the communications centers we survey. We've found that the most critical factor in responding to emergencies is telecommunicators. Having a sufficient number of well-trained*

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<sup>40</sup> <https://www.apcointl.org/services/agency-training-program-certification/>

<sup>41</sup> <https://www.calea.org/>

<sup>42</sup> <https://www.calea.org/accreditation-programs>

<sup>43</sup> <https://www.calea.org/node/11406>

<sup>44</sup> <https://cpse.org/cpse-overview/>.

<sup>45</sup> "Verisk, ISO's parent company, is unifying all its insurance business ... under the Verisk brand." [Verisk Community Hazard Mitigation Services | Verisk's Community Hazard Mitigation Services \(isomitigation.com\)](https://isomitigation.com)

<sup>46</sup> "The Public Protection Classification (PPC®) program provides important, up-to-date information about municipal fire protection services in each community we serve ... In each of those protection areas, we analyze the relevant data and assigns a Public Protection Classification - a grading from 1 to 10. Class 1 generally represents superior property fire protection, and Class 10 indicates that the area's fire suppression program does not meet our minimum criteria." [How the Program Works | PPC | Verisk's Community Hazard Mitigation Services \(isomitigation.com\)](https://isomitigation.com)

*telecommunicators can make all the difference when responding to an emergency, and our evaluation gives this component the weight it deserves.<sup>47</sup>*

Thus, fire department accreditation and ISO ratings rely on communications center compliance.

CAAS is the accrediting body for ambulance services. CAAS is an independent commission that "established a comprehensive series of standards for the ambulance service industry."<sup>48</sup> The CAAS standards are designed to help increase operational efficiency and decrease risk and liability across the entire spectrum of the organization, often exceeding standards established at the local or state level. While CAAS does not accredit communications centers, Section 204 of the standards addresses communications centers, stating, "efficient call taking, effective resource deployment, and continuous communications capabilities are required to maintain an effective EMS agency."<sup>49</sup> There are seven applicable areas within Section 204:

204.01 – Policies and Procedures

204.02 – Contingency Plans

204.03 – Preventive Maintenance

204.04 – Training

204.05 – Licensure

204.06 – Communications Inter-Agency Dialogue

204.07 – Communications Performance Improvement

## Protocols / Guidecards

The International Academies of Emergency Dispatch (IAED) define a protocol as "a highly-defined procedure placed into a reference system...designed to lead the call taker through a predictable, repeatable, and verifiable process for a specific situation."<sup>50</sup> "Protocols have become an integral part of modern day, emergency dispatch operations. Protocols reduce variance, ensure a continuity of care, reduce liability, standardize response decisions, and provide a basis for performance measurement and quality improvement efforts."<sup>51</sup>

APCO refers to its call-taking and dispatching system as guidecards, which serve the same purpose.

Protocols (or guidecards) involve a set of scripted questions designed to elicit as much information from the caller as possible.<sup>52</sup> At case entry, essential information is gathered in a standardized format, including the address of the incident, the caller's phone number and name, and the problem. Once the problem or chief complaint has been identified, questioning continues to help assess scene safety, prioritize the response, select appropriate instructions for the caller, and provide pertinent information for responders. The questions are designed to be asked verbatim and in order. Where the answer is obvious, questions may be skipped. Post-

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<sup>47</sup> <https://www.isomitigation.com/emergency-communications/>.

<sup>48</sup> <http://www.caas.org/about/>.

<sup>49</sup> <http://www.caas.org/caas-standards/content-summaries>.

<sup>50</sup> The National Academies of Emergency Dispatch® (2011) *Emergency Telecommunicator Course Manual*, Edition 3. Salt Lake City, Utah: Priority Press.

<sup>51</sup> "Protocol Use in Emergency Dispatch: An Evolving Standard of Care," 9-1-1 Magazine.com, May 13, 2011, <http://dispatchingdiscussions.blogspot.com/2013/05/protocol-use-in-emergency-dispatch.html>.

<sup>52</sup> While there are numerous vendors for dispatch protocols, the terminology and information referenced is from Priority Dispatch; other vendors may have slightly differing terms and sequencing.

dispatch instructions are designed to ensure responders' and the caller's safety. If necessary, pre-arrival instructions—potentially life-saving, scripted instructions—are provided.

## Quality Assurance

- *Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points*
  - “This standard defines the recommended minimum components of a Quality Assurance/Quality Improvement (QA/QI) program within a public safety communications center. It recommends effective procedures for implementing the components of the QA/QI program to evaluate the performance of public safety communications personnel.”<sup>53</sup>
- *Core Competencies and Minimum Training Standards for Public Safety Communications Quality Assurance Evaluators (QAE)*
  - “This standard identifies the core competencies and minimum training requirements for Public Safety Communications Quality Assurance Evaluators (QAE). The QAE administers the Quality Assurance/Quality Improvement (QA/QI) process by providing compliance oversight, reviewing, and documenting an evaluation of the level of compliance with Agency directives and standards in an ongoing effort to ensure the highest levels of service to the public and emergency responders.”<sup>54</sup>

APCO and NENA's joint standard is the *Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points* (APCO/NENA ANS 1.107.1.2015). Section 5.4.1 states the QA/QI “process shall adequately measure the quality and performance of the service provided. This process includes, but is not limited to, the following criteria:

- 5.4.1.1 Analysis of performance trends;
- 5.4.1.2 Compliance to protocols and standard operating procedures;
- 5.4.1.3 Customer Service;
- 5.4.1.4 Optimizing the use of agency resources;
- 5.4.1.5 Overall performance of each employee; and
- 5.4.1.6 Reviewing the operation as a whole”<sup>55</sup>

Section 5.3.1 states “The Agency shall ensure a sufficient number of case reviews are conducted for both call-taking and radio dispatch responsibilities of a telecommunicator.”<sup>56</sup> Section 5.3.1.2 further states that “PSAP agencies shall, in the normal course of business, review at least 2% of all calls for service. Where the 2% factor would not apply or be overly burdensome due to low or excessively high call volumes, agencies must decide on realistic levels of case review.”<sup>57</sup>

CALEA requires a “documented quality checks of employees' call taking and dispatch performance,” but does not address the percentage of reviews.

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<sup>53</sup> <https://www.apcointl.org/standards/standards-to-download/>.

<sup>54</sup> <https://www.apcointl.org/standards/standards-to-download/>.

<sup>55</sup> <https://www.apcointl.org/standards/apco-standards-for-download.html>, page 23.

<sup>56</sup> Ibid., page 22.

<sup>57</sup> Ibid.

NFPA 1225, Section 15.7 states, “Communications centers shall establish a quality assurance/improvement program to ensure the consistency and effectiveness of event processing.”<sup>58</sup> Explanatory material in Annex A states, “The purpose of the quality assurance program is to follow up and review calls with communications center employees, improve procedures, and make the corrections needed to improve service and response. Generally accepted statistical methods should be used when selecting calls for review.”<sup>59</sup>

## Training

APCO’s *Minimum Training Standards for Public Safety Telecommunicators*, APCO ANS 3.103.2.2015, “identifies minimum training requirements for both new and veteran Public Safety Telecommunicators. This position is typically tasked with receiving, processing, transmitting, and conveying public safety information to dispatchers, law enforcement officers, firefighters, emergency medical and emergency management personnel. This document seeks to define training in certain knowledge and skills for the Agency to provide to Telecommunicators.”<sup>60</sup>

APCO “recognizes the need to supplement these core competencies with Agency-specific information. [The] standard should be accepted as independent and stand-alone from standards addressed elsewhere. Supervisors should be cognizant of other APCO standards and other relevant standards such as The National Fire Protection Association’s (NFPA) standards, The Commission on Accreditation for Law Enforcement Agencies (CALEA) standards, etc.”<sup>61</sup>

CALEA’s *Standards for Public Safety Communications Agencies* has a section pertaining to training.

Standard 5.2.1 states:

*The agency requires all newly hired telecommunicators to complete a training program prior to routine assignment in any capacity in which the telecommunicator is allowed to answer calls for service or is in a position to make dispatching decisions ...<sup>62</sup>*

Standard 5.2.2 states:

*A written directive establishes a telecommunicator training program for new hires including both classroom training and on the job training, which includes provisions for the following:*

- a. *curriculum based on tasks of the most important and frequent assignments;*
- b. *use of evaluation techniques and guidelines designed to measure competency in the required skills, knowledge, and abilities;*
- c. *on the job training of at least four weeks for trainees, during and/or after the required classroom training; and*
- d. *provisions for training and orientation of lateral-entry personnel.*<sup>63</sup>

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<sup>58</sup> “NFPA 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems,” National Fire Protection Association, 2019, <http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1221>.

<sup>59</sup> Ibid.

<sup>60</sup> “Abstract,” *Minimum Training Standards for Public Safety Telecommunicators*, page 2 of 37.

<https://www.apcointl.org/download/minimum-training-standards-for-public-safety-telecommunicators-3/?wpdmdl=6288>.

<sup>61</sup> Ibid. page 11 of 37.

<sup>62</sup> *Standards for Public Safety Communications Agencies*. CALEA. Section 5.2 Training.

<sup>63</sup> Ibid.



Commentary for standard 5.2.2 advises that the “entry-level classroom training should meet the requirements established in APCO’s ‘National Public Safety Telecommunicator Training Standard’ (#33), or another similar program.”<sup>64</sup>

Standard 5.2.6 requires annual retraining, while standard 5.2.10 identifies the activities for specialized training. Standard 5.2.12 addresses job-related training for newly promoted personnel.

NFPA 1225 has a section pertaining to telecommunicator qualifications and training.

- 15.2 *Telecommunicator Qualifications and Training.*
  - 15.2.1 *Telecommunicators shall meet the qualification requirements of Chapters 4 through 11 as appropriate for their position.*
  - 15.2.2\* *Telecommunicators shall be certified in the knowledge, skills, and abilities related to their job-related function.*
    - 15.2.2.1 *The certification program shall have a skill maintenance component for recertification as defined by the certifying organization.*
  - 15.2.3 *Telecommunicators shall be trained in general emergency service operations and shall have access to information regarding the following:*
    - (1) *Locations of streets*
    - (2) *Locations of important structures, including schools, hospitals, and other buildings with a high life hazard*
    - (3) *Locations of congested or hazardous areas*
  - 15.2.4 *Telecommunicators shall have operational knowledge of the functions of communications equipment, systems, and networks in the communications center.*
  - 15.2.5 *Telecommunicators shall know the rules and regulations that relate to equipment use, including those of the Federal Communications Commission that pertain to emergency service radio use.*
  - 15.2.6 *The AHJ shall be responsible for providing training to maintain the skill levels of telecommunicators to the level appropriate to their position as identified in Chapters 4 through 11, and Section 15.2.*
  - 15.2.7 *Telecommunicators shall be trained in TDD/TTY procedures, with training provided at a minimum of every 6 months.*
  - 15.2.8 *Telecommunicators shall receive training on the CEMP, including the TICP, at least annually.*

Annex A, Explanatory Material, provides clarification regarding 15.2.2.

*The AHJ can develop a certification program or use the certification programs of others. Examples of other certification programs are Associated Public Safety Communications Officials International, International Municipal Signal Association, and National Academies of Emergency Dispatch and Power Phone.*

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<sup>64</sup> Ibid.

### *Continuing Education*

APCO's *Minimum Training Standards for Public Safety Telecommunicators*, Section 2.3.7 states, “[t]he Agency shall require and ensure no less than twenty-four hours of continuing education or recurrent training for each Telecommunicator annually.”<sup>65</sup>

CALEA's *Standards for Public Safety Communications Agencies*, Standard 5.2.6 requires all public safety agency personnel to complete annual retraining.

### *Vermont Statutes and Rules on Communications*

The Vermont Enhanced 911 Board provides a webpage for states, rules, and standards:

<https://e911.vermont.gov/statutes-and-rules>

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<sup>65</sup> “Training Program Administration,” *Minimum Training Standards for Public Safety Telecommunicator*,” APCO International, page 18. <https://www.apcointl.org/standards/standards-to-download/>.

## Appendix G: Staffing Factors and Approach

Collectively, call-takers and dispatchers are often referred to as telecommunicators or, recently, public safety telecommunicators (PSTs)—a more common term in a bid to better define their significance to the public safety realm. The National Emergency Number Association (NENA) defines a telecommunicator as follows:

*An emergency response coordination professional trained to receive, assess, and prioritize emergency requests for assistance, including, but not limited to:*

- *Determining the location of the emergency being reported*
- *Determining the appropriate law enforcement, fire, emergency medical, or combination of those emergency services to respond to the emergency*
- *Coordinating the implementation of that emergency response to the location of the emergency*
- *Processing requests for assistance from emergency responders.<sup>66</sup>*

The National Fire Protection Association (NFPA) defines a telecommunicator, generically, as follows:

*An individual whose primary responsibility is to receive, process, or disseminate information of a public safety nature via telecommunication devices.<sup>67</sup>*

NFPA 1225, *Standard for Emergency Services Communications*, Section 3.3.101, Public Safety Communications Center Personnel, provides more detailed definitions of several emergency communications center positions, including Public Safety Telecommunicator I (Call Taker) and Public Safety Telecommunicator II (Radio Dispatcher). Section 3.3.103 defines a qualified telecommunicator.

NENA and the Association of Public-Safety Communications Officials (APCO) International both have tools to assist in determining baseline staffing. Communications center data is measured and used as a basis for projecting the number of call-takers, dispatchers, and supervisors required to adequately handle call and incident volumes and meet and/or exceed national and/or state call-answering standards. Two approaches to staffing calculations are volume- and coverage-based positions.

- Volume-based is dependent on the respective activity levels in the center, which determine the employees needed to fill a position. In essence, the workload (e.g., incoming calls and incidents) determines the number of individuals that should be scheduled each shift to handle the volume of work.
- Coverage-based refers to a position that must be staffed regardless of the volume of work at the respective position. The position could be staffed 24/7 or just for certain hours of the day.

For most communications centers, dispatch positions are typically coverage-based positions.

Conversely, call-take positions, without dispatch responsibilities, are likely to be volume-based positions—meaning the number of staff necessary to answer incoming calls may fluctuate based on historical incoming call data. There is often a greater need during business hours and early evening hours, for example, than overnight

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<sup>66</sup> [Telecommunicator - NENA Knowledge Base](#)

<sup>67</sup> [NFPA 1225: Standard for Emergency Services Communications](#)

hours. While this specific level of detail requires greater breakdowns of the call data, it is a snapshot in time—any hour of the day can be the busiest.

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In addition to position types (coverage or volume), other factors play a role in forecasting staffing, including available work hours, utilization, and turnover rates.

**Available work hours.** This is simply the number of hours a telecommunicator is available to work during a year. It is necessary to determine the number of days in 12 months that an employee is *scheduled* to work. Telecommunicators working an 8-hour shift will normally work 260 days (2,080 hours) based on a 40-hour work week. Those working a 12-hour shift will normally work 182 days (2,184 hours), based on a 4-on/4-off schedule or the common 2-on/2-off/3-on/2-off/2-on/3-off schedule. Other schedules yield similar work hours.

Subtracted from this figure is any time that a telecommunicator is away from their assigned duties. This time includes vacation/holiday, sick and personal leave; training; military leave; and other activities. (Each leave category is averaged for all telecommunicators for 12 months.) The result is the work hours (net) an employee is available to work during a calendar year.

**Utilization.** Utilization is, simply, the proportion of available time that something is operating. In staffing calculations, utilization measures the percentage of time that staff (telecommunicators and supervisors) are available to work each shift. This is calculated by taking a respective shift length and subtracting the time allotted away from a position during the shift, such as for meals and breaks, and for ancillary duties not related to call-taking and dispatching. Some agencies also include a buffer to allow staff to decompress or debrief after stressful calls, this is specific to an agency. The resulting calculation is the utilization rate—the percentage of time each shift that staff are *available* to do their respective job. The utilization rate is then applied to the available work hours to determine the true availability of a telecommunicator.

**Turnover and Retention.** Turnover is often referred to as attrition, but there is a distinct difference. Simply put, when turnover occurs, the organization seeks someone to fill the position; with attrition, the vacancy is left unfilled, or the position is eliminated altogether. Turnover is usually sudden and unanticipated, whereas attrition can be anticipated, such as a retirement. The formulas to calculate turnover and attrition are the same.

APCO commissioned a study of communications centers across the country “to address the chronic problems of understaffing and turnover that exist within the field of emergency communications.”<sup>68</sup> The 2018 study found the average retention rate was 71%, for a turnover rate of 29%.

**Performance metrics.** Performance metrics measure the operational efficiency of a communications center with targeted goals and established standards. Throughout the country, communications centers adopt and use industry standards and best practices to assure the effectiveness of the agency and that the best possible service is provided to citizens and first responders. Measurable standards create an objective view of 911 operations and provide for consistent interactions with the served public and first responders. The most common metric involves the average time it takes a communications center to answer its incoming emergency calls. Communications centers typically try to align their call-answering goals to either NENA or NFPA standards, absent a state standard.

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<sup>68</sup> “Project Responsive Efforts To Address Integral Needs in Staffing (RETAINS): Staffing and Retention in Public Safety Answering Points (PSAPs): A Supplemental Study.” APCO Project Retains, APCO International. <https://www.apcointl.org/resources/staffing-retention/project-retains/>

NENA-STA-020.1-2020, *NENA Standard for 9-1-1 Call Processing*, states, “Ninety percent (90%) of all 9-1-1 calls arriving at the Public Safety Answering Point (PSAP) SHALL be answered within (≤) fifteen (15) seconds. Ninety-five (95%) of all 9-1-1 calls SHOULD be answered within (≤) twenty (20) seconds.”<sup>69</sup>

NFPA 1225, *Standard for Emergency Services Communications*, states, “Ninety-percent of events received on emergency lines shall be answered within 15 seconds, and 95 percent of events shall be answered within 20 seconds.”<sup>70</sup>

NFPA 1225 further defines call processing times, which begin when the call is answered and end when dispatch begins. Section 15.4.3 states, “Call processing time shall include the time from call answer to initial notification of the responding ERU<sup>71</sup>(s).”

Section 15.4.4 states, “Emergency event processing for the highest prioritization level emergency events listed in 15.4.4.1 through 15.4.4.2 shall be completed within 60 seconds, 90 percent of the time.

Section 15.4.4.1 states, “The following types of calls where there is an imminent threat to life shall be included in the highest prioritization level:

- (1) Trauma (e.g., penetrating chest injury)
- (2) Neurologic emergencies (e.g., stroke, seizure)
- (3) Cardiac-related events
- (4) Unconscious/unresponsive patients
- (5) Allergic reactions
- (6) Patient not breathing
- (7) Choking
- (8) Other calls as determined by the AHJ”

Section 15.4.4.2 states, “The following types of calls where significant property loss/damage is likely or actively occurring shall be included in the highest prioritization level:

- (1) Fire involving or potentially extending to a structure(s)
- (2) Explosion
- (3) Other calls as determined by the AHJ”

NFPA 1225 does not address law enforcement call processing and dispatching times, allowing jurisdictions to “determine time frames allowed for completion of dispatch.”

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, provides time standards that include processing times (applicable to the communications center) as well as turnout, travel, and total response times (applicable to the responding organization). While the communications is not responsible for the organization’s response times, it does contribute to the Total Response Time, defined as the “time interval from

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<sup>69</sup> “NENA Standard for 9-1-1 Call Processing,” National Emergency Number Association,” April 16, 2020, page 8 of 26. [https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/nena-sta-020.1-2020\\_911\\_call.pdf](https://cdn.ymaws.com/www.nena.org/resource/resmgr/standards/nena-sta-020.1-2020_911_call.pdf)

<sup>70</sup> [NFPA 1225: Standard for Emergency Services Communications](#)

<sup>71</sup> Emergency response unit

the receipt of the alarm at the primary PSAP to when the first emergency response unit is initiating action or intervening to control the incident.”<sup>72</sup>

Note: While NFPA 1710 references NFPA 1221 for alarm answering and processing times, the standards no longer align. NFPA 1221 was combined with NFPA 1061 into NFPA 1225, which was published in 2022. NFPA 1710, with the current edition of 2020, is being consolidated into NFPA 1750. Thus NFPA 1225 is applicable for the PSAP’s call answering and processing times while NFPA 1710 is applicable for the response organization’s times, which are shown in the graphic to the right (excerpted from Section 4.1.2.1).

- (2) 80 seconds turnout time for fire and special operations response and 60 seconds turnout time for EMS response
- (3)\* 240 seconds or less travel time for the arrival of the first engine company at a fire suppression incident
- (4) 360 seconds or less travel time for the arrival of the second company with a minimum staffing of 4 personnel at a fire suppression incident
- (5) For other than high-rise, 480 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident
- (6) For high-rise, 610 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident
- (7) 240 seconds or less travel time for the arrival of a unit with first responder with automatic external defibrillator (AED) or higher-level capability at an emergency medical incident
- (8) 480 seconds or less travel time for the arrival of an advanced life support (ALS) unit at an emergency medical incident, where this service is provided by the fire department provided a first responder with an AED or basic life support (BLS) unit arrived in 240 seconds or less travel time

Another factor that involves communications centers pertains to insurance ratings for their area. There is a substantial connection between a community’s Insurance Services Office (ISO)<sup>73</sup> Public Protection Classification (PPC) rating and their commercial and residential insurance rates.

The Fire Suppression Rating Schedule (FSRS), previously under the ISO, evaluates four primary categories of fire suppression: fire department, emergency communications, water supply, and community risk reduction. The FSRS “measures the major elements of a community’s fire protection system and develops a numerical grading called a Public Protection Classification.”<sup>74</sup> Ten points are available for emergency communications. The review focuses on the community’s facilities and support for handling and dispatching alarms for structure fires.

Verisk notes:

*We base our evaluations on nationally recognized standards developed by the Association of Public-Safety Communication Officials International (APCO) and the National Emergency Number Association (NENA). Verisk works very closely with APCO, NENA, the National Fire Protection Association (NFPA), county coordinators, directors, and staff at the communications centers we survey. We’ve found that the most critical factor in responding to emergencies is telecommunicators. Having a sufficient number of well-trained*

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<sup>72</sup> [NFPA 1710 Standard Development](#)

<sup>73</sup> “Verisk, ISO’s parent company, is unifying all its insurance business ... under the Verisk brand.” [Verisk Community Hazard Mitigation Services | Verisk’s Community Hazard Mitigation Services \(isomitigation.com\)](#)

<sup>74</sup> “The Public Protection Classification (PPC®) program provides important, up-to-date information about municipal fire protection services in each community we serve ... In each of those protection areas, we analyze the relevant data and assigns a Public Protection Classification - a grading from 1 to 10. Class 1 generally represents superior property fire protection, and Class 10 indicates that the area’s fire suppression program does not meet our minimum criteria.” [How the Program Works | PPC | Verisk’s Community Hazard Mitigation Services \(isomitigation.com\)](#)



*telecommunicators can make all the difference when responding to an emergency, and our evaluation gives this component the weight it deserves.<sup>75</sup>*

Another metric is the abandoned call rate. An abandoned call is defined by NENA as “An emergency Call in which the caller disconnects before the Call can be answered by the PSAP (Public Safety Answering Point).”<sup>76</sup>

Every center will experience abandoned calls; the goal is to keep them as low as possible. There are many reasons for abandoned calls, including those who “pocket dial,” realize they have misdialed, or become frustrated waiting for an answer and hang up. When telecommunicators are on another line, incoming calls cannot be answered right away. Regardless of the reason, this creates additional work as staff must try to re-establish contact with the caller to determine if there is an actual emergency.

There is no industry metric for a “normal” number of abandoned calls. In MCP’s experience, an abandoned call rate of 8% percent or less is attainable when a communications center is appropriately staffed. In the *2024 Talkdesk global contact center KPI benchmarking report*, the average abandonment rate in 2023 was 9.3%. Talkdesk noted: “Due to the significant increase in calls and agent attrition rates in 2023, contact centers had to work hard to keep up with call volume.”<sup>77</sup> MetricNet, a performance benchmarking company in McLean, Virginia, for IT and call centers, notes that “[b]enchmarking data shows that the optimal range for abandoned calls is between 4% and 7% ... Industry data from MetricNet’s benchmarking database shows that the average call abandonment rate for all service desks is 8.7%, which is slightly above the optimal range.”<sup>78</sup> While the focus of these companies is on the service industry, not the 911 industry, there is a correlation between the two—the industries are answering calls from the public in response to their stated mission or objective.

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Typically, MCP uses the NENA staffing tool to forecast dispatch requirements and the NENA staffing tool in concert with Erlang C<sup>79</sup> calculations to forecast call-handling requirements. The NENA and APCO staffing tools both yield baseline requirements—no single algorithm estimates staffing requirements, and it is not as simple as “plugging in numbers.” It is a layering process of baseline determinants, shift dynamics, operational configurations, the application of industry trends, and industry subject-matter expertise, yielding a recommendation from an objective third party. Common sense and experience play a significant role in staffing configurations. There is no “best” method for determining appropriate staffing levels. Using multiple methods, and comparing results, combined with industry experience, is a best practice that can yield repeatable and verifiable results. Ultimately, final staffing determinations are with an agency as proper staffing is finding the balance between service-level expectations and fiscal constraints.

<sup>75</sup> “Emergency Communications,” ISO Mitigation, 2018, <https://www.isomitigation.com/emergency-communications/>.

<sup>76</sup> [Abandoned Call - NENA Knowledge Base](#)

<sup>77</sup> Talkdesk is a cloud contact center. [Contact Center KPI Benchmarking Report 2024 - Reports | Talkdesk](#)

<sup>78</sup> “Call Abandonment Rate,” MetricNet, May 23, 2012, <https://www.metricnet.com/call-abandonment-rate/>.

<sup>79</sup> Erlang C calculations use a mathematical equation to determine the number of call-takers needed based on the number of incoming calls, the service level to be achieved, and the time it takes to process each call.

## Appendix H: Glossary

Acronym	Term
AI	Artificial Intelligence
ALI	Automatic Location Identification
ANI	Automatic Number Identification
APCO	Association of Public Safety Communication Officials
CAD	Computer Aided Dispatch
CHE	Call Handling Equipment
COOP	Continuity of Operations Plan
EAS	Early Warning System
ECC	Emergency Communications Center
EFD	Emergency Fire Dispatch
EMA	Emergency Management Agency
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
EPD	Emergency Police Dispatch
FCC	Federal Communications Commission
FSA	Fire Station Alerting
LMR	Land Mobile Radio
MDC	Mobile Data Computer
MDT	Mobile Data Terminal
NCIC	National Crime Information Center
NENA	National Emergency Number Association
NFPA	National Fire Protection Association
NG911	Next Generation 911

Acronym	Term
<b>Nlets</b>	National Law Enforcement Telecommunications Network
<b>PSAP</b>	Public Safety Answering Point
<b>QA</b>	Quality Assurance
<b>QI</b>	Quality Improvement
<b>RF</b>	Radio Frequency
<b>RMS</b>	Records Management System
<b>SCF</b>	Secure Controls Framework
<b>UHF</b>	Ultra-high Frequency
<b>UPS</b>	Uninterrupted Power Supply
<b>VCOMM</b>	Vermont Communications System
<b>VHF</b>	Very-high Frequency