

Department of Public Safety
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Vermont Public Safety Broadband Network Commission

VT First Responder Application Survey

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Advances in technology and the introduction of new applications (apps) for a range of devices are enabling first responders to have access to new tools that save time, enhance response, and improve safety. As Vermont anticipates the buildout of the Nationwide Public Safety Broadband Network (NPSBN), the Department of Public Safety and the Public Safety Broadband Network Commission (PSBC) would like to better understand how Vermont’s first responders are currently using broadband.

A 15-question online survey was created to (1) determine responders’ rating of current broadband coverage and their use of it; (2) examine current and projected uses of applications and determine those areas responders would like more information and education; and (3) identify factors that are limiting responders’ use of wireless technology.

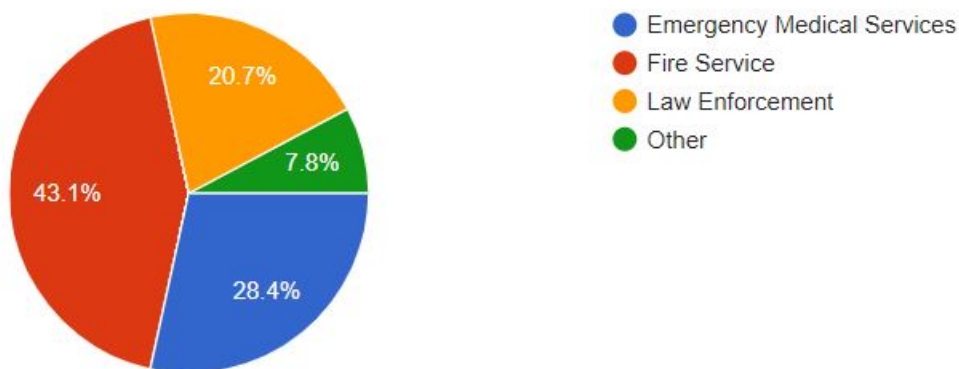
An email invitation to participate in the survey was sent to 404 public safety organizations and individual first responders who had previously indicated they would like to be contacted regarding developments within the FirstNet project in Vermont. The survey opened on November 5, 2018 and was closed on December 10, 2018. **There were 115 responses received to the survey—a response rate of 28 percent.** That response rate is consistent with national response rates for online surveys.

The Department of Public Safety appreciates the effort made by Vermont’s first responder community to respond to this survey.

Who Responded to the Survey?

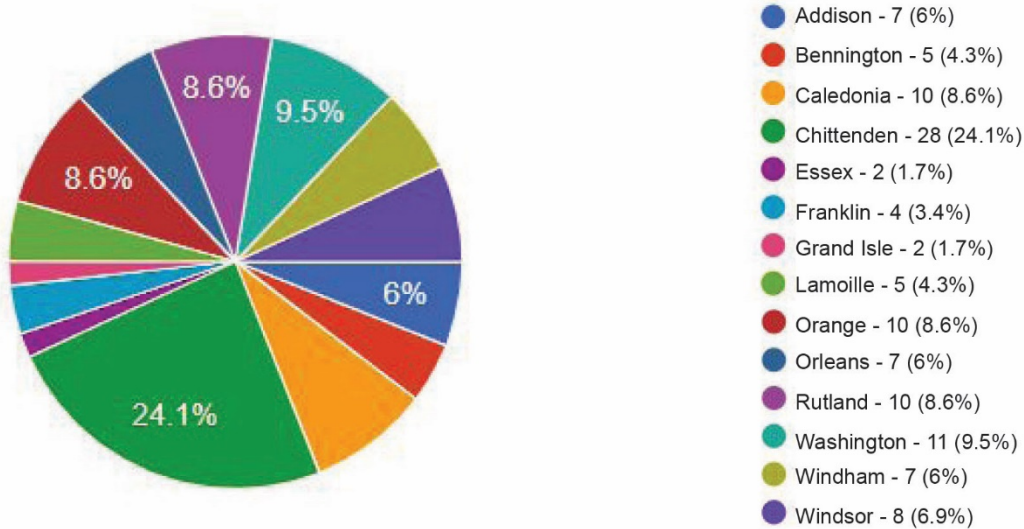
Survey respondents were not asked for their individual names or contact information, to ensure confidentiality for the reporting of what could be determined as sensitive operational processes. Responders were asked to identify the first responder group they were affiliated with and the Vermont county in which they primarily perform their public safety service.

