

To: Senate Committee on Government Operations
House Committee on Energy and Technology

From: Secretary of Administration Susanne Young 

Date: January 15, 2020

Re: Report relating to the Vermont Enhanced 911 Board required by Section 19 of Act 61 (2019)

Introduction

Section 19 of Act 61 (2019) directed the Secretary of Administration to submit a report to the Senate Committee on Government Operations and the House Committee on Energy and Technology on or before January 15, 2020, “with a recommendation regarding to which agency or department the Vermont Enhanced 911 Board shall report beginning in Fiscal Year 2021.”

Recommendation Summary

The Secretary of Administration recommends that if the Legislature determines a transfer of the Vermont Enhanced 911 Board (hereinafter 911 Board or the Board) into an agency or department of the Executive Branch should be accomplished, the recommendation is that the Board and its staff be transferred to the Department of Public Safety (DPS). The make-up of the current governance Board should remain intact, both in representation and the appointment process, but the Board’s role should be changed to one that is advisory to the Commissioner of Public Safety.

In summary, placing the Board as a Division within the Vermont Department of Public Safety is recommended, because of their shared public safety mission, if the following goals can be achieved:

- the Board director reports directly to the Commissioner of Public Safety and serves to advise the Commissioner of DPS on policy, standards and service-level matters relevant to the enhanced 911 system’s operations;
- during a transition period, the Board staff should continue to report to the Board Director to ensure the Board’s technology functions are neither overlooked nor diminished;
- the integrity of the services provided by the Board are not compromised;
- the Governing Board maintains a clear advisory and consultative role to the Commissioner of the Department of Public Safety; and
- protections currently in law are maintained around the Board’s current funding sources and budget.

Discussion

The Vermont Enhanced 911 Board Governance, Role and Structure

The Vermont Enhanced 911 Board (hereinafter 911 Board or the Board) is a quasi-independent entity established by 30 V.S.A. §7052 to “develop, implement, and supervise the operation of the statewide Enhanced 911 system.” It is responsible for developing policy, system design,

standards and procedures related to the statewide 911 system. Even though it is a Board independent of any Agency or Department of the Executive Branch, the nature of the Board's responsibilities require it to collaborate extensively with multiple state agencies and departments, as well as federal and local government entities, private and non-profit businesses and emergency responders and service providers.

The 911 Board receives no general funds. The enabling statute provides funding for the 911 system through the Vermont Universal Service Fund (VUSF) surcharge on telecommunications bills. This means the system is paid for solely by those who have telecommunications devices. The 911 statute prohibits the use of the VUSF appropriation for non-911 operations. This prohibition of use of the VUSF appropriation for non-911 operations should remain in law.

The question whether the Board should remain independent or be moved to an agency or department in state government is not a new one. Previous examination of the question at the request of a past Legislature provided a recommendation from the prior Administration in 2014 that the 911 Board be transferred to the Department of Public Safety. The report concluded that the transfer would reduce the risk of a systems failure and save up to \$350,000/year in staff reductions of 3-5 positions, while acknowledging that modern technological capabilities and public expectations may have rendered the Board governance model a poor fit. The Legislature did not act to move the 911 Board but instead eliminated one position at the Board and reduced its budget by \$300,000 in the FY15 budget.

In 2015, the 911 Board commissioned an independent review of its organizational effectiveness and potential savings that concluded the 2014 report was overly optimistic in the amount of savings that would result from a merger of 911 operations with the Department of Public Safety. Additionally, it concluded that the staffing levels proposed in the Administration's report would "eliminate a highly effective and functional board that is cohesive in mission and direction." This Administration agrees and does not recommend a staff reduction should a transfer to DPS be determined. The 40% staffing cuts proposed in the 2014 report would make it impossible for the remaining staff to maintain mission critical functions, such as maintenance of critical databases necessary for proper call routing, oversight of the NG911 vendor on its current 24/7 schedule, and delivery of required training and certification programs for Vermont's 911 call-takers.

Whether savings could be achieved through a transfer of reporting responsibility from the current Board governance model to a department or agency within state government is outside the scope of this report as required by Act 61 of 2019. Act 61 does not ask for a recommendation whether the Board should be moved. Instead the language presupposes a move without regard for savings or additional costs, unlike the legislative language directing the 2014 report.

The report requirement in Act 61 of 2019 has its genesis, based on committee discussions, in identifying where the most effective accountability structure would be achieved in light of the increased technological complexities of the 911 system, its many intersections with other organizations (federal, state, local, non-profit and private) in a regulatory framework that spans both federal and state regulators, and the concerns presented by "isolation" incidents. To be clear, the current governance structure is functioning well and transfer to another department or

agency is unlikely to solve the issue of outages in a telephone service provider network absent action by a regulatory body.

The Board consists of nine members appointed by the Governor that includes representatives from various emergency responder communities, including the Sheriff's Association, the Chiefs of Police Association, the Fire Service, Vermont State Police, Emergency Medical responders, a representative from a municipality, and three members of the public. The Board meets quarterly, and more often as necessary, and provides oversight of the operation of the program and staff. The expertise and institutional knowledge acquired by the Board and its members since its creation in 1994 has proved invaluable to the successful design and operation of a state-of-the-art statewide 911 system. The Board has worked to include an array of backgrounds and expertise within its membership, is served by a well-qualified and trained program staff, and, when it identifies a need for additional expertise, contracts with experts as needed.

The statute authorizes the Board to appoint an Executive Director, subject to the approval of the Governor, to execute the Board's mission. The Executive Director is authorized to hire additional staff, subject to the approval of the Board. The Board's staff currently consists of nine full-time employees and one part-time support staff member. The Director is responsible for the day-to-day management of the Board staff and the systems used in the 911 program. The 911 Board, at the Administration's request, provided a current and complete summary of its structure, roles and responsibilities that is included as Appendix A to this recommendation for ease of reference and greater detail about the Board's current operations, staffing and funding.

The Vermont Enhanced 911 Board Regulatory Authority

The Board has no regulatory authority over landline or cellular phone service providers and a transfer to report to an agency or department of state government is not likely to change that fact. "911" calls are placed through both landline and cellular phones. Every wireline (landline) telephone company operating in Vermont is under the supervisory jurisdiction of the Public Utility Commission and is required by law to provide 911 services to its customers. Wireless (cellular) and VoIP telephone service providers are subject to the supervisory jurisdiction of the Federal Communications Commission, the federal regulatory entity that requires that these companies deliver their customers' 911 calls to the State's 911 system.

While the Board has no regulatory authority over landline or cellular providers, it does play a critical role in ensuring the statewide system is functioning properly, specifically when there is an isolation incident. Telephone service providers in Vermont are required by 911 Board rules to report any isolation or other outage in their networks which meet thresholds defined in state or federal rules.¹ Once the providers carry out their legal duty to notify the Board, the Board notifies all Public Safety Answering Points (PSAPs or call centers) that there is an isolation or outage. The PSAP, in turn, will then notify the affected local agency and/or dispatching center

¹ In some areas of Vermont, when there is a temporary failure in a wireline telephone service provider's network, it can result in what is referred to as "isolation" in which a caller has a dial tone, but cannot complete long distance calls or calls to 911. 911 has been notified of four "isolation" events occurring in each of the last two years

for situational awareness. The affected agencies or dispatch centers then take additional steps as appropriate and defined by their locally adopted protocols.

The State has six 911 call-taking centers--the Department of Public Safety operates two, which handle approximately 68% of the 911 call volume. The Department, through the Division of the Vermont State Police, is directly responsible and accountable for their proper functioning. The remaining 32% of calls are answered in four regional PSAPs operated by the municipal police in Hartford, Shelburne, St. Albans, and by the county Sheriff Department in Lamoille County. These four PSAPs are accountable to the municipality or elected sheriff, respectively. The 911 Board does not oversee how dispatch agencies respond to calls once received nor does it have authority over state and local emergency response agencies.

The 911 Board plays a critical role, however, in addition to funding and assigning call-taking areas, to ensure the PSAP's are successful. The Board develops call-taking standards, through rulemaking, and provides and oversees training that meets those standards. The Board routinely interacts, consults, or collaborates with the six PSAPs through its development, management, oversight, and implementation of all training and continuing education for Vermont's 911 call-takers. The responsibilities of both the Board and PSAPs are outlined in a formal memorandum of understanding which includes performance measures that must be met to ensure no loss of funding from the 911 Board to the PSAP for call-taking services.

The Vermont Enhanced 911 Board Standards

As noted, the Board is tasked by statute with the responsibility to develop standards and procedures, and the design of the statewide 911 system. The Request for Proposals for the Board's latest contract for the Next Generation 911 system was carefully drafted to include more than 200 technical requirements, service level agreements that comport with best practices and represents an agreement with an experienced and proven system provider focused solely on Next Generation 911 solutions operating in 34 states. Through the standards established in this contract, currently in implementation, and strong vendor management provided by the Board and staff, Vermont will stay at the forefront of NG911 technology – critical as NG911 deployments continue nationwide.

The Vermont Enhanced 911 Board Relationship to Other Government and Non-government Entities

In addition to the PSAPs, the Board's scope and breadth of responsibility requires it to interact routinely with several state agencies and departments, making it difficult to pigeonhole neatly into one department or agency. For example, the Board works with: the Agency of Digital Services (ADS) with respect to technology contracts following the Administration's Bulletin 3.5 process and the ADS independent review process; the Public Service Department (PSD) with respect to matters within the jurisdiction of the Department and the Public Utility Commission (PUC); the Department of Health (VDH) with respect to protocols for medical emergencies; the Federal Communications Commission (FCC) with respect to regulatory matters within its jurisdiction.

Additionally, the Board routinely interacts externally with service providers, including telecommunications and voice service providers, enterprise communications systems (ECS),

emergency response agencies, that include state and local police, firefighters, and emergency service providers, municipal 911 Coordinators, CARE program partners, and the National 911 program and related national associations.

Because of these strong and continuing relationships, the Board is actively involved in assessing breakdowns that occur at any point in this “system of systems.” The Board has deemed it critical to understand every reported outage to determine what happened, why it happened, and what steps are needed to prevent a recurrence.

Additionally, when the Board is made aware of a complaint or concern about any aspect of a 911 call, the Board conducts a thorough investigation that reviews all aspects of the 911 call, including when and how the call was delivered to 911, and the actions of the 911 call-taker. Additionally, the Board engages with the contracted system provider, any involved telephone service providers, dispatch agencies and/or the emergency responder organizations as needed. The 911 Board facilitates any needed discussions with these organizations to ensure the concern has been addressed.

For large-scale events, including certain telephone service provider outages, additional partners such as the Public Service Department, Public Utility Commission and/or the Federal Communications Commissions may be contacted in order to ensure the event is properly investigated and resolved.

Recommendation

The Secretary of Administration appreciates the input of those potentially impacted by moving the 911 Board into a State government reporting structure. Many stakeholders indicated that, were the Board to be moved, the Department of Public Safety would be its natural and logical home because of the Department’s established day-to-day familiarity with, and structure for, providing citizens with first-responder services as well as the shared mission of supporting the safety and well-being of Vermonters.

It was observed by one stakeholder that the law enforcement community works hard to speak with one voice without losing local input. The Department of Public Safety and the Board share important relationships that are critical to ongoing communications and an understanding of the importance of 911 to their shared public safety function. Likewise, the Department recognizes that it will benefit from the Board given its relations outside of the law enforcement/emergency responder community and its high standards, history, and technological expertise with the 911 system.

Nevertheless, stakeholders emphasized the importance of maintaining efficiency of boots-on-the-ground services as well as retaining the Board’s current staffing and funding structures. In other words, there should be no interference with the line of service linking a caller/texter to emergency help, the Executive Director should retain oversight of the Board’s operations, report directly to the DPS Commissioner, and continue to consult quarterly, or as frequently as necessary with an advisory 911 Board.

Nearly all stakeholders expressed that any transition must be structured to ensure that none of the VUSF would be diverted from the Board’s mission. Moving the Board to DPS should not rest merely on the recognition that “they already do dispatch and answer phones.” Such a move

should also take into account the immense role of technology in the Board's responsibilities and the vulnerability of the funding structure.

This is especially true of those who voiced concerns about the impact such a move could have on their organizations and Vermonters most-in-need of emergency services. Provided that certain safeguards are put into place to make the most of the Board's growth as an effective and efficient "system of systems" and to capitalize on what it has accomplished since its inception, it is recommended that statutory language be implemented to direct the 911 Board Executive Director to report to the Department of Public Safety Commissioner in order that she or he continue responsibility over the Board's functions and staff as a distinct division within the Department of Public Safety, not to be embedded or integrated into another.

In summary, the Administration recommends that the 911 Board, if moved, report to the Commissioner of the Department of Public Safety (DPS) if the Board director reports directly to the Commissioner and serves to advise the Commissioner on policy, standards and service-level matters relevant to the system's operations; during a transition period, the Board staff continues to report to the Board Director to ensure the Board's technology functions are neither overlooked nor diminished; the integrity of the services provided by the Board are not compromised; the Board maintains a clear advisory and consultative role to the Commissioner; and protections currently in law are maintained around the Board's current funding sources and budget.

Maintaining the institutional history, relationships, authority and standards will be critical to continued success of E911, especially as the Next Generation 911 system is stood up and implemented. Most important, a successful transfer will be one that goes unnoticed by 911 callers and emergency responders.

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Appendix A

Vermont Enhanced 911 Board

OPERATIONAL OVERVIEW JANUARY 2020

Barbara Neal, Executive Director

Operational Overview January 2020

Introduction - History and Background

On November 18, 1998, after several years of planning and preparation, Vermont's statewide 911 system became operational when a 911 call requesting medical assistance in southern Vermont was answered and processed by a fully trained and certified 911 call-taker at the Williston Public Safety Answering Point (PSAP). Since that first call, the Vermont 911 system has processed nearly four million calls for emergency assistance.

The Enhanced 911 Board ("Board" or "911 Board") was created by the legislature in 1994 as the single governmental agency responsible for statewide enhanced 911¹. Prior to this time, most Vermonters did not have access to any level of 911 service. The intent of the legislation was to create a statewide 911 system that would serve all Vermonters and allow emergency responders to locate callers more quickly and efficiently. The 911 Board was made responsible for the design, implementation and operational oversight of the statewide 911 system. To that end, the 911 Board developed and implemented policy, system design, standards and procedures related to the statewide 911 system – and continues to do so today. As required by statute, the 911 Board consults with various state agencies and local community service providers to meet these responsibilities.

The 911 Board itself is defined in statute as consisting of nine members, appointed by the Governor, representing all user constituents in the state. This includes representation from the emergency medical, fire and law enforcement communities, municipalities and the public at large. The diversity of the Board helps ensure the many users of the statewide system – including callers and responders – are equally represented and served by the system. The 911 Board is required to meet at least four times a year and holds special and/or emergency meetings as necessary.

911 is a critical service which is dependent upon multiple stakeholders at all levels of government and beyond. A representative Board ensures the appropriate parties have a seat at the table and a voice in the discussion on matters relevant to a system that serves everyone in the state.

Funding

The enabling statute provided funding for the 911 system through the Vermont Universal Service Fund (VUSF) surcharge on telecommunications bills. This means the system is paid for solely by those who have telecommunications devices. The statute prohibits the use of the VUSF appropriation for non-911 operations. The 911 program receives no general funds.

¹ 30 V.S.A §7051-7061, (1993 Adj. Sess.), <https://legislature.vermont.gov/statutes/chapter/30/087>

VERMONT ENHANCED 911 BOARD

Operational Overview January 2020

The Fiscal Year 2020 budget appropriation is approximately \$4.9 million dollars². The Board anticipates a slight decrease in the budget request for FY21 due primarily to savings in ongoing system operation costs as we move to a new system provider in July 2020. A high-level breakdown of the FY20 budget:

- Salaries/Wages/Benefits: \$1.13 million or 23%
- Contracts/3rd Party Services: \$2.67 million or 54%
(primarily contracted system provider costs)
- PSAP Reimbursement \$1.08 million or 22%

The Enhanced 911 Board and Board Staff

The Enhanced 911 Board establishes policy, adopts standards and rules, enters into contracts and takes all actions necessary to ensure effective oversight and management of the statewide 911 system. The policies and directives established by the Board are implemented by staff members hired by the 911 Board.

Statute authorizes the Board to appoint an Executive Director³, subject to the approval of the Governor, to execute the Board's mission, policies and directives. The Executive Director's duties and responsibilities are assigned by the Board and include:

- Providing leadership and direction for all activities associated with the operation of the statewide 911 system and program.
- Day to day direction of Board operations and supervision of a nine member staff, consultants and contractors.
- Establishment of system performance benchmarks, measurements, and compliance.
- Development and management of the annual budget.
- Serving as the Board's primary spokesperson to constituent groups, telecommunications providers, local/state/federal governmental and legislative officials, the media and the public.

The Executive Director is authorized to hire additional staff, subject to the approval of the Board. The Board's staff currently consists of nine full-time employees and one part-time support staff member.

The staff at the Board office do not take 911 calls. Rather they provide critical support functions for the program, including information technology management, training, development of geographic information services and ensuring the accuracy of addresses throughout Vermont.

² Vermont Enhanced 911 Board Budget Request Fiscal Year 2020 Budget Request: https://e911.vermont.gov/sites/nineoneone/files/documents/E911-FY20_Budget_Request.pdf

³ 30 V.S.A §7051-7061, (1993 Adj. Sess.), <https://legislature.vermont.gov/statutes/chapter/30/087>

VERMONT ENHANCED 911 BOARD

Operational Overview

January 2020

Staff member responsibilities fall into four categories as outlined below:

- 1. IT Management** (2 staff members): Close supervision and management of the 911 system and system provider is critical to ensuring the 24 x 7 x 365 availability of the statewide 911 system. The Board's IT staff have the technical expertise to understand and evaluate the work and actions taken by the contracted system provider to ensure the State's citizens and visitors have access to emergency services. The consequence of mismanagement of the system provider is potential system downtime which could result in 911 callers being unable to reach help in an emergency.

The Next Generation 911 (NG911) industry is rapidly evolving. Vermont's 911 system must be able to accommodate new technologies. An important part of the Board's IT Management responsibilities is to keep a keen eye on a quickly changing industry to ensure Vermont's 911 system remains relevant and meets the ever-changing needs of 911 callers and call-takers.

The Board's IT responsibilities are met by the following personnel:

- **IT Manager** – Responsibilities include management and oversight of the contracted 911 system and system provider; strategic planning and oversight of 911 Board programs and projects; development of all technical reports and requests for proposals; coordination with system provider during upgrades and implementations of new systems. Shares 24 x 7 responsibility (with the IT Specialist) for carrying pager during off hours, so incidents occurring in the PSAPs or impacting the system are monitored and immediately addressed. Oversees work of IT Specialist.
 - **IT Specialist** – manages and coordinates office technology. Troubleshoots system problems and works with service providers to resolve system issues. Shares 24 x 7 responsibility (with the IT Manager) for carrying pager during off hours, so incidents occurring in the PSAPs or impacting the system are monitored and immediately addressed.
- 2. GIS /Database Administration** (4 staff members): The GIS/Database staff members are responsible for development and maintenance of multiple databases critical to the operation of the NG911 system. GIS/Database staff work closely, and on a daily basis, with town officials and telecommunications entities in Vermont to ensure the validity of the databases and the accuracy of the mapping system. The GIS/database department maintains the following key databases: Geographic Information Systems (GIS), Telephone or Automatic Location Database (ALI), ALI Discrepancy Database, Master Street Address

Operational Overview January 2020

Guide (MSAG), Emergency Service Zone Boundaries (ESZ), Emergency Service Agencies (ESA), and Citizen Assistance Registry for Emergencies (CARE) data.

Having accurate GIS data enables responders to more quickly reach someone in an emergency. Vermont is nationally recognized for the extent and quality of its GIS data. Over four dozen entities in Vermont utilize the data collected and managed by the 911 Board including towns, regional planning commissions, and other public entities. Having quality data has enabled the Board to develop and launch the “Responder” map system now in use by multiple emergency responders around the state.

The four GIS/Database staff members are:

- **GIS/Database Administrator** – Oversees the GIS program and works with vendors to develop new GIS tools used by the program. Coordinates work on the Automatic Location Information (ALI) database (landline telephones with fixed addresses). Works with wireless carriers to ensure that new installations of cell towers are configured to properly route 911 calls to the appropriate PSAP. Oversees work of two GIS Technicians and one Data Integrity Analyst.
- **GIS Technicians (2)** – One GIS technician works in the field using a specially-equipped vehicle to map coordinates for new roads, developments and structures. Responsibilities also include ensuring GIS data remains accurate and current. He also developed the responder map system now in use by emergency responders around the state. The second GIS technician works with the Town Coordinators in every Vermont community to resolve location discrepancies reported by 911 call-takers and to ensure mapping data is accurate and up-to-date; completes approximately 2900 edits per month in the statewide GIS data; completes the annual audit of GIS data, and helps resolve questions from the Town Coordinators, members of the public and others.
- **Data Integrity Analyst** – The Data Integrity Analyst administers the Enterprise Communications System (ECS) Compliance Program and coordinates with all telephone service providers to obtain updates to the ALI database and resolve discrepancies reported by call-takers. Works with towns to ensure that accurate information about police, fire and EMS services (as contracted by each town) are reflected in the 911 system, coordinates changes in Emergency Service Zones, and conducts audits of ALI database.

3. Training and Communications (2 staff members): The Board’s training and communications team is responsible for the certification, recertification, and continuing education of approximately 100 911 call-takers employed by six PSAPs. This team is also responsible for the Board’s quality control program, public education and outreach initiatives, initial training of 911 town coordinators, administration of the CARE program, and development of a new call-taker wellness program.

Operational Overview

January 2020

The Training and Communications staff includes:

- **Emergency Communications Training Coordinators (2)** – These two staff members share responsibility for development, management, oversight and implementation of all training and continuing education for Vermont’s 911 call-takers. Additionally, they develop training related to the implementation of new systems and for the implementation and maintenance of standardized emergency protocols (police, fire and EMS) in coordination with medical control and other experts. This team is responsible for the quality assurance program that regularly reviews call-taker performance on 911 calls to help ensure consistent service delivery regardless of location. The team also serves as initial point of contact with the PSAPs.

- 4. Administration (2 staff members -1 full-time, 1 part-time):** Provides office administrative functions and support for all other departments and the Executive Director. Administers the 911 Compliance Grant Program, coordinates and provides general office functions, including invoice processing, payroll, and procuring supplies. Receives, researches and responds to legal subpoenas for 911 call recordings (average 18 requests a week). Serves as Clerk to the E911 Board.

The 911 Board staff is a small and effective team. The Board IT, GIS and executive staff are frequently asked to provide guidance and information to other jurisdictions in various stages of NG911 implementation. The commitment of the 911 Board, and its staff, to a standards-based approach to the statewide 911 program helps ensure a reliable, resilient system capable of serving Vermonters and our visitors in times of crisis.

Statewide 911 System Operations

System Statistics: The statewide 911 system processes approximately 200,000 calls and text messages each year - or about 550 calls every day⁴. Complaints regarding the manner in which a 911 call was handled are rare; typically fewer than five per year.

Vermont’s Next Generation 911 System: Next Generation 911, or NG911, is the term used to describe the initiative to update 911 systems around the nation. Vermont was an early adopter of NG911 technology; implementing its first Emergency Services IP network (ESInet) in 2007.

The 911 Board currently contracts with Consolidated Communications for a fully-hosted NG911 system that facilitates the delivery of 911 calls and text messages, and associated location data,

⁴ Enhanced 911 Board, *2018 System Statistics*, January 2019, <https://e911.vermont.gov/forms-and-publications/2018-system-statistics>

VERMONT ENHANCED 911 BOARD

Operational Overview January 2020

to certified call-takers at the six PSAPs. In March 2019, the Board executed a contract with a new NG911 system provider, INdigital. The INdigital system build-out is underway and implementation is scheduled for July 2020. The INdigital contract is good for Vermont as it:

- Meets all of the more than 200 technical requirements outlined in the 911 Board's Request for Proposal (RFP);
- Meets all the Board's requirements for robust service level agreements which align with industry best practice and will better serve Vermont than the existing agreements;
- Results in a partnership with a proven system provider focused solely on NG911 solutions, including statewide deployments in Indiana, Alabama and New Hampshire;
- Keeps Vermont at the forefront of NG911 technology – critical as NG911 deployments continue nationwide;
- Is expected to save Vermont \$1.6 million in operating costs over the life of the contract (through 2025).

Improved Call Flow: With the implementation of NG911 technology came opportunities for more efficient call distribution which allows calls to flow seamlessly from one PSAP to another if the primary PSAP is unable to answer a call for any reason. This design minimizes the possibility of calls waiting in “queue” to be answered during times of high call volume.

Weathering the Storms: This call distribution design served the state well during Tropical Storm Irene when the Rutland PSAP, then the second busiest PSAP in terms of call volume, had to be evacuated due to flooding. All calls destined for Rutland were immediately delivered to available call-takers in the remaining PSAPs with no human intervention required. Had this call routing not been in place, the Rutland calls would have been delivered to just two back-up positions located in one PSAP which would have resulted in call answering delays.

The call flow design was also significant during the recent “Halloween Storm” of October 31 – November 1, 2019. Though the call volume on November 1 was nearly three times higher than average, emergency calls were distributed seamlessly to available call-takers all around the state with no delays for the 911 callers.

Improving Accessibility: The State of Vermont was the first to implement statewide “text to 911” service in 2012. Text to 911 provides life-saving access to 911 when callers are unable to make a voice call – including access for the deaf/hard of hearing community, domestic violence victims and others who may find themselves in situations where a voice call to 911 is not possible or would cause them to be in more danger.

VERMONT ENHANCED 911 BOARD

Operational Overview January 2020

As we look to the future, and as standards continue to be developed, the 911 Board's commitment to standards-based NG911 system positions the State well to adapt to changes in the way people communicate (for example, by sending video and/or images). Other potential benefits include the possibility for improved connections with responders and other partners.

Current PSAP Configuration: As noted earlier, the staff at the Board office do not take 911 calls, but rather perform critical support functions for the 911 program. The 911 Board partners with five law enforcement agencies in Vermont for 911 call handling services. These five agencies operate a total of six PSAPs.

Each PSAP is responsible for answering calls from a primary catchment area⁵ and is also responsible for handling overflow calls from all other PSAPs. The call handling services agreement, and associated reimbursement terms, are detailed in a formal Memorandum of Understanding with each agency.

The Department of Public Safety operates two PSAPs in Williston and Westminster. These PSAPs answer approximately 68% of the total 911 call volume and, between the two facilities, house sixteen of the state's twenty-four 911 workstations.

Four regional PSAPs are operated by the Hartford, Shelburne, and St Albans Police Departments and the Lamoille County Sheriff's Department. These PSAPs answer about 32% of total 911 call volume and each house two funded 911 workstations. In addition, two unfunded workstations are currently housed at two of the regional PSAPs.

Risk Reduction: The geographic diversity of multiple PSAPs operated by distinct agencies is wise. Not only does it lessen the impact of human or natural caused events that could significantly impair call-taking capability within the state, it also aligns with the intent of the enabling legislation that the 911 system be a state and local partnership.

Technology allows 911 calls to be answered at any of the six PSAPs regardless of where the call originated and allows all call-takers access to the same technical resources and equipment. Because the Board has developed standards-based training requirements and call handling protocols, 911 callers receive the same level of service regardless of where their 911 call is answered.

⁵ Enhanced 911 Board, *PSAP Configuration Map*, updated May 1, 2019, <https://e911.vermont.gov/sites/nineoneone/files/graphics/PSAPconfiguration%209.16.19.1.jpg>

Operational Overview January 2020

A System of Systems

Multiple Networks, Agencies and Organizations: The 911 Board is an independent board, but that does not mean it operates in isolation. The reality is, a call to 911, and the ensuing emergency response, involves multiple networks, agencies and organizations– both public and private.

It is important to understand that when an individual picks up a phone and dials (or texts) the digits “911”, a “system of systems” is required to connect the caller with the emergency help they need:

- First, the call traverses the telephone service provider network – whether that is landline, wireless or VoIP. The telephone service provider network, in accordance with federal and state laws and regulations, delivers their customer’s 911 call to the appropriate 911 system. In Vermont, that 911 system is managed and overseen by the 911 Board.
- Once in the 911 system, the call is routed to a certified Vermont 911 call-taker employed at one of the six Vermont PSAPs.
- Depending on the location of the emergency, the call may be dispatched by the same PSAP that answered it or it may be transferred to one of more than fifty other dispatch centers serving Vermont. Each dispatch center has its own governance, equipment, and training requirements. In Vermont, dispatch operations are not under the purview of the 911 Board.
- The dispatch agency, in turn, notifies the emergency response agency. Emergency responders also have varying governance structures and may be public or private organizations. Emergency response agencies and their operations are also not governed by the 911 Board.
- And finally, the emergency response agency responds to the location of the emergency and determines the needed next steps which may involve a trip to the emergency room, the suppression of a fire, or the investigation of a crime.

Accountability: If a breakdown occurs at any point in this “system of systems”, it is critical to understand what happened, why it happened, what steps are needed to prevent a recurrence, and what entity is responsible for ensuring those steps are taken. The 911 Board takes all appropriate actions whenever it becomes aware of any failure within the “system of systems”.

Singular Events/Complaints or Concerns: When the 911 Board becomes aware of a complaint or concern related to a 911 call, it initiates an investigation into the circumstances of the event, identifies and engages with all responsible parties, and works to ensure answers are found regardless of where – in the “system of systems” - the failure occurred. The 911 Board’s investigation into an individual complaint or concern includes:

VERMONT ENHANCED 911 BOARD

Operational Overview

January 2020

- a thorough review of the 911 call, including a determination of when and how the call was delivered to 911 and the actions of the 911 call-taker.
- appropriate follow-up with involved parties may include discussion with:
 - the call-taker and/or PSAP that processed the call
 - the contracted 911 system provider
 - Any and all involved telephone service providers, dispatch agencies and/or the emergency responder organizations.

Telephone service providers, dispatch agencies and emergency response organizations are not under the operational control or purview of the 911 Board. However, the Board routinely interacts with these organizations and ensures any complaint or concern that is outside the Board's authority is directed to the appropriate personnel at these organizations. The Board will facilitate any communications between the responsible organization and an individual complainant to ensure concerns are addressed.

Large Scale Events/Outages: For large scale events, such as telephone service provider outages, the 911 Board will identify and engage with additional partners as needed to understand the event and/or determine any required additional steps. These partners may include the Vermont Public Service Department, Vermont Public Utility Commission and/or the Federal Communications Commissions (FCC).

Current Public Utility Commission Proceedings: The 911 Board is currently an active participant in two proceedings at the Vermont Public Utility Commission:

Docket 19-0869-PET - Host Remote Isolation: In the spring of 2019, at the request of the 911 Board and the Public Service Department, the Public Utility Commission (PUC) opened a workshop related to host-remote isolation vulnerabilities in Vermont. Information received from the wireline telephone service providers as a result of this proceeding indicates the number of communities potentially impacted by host-remote isolation has decreased by over 50% since 2009. The 911 Board is continuing its review and assessment of this information and will respond to the information within the framework of the PUC proceeding.

Docket 19-0705_PET - Battery Back Up for Non-Line Powered Telephone Service: The 911 Board participated in a series of PUC workshops related to battery back up requirements for non-line powered telephone service providers. The PUC issued a report to the legislature regarding this issue in December 2019. The 911 Board is currently reviewing the report and may respond with comments within the framework of the PUC proceeding.

Operational Overview January 2020

Key Partnerships

In addition to the partnerships with the six PSAPs in Vermont, the 911 Board routinely interacts, consults, or collaborates with:

- **Agency of Digital Services (ADS)** – the 911 system itself, and the procurement process for same, aligns with all technical, cybersecurity, and project management requirements established by the Agency of Digital Services. The 911 Board IT staff may request assistance from ADS subject matter experts as needed.
- **Public Service Department (PSD)** – the 911 Board and its staff routinely interact with Public Service Department staff to ensure the interests of Vermonters and the 911 Board are met in interactions with regulated telephone service providers in Vermont.
- **Public Utility Commission (PUC)** – the 911 Board stays informed about Public Utility Commission dockets that impact 911 and participates in various proceedings as necessary. Ongoing PUC proceedings include workshops related to host-remote isolation and battery back up requirements for non-line powered telephone service providers.
- **Department of Health (VDH)** – the 911 Board partners with the Vermont Department of Health for medical oversight of the 911 call handling protocols for medical emergencies.
- **Federal Communications Commission (FCC)** – the 911 Board stays current with FCC orders and regulatory activities that impact 911 and intervenes in FCC dockets to ensure that 911 issues are addressed.
- **Telecommunications and Voice Service Providers** – the 911 Board has established formal relationships with each telecommunications carrier to ensure accountability, manage network interconnections and ensure database development and maintenance.
- **Enterprise Communications Systems (ECS)** – the 911 Board works closely with privately owned telephone system providers to ensure they are compliant with all 911 statutes, rules, policies and procedures related to these systems.
- **Emergency Response Agencies** – the 911 Board works with Vermont’s emergency response community to maintain critical databases related to geographic jurisdictions, telephone numbers, and dispatching arrangements.
- **Municipal 911 Coordinators** – statute requires that every municipality appoint a 911 coordinator to ensure each town meets the 911 Board -established addressing standards. Board staff train the 911 coordinators on their responsibilities and interact with them daily to resolve addressing questions or discrepancies.
- **CARE Program Partners** – 911 Board staff work collaboratively with Vermont Emergency Management, Vermont 211, the United Ways of Vermont and other relevant organizations to manage the Citizens Assistance Registry for Emergencies – a program designed to connect local emergency responders with citizens in their communities who may need specialized assistance during a wide-scale emergency.
- **National Partners** – since the 1990s, 911 Board staff have been engaged at the national level on NG911 and GIS standards development, training initiatives, and information

VERMONT ENHANCED 911 BOARD

Operational Overview

January 2020

sharing. The 911 Board executive director and senior staff routinely work with the National 911 program and other 911 authorities around the country, are active members of the National Association of State 911 Administrators and industry groups such as NENA and APCO.

In addition to these examples of effective partnerships, the 911 Board is actively participating on the Vermont Public Safety Broadband Commission and the Governor's Emergency Preparedness Advisory Council.

Reliable Service for Over 20 Years

The 911 Board has provided Vermonters and our visitors with a reliable, efficient, and effective statewide 911 system for over 20 years. The 911 Board, represented by primary stakeholders in Vermont's emergency communications and responder communities, municipalities and the public, correctly established its commitment to a standards-based program built on industry best practice at all levels. This commitment from the Board, executed by an experienced, highly qualified staff, in cooperation and collaboration with partners across multiple agencies and organizations, is the reason Vermont has a nationally recognized, state of the art, NG911 system in place serving our communities.

Moving Forward

The continued success of Vermont's statewide 911 system is reliant upon several factors. Maintaining program integrity, authority and stable funding is critical moving forward. The fact that an independent Board oversees the state's 911 program means the focus can remain solely on its crucial mission without the risk of other agency/departmental needs competing for limited funding and resources. Potential changes to the program's governance and/or mission must be carefully considered, must take into account the success the program has achieved with its long-standing, representative governance structure, and must include a commitment and adequate plan to prevent the introduction of risks and problems that do not currently exist in the management of this mission-critical program.

END