STATE OF VERMONT
PUBLIC SAFETY COMMUNICATIONS TASK FORCE

Regular Meeting No. 24 – Meeting Minutes
April 24, 2024
Via Microsoft Teams

11:15 AM - Call to Order and Roll Call

Co-Chair Neal brought the meeting to order and conducted roll call for Task Force members. She reminded the attendees that the meeting was being recorded.

The following were in attendance:

Task Force Members Present

Barbara Neal, E911 Director, Co-Chair
Jennifer Morrison, Public Safety Commissioner, Co-Chair
Paul White, Regional Dispatch Working Group, Vice-Chair (arrived after roll call)
James 'Jim' Mack, Shelburne Dispatch
Ron Kumetz, VSFA

Others Present

Soni Johnson, E911 Board Clerk (subbing for Task Force Clerk Cally Audet)
Senator Irene Wrenner (Joint Information Technology Oversight Committee)
Dominick Arcuri
Rance Duffy
Rick Burke
Phillip Sisk
Stephen Whitaker
Kim Cheney

Approval of Agenda – no changes were made to the agenda

Approval of Minutes

Motion: Ron Kumetz moved to accept the minutes of the 4/10/24 meeting (Regular Meeting No. 23) as written; 2nd by Jim Mack. There was no discussion and the motion passed unanimously. Note: Paul White was not in attendance for this vote.

Public Comment

Stephen Whitaker asked Task Force members to confirm if a two-year extension was asked for (with a one-year extension granted). Co-Chair Morrison confirmed that a one-year extension was asked for and granted. Mr. Whitaker also commented on:

- Governance continues to be an issue. You get what you pay for. No plan is in place and what is being worked on does not meet statutory requirements.
- Dead zones – finding them is important – the current pace of this work is too slow.

- An architecture is lacking – what will the State's radio system and the State's microwave system be used for in the long run in support of the transition to regional dispatch?
- Local and regional people don't trust this effort or the department.
- The 10-year telecommunications plan refers to a consolidation of dispatch but doesn't articulate what that means.
- The Task Force should use the one-year extension for Mission Critical to get a planning framework and architecture in place.

Project Updates

Dominick Arcuri provided project updates:

- They are focusing on the plans for the data collection activities.
- A draft data collection form has been created and is under review.
- Televate is working with Mission Critical Partners on coordinating wireless data collection.
- Televate met with Corey Chase (Department of Public Service) concerning the wireless situation and facilities throughout the state.
- A draft of the inventory and assessment schedule is in progress.
- A draft *Frequently Asked Questions* has been developed. Updates are ongoing and it should be ready for publishing soon.
- They are working on additional outreach plans.
- Work on the April stakeholder newsletter is ongoing, and it should be published soon.
- Televate is reviewing the GeoSpectrum SPA report.

GeoSpectrum, Inc. (GSI), Strategic Planning Assessment – CDS Plan

Co-Chair Neal provided a brief overview of the Strategic Planning Assessment (SPA) report. This report was distributed to members prior to the meeting and a copy of the report is attached to these minutes for the record.

Co-Chair Neal and Co-Chair Morrison invited member comments.

Ron Kumetz commented that nothing on the list of suggested expenditures will hogtie the task force moving forward and provided a brief description of the difference between trunking and conventional radio systems.

Dispatch Center Survey Questions Review

Dispatch survey questions were distributed to members prior to the meeting and the draft document is attached to these minutes for the record.

Senator Wrenner, Stephen Whitaker, and Kim Cheney asked that a copy of the draft questions be sent to them via email.

Co-Chair Neal invited members to comment on the draft document.

Rance Duffy provided a brief overview of the draft document and detailed the plans for incorporating member recommendations.

Paul White left the meeting at approximately 11:53 AM.

Draft Survey Question Review (by section)

It was recommended that the document introduction include a sentence instructing that answers be left blank if not known.

Co-Chair Neal noted that the Enhanced 911 Board would be able to provide all 911 system and coverage information asked for in this survey.