Responders identified themselves with the following public safety groups:



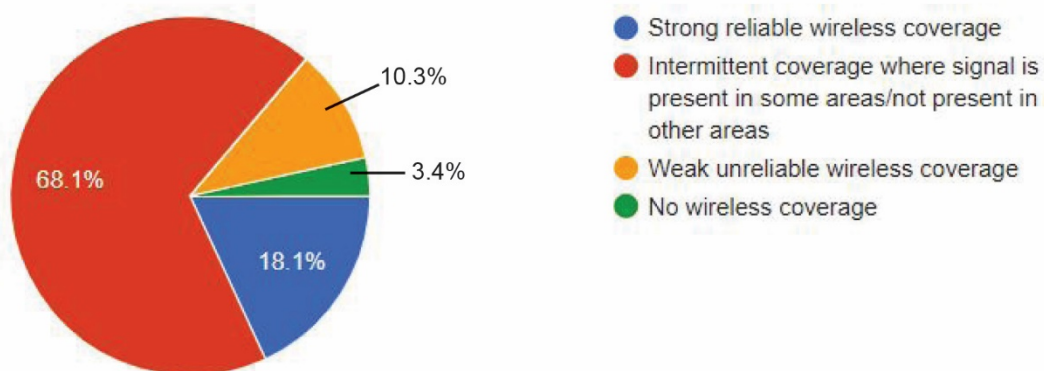
There were 11 “other” responses to this question. Responses included: public safety, emergency management, fire warden, and a combination of roles that blended EMS, police and fire responsibilities.

Responses were received from every county in Vermont. The five counties with the largest number of responses were: Chittenden – 28; Washington – 11; Rutland, Orange & Caledonia – 10 each.



Current Broadband Use

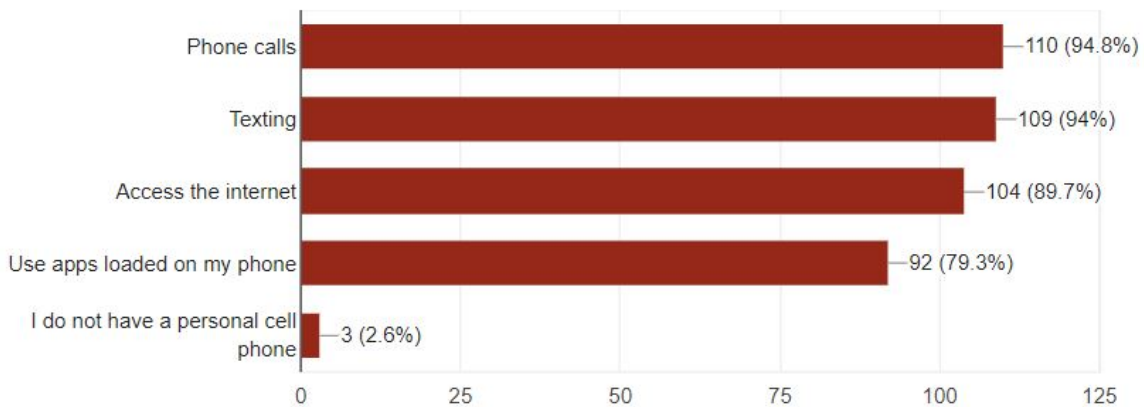
Survey respondents were asked to describe their current broadband (wireless-cellular) coverage and how they use broadband for both personal and work-related tasks. The majority of responders described their current broadband coverage as “intermittent, where a signal is present in some areas/not present in others.”



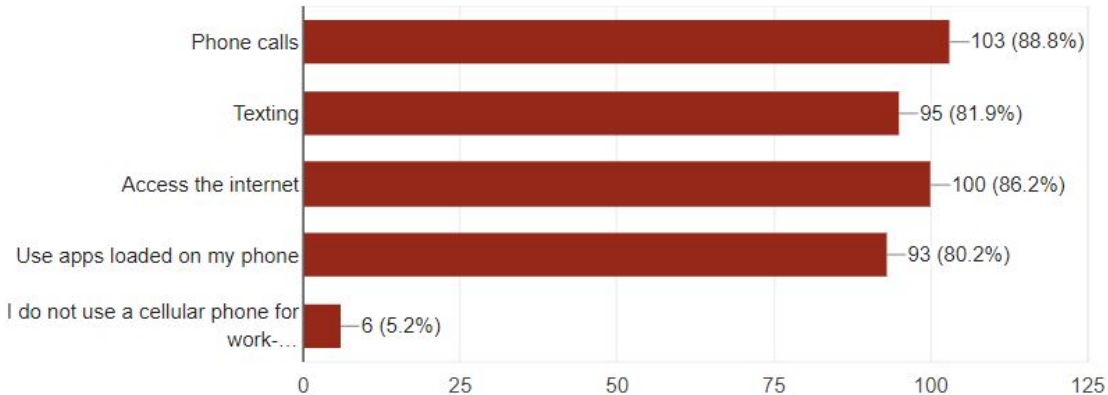
Responders were presented with five potential options for their use of broadband. The intent of the question was to ascertain the most important uses for broadband and detect whether there were any notable contrasts between how first responders used broadband at work versus for personal use. No striking differences were noted—underscoring how pervasive the use of broadband has become in the responders’ daily work and personal lives. While the majority of responders described their current broadband coverage as intermittent or weak, it is not deterring them from having a cell phone. The majority of responders reported having a personal cell phone and using a cell phone for work-related tasks.

Below is the response to the personal and work-related uses of broadband. Responders were asked to check all that applied. The percentages below reflect that portion of responders who selected that function.

Personal Use of Broadband



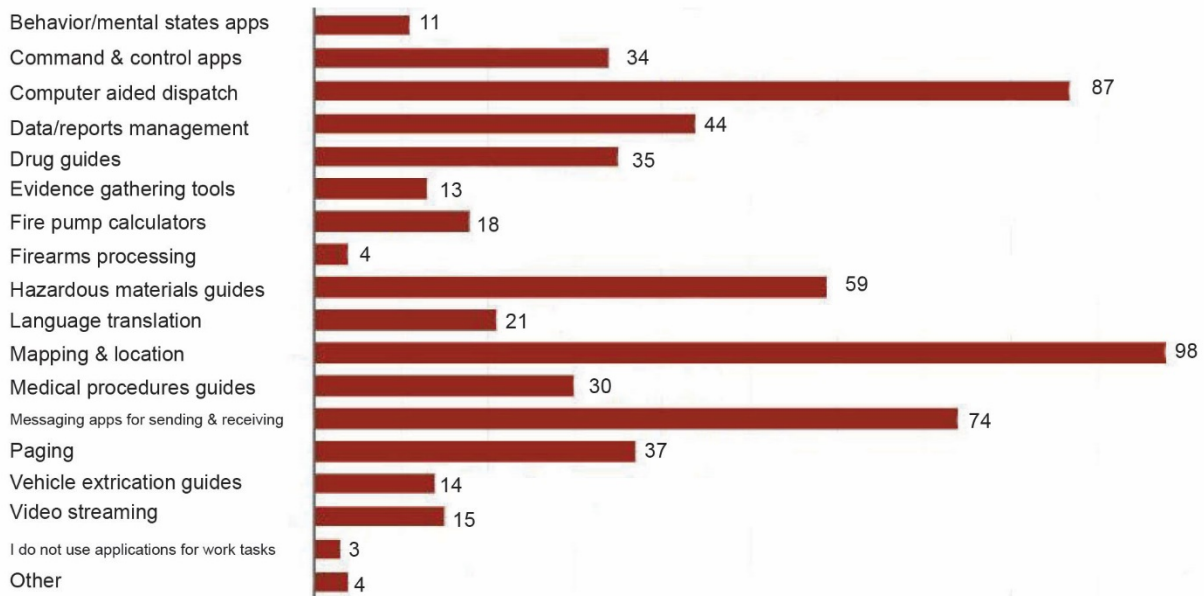
Work Use of Broadband



Future Broadband Use

The NPSBN for first responders must support the secure mission critical transmission of data and text, ensuring reliability and connectivity. The Department of Public Safety anticipates that having such a network available will open the door for Vermont first responders to use more applications. Responders were asked to identify how they were currently using applications, to identify applications they would likely use if they had reliable secure broadband, and to identify applications they would like more information. The application categories were taken from the application community web site for the Association of Public Safety Communications Officials (APCO). The site lists mobile applications that serve a public safety or emergency response purpose. (www.AppComm.org)

Applications Currently Used by First Responders for Work-Related Tasks



Other Responses

The four other responses were: grant applications such as AFG; VT EMS Protocol Book; VT Alert; and Vermont EMS Protocols Guidebook.

Application Details

APCO has organized a broad range of applications into general categories. The following is a description of the top four application areas Vermont first responders reported to be currently using.

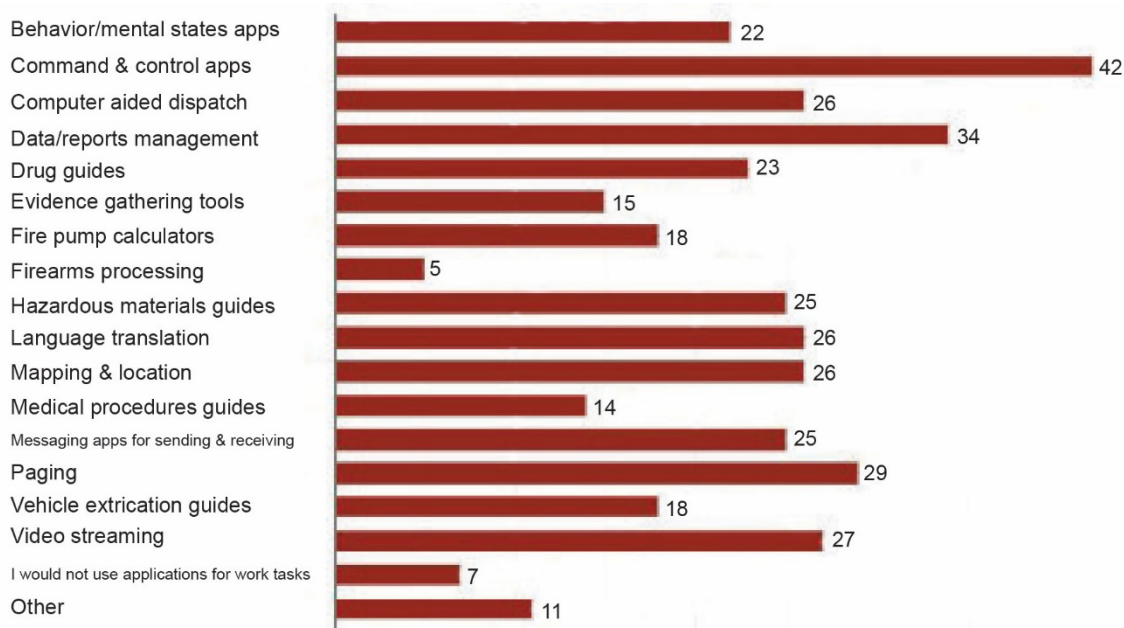
Mapping & Location: This category includes applications that show the location of an emergency call to help responders reduce the time from the point of call to being on-scene. Applications in this area also show the location of personnel in an emergency. Application examples include Google Maps, CrewForce, and Active911.

Computer Aided Dispatch: Applications in this area can enable field personnel access to critical applications and information. Organizations can deploy mobile dispatch capabilities on laptops, smartphones and tablets. Field personnel can update event details, access databases, and send and receive messages. The functionality of applications in this area can vary considerably and integrate with an organization’s dispatching software. Vendors creating mobile apps for their systems include Spillman Technologies (Spillman Touch), Hitech Systems (SafetyNet), and Samsung (Samsung DeX connection).

Messaging Applications: Texting functions are an integral part of many applications and are a basic function of cellular operations, along with voice calls. In addition to the texting function that is a feature of cellular phone plans, messaging application examples include Facebook Messenger, Pulse SMS, and Evolve SMS (short message service).

Hazardous Materials Guides: These applications provide first responders with a convenient resource to receive help with hazmat incidents. Mobile application examples include a free mobile web app from the Pipeline and Hazardous Materials Safety Administration called ERG App. WISER, the Wireless Information System for Emergency Responders, has a standalone application for the iPhone and Android devices that provides a wide range of information on hazardous substances.

Applications Likely Use if Reliable Secure Broadband Services Available
(currently do not use these applications)



Other Comments

In the comments section, one responder had an interest in an application for the transmission of patient medical data and another responder was interested in an application for data transmission from their equipment to the hospitals. One responder wrote, "I checked 'other' because of the poor service in our area. All uses are very limited to IF we have service. Frustrating, but I know you're working on it."

Application Details

The following is a description of the top four application areas Vermont first responders reported they would be interested in using if they had access to reliable and secure broadband coverage.

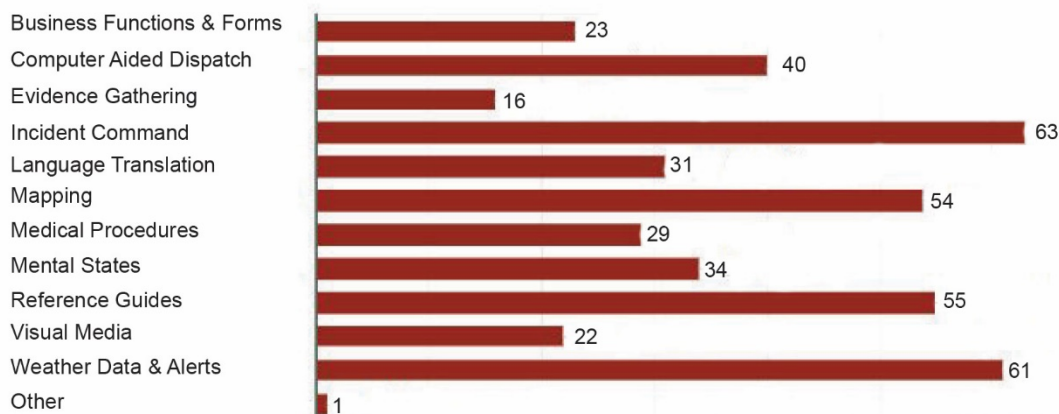
Command & Control: These applications allow agencies to enable command and dispatch functions in a wide range of tasks. Applications may offer broad functions or focus on a single emphasis such as event security. Other command and control functions include tracking and displaying elements of an emergency incident, alarm call taking and handling, and the integration of data to allow the monitoring of critical systems.

Data/Reports Management: Mobile applications in this category enable public safety personnel to create and access reports from the field, provide connections to important informational links, provide mapping capabilities to visually present crime data, and act as a repository for content needed in an emergency. Application examples in this area include Public Eye, RAIDS Online, Droid Law and U.S. Cop.

Paging: These applications provide secure mobile communication solutions for critical messages and notifications. Applications can provide access to staff directories and send messages to smartphones, pagers and other devices. Application examples in this area include Spok Mobile, HipLink and AppArmor Alert.

Video Streaming: Applications in this area utilize the camera functions on a smartphone or other device to record video. Application examples in this area include Video Armor, 10-21 Video and Axon View.

Application Categories Interested in Learning More About

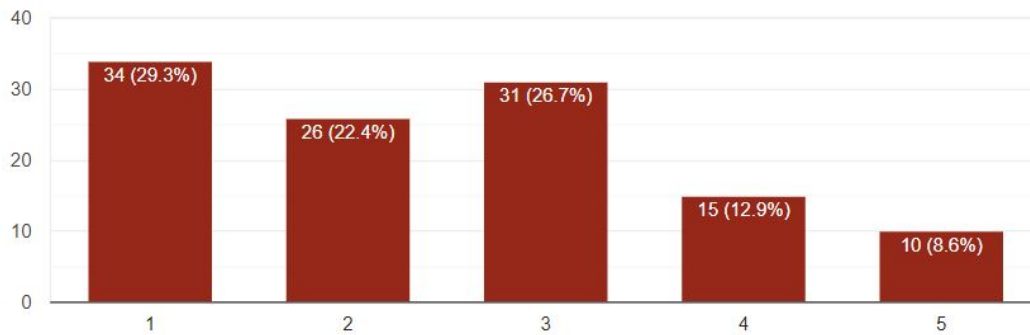


Limits to Use of Wireless Technology

In 2015, the Department of Public Safety administered a national survey of Vermont first responders upon request from the First Responder Network Authority (FirstNet, the government office). For this 2018 survey, we wanted to see if the challenges to adopting wireless technologies had changed since 2015. To do this, the 2018 survey used questions similar to the ones administered in 2015. In 2015, responders ranked coverage as the largest hurdle in adopting wireless technologies, followed by reliability of service, cost of service, and personal expertise with the technology. The results of this 2018 survey mirror the 2015 findings. In the survey questions responders were asked to assign a number from 1 to 5 to a statement. **FIVE meant it was the biggest barrier to usage and ONE meant it was the least barrier.**

STATEMENT: Cost of Service Limits My Use of Wireless Technology

The majority of responders indicated that cost for service was not a significant limiting factor in their use of wireless technology. Approximately 21 percent of responders described this as a barrier to use. (combined ranking of 4 and 5)

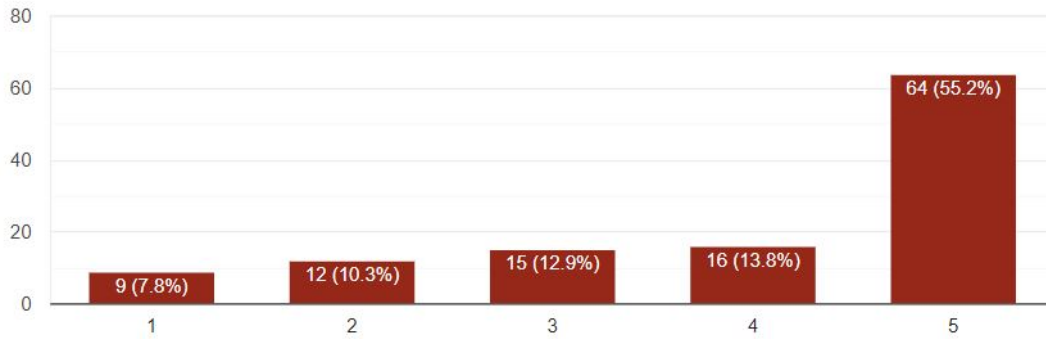


LEAST BARRIER

BIGGEST BARRIER

STATEMENT: Coverage in My Service Area Limits My Use of Wireless Technology

The majority of responders indicated that coverage is a significant factor in limiting their use of wireless technology. This was cited as the number one limiting factor, with 69 percent of responders describing this as a barrier to use. (combined ranking of 4 and 5)

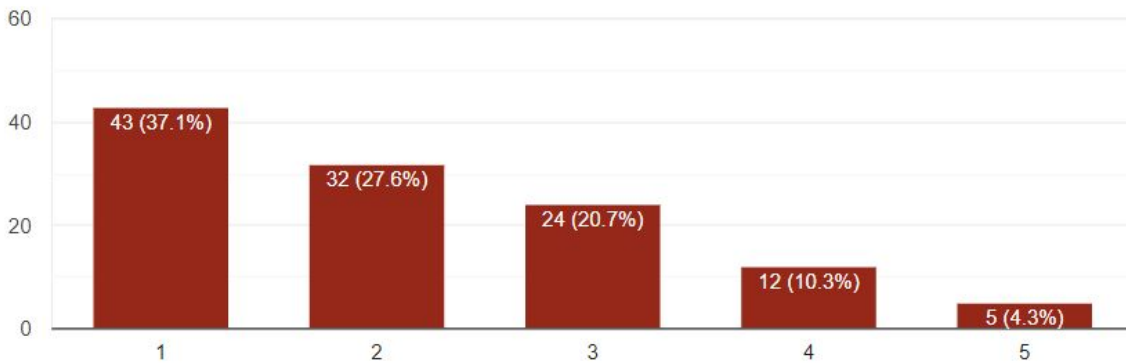


LEAST BARRIER

BIGGEST BARRIER

STATEMENT: Lack of Personal Expertise in Using Wireless Technology Limits My Use

The majority of responders indicated that their lack of personal expertise with the technology was not a significant limiting factor in their use of wireless technology. Approximately 14 percent of responders described this as a barrier to use. (combined ranking of 4 and 5)

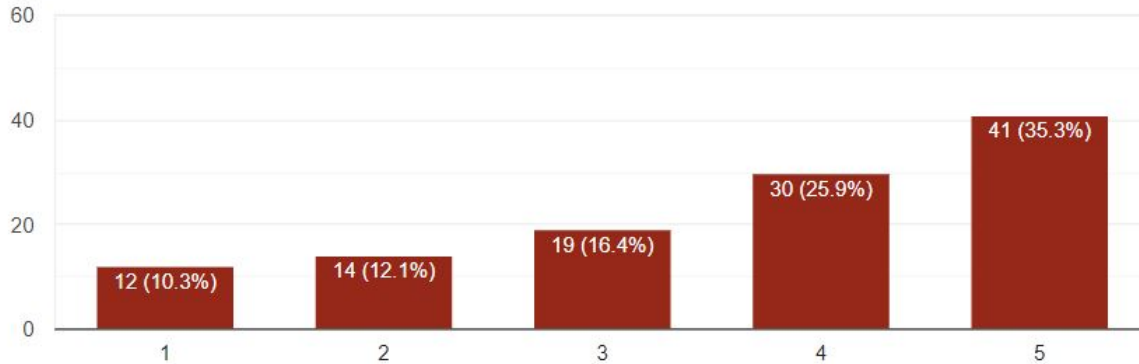


LEAST BARRIER

BIGGEST BARRIER

STATEMENT: Reliability of Service Limits My Use of Wireless Technology

The majority of responders indicated that the reliability of service is a significant limiting factor in their use of wireless technology. This was cited as the number two limiting factor, with approximately 61 percent of responders describing this as a barrier to use. (combined ranking of 4 and 5)



LEAST BARRIER

BIGGEST BARRIER

Closing General Comments

Responders added the following comments at the end of the survey.

- “Coverage is really the only issue that limits usefulness of mobile devices.”
- “FirstNet is very expensive for member paid subscriptions, which is most of the volunteers in our state. The \$10 Vermont rebate helps towards this, but I still have members of my department that can’t afford to upgrade their phone to be FirstNet compatible.”
- “Lots of dead spots in Pomfret, especially the valleys.”
- “Get more cell towers up. In a rural area, this FirstNet will never work!”
- “Recently, the Arlington Fire Department responded to a fully involved home fire in our fire district – Sandgate! The home was destroyed by the time we arrived! The homeowner had only a land-line telephone – cell phone, with no service. He drove five miles to make the 911 call for help in SW VT! Thanks!”
- “We currently have a FirstNet mobile hotspot. However, most of the area we cover does not have sufficient cell coverage for most of our requirements. We use the device mostly for mutual aid calls. It would be nice to expand our FirstNet services to our local primary coverage area.”
- “When my company switched to AT&T earlier this year, I was shocked at how bad their coverage is, especially in the most populated county in Vermont. Verizon’s coverage is far better and its unfortunate that they don’t have the FirstNet contract. Hopefully, things improve.”
- “Extender at home, poor coverage throughout many areas of the county.”

Conclusion

Vermont's first responders are keenly interested in using broadband technology, but many feel limited by the availability and quality of the coverage in their service area. As the Department of Public Safety and the PSBC considers follow-up steps in response to this survey, the following are some guiding recommendations.

- Foster first responder interest in the use of applications and broadband technology. Applications can be used by first responders irrespective of the wireless network an agency and its members subscribe to. As such, encouraging adoption of applications that would particularly aid in promoting interoperable communications would benefit the greater public safety community and capitalize on the interest in this technology shown by survey responders.
- Conduct application demonstration sessions for first responders to enable them to see and learn firsthand how these programs can enhance their operations.
- Share public safety application success stories and facilitate ongoing discussions.
- Announce coverage improvements in the FirstNet/AT&T network, or any particular updates in the cellular coverage within the state, to keep interest up in utilizing broadband technology.

Appendix

Below are the questions used in the 2018 mobile application survey.

- I am a part of the following first responder group.
Emergency Medical Services Fire Service Law Enforcement Other
- If you answered other, please describe or your response will not be counted.
- I serve as a first responder primarily in this Vermont county.
Addison, Bennington, Caledonia, Chittenden, Essex, Franklin, Grand Isle, Lamoille, Orange, Orleans, Rutland, Washington, Windham, Windsor
- I would describe my current broadband (wireless-cellular) coverage as:
Strong reliable wireless coverage
Intermittent coverage where signal is present in some areas/not present in other areas
Weak unreliable wireless coverage
No wireless coverage
- Personal Use: I use broadband (wireless-cellular) for: (check all that apply)
Phone Calls Texting Access the Internet Use Apps Loaded on My Phone
I do not have a personal cell phone
- Work-related Use: I use broadband (wireless-cellular) for: (check all that apply)
Phone Calls Texting Access the Internet Use Apps Loaded on My Phone
I do not use a cellular phone for work-related tasks

Future Use

The NPSBN for first responders must support the secure mission critical transmission of data and text, ensuring reliability and connectivity. DPS anticipates that having such a network available will open the door for Vermont first responders to begin using more applications.

- Please check those application you are CURRENTLY using as a first responder for work-related tasks.
Behavioral/mental states apps (i.e. lost person behavior)
Command and control apps
Computer aided dispatch (i.e. Active911, I Am Responding, eDispatches)
Data/reports management
Drug guides
Evidence gathering tools
Fire pump calculators
Firearms processing
Hazardous materials guides
Language translation
Mapping and location (i.e. Google maps)

Medical procedures guides (i.e. CPR Tempo)
 Messaging apps for sending and receiving (i.e. texting, email)
 Paging (i.e. FirstAlert, TwoToneDetect, CVC Paging)
 Vehicle extrication guides
 Video streaming (i.e. viewing closed circuit camera transmissions, body camera video)
 I do not use applications for work-related tasks
 Other

- If you answered “Other” to the above question, please list the application(s) you are referring to.

- Which applications are you currently NOT USING but WOULD LIKELY USE if you had reliable secure broadband service?

Behavioral/mental states apps (i.e. lost person behavior)
 Command and control apps
 Computer aided dispatch (i.e. Active911, I Am Responding, eDispatches)
 Data/reports management
 Drug guides
 Evidence gathering tools
 Fire pump calculators
 Firearms processing
 Hazardous materials guides
 Language translation
 Mapping and location (i.e. Google maps)
 Medical procedures guides (i.e. CPR Tempo)
 Messaging apps for sending and receiving (i.e. texting, email)
 Paging (i.e. FirstAlert, TwoToneDetect, CVC Paging)
 Vehicle extrication guides
 Video streaming (i.e. viewing closed circuit camera transmissions, body camera video)
 I do not use applications for work-related tasks
 Other

- If you answered “Other” to the above question, please list the application(s) you are referring to.

- DPS and the PSBC would like to assist first responders with information and education on applications that may aid in the performance of work-related duties. Please check next to the categories of applications you would be interested in learning more about.

Business Functions and Forms (i.e. billing, reporting forms)
 Computer Aided Dispatch (i.e. call alerts)
 Evidence Gathering (i.e. license plate readers, note recording)
 Incident Command (i.e. info to improve situational awareness)
 Language Translation
 Mapping (i.e. directions, locator maps)
 Medical Procedures (i.e. CPR, symptom identifiers)

Mental States (i.e. behavior references)
 Reference Guides (i.e. drugs, hazardous materials)
 Visual Media (i.e. streaming video, picture transmission)
 Weather Data and Alerts
 Other

- If you answered “Other” to the above question, please describe what you are looking for.

What is limiting your use of wireless technology?

In 2015, DPS surveyed first responders to determine what was limiting their ability to use wireless (cellular) technologies. The next few questions ask you to assign a number from 1 to 5 to a factor previously identified as limiting wireless technology use. FIVE means it is the biggest barrier to usage and ONE means it is the least barrier.

- Cost of service limits my use of wireless technology.
 (Least barrier) 1 2 3 4 5 (Biggest barrier)
- Coverage in my service area limits my use of wireless technology.
 (Least barrier) 1 2 3 4 5 (Biggest barrier)
- Lack of personal expertise in using wireless technology limits my use.
 (Least barrier) 1 2 3 4 5 (Biggest barrier)
- Reliability of service limits my use of wireless technology.
 (Least barrier) 1 2 3 4 5 (Biggest barrier)
- Any comments or requests? If you want us to contact you, please give us your name and contact information.

Thank you for responding to this survey!

If you have questions, please contact Lisa Helme, FirstNet Program Lead, Department of Public Safety at lisa.helme@vermont.gov or by phone at (802) 241-5535.