Vermont Public Safety Communications System Design Concept and Recommendations

January 2026

Vermont Public Safety Communications Task Force

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1 Executive Summary

In pursuit of a reliable, secure, and interoperable statewide public safety communications system, the Vermont General Assembly, through Act 78 of 2023, established the Public Safety Communications Task Force to oversee and manage all phases of the system's development, design, and implementation. Throughout the associated Statewide Public Safety Communications System Planning project, the Task Force members dedicated considerable time and effort in support of the project and conducted nearly 100 public forum working meetings where members of the public safety stakeholder community and the public participated. The Task Force also engaged directly in outreach and collaboration with the statewide public safety stakeholder community to gather and analyze information about the existing public safety dispatch, land mobile radio (LMR), mobile data, and other critical communications systems and operational procedures. Stakeholder engagement during the inventory and system options phases of the project included surveys and questionnaires, multiple workshops, and listening and strategy sessions.[1]

The Task Force additionally conducted more than 30 Working Group meetings that were open to the public and received 51 informative responses from a broad cross section of public safety and community leaders across two dispatch surveys, all through which participants could share their suggestions, opinions and concerns. This process resulted in the Task Force recommendations as described within this report, which are designed to advance a reliable, secure, and interoperable statewide public safety communications system that is equitably and sustainably financed and universally accessible by all people throughout the State. In order to continue the progress realized to date, the Task Force is requesting support for the development of a formal Public Safety Communications governance board, along with approval to allocate the remaining Act 78 budget to the initiatives presented.

The proposed Task Force recommendations will deliver key system upgrades and improve interoperability by creating common dispatching standards and best practices facilitated through training, building a common quality assurance framework, and through the introduction of critical public safety technologies, many of which can be integrated in year one. These recommendations focus on the operational efficiencies of a shared resource approach advanced through local and state collaboration that strives to deliver measurable and sustainable improvements in all key aspects of public safety communications systems throughout the State. The recommendations will also provide a strong public safety communications system foundation that will foster common operating architecture and innovations that will better protect and serve Vermont's public and first responder community. Importantly, these recommendations will provide a pathway on which future improvements to the statewide public safety communications system can be achieved. However, it is important to understand that these recommendations represent an important beginning of the effort to modernize and enhance Vermont's public safety communications systems and dispatch requirements. To ensure long-term success, this effort must be sustained continually in the best interest of Vermont's essential public safety communications systems, and the dedicated first responders who rely on them in support of the communities they serve.

The following table provides a summary of the key Task Force recommendations.

[1] These reports can be found at https://dps.vermont.gov/document/psctf-mcp-inventory-report-redacted and https://dps.vermont.gov/document/psctf-system-options-plan-recommendations-final-report.

Strategic Objective	Task Force Recommended Action
Governance	Establish a Governance Board that: • Operates as an independent entity • Has decision-making authority and the authority to approve minimum technical and operational standards, hire staff, and enter into agreements • Promotes service improvement and organic consolidation based on common standards and performance benchmarks
Reliability	Governance Board to Establish: • A minimum set of common standards, procedures, and protocols to be followed by all dispatch centers serving Vermont • Standardized Quality Assurance (QA) process and resource materials in support of dispatching • A list of approved initial and ongoing training programs, followed by a statewide certification program • Templates to standardize job classifications, job descriptions, and promote dispatcher professional certification • Ongoing dispatcher training and leadership workshops covering strategic planning, change management, and continuity of operations • Support for hybrid staffing across centers for resource backfill and staffing emergencies • Solutions and best practices to facilitate statewide public safety communications system technical and operational failover
Interoperability	• Secure a new Computer Aided Dispatch (CAD) system with multi-discipline functionality (police, fire, EMS), CAD-to-CAD interoperability, interfaces to location data, mapping, the State's records management systems, paging and alerting • Expand the use of RapidSOS and state GIS resources for all dispatch centers • Update the Land Mobile Radio (LMR) infrastructure, while considering existing systems and expansion plans, to deliver reliable public safety radio across common dispatch areas to enable regional and statewide interoperability based on robust LMR network design coverage, channel capacity, and interoperability standards
Sustainability	• Governance Board and operations to be covered by remaining Act 78 funding for three years, at which time proposed dispatch fee assessments will provide continued funding
Equity	• Establish a fee formula that incorporates towns not currently paying for dispatch service and adjusts rates according to system utilization. This formula will be designed to offset ongoing costs of the common LMR system, shared statewide dispatch technologies and services, and actual dispatch service to municipalities. It should be introduced in an incremental structure to allow stakeholders to make appropriate adjustments, and the formula should reflect reasonable and relatively equivalent fees representative of existing dispatch agreements.
Security	• Establish a statewide cybersecurity Governance, Risk, and Compliance (GRC) framework • Perform periodic assessments and provide improvement guidance where appropriate
Accessibility	• All dispatch centers provide dispatch service subject to specific policy and technology benchmarks as defined by the Governance Board • Collected dispatch fees support technology and shared resources for all dispatch centers • The Governance Board will work with the Community Broadband Board and Public Service Department to provide coverage gap data to cellular providers

2 Detailed Recommendation Plans

The Task Force has outlined specific actionable recommendations focused on key public safety dispatch operational and technology areas designed to achieve the strategic objectives called out in Act 78 and summarized above. These recommendations are grouped into the following categories and described in detail below:

- Public Safety Communications Governance
- Public Safety Dispatch Operational Standards
- Training and Staffing
- Public Safety Technologies
- Land Mobile Radio
- Dispatch Center Facilities
- Dispatch Equity Funding Strategy.

2.1 Public Safety Communications Governance

Act 78 Objective

Governance	The Public Safety Communications Governance recommendations support all stated Act 78 strategic objectives through the establishment of an independent Board to engage stakeholders, identify and mitigate public safety communications system gaps, and to provide statewide oversight and management that best promote interoperability, operational continuity, and solutions that facilitate system failover.

The Task Force recommends the creation of a Public Safety Communications Governance Board ("PSC Board," "Board") to garner the collaboration of key public safety agency stakeholders, to identify public safety communications system gaps and the initiatives to mitigate the critical gaps, and to provide statewide oversight and management while guiding the continuous improvement of the fundamental public safety communications systems and operational requirements. The PSC Board should be staffed with respected local and state leaders from key police, fire, emergency medical services (EMS), dispatch, cybersecurity, transportation, the Enhanced 911 Board, and other public safety disciplines.

The proposed PSC Board would be modeled after the Vermont Emergency Communications Advisory Council[2] (ECAC) that was established by Executive Order to provide the Governor and the Department of Public Safety with input on emergency communications in Vermont. A key administrative difference between the future PSC Board and the advisory function of the ECAC is that the Task Force recommends that the PSC Board serve as an independent governance board having decision-making authority to advance initiatives and enter into agreements in support of improving Vermont's public safety communications systems and operational standards.

The PSC Board structure and purpose should also consider the national best governance practices integral in the Statewide Interoperable Executive Committee (SIEC) model, which nearly all States have adopted and administer in their states. The SIEC was established by U.S. Department of Homeland Security, in collaboration with key national public safety officials, through the development of the Interoperability Continuum[3] (also see Appendix 1 for additional information). The Interoperability Continuum and the SIEC

[2] See Emergency Communications Advisory Council | Radio Technology Services for additional information.

[3] See 21_0615_cisa_safecom_interoperability_continuum_brochure_final.pdf for additional information.

governance model have been guiding the advancement of critical public safety communications initiatives for over 20 years. When considering the SIEC model, Vermont's public safety governance model should be structured to reflect the unique requirements of the State's public safety communications systems and operational structures.

In designing the proposed Vermont Public Safety Communications Governance Board, the Task Force studied multiple state SIEC governance models and incorporated key attributes of these models into the PSC Board recommendation. The Task Force recognizes that the Board must include local and state members representing rural and urban communities from all key public safety disciplines. Additionally, the statewide public safety stakeholders must be recognized, engaged, and provided a forum where they can share their respective best practices, service gaps, and recommendations to advance initiatives to improve public safety communications systems. In administering structured regional and statewide public safety communications meetings, the Board can advance its objective to design and operate shared communications systems and operational standards. Shared public safety communications systems are inherently more interoperable, are more cost effective and efficient to deploy and operate, and they facilitate greater collaboration and information sharing.

2.1.1 The Proposed Public Safety Communications Governance Board Framework

In fostering the success of the PSC Board to guide the continuous improvement of Vermont's public safety communications systems the structure and framework of the proposed Board must be aligned with the key underlying objectives and supporting tasks. The Board would collaborate and make decisions in the best interest of the statewide public safety community and the residents they serve. In consideration of these and other strategic objectives, the Task Force recommends that the following key attributes and guidelines be considered:

- Establish a Vermont Public Safety Communications Governance Board that:
    - Operates as an independent entity
        - Leave the existing Enhanced 911 Board intact while considering options for merging the PSC and E911 Boards in the future
    - Has decision-making authority together with the authority to approve minimum technical and operational standards (i.e., minimum dispatch center staffing, dispatcher training and certification requirements)
    - Hire staff including a director, two senior administrative/liaison staff and as-needed professional service and consultant specialists
        - Retain a fiscal agent or obtain fiscal support from another Vermont department
    - Enter into agreements that best facilitate operational needs and objectives
    - Be appropriated an annual budget to fund all operating expenses and staff compensation
    - Promotes service improvement and organic consolidation based on common performance benchmarks set by the Board

The Task Force is confident that this proposed PSC Board structure will satisfy the underlying Act 78 governance objective for the Task Force to develop a "recommended governance model to ensure effective State and regional oversight, management, and continuous improvement of the system, including identification of staffing or operational needs to support such oversight and management of the system." The Task Force appreciates that the support and authorization of the governor and the Vermont legislature is required to implement this proposed PSC Board framework and looks forward to furthering discussion and partnership in creating an effective PSC Board.

2.1.2 Recommended Governance Board Structure and Membership

The following draft Public Safety Communication Governance Board organization illustrates the structure of the proposed PSC Board that the Task Force believes will best accelerate and deliver on the stated Act 78 objectives regarding Vermont's public safety communications systems and operational standards.

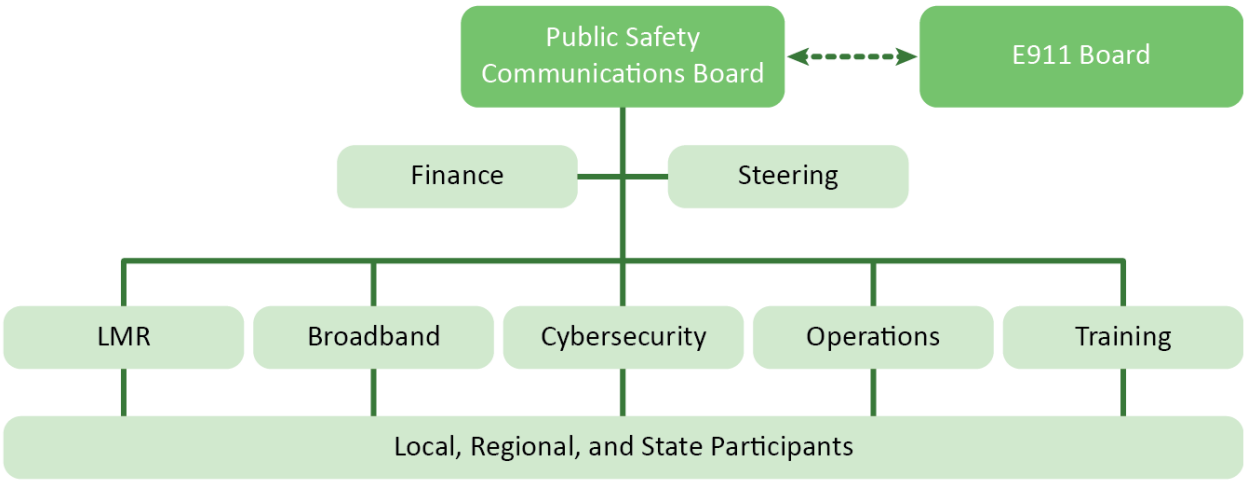

Figure 1: Draft Public Safety Communications Governance Board Organizational Chart

2.1.3 Proposed Subcommittees

The proposed PSC Board Subcommittees would comprise state and local public safety disciplinary experts from throughout the state. The Subcommittees would be chartered by the PSC Board to develop draft recommendations and propose initiatives that best address the assigned charters. Subcommittee meetings and supporting activities would be administered by the PSC Board, which would establish and publish meeting agenda and public notices, and provide other required admin and technical liaison support. Engaging the public safety professionals having the best insight into the communications issues and service and infrastructure gaps impeding public safety communications in Vermont are also best suited to assess and offer actionable solutions. Importantly, the participation of state and local public safety experts, representing rural and urban communities, results in greater ownership of the solutions and fosters an invaluable sense of ownership and respect. The collaboration of these dedicated professionals will lead to more robust interoperable systems and operational standardization.

2.2 Public Safety Dispatch Operational Standards

Act 78 Objective

Reliability, Equity, Interoperability, Accessibility	The definition and adoption of common dispatch policies, standards, and procedures will drive repeatable, high-quality dispatch services statewide. Common dispatching standards and best practices will ensure that equitable services are available to all Vermont residents.

Standardized operational procedures within the public safety communications landscape drive greater efficiency, facilitate repeatable best practices, reduce cost, and are essential for ensuring the highest quality of the services provided. Common policies and standards also provide the public safety dispatcher community with a uniform set of procedures to guide their professional activities and associated training

programs. While all Vermont PSAPs and dispatch centers are focused on providing the highest quality of services to their communities, there are currently no standardized operational policies, procedures, or protocols for Vermont's public safety dispatchers to enable equitable dispatch services statewide. Key Task Force strategies to advance the development and adoption of common dispatch technical and operational standards and protocols ensuring an interoperable and resilient system are detailed within this section.

2.2.1 Standardized Dispatcher Quality Assurance (QA)

The Task Force recognizes the value in supporting the statewide dispatcher community with new hire training, continuing education, and a professional certification program to ensure that Vermont's public safety dispatchers are equipped with nationally recognized skills, tools, and information. A standardized Quality Assurance (QA) program is also required to provide dispatchers with an evaluation process to periodically monitor and assess performance. The QA program is designed to determine a dispatcher's competency level and to identify if and what job-related skill improvements may be required.

The Task Force recommends implementing QA assessments to be administered onsite during an employee's regular shift hours by trained professionals affiliated with the PSC Board. The QA program would be established based on nationally standardized curriculum created by the Association of Public Safety Officials (APCO) and adapted to the unique requirements of the Vermont dispatch community. The Enhanced 911 Board currently provides a similar QA assessment to all statewide 911 call takers, and the proposed dispatcher QA would be modeled after the E911 call taker program, augmented with additional qualified staff to administer the dispatcher QA program.

2.2.2 Policies and Procedures

Common public safety dispatcher policies and procedures, focused on common technical and operational standards, are required to provide Vermont's residents, and the public safety professionals who support them, with consistent, high quality emergency dispatch services. The development and adoption of nationally recognized industry standards and procedures by all PSAPs and dispatch centers will ensure the delivery of similar services and capabilities statewide, support dispatcher resource sharing among the centers to meet unexpected staffing demand and will facilitate common training curriculum and dispatcher certification. In advancing this key objective, the Task Force supports the collaboration of state and local dispatch professionals, working as a subcommittee under the guidance of the PSC Board, to develop a common set of policies and procedures for communications centers to leverage.

2.2.3 Dispatch Protocols

Formalized public safety dispatch standards and best practices are required within and between dispatch centers that establish common dispatch conduct, procedures, tools, and data sharing. These protocols would be designed to advance and achieve the desired statewide dispatch operational environment underlying the quality of services objectives. Working within the framework of the PSC Governance Board subcommittee structure, the Task Force supports the collaboration of state and local professionals to define the required protocols and for their adoption to be organic and without legislative action.

2.2.4 Dispatch Center Planning and Leadership Training

As detailed in *Section 2.3 Training and Staffing*, the Task Force recommends the creation of a comprehensive dispatcher training program to encompass dispatcher center leadership planning and educational content. Recognizing that the definition and successful adoption of common dispatch standards, procedures, and protocols require the support of informed dispatch center leadership, the Task Force recommends that the planning and training program provide opportunities for dispatch center executives to share best practices and their respective experiences. The creation of a forum where

dispatch directors can meet, collaborate, and gain invaluable insights will drive innovation and provide an opportunity to share dispatch center operational ideas, and experiences of mutual interest and benefit.

2.2.5 Proposed Operational Budget

The proposed budget to oversee the development of the dispatcher standards, procedures, protocols, and dispatcher planning and leadership training, and for enabling adoption is included within the PSC Governance Board annual budget detailed in section *2.8.1 Budgetary Recommendations*. The PSC Board would authorize the initiative underlying this objective and administer the subcommittee representatives and their work to advance this effort. PSC Board staff would be engaged to deliver various designated support services and provide subcommittee assistance.

2.3 Training and Staffing

Act 78 Objective

Reliability	Standardized training will ensure that Vermont's dispatch professionals have the tools and knowledge to reliably perform the duties of their job.
Accessibility	The recruitment and sustainment of qualified public safety dispatchers having access to standardized training and a certification program will be strengthened through the proposed recommendations.

2.3.1 Standardized Training

Formal new recruit and experienced dispatcher classroom training is fundamental for educating Vermont's public safety dispatch professionals and for growing and maintaining their expertise. A successful dispatcher training program should be developed by the dispatcher community and supported by the PSC Board. This essential training would be anchored on industry best practices and common standards and procedures, and provide a forum where dispatchers can also share their experiences. Ideally, dispatcher training would be periodically delivered by experienced trainers at a central location such as Vermont's Police or Fire Academies. Today, Vermont's PSAPs and dispatch centers typically rely on experienced internal staff to train new dispatcher staff during normal shift work, which is not an ideal training classroom.

There is currently a dispatcher training program offered by volunteers associated with the new Vermont Emergency Dispatcher Association[4] (VEDA). This volunteer staffed program is offered at no cost to interested dispatch centers with no compensation provided to the trainers. The Task Force recognizes that the VEDA dispatcher training program offers a viable starting point for supporting the objective of creating a list of approved new hires and for professional development training programs that the communications center can select from to deliver professional development training. The Task Force recommends that the VEDA training program and volunteer trainers play an integral role in the development and delivery of the future training curriculum.

2.3.2 Recruiting and Hiring

Vermont's emergency dispatch centers often operate with fewer dispatchers than required when compared to national standards, as was determined during the inventory and assessment process and validated by informed Vermont stakeholders over the course of this program. Dispatch center directors and others expressed their challenges in recruiting and maintaining qualified staff. Dispatcher resource

[4] See https://www.facebook.com/profile.php?id=61574855846271# for additional information on the Association.

shortages are not isolated to Vermont; qualified staffing is a nationwide challenge. Ongoing activities by APCO, the Nationwide Emergency Numbering Association (NENA), and other industry associations, and through efforts of multiple states, are designed to bolster the nationwide dispatcher community. It is recommended that Vermont monitor these efforts and leverage recommended activities that support Vermont's dispatcher staffing retainment goals.

While a limited number of Vermont's dispatch centers successfully staff their dispatch centers, many of Vermont's PSAPs and dispatcher centers regularly encounter challenges in recruiting and maintaining qualified staff. A focused and systematic strategy, championed at the state and local level, is required to recruit and sustain professional dispatchers. This initiative would address current staffing challenges and solidify access to these professionals into the forcible future.

To achieve these essential objectives, the Task Force proposes a multi-faceted approach facilitated within the activities of the PSC Governance Board. The strategy includes the creation of a standardized dispatcher certification program, the development of a common set of job descriptions, along with the creation of a centralized job posting website or portal that all communications centers can access. The Task Force additionally recommends Vermont's 911 call takers and dispatchers, collectively referred to as telecommunicators, be provided access to the benefits of the first responder community and designated as public safety/first responder professionals to provide access to the benefits of the first responder community. To date, nearly 20 states have certified their telecommunicators as public safety/first responder professionals,[5] and the Task Force is confident that legislative action on this recommendation will drive greater respect and appreciation for the dispatcher community and promote the recruitment and continuity of staffing.

2.3.3 Staffing Approaches

The Task Force is confident that, through the adoption of common dispatcher standards, procedures, certification and training, dispatch centers would be best positioned to provide temporary "substitute" dispatching services to fill in for dispatchers who are not available to work due to scheduled training, illness, or other mitigating services. Proxy dispatchers could be available on request from any dispatch centers, and would be available to work onsite, or potentially from their home dispatch center if the center requesting assistance can be reached from their home center. This hybrid staffing strategy will be enabled by common standards, technologies, procedures and dispatch protocols, and would further ensure the continuity of essential public safety dispatching services when centers are confronted with staffing shortages.

2.3.4 Proposed Training and Staffing Budget

The fees associated with the dispatcher training and staffing recommendations would be administered by the PSC Governance Board and are included in the Board's proposed annual budget detailed in section *2.8.1 Budgetary Recommendations*.

[5] See https://www.nena.org/page/reclassification_map.

2.4 Public Safety Technologies

Act 78 Objective

Interoperability	The Public Safety Technologies recommendation addresses interoperability with the implementation of a full-feature, multi-discipline CAD system that includes a CAD-to-CAD interface and is utilized by PSAPs and all dispatch centers.
Security	The Public Safety Technologies recommendation addresses security through a comprehensive state-level approach to cybersecurity Governance, Risk, and Compliance (GRC), which will enable agencies to respond swiftly to emerging threats and to maintain the security and confidentiality of the emergency communications networks.
Accessibility	These recommendations address accessibility and system failover by enabling access to enhanced public safety technologies by all dispatch centers and continuously maintaining them.
Sustainability	Funding for the Public Safety Technologies is covered initially through the current Task Force allocation and further through fees collected as part of the Dispatch Equity approach to ensure sustainability.

2.4.1 Statewide Computer Aided Dispatch (CAD) Recommendation and RFP

A Computer-Aided Dispatch (CAD) system is a critical public safety technology widely used in Public Safety Answering Points (PSAPs)[6] and dispatch centers[7] throughout the country. The CAD system can be used to communicate vital information about the 911 caller and the call for service data from the PSAP to the dispatch center and as a resource for the dispatcher to automate and simplify the dispatch process. This key incident response data can also be delivered directly over a wireless connection to the first responders managing the incident. Importantly, the CAD provides dispatchers with essential incident data for both the 911 caller and for the agency to which the emergency response request will be delivered to expedite the service call, reduce the risk of 911 call data transfer errors, and greatly improves the efficiency and service quality.

A comparable system used in most dispatch centers in Vermont today functions primarily as a law enforcement records management system (RMS) and not as a full-featured multi-discipline CAD system. As a result, most dispatch centers within the State do not benefit from the useful functionality provided by a full-featured CAD. Most dispatch centers do not automatically receive the caller's number or location information when the 911 call is transfer from the PSAP, and dispatchers must use a manual process to enter an incident into the current "RMS" system.

[6] The Public Safety Answering Points (PSAP) is the public safety call center that receives the public's calls for 911 emergency assistance (such as for police, fire department, or emergency medical services/ambulance) based on the geographic location of the caller. In Vermont, the PSAP receives 911 calls and either redirects that call to one of the states 32 emergency dispatch centers or directly dispatches for the communities served by the respective PSAP.

[7] The Dispatch Centers in Vermont are geographically distributed throughout the state and receive 911 calls transferred from one of the state's 6-PSAPs from which local public safety professionals are dispatched from based on the incident type.

Additionally, in most dispatch centers, there is no capability to build fire/EMS response plans so the system can determine and automatically display what responder resources are required for a specific incident based on the caller's location and the incident type (e.g., automated unit recommendations). This is a common feature in any multi-discipline CAD system. This limitation in today's system impact the dispatcher's ability to expeditiously notify agencies and create functional assignments that meet the needs of those agencies.

All Task Force members and most stakeholders in the State believe that upgrading to a common full-featured multi-discipline CAD system available to all PSAPs and dispatch centers would be one of the singular most significant improvements that could be implemented to improve the dispatch process. Therefore, the Task Force recommends immediately beginning a process to define the requirements for a full-featured multi-discipline CAD system and developing an RFP to procure such a system. Additional key requirements of this system would be to interface directly to the 911 call taking system used at the PSAPs, and either interface directly to the current records management system to provide automatic data transfer, or to replace its functionality. Both approaches for records management are available in the industry. Furthermore, even though the Task Force recommends a common CAD system available to all dispatch centers, they recognize that some different systems are currently in use within the State and in neighboring states that also dispatch Vermont first responders, and therefore, requirements for a CAD-to-CAD interface should also be a key requirement of a new system.

Implementation of a common full-featured multi-discipline CAD system throughout the State would have a number of benefits for Vermont dispatch centers, such as:

- Automatic and electronic transfer of the 911 caller's calling and location information from the PSAP to the dispatch center
- Incorporation of specific agency response plans to automate and aid dispatching of first responder resources
- The capability to quickly transfer calls from one dispatch center to another during times of dispatch resource or capacity constraints, and
- The capability to perform remote dispatching if a facility is impacted or cannot be occupied.

2.4.2 GIS and Mapping

The Enhanced 911 Board currently provides Geographical Information System (GIS) data sets for use by all dispatch centers within the State. The Board will also provide integration of specialized regional data sets for individual dispatch centers upon request. By all accounts, this process is working well, and the Task Force recommends that the Board continue to provide this service.

Additionally, the Board has recently transitioned their mapping service to RapidSOS, which is an integrated platform that provides enhanced incident location data and situational awareness to the PSAPs and dispatch centers. One of the functions that RapidSOS can provide is the automated transfer of 911 caller and location information from the call-taker to the dispatcher. While this function can also be done through use of a common CAD system as described above, the RapidSOS extension can be done quickly and help provide this critical dispatch enhancement in the near term, even prior to statewide CAD implementation. The Task Force recommends that this be done by extending the RapidSOS licensing to all dispatch centers throughout the State.

2.4.3 Cybersecurity

The cybersecurity approach to Vermont's public safety networks is a critical factor in maintaining the integrity, availability, and confidentiality of mission critical systems. These networks serve as the foundation for emergency response, law enforcement, and public safety communications, making them

prime targets for cyber threats that could disrupt operations, delay response efforts, or expose sensitive information. While most dispatch centers have made advancements in data privacy and proactive security measures, malicious actors are always searching for new areas to potentially exploit vulnerabilities. Strengthening cybersecurity resilience in all areas is essential to safeguarding public safety infrastructure and ensuring the uninterrupted delivery of emergency services.

The Task Force recommends a comprehensive state-level approach to cybersecurity Governance, Risk, and Compliance (GRC), which will establish a structured framework for the continuous management and enhancement of cybersecurity postures and network operational maturity. A GRC program provides a structured framework to centralize and formalize the management of cybersecurity policies, risk assessments, and compliance requirements.

Governance through a GRC program establishes clear roles, responsibilities, and accountability across agencies and stakeholders managing emergency communications networks. For risk management, a GRC program enables continuous identification, assessment, and prioritization of threats, ensuring resources are allocated effectively to address high-impact vulnerabilities. Finally, the compliance component of a GRC program helps ensure adherence to data privacy regulations and industry standards. Regular compliance assessments, facilitated through a GRC platform, would allow agencies to identify and close gaps in privacy protections, continuous monitoring, and proactive security measures. By implementing a GRC program, along with the adoption of common cybersecurity standards and best practices, the state can shift from a reactive cybersecurity posture to one that is proactive and adaptive.

2.4.4 Logging Recorder Standard

A logging recorder is a voice-band audio recorder typically used in PSAPs and dispatch centers to record phone calls and radio traffic so that it can be recovered for incident analysis and information requests. The Task Force discovered that there are at least six disparate logging recorder systems used by Vermont communications centers and one agency self-reported that it does not have a logging recorder and does not record telephone or radio traffic.

The Task Force recommends that there should be a state standard for recording all radio and telephone traffic. The benefits to the community are responder safety, evidentiary value, QA, and complaint resolution. As a best practice, the public safety communications industry should be conducting QA (Quality Assurance)/QI (Quality Improvement) activities on approximately 2% of all incidents on a monthly basis. To meet the processes outlined in the standard, agencies would need to perform QA on both incoming emergency phone calls and radio traffic of the same incident.

2.4.5 Proposed Budget

The Task Force proposes to fund the recommended key public safety technologies proposed in this section with the funds previously allocated to the Task Force as part of Act 78. The following costs have been estimated based on recent experience and budgetary quotes provided by potential vendors.

- A new multi-discipline CAD system with an RMS interface and CAD-to-CAD capability – upfront five-year investment of $2M based on an upfront cost of $200k to cover hardware, training, and installation, with an annual CAD licensing fee of $360k
- Short-term mapping support of $40k/yr. for the RapidSOS platform, which is continued for two additional years
- Development of a Cybersecurity Governance, Risk, and Compliance framework - $200k for three years, which includes $100k for the first year, followed by $50k per year.

The Task Force has planned for each of these items to be funded for a minimum of three years using the funding already allocated for the Task Force. The funding needed beyond the three-year performance

time frame is recommended to come from the fees collected in conjunction with the proposed Dispatch Equity Funding Strategy, which is described .in section *2.7 Dispatch Equity Funding Strategy*.

2.5 Land Mobile Radio

Act 78 Objective

Reliability	The LMR recommendations address reliability by creating regional simulcast cells with multiple sites for coverage, radio access by multiple dispatch centers, redundant backhaul, and dual simulcast controllers.
Interoperability	The LMR recommendation addresses interoperability by initially using common analog technology while deploying infrastructure that supports the nationwide digital standard P25. The concept also using common radio interfaces for all dispatch centers within a region.
Accessibility	The LMR recommendations address accessibility and failover by providing equivalent levels of coverage in all regions and equal access by all dispatch centers.

2.5.1 LMR Coverage and Performance Gaps

The current Land Mobile Radio (LMR) landscape within Vermont is fragmented across multiple radio frequency bands and radio technologies. The existing LMR networks are primarily operated independently and do not support the fundamental wireless communications interoperability so essential for cross-jurisdiction and cross-agency communications. The existing LMR networks also do not support the communications requirements of Vermont's police, Fire, and emergency medical services (EMS) public safety community. In particular, the Fire and EMS radio networks, serving both volunteer and paid responders, are not interoperable with one another or with the existing police LMR networks, and they do not provide sufficient coverage, capacity, or interference free communications. The existing networks place public safety responders and the communities they serve at great risk, and they are extremely challenging for dispatchers to navigate when dispatching calls for emergency response service.

Wireless communications for public safety across the state contains a mixture of very-high frequency (VHF) and ultra-high frequency (UHF) systems. In general, law enforcement operates in the UHF band, and Fire and EMS services operate in the VHF band. According to the inventory report produced for the Task Force, there are a total of 357 VHF frequencies and 277 UHF frequencies licensed for use by public safety agencies in Vermont. The vast majority of these networks are anchored on outdated legacy technologies that do not support essential location, encryption, data communications and other features and capabilities that enhance performance and reduce operational costs. Furthermore, the ongoing cost to operate and maintain multiple local radio network, many of which are operating well beyond their typical lifecycle and must be upgraded, is significantly higher than a unified regional or statewide LMR network.

The Vermont Department of Public Safety (DPS) Radio Technology Services Unit (RTS) operates and maintains a statewide system that supports the Vermont State Police (VSP), Fish and Wildlife, and the Agency of Transportation. This older generation analog UHF network was designed to provide statewide mobile radio coverage; however, there are numerous gaps in coverage, and it does not support reliable on-street and in-building portable radio coverage. The RTS unit is currently advancing an initiative, funded by a federal Community Oriented Policing Services (COPS) grant, to upgrade the legacy analog network to

digital across ten simulcast zones[8] within each of the 10 VSP barracks areas. This grant funded upgrade will improve coverage and reliability for the UHF system used by VSP and will be deployed using current Project 25 LMR technology.

Despite the planned upgrade for the State's UHF network, many Fire and EMS agencies will still operate LMR networks with coverage gaps, interference concerns, and other performance issues with their VHF channels and systems. The *Vermont Public Safety Communications Inventory and Assessment: Final Report*[9] found that many Fire and EMS systems fall well short of the public safety coverage benchmark of providing a minimum of 95% coverage throughout their required service area. To address these gaps and issues, the Task Force recommends developing statewide VHF network based on regional simulcast zones, similar to the upgrade currently being pursued by DPS-RTS for the VSP system.

2.5.2 LMR Regionalization Concept Overview

The Task Force recommends a regional VHF network of simulcast cells be developed based on current dispatch regions for Fire/EMS agencies. The current dispatch assignments for Fire agencies are fragmented as can be observed in the following maps, where each color represents a different dispatch center assignment. In addition, even in areas that appear to be consistent, such as the northern portion of Addison County, the dispatch process can still be very cumbersome because different tower locations (up to 13 in this case) must be individually selected when dispatching Fire and EMS agencies for many of the towns (see the Addison County map below, where each color here represents a different fire dispatch radio system).

The emergency call dispatch process, including the professional dispatchers and the tools they rely on to successfully dispatch first responders, are highly reliant on the LMR networks they transmit the emergency service calls over. Reliability, automated failover, and ease of use are essential to the emergency dispatch process.

[8] See https://www.npstc.org/download.jsp?tableId=37&column=217&id=2489&file=LMR_101_NPSTC_Presentation_120725.pdf for additional information of the simulcast radio technology.

[9] Vermont Public Safety Communications System Inventory and Assessment: Final Report | Department of Public Safety

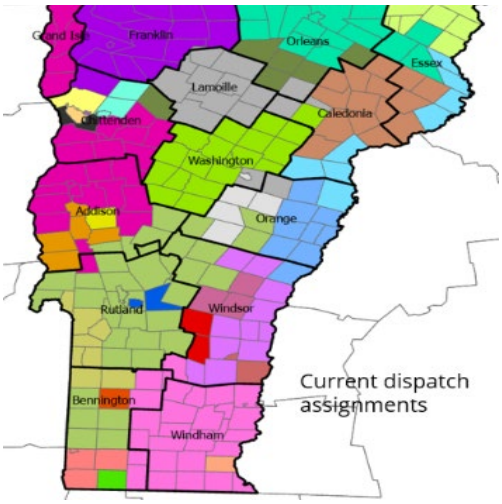

Figure 2: Vermont Town Assignments per Dispatch Center

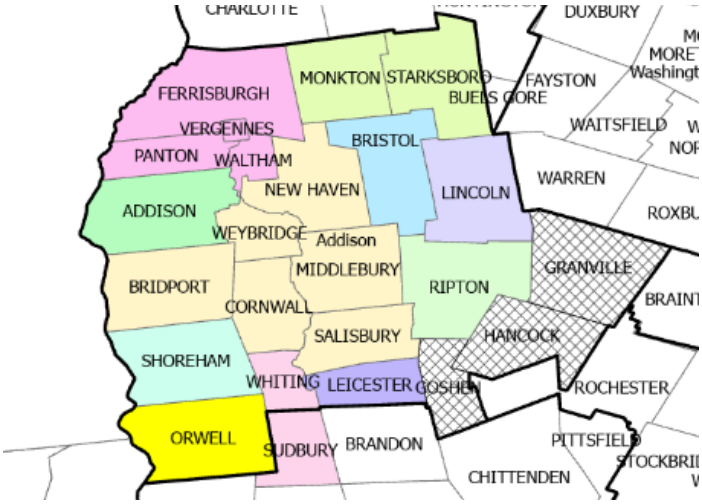

Figure 3: Addison Dispatch Town Assignments

Using the statewide Fire dispatch center assignment map as a guide, the Task Force is recommending a concept for 13 regional simulcast cells, illustrated in Figure 4, where the 13 dispatch center-to-town groupings would all be dispatched and supported by a single simulcast radio system. In this concept, each cell would be designed to provide a minimum of 95% coverage within the designated area and would utilize VHF analog conventional communications initially to be compatible with existing agency user equipment and to be interoperable throughout the State. The infrastructure will also be capable of supporting digital P25 communications for future enhancement and compliance with the nationwide interoperability standard.

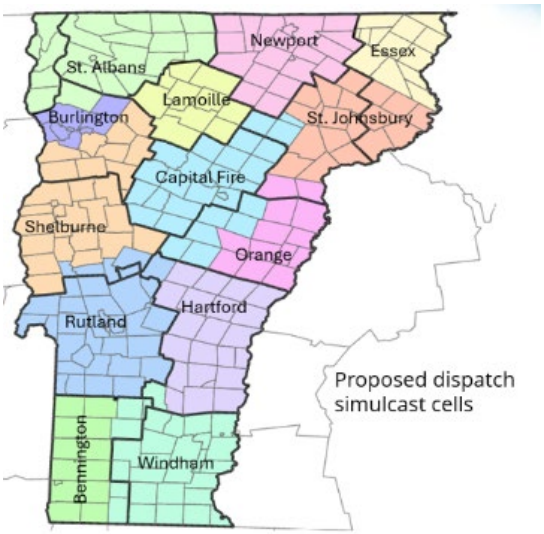

Figure 4: Proposed VHF Simulcast Zone Network

The Task Force has determined that the objectives of this regional system concept can be met by utilizing, almost exclusively, existing state owned or partner tower sites. This approach was used to maximize usage of existing infrastructure and backhaul connectivity and to minimize the need for costly site development and support systems such as shelters and generator power.

The concept design uses a total of 50 (47 state/partner) existing tower sites to provide the regional and coverage performance goals. Additionally, the concept allows additional local sites to be incorporated into this design if a given region or municipality has a preferred site(s) that could support the system and further improve coverage.

2.5.3 Anticipated LMR Budget

The Task Force recognizes that any significant LMR improvement throughout the State will be a costly endeavor and beyond the budget currently allocated to the Task Force. However, the Task Force also realizes the key function a robust LMR plays in the overall dispatch process and that a comprehensive

improvement in the State's dispatch environment, as envisioned by Act 78, will require significant LMR improvements.

In development of this improved LMR design concept, the Task Force made use of as much existing infrastructure as possible. However, new equipment for repeaters, networking, channel combining onto common antennas, simulcast timing and voting (2x for redundancy), and other components are required. Each of the 13 regional simulcast cells will support between 2 and 4 channels to support the required radio channel capacity requirements, based on the anticipated number of agencies in each region. Given these parameters, each simulcast cell is expected to cost between $1M to $3M to implement. Additionally, approximately $5M total is budgeted for system backhaul, although some of this may potentially be saved if sharing with the VSP backhaul network is feasible. Given these assumptions, the total estimated cost for the statewide regional simulcast system is between $32M and $35M. It is important to note that any funding allocated toward LMR out of the current Task Force funds for detailed design or pilot projects, will reduce the amount of total funding needed for the statewide VHF system build out.

2.6 Dispatch Center Facilities

Act 78 Objective

Equity	The Dispatch Center Facilities recommendations support equity by establishing universal levels of performance and metrics for each dispatch center to comply with and maintain. The recommended approach will also provide broad access to state-of-the-art technology that will enhance dispatch operations and performance for all centers.
Reliability	The Dispatch Center Facilities recommendations support reliability by ensuring access to state-of-the-art technology and staffing support to address temporary shortages.

2.6.1 Concept Overview

The inventory work performed by the Task Force determined there are a total of 37 dispatch centers that either receive or accept transferred 911 calls and dispatch Vermont first responder agencies. These 37 centers can be further categorized as:

- Six PSAPs that receive 911 calls and either dispatch first responder agencies directly or transfer the call to the appropriate dispatch center based on the location of the incident
- Twenty-five dispatch only centers within the State of Vermont, and
- Six out-of-state dispatch centers that dispatch Vermont first responder agencies.

The majority of these dispatch centers are considered small, having between two and six dispatch positions. Only three of the centers—VSP Westminster, VSP Williston, and Washington County in New York State—can be classified as medium. According to the consultant's analysis, a significant number of the Vermont dispatch centers met the criteria that would make them candidates for consolidation. However, despite the potential benefits gained from consolidation, there were numerous concerns expressed regarding mandating such consolidation. Those concerns included the opinion that local dispatch centers are best suited to serve the local community, and the fact that dispatch staff provide other key services to their departments as well. Ultimately, the Task Force chose not to mandate any type of consolidation but developed a concept to encourage dispatch service improvement, and the potential for organic consolidation throughout the State, with incentives to meet minimum performance benchmarks or to consolidate in order to meet the established service levels.

The concept for this dispatch center service and performance benchmark program would be based on specific benchmarks to be established by a focused subcommittee established by the Public Safety Communications Governance Board and adopted by the Board. The benchmarks are anticipated to include, but not be limited to:

- Meeting mission Critical Dispatch Key Performance Indicators (KPIs)
- Meeting mission Critical Technical Systems KPIs
- Meeting mission Critical QA/QI KPIs
- Dispatcher training and certification
- Compliance with established dispatch policies, procedures, and protocols
- Use of a compatible CAD system to enhance dispatch operations.

The performance benchmark subcommittee will utilize industry standards[10] and best practices as guidelines to establish benchmarks that are appropriate for dispatch centers within the State of Vermont, and to develop a required implementation timeframe associated with the benchmarks.

Dispatch centers that agree to meet and demonstrate they meet the benchmarks will benefit from access to certain shared technology and other resources made available by the Board. These shared resources are anticipated to include but not limited to the following:

- Statewide CAD access with State-paid annual licensing fees
- RapidSOS mapping access State-paid annual licensing fees
- Shared LMR resources (regional simulcast cells) and maintenance agreements
- Trained temporary staffing resources for shortages and training backfill
- Support for shared common non-dispatch activities (administrative duties, records, warrants, etc.).

The dispatch center facilities concept developed by the Task Force also included these other key elements.

- Independent/Stand-Alone dispatch centers could continue to operate but would not receive State resources unless they agreed to meet the established benchmarks.
- Out-of-state dispatch centers would also be required to meet the established benchmarks in order to continue dispatching Vermont agencies.
- No new dispatch centers are recommended unless some consolidation is achieved.
- Any new centers that are established must present a plan to meet the required benchmarks.

[10] Example reference document: APCO KPI: https://www.apcointl.org/~documents/standard/11171-2019-kpi-comm-center/?layout=file

2.7 Dispatch Equity Funding Strategy

Act 78 Objective

Sustainability	The Dispatch Equity Funding Strategy recommendation supports sustainability by collecting fees for dispatch service from those towns not currently paying for the service. These fees can be used to support ongoing work of the governance board and its operational and technology committees.
Equity	The Dispatch Equity Funding Strategy recommendation supports equity by assessing fees for dispatch service to towns not currently paying for services that are equivalent to those being paid by other towns for equivalent services, based on a standard formula.
Accessibility	The Dispatch Equity Funding Strategy recommendation supports accessibility by allocating a portion of the fees collected to maintain key dispatch technology tools that are made available to all dispatch centers.

2.7.1 Concept Overview

One of the key objectives of Act 78 was for the Task Force to develop a communications system that is "equitably and sustainably financed." Currently, many cities, towns, and first responder agencies pay a dispatch center fee, or fund their own dispatch center, in order to have their first responders dispatched. However, there are many towns and public safety agencies that are dispatched by one of the two VSP dispatch centers who are not currently paying for their respective emergency dispatch services. The Task Force does not feel it is practical to have VSP dispatch all agencies, and many towns and agencies are satisfied with their current dispatch arrangements and associated service fees, so an alternatives approach is required.

The Task Force identified all the towns that are receiving dispatch services from VSP. A total of 218 towns are receiving some form of dispatch services from VSP, according to the following breakdown:

- Number of towns receiving Law Enforcement dispatch services from VSP 218
    - Of these 218 towns, 201 of them receive Law Enforcement services provided by VSP and therefore VSP is dispatching their officers to incidents in these towns. The remaining 17 towns have their own Law Enforcement personnel but utilize VSP to provide dispatch services for their agency.
- Number of towns receiving Fire dispatch services from VSP 42
- Number of towns receiving EMS dispatch services from VSP 42

This Task Force leveraged this data to develop the concept for a dispatch fee that would achieve substantial progress towards cost equity of dispatch services as well as provide a funding stream to support the ongoing operation and efforts of the Public Safety Communications Governance Board. A portion of the fees collected could also be used to offset one of the most significant costs of a comprehensive communications system, the LMR infrastructure upgrade and maintenance.

The fee for each municipality not currently paying for dispatch service would be based on those fees currently being assessed on municipalities receiving dispatch service from one of the existing regional dispatch centers to ensure an equitable distribution. These fees would also be assessed for each first

responder discipline (Law Enforcement, Fire, EMS) receiving dispatch services in order to match the fess to the level of service.

2.7.2 Formula Factors and Example Fees

The Task Force recommends the development of a fair and equitable dispatch services fee model that is sustainable and contributes to the evolution of Vermont's public safety communications systems and operations. Dispatch fee assessments to the communities not currently paying for dispatch services, would be leveraged to fund ongoing enhancements of Vermont's public safety communications systems. In support of this objective, the Task Force evaluated several elements integral to the eventual fee formula to be developed. While the ultimate formula is expected to be developed by a specific subcommittee established by the Public Safety Communications Governance Board, the formula may include the following elements:

- **Base Fee:** A Base Fee may be assessed for every municipality that receives dispatch services from one of the State dispatch centers. This fee would be assessed in recognition of the fact that a dispatch center must be staffed and operational at all times to be ready and able to provide dispatch services. As a result, some level of expenses are incurred independent of the number of calls processed or agencies dispatched.
- **Public Safety Disciplines:** While many municipalities have only their Law Enforcement services dispatched by a State dispatch center, some also have their Fire and EMS services dispatched as well. Therefore, it is reasonable for a given municipality's fees to be based on the number agencies that are dispatched.
- **Call History:** A potential element for determining the dispatch fee is the historical call volume from a given municipality. This element could be used if sufficient data is available and if the calls can be broken down across the various public safety disciplines. Additionally, due to concerns about call volume variation on an annual basis, a rolling multi-year average may be considered.
- **Population:** The population of a municipality is also a potential element to include in the fee formula as public safety activity can be directly related to population.
- **Grand List:** The Grand List is also a potential element to include in the fee formula as this element is currently used by some regional dispatch centers to determine appropriate fees to charge for dispatch services.

The Task Force recognizes that the budgeting of the dispatch fee will be a burden on the municipalities that do not currently fund these services. It was determined that the best approach would be to provide ample time for these municipalities to plan for this additional expense and to phase in the fees over a multi-year period. Therefore, per the proposed implementation timeframe provided below, it is recommended that a fee planning and outreach process be put in place for the first two years, providing a grace period for the municipalities. After this time, the assessment of the fees would begin in year three at 25% of the calculated value, increasing to 50% in year four, 75% in year five, and reaching the full assessed value in year six and beyond.

2.8 Conclusion and Next Steps

2.8.1 Budgetary Recommendations

The proposed Vermont Public Safety communications funding and cost sharing strategy was designed by the Task Force to fully leverage the initial Act 78 allocation of $11,000,000 through the investment in key public safety communications technologies, operational dispatch policies and procedures, and ongoing dispatcher training. The Task Force proposes investing in the Public Safety Communications Governance Board to ensure effective state and regional oversight, management, and continuous improvement of the system. The remaining Act 78 budget will fund key initiatives over the initial three years of

Communications Board oversight of the interoperable public safety communications system operations and technology enhancements. As detailed above, additional post year three funding would be derived from the dispatching fees charged to Vermont towns not currently paying for the dispatching services provided to them by the Vermont Public Safety Answering Points (PSAP) in Westminster and Williston operated by the Vermont State Police (VSP).

The Task Force additionally proposes an initial investment into the improvement of public safety land mobile radio (LMR) systems. Despite recent investment and improvements, LMR systems used by Vermont's first responders are not currently meeting the operational requirements of dispatchers, fire and emergency medical service (EMS) professionals and volunteers, and local police departments. These systems are anchored on aged radio technologies; have numerous coverage, interference, channel capacity gaps, and operational inefficiencies; and experience greater maintenance cost and support due to their siloed architecture. An enhanced LMR network, providing a public safety lifeline communications capability, will greatly improve the quality and reliability of public safety communications and greatly simplify the dispatch process. Furthermore, ongoing system enhancements by the Department of Public Safety (DPS) to the VSP LMR network can be leveraged to provide foundational steps toward an improved statewide LMR network. Although completion of a truly centralized network will require significantly more investment, the proposed initial enhancements will provide some immediate improvements and represent a cost-effective step that cannot be reproduced if not coupled with ongoing DPS-VSP system upgrades.

Recommendation Category	Proposed Funding Allocation
Governance	• Operation of the Governance Board for the first three years - $1.59M ($530k annually to fund staffing and operations) • Funding supports dedicated staffing and funds ongoing committee activity.
Dispatch Operational Standards	• Included in the Governing Board operations plus an initial investment of $30k that is continued for two additional years
Training and Staffing	• An initial investment of $150k that is continued for two additional years
Public Safety Technologies	• A new multi-discipline CAD system – upfront 5-year investment of $2M (upfront cost of $200k to cover hardware, training, and installation, with an annual CAD licensing fee of $360k) • Short-term mapping support of $40k that is continued for two additional years • Development of a Cybersecurity Governance, Risk, and Compliance framework - $200k
Land Mobile Radio (LMR)	• Initial investment to support the development of a reliable interoperable public safety LMR network to address existing coverage and performance quality service gaps - $4.5M to include planning and initial deployment • Much of the initial deployment is to be done in conjunction with VSP's COPS grant work to maximize efficiencies • This initiative will create a strong foundation supporting future improvements
Dispatch Center Facilities	• Development of benchmarks included in the Governing Board operations
Dispatch Equity Funding Strategy	• Dispatch fees post Year 3 based upon a preliminary fee formula that may include elements such as a base fee and separate assessments for services • Consideration of alternative funding options that have been leveraged by other states and municipalities to fund Public Safety communications systems

2.8.2 Potential Funding Sources

The Task Force conducted research on how other states and jurisdictions fund the capital improvements of their public safety communications systems and how they provide sustaining operational funding to ensure the continuity of operations. In recognition of the challenges in securing a viable ongoing source of funding for Vermont's public safety communications systems and operations, the following table summarizes potential funding sources for Vermont's legislative consideration.

Category	Leveraged by Vermont or Other States and Municipalities
State Bonds	• Issue bond for the Public Safety Radio network – many states sell bonds to fund land mobile radio (LMR) network capital funding requirements
State/Local Budget Allocation	• ACT-78 funds, future state funds; assess fees to non-paying dispatch towns
Universal Service Fund (USF)	• Vermont USF ($.72 per line) is low in comparison to many states (e.g., MA fee at $1.65 and funds radio)
Right-of-Way (state highways)	• Opportunities to leverage the Vermont Right-of-Way fee
Public Service Utility Pole Fee	• Assess a state fee for connecting to public service utility poles
State Radio Tower Access Fee	• Enter into agreements with commercial wireless companies to lease access • Multiple states and municipalities leverage site access rental fees
Rental Car Fee (Tourist levy; not on in-state rentals)	• $3-10M on a $2.00 per day fee • $6-15M on a $3.00 per day fee
Airport Fee	• Assess a fixed fee ($1-3) per plane ticket
Cannabis Tax	• 2024 revenue of $19.5M • Allocate a percentage
Motor Vehicle and Other Violation Fees	• Indiana's state legislature redirected a portion of each Bureau of Motor Vehicles transaction ($10.00) to ensure investments in public safety interoperable communications including LMR
Special Taxes (see Funding Mechanisms Guide for Public Safety Communications for additional details on funding options)	• Whitfield County, GA: Voter approved Special Purpose Local Option Sales Tax (SPLOST) in 2016 to pay $12M for a new P25-compliant 700/800 MHz LMR system – collected $63.6M • Yakima County, WA SPLOST: Voter approved 0.25% sales tax in 2024 to raise $40M for a new public safety LMR network

2.8.3 Recommended Timeline

The proposed Task Force recommendations will deliver near and long-term advancements to the critical public safety communications system's infrastructure and for the state's dispatchers, first responders, and to the citizens served by these professionals. Under the guidance of the Task Force and the future Public Safety Communications Board, significant improvement can be implemented during the first year of operations. In subsequent years, the initiatives launched during year one can be expanded and completed. The proposed governance structure, including stakeholder subcommittees focused on dispatch operations, land mobile radio, dispatch fee equity, and others, would be established during year one, and will continue to guide the future of the public safety communications systems and best practices, which continually evolve in response to technological advancements and critical emergency incident response.

As illustrated in the following implementation schedules for year one, the Task Force is positioned to secure a Computed Aided Dispatch (CAD) system that delivers an essential solution to better integrate the existing statewide 911 system with dispatch centers and improve the quality of emergency incident notification and response at all dispatch centers and PSAPs. During year one, the future Public Safety Communications Board and priority stakeholder committees will be created and their respective work in pursuit of a reliable, secure, and interoperable statewide public safety communications system advanced. In subsequent years, the ongoing collaboration of rural and urban, and state and local community stakeholders will ensure the implementation, operations, and future enhancement of the Vermont Public Safety Communications System.

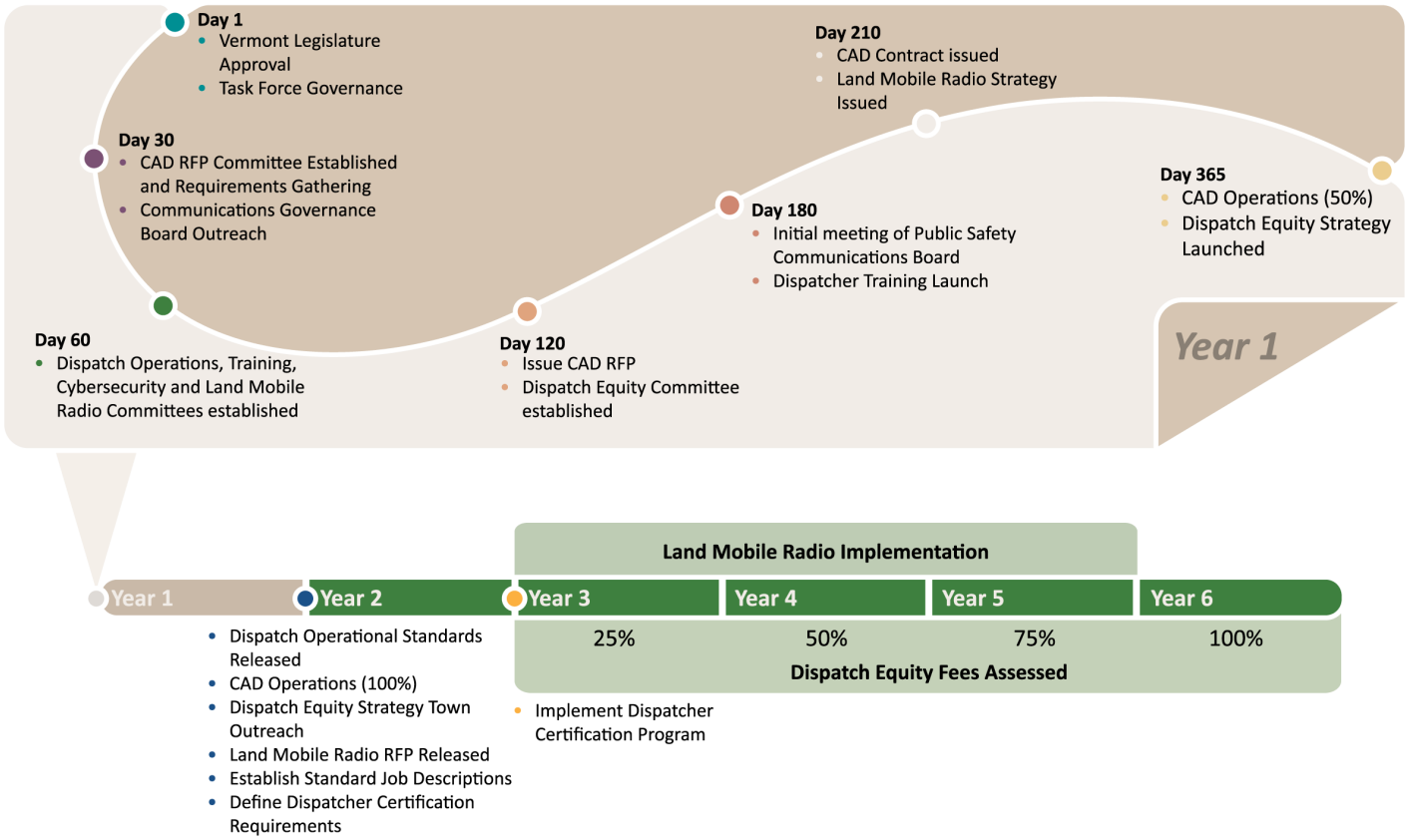

Figure 5: Preliminary Implementation Schedule

3 Appendix 1: The Department of Homeland Security Interoperability Continuum

In the aftermath of the September 11, 2001 terrorist attack on the United States, which fully exposed serious flaws in the performance, reliability, and interoperability of mission critical public safety voice and data communications networks, the Interoperability Continuum was developed to provide a public safety communications framework that local and state governments could adopt and customize. The Interoperability Continuum was designed to support the emergency response community and policy makers guiding the implementation and operations of interoperable public safety communications solutions. The key elements of the Continuum include governance, standard operating procedures, technology, training and exercises, and usage of interoperable communications. The Continuum describes how each of these elements evolve from the most basic of capabilities through the highest order of public safety communications competencies.

Within the Interoperability Continuum framework, Governance establishes the foundation under which the statewide public safety community can successfully collaborate to design, implement, operate, and maintain common communications systems, operational policies, processes, and procedures, and advance interoperable voice and data public safety communications capabilities. Inherent within the Governance element is the creation of the Statewide Interoperable Executive Committee (SIEC) consisting of key state and local police, fire, emergency medical, dispatch, transportation, information technology, and other members representing rural and urban communities.

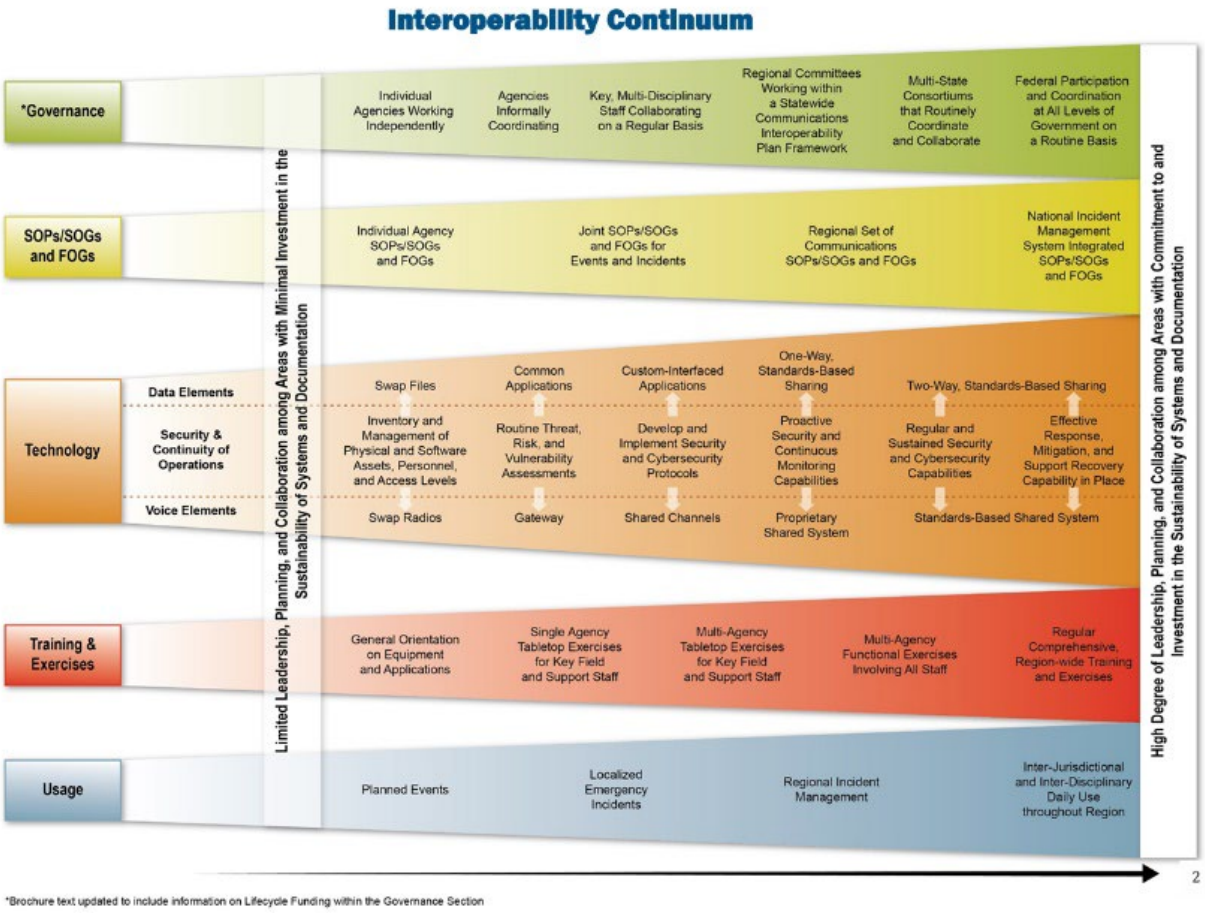

Figure 6: The Interoperability Continuum