- Contact Information – Demographics (questions 1-12)
    - Questions 6-10
      Members asked for clarification on jurisdiction (911 jurisdiction vs. dispatch jurisdiction, should the answers be broken out by Law, Fire, and EMS). It was suggested that this section/questions could also be used to gather agency information and towns covered.
- Technology (questions 13-33)
    - Question 16 should be updated to clarify/specify that it applies to any dispatch system upgrades. A comment section could be added for agencies to provide specific details.
    - Question 24 should have ANI/ALI added to the list of CAD interfaces and applications.
    - Question 26 should also ask for the number of radio consoles.
    - Question 27 should be reworded so the answer provides specific radio technology details. Questions concerning radio technology could be broken out into its own section. Radio contact information needs to be gathered here.
    - Question 28 could be used to get specifics from each agency concerning known dead zones.
    - Question 32 can be removed from the survey. The Enhanced 911 Board can provide that information.
    - Question 33 should ask for specific information and/or examples.
- Facilities & Equipment (questions 34-40)
    - Question 34 needs to clarify what is meant by a workstation (used for 911 only, dispatch only, both dispatch/911, etc.).
    - Question 39 needs to be worded to collect specific backup/battery information; a yes/no answer will not be helpful.
    - Question 40 – The reference to 911 phones can be removed.
- Operations (questions 41-51)
    - This section needs to be clear that it is looking for dispatch function information (not 911). Dispatch agencies govern the adoption of their own standards/protocols. The Enhanced 911 Board can provide all details concerning the standards adopted for 911 purposes.
    - Question 48 should clarify what is meant by a "unit".
    - Question 49 – the ancillary duties list needs a few updates. This question/section could also be used to quantify the amount of each shift that is spent on ancillary duties, though that information might be better gathered during agency site visits.
- Personnel & Staffing (questions 52-77)
    - Should information be gathered on the amount of overtime worked?
- 911 Calls & Incident Data (questions 78-99)
    - The Enhanced 911 Board can provide all 911 call information. This section should be used for collecting dispatch information (including 911 transfers). Rename section to Dispatch Calls & Incident Data.
    - Question 78 needs to clarify what is meant by call volume (answered, dispatched, or both).

    - Questions 88-90 ask for total incident information. Members asked if answers should be detailed by specific incident type.
    - The Enhanced 911 Board can provide all the information asked for in questions 80-83, 86, 91-92, and 94.
    - Question 86 – Can headquarters provide this information for all the law enforcement agencies?
    - Several questions state "(one month average is acceptable)". It should be clarified that the answer can be an average of one month's data, not that a one-month average response time is acceptable.
    - Question 96 – How much detail should the answer provide?
- Leadership & Planning (questions 100-104)
    - Should governance be added to this section (or should there be a separate governance section)?
- Budget & Finance (questions 105-109)
    - Agencies can attach copies of their budgets (instead of trying to type in details).
    - Question 105 – Will out of state/private dispatch agencies want to share this information (will they consider it confidential)?
    - Question 106 – The Enhanced 911 Board can provide 911 system data.
    - Question 108 – '911 Tax' can be removed from the list (911 is funded at the State level through the Universal Service Fund).
- Data Request Checklist (question 110)
    - Add a definition for ILA and MOU.
    - The 'List of adopted standards' should specify that it is for dispatch, not 911.

Co-Chair Neal opened the floor to public comment concerning the draft survey questions.

- Kim Cheney commented that the survey should ask about dead zones and that governance will sink this whole project or make it work; a single board with taxing authority is needed. It must be determined what the average per-person cost for dispatching service is in each community in order to build a funding plan.
- Stephen Whitaker commented that without an architecture or vision of what is being built, no agency is going to be motivated to answer a 33-page survey.

New Business – none

Set Next Meeting Date and Adjournment

The next regular meeting is scheduled for 5/8/24.

Motion: Jim Mack made a motion to adjourn; 2nd by Ron Kumetz. There was no discussion and the motion passed unanimously. The meeting adjourned at 1:07 PM.

Respectfully submitted,

Soni Johnson 4/29/24

Soni Johnson, E911 Board Date

Strategic Planning Assessment

Vermont Department of Public Safety

COPS Technology and Equipment Program Grant

15JCOPS-23-GG-04417-TECP

April 2024

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Executive Summary

Generations of Vermont first responders have relied on Department of Public Safety land mobile radio (LMR) systems. Dispatch of state and local services continues to occur over them and will for the foreseeable future. As Vermont transitions to a broader vision of statewide regional emergency communications, its LMR systems must evolve to serve changing operational requirements, build a resilient architecture with flexible technologies, and expand coverage to unserved areas of the state.

The Department of Public Safety (DPS) received earmark funding of $9,000,000 directed by Congressional appropriations made to the U.S. Department of Justice (DOJ) in December 2022. A grant award was made through DOJ's Office of Community Oriented Policing Services (COPS) as directed by Congress in September 2023 based on a DPS proposal made in the preceding month. The original budget and project periods, which coincide, extended through calendar year (CY) 2024. The grant was extended through CY 2025 in April 2024.

The August 2023 proposal upon which the grant was made and which is still the approved slate of activities consists of 10 interrelated projects and three overhead cost items (project management, administration, and independent review.) Substantial changes to the approved slate were proposed to COPS in March 2024 and are yet to be accepted for grant funding at this time. However, they are expected to be approved and planning has appropriately proceeded based on that assumption.

While nominally retaining the original 10 projects, the proposed changes shift focus from radio site and backbone development to adding digital LMR (P25 – a suite of LMR standards) capabilities. To the extent it was defined in the August 2023 proposal to COPS, which is still the approved approach, P25 may have been originally intended in the project for Vermont State Police system upgrades. It was not stated, though, and the proposed changes significantly target P25 simulcast for DPS LMR systems.

Through this report, DPS has sought strategic planning assistance evaluating the proposed manner of spending Federal grant funding. It contracted with GeoSpectrum, Inc. (GSI), for this assistance.

> "The purpose is to ensure the DPS has correctly identified initial scope to invest funding to increase Resiliency of the Radio Technology Services (RTS) current system equipment, architecture and clearly identified future investment strategies."[1]

This report provides an analysis of whether, in consideration of grant constraints, the proposed projects are reasonably in line with the goal of hardening and improving LMR operations throughout the state. The assessment is in consideration of the goals and objectives of the Public Safety Communications Task Force (PSCTF) set forth in 2023, No. 78, § C.114–C.115.

We find that the proposed projects are reasonably in line with that goal and will improve LMR foundations for agencies statewide, thus serve the central PSCTF goal of a broadly-defined, statewide regional dispatch system. The Task Force has an ambitious project ahead that may well include design

1 "Contract Description", State of Vermont Contract #47698, March 2024.

options where the COPS grant could be used differently, but we do not foresee Vermont's public safety LMR future without P25 elements. To the extent that DPS radio networks are central to that future and that the grant funding presses a timeline ahead, the proposed projects should not restrict PSCTF options.

End of Executive Summary

Department of Public Safety Response

DPS has received and reviewed the report that follows. We offer no response and thank Geospectrum for their timely and thorough work on this matter.

Background

Background on the grant, Vermont General Assembly acts, and work of both the past Regional Dispatch Working Group and current Public Safety Communications Task Force inform this assessment. It is presented here to substantiate the basis for conclusions. It also may serve to summarize information for decisionmakers in and beyond the Department of Public Safety.

COPS Technology and Equipment Program Grant

The Vermont Department of Public Safety (DPS) is the recipient of a U.S. Department of Justice (DOJ) Federal Fiscal Year 2023 (FFY23) grant of $9,000,000. The grant is a product of Congressional omnibus budget legislation directing DOJ to provide the funds for "Transition to Statewide Regional Emergency Communications" through its Office of Community Oriented Policing Services (COPS) technology grant program. We are aware of consternation that the funding was provided through this grant program and its constraints, but note that was the choice of Congress rather than DOJ.

Over its 30-year history, the COPS Office has provided over $20 billion to state and local law enforcement agencies. Most of this funding has gone to staff supplementation, but COPS has provided technology grants for at least 25 years under various programs to improve agency and officer effectiveness. Much has been awarded competitively. It is a favored stream for earmarks to law enforcement that ebbs and flows, though.

The grant to DPS was made under the FFY23 COPS Technology and Equipment Program II (TEP). This invitational program is "for grants to State, local, Tribal, territorial, and entities to develop and acquire effective equipment, technologies and interoperable communications that assist in responding to and preventing crime."[2] Its overarching objective is:

> "[T]o provide funding for projects which improve police effectiveness and the flow of information among law enforcement agencies, local government service providers, and the communities they serve. Funding shall be used for the projects, and in the amounts, specified under the heading "Community Oriented Policing Services, Technology and Equipment Community Projects/ COPS Law Enforcement Technology and Equipment" in the Joint Explanatory Statement – Division B, which is incorporated by reference into Public Law 117-328."[3]

The referenced "Joint Explanatory Statement", rather than the actual omnibus budget bill, is where the earmark is actually listed. There, COPS is directed through TEP to make $178M of funding available to approximately 190 agencies across the country, only three of which are state agencies. Grant

2 Source: "About the TEP Program II", COPS Office website (https://cops.usdoj.gov/tep)

3 Source: FY 2023 COPS Office Technology and Equipment Program Award Package, Award No. 15JCOPS-23-GG-04417-TECP (Vermont Department of Public Safety), p. 1.

amounts range from $16,000 to $9,000,000. Less than a third are over $1M and only three are $6M or more[4].

DPS' grant is the largest and again simply identified in COPS materials as "Transition to Statewide Regional Emergency Communications." Upon application, DPS received the grant award on September 26, 2023, for a period of 12/29/2022 through 12/31/2024. The award does not describe DPS' project beyond a brief budget statement with personnel at $137,739 and the balance for "Procurement Contracts" with no further detail.

Congressionally Directed Spending such as this typically comes through appropriations with no more project description. The COPS Office works with identified earmark recipients to further define projects. In our experience, little project definition ever proceeds from Congressional offices to COPS; identified recipients provide it through the grant application process. Often enough, earmarks are directed through programs that are incomplete fits for proposed projects and funding agencies have to work with intended recipients to shape proposals within program limits.

COPS has made funding available for many multi-discipline, multi-jurisdictional communications systems over the past 20 years. They are almost invariably part of large, costly projects and often receive one or more time extensions.

DPS received a 12 month extension on April 3, 2024, moving the grant end date to December 31, 2025. While the extension was expected, it did substantially improve odds of successful completion of projects that otherwise were considered here at risk due to timeline alone.

Proposed changes to the projects as defined in August 2023 have not, yet, been approved. We assess this further below.

Regional Dispatch Working Group

The Regional Dispatch Working Group, which operated between July and December 2022, final report has been informative in our assessment. While it has little to say about land mobile radio, specifically, it does provide a great deal of recent context wherein DPS radio capabilities serve. Its declaration that "emergency communications" is a service akin to fire, law enforcement, and others is an important point that could inform future management of shared capabilities.

The report notes that the "new regional dispatch model" that the working group was to address was undefined at that time and that an inferred goal was to offload local dispatch services from DPS. These challenges were subsequently taken up by the current Public Safety Communications Task Force. Historical observations show that communications and planning were problematic at least 50 years ago and that radio dead spots in Vermont State Police system 30 years ago "still account for approximately 25% of the state's geography."[5]

4 Source: *Congressional Record – Senate*, December 20, 2022, pp. S7936-S7944. See Appendix B, "Resources".

5 Memo from the Regional Dispatch Working Group to Governor Scott and Members of the General Assembly, December 1, 2022, p. 19, "Recommendations for Future Work: Build a Better System Statewide."

Vermont General Assembly Acts

The Vermont General Assembly enacted its Fiscal Year 2024 Appropriations Act ("Act 78") in June 2023. § C.114–C.115 of the act established the temporary Public Safety Communications Task Force whose goals and objectives are to be considered in this assessment of projects proposed for funding by the COPS grant. Its inferred goal is a statewide public safety communications system. Its objectives are to oversee and manage all phases of the development, design, and implementation of a statewide public safety communications system.

Act 78, as amended by Act 80 in 2024, further states General Assembly intent that DPS use the Congressionally Directed Spending that resulted in the COPS grant to,

> "support Vermont's transition to a modernized, regional communications network in a manner that coordinates with and advances, to the greatest extent possible, the statewide public safety communications system developed by the Public Safety Communications Task Force."

Act 78 details establishment of a system through a three-phase process that was initiated in March 2024 following contract by the Task Force with Mission Critical Partners, LLC. The system is not defined, nor how DPS and other land mobile radio (LMR) systems may be part of it.

Public Safety Communications Task Force

Since its creation in Act 78 and kickoff meeting in June 2023, the Public Safety Communications Task Force (PSCTF) has been provided regular updates and provided input on plans for the COPS grant. The 'Reports' section of its website includes a draft of the implementation plan that DPS submitted to COPS for modification of grant in March 2024.

Challenges identified by the Regional Dispatch Working Group in 2022 remain for the PSCTF and, consequently, challenge determination whether DPS projects funded by the COPS grant serve Task Force goals and objectives. We note that the PSCTF tasking to development, design, and implementation of a statewide public safety communications system is just now getting to the definition stage through work over the next several months by the system planning vendor.

PSCTF members and others interviewed for this report note that the grant timeline has pushed it ahead of broader planning and design work contracted by the Task Force. There is an expectation that the projects under this grant funding serve for the foundations of the future statewide public safety communications system and do not restrict options.

Analysis & Assessment

This report is to provide an analysis of whether, in consideration of grant constraints, the proposed projects are reasonably in line with the goal of hardening and improving LMR operations throughout the state. It examines project goals and objectives. The assessment is in consideration of the goals and objectives of the Public Safety Communications Task Force set forth in 2023, No. 78, § C.114–C.115.[6]

Grant constraints and proposed projects are assessed in the following.

Grant Constraints

Administrative and Programmatic

There are extensive administrative conditions on the FY23 COPS TEP II grant, but few programmatic restrictions. For example, the law enforcement focus of this grant program does not preclude additional use of the technology for fire response communications. While DPS is the grant recipient and ultimately accountable for expenditure of funds, nothing in the grant program requirements, its application, nor award prevents it from providing beneficial use to other public safety entities. We do not purport to advise on grant administration.

The first programmatic restriction is Congressional intent for this earmark, noted in Congressional budget records and COPS documents noting eligible recipients as, “Transition to Statewide Regional Emergency Communications”. The award made upon DPS’ August 2023 proposal is evidence that the intent was met. We assess that proposed changes submitted in March 2024 do not alter that, so expect no additional constraints.

The COPS TEP II *Award Owner’s Manual*[7] is the binding guidance for this grant. It lists forty (40) conditions – mostly concerning compliance with Federal law not related specifically to programmatic activities. Examples include compliance with award monitoring activities, conflicts of interest, employment eligibility, equal employment opportunity, and trafficking in persons. Others are common grant requirements, such as reporting and contracting, and supplanting other appropriations. Construction projects almost invariably draw in National Environmental Policy Act (NEPA) conditions.

Compliance with NEPA, the National Historic Preservation Act, and other related federal environmental impact analyses (Condition No. 39) is potentially the most impactful Federal grant programmatic constraint for LMR projects. Many grant recipients have had optimistic schedules for site construction put their projects at risk. Site construction poses schedule challenges for a number of reasons, but environmental impact assessments are among the most commonly overlooked.

> **Our assessment**: DPS has wisely reduced schedule risk in its latest proposal. We address this further below in specifically examining the proposed projects.

6 “Scope of Work”, State of Vermont Contract #47698, March 2024.

7 FY 2023 COPS Technology and Equipment Program Award Owner’s Manual. See Appendix B, “Resources”.

Two other COPS grant conditions may be considered in light of DPS intentions for beneficial use of the procured equipment by other agencies. Their relevance or lack thereof may appear self-evident, but it is well to remember that COPS Office grant managers and other staff are typically neither public safety practitioners, nor technologists. Our brief assessments may be useful if questions arise. As the largest in this program, DPS' grant should be expected to get the greatest scrutiny by managers. We note that in each case the equipment is part of a larger system or subsystem managed and operated by DPS.

From the *Award Owner's Manual:*

25. Community Policing

Condition:

Community policing activities to be initiated or enhanced by your agency were identified and described in your award application. All equipment, technology, training, and civilian positions awarded under the TEP award must be linked to the implementation or enhancement of community policing. 34 U.S.C. § 10382 (c)(10).

Why this condition:

The COPS Office defines community policing as a philosophy that promotes organizational strategies that support the systematic use of partnerships and problem-solving techniques to proactively address the immediate conditions giving rise to public safety issues such as crime, social disorder, and fear of crime. TEP awards must be used to initiate or enhance community policing activities. Your organization may be monitored or audited to ensure that it is initiating or enhancing community policing in accordance with your proposed plan.

What you should do:

The community policing activities designated for implementation or enhancement by your agency were identified in your TEP application. Your community policing needs may change during the life of your award, and minor changes to this plan may be made without prior approval of the COPS Office. If your agency's community policing plan changes significantly you must submit those changes in writing to the COPS Office for approval. Changes are significant if they deviate from the range of possible community policing activities identified and approved in the original community policing plan submitted with your application.

> **Our assessment:** COPS has issued hundreds of technology grants over the past 20 years for multi-discipline, multi-agency communications systems. They allow wide latitude for shared systems. The DPS proposal leading to the grant satisfied this condition and recent proposed changes do not affect that. Intended uses of the funded technology were made clear.

Further from the *Award Owner's Manual*:

26. Contracts and/or MOUs with Other Jurisdictions

Condition:

Items funded under this award must only be used for law enforcement activities or services that benefit your agency and the population that it serves and cannot be utilized by other agencies unless the items benefit the population that your agency serves.

Why this condition:

The TEP award is intended to benefit the communities within the recipient's primary law enforcement jurisdiction. Therefore, the recipient must use the TEP award funding to benefit its own service population.

What you should do:

Items funded under the award cannot be utilized to provide law enforcement services to other agencies unless they will directly benefit the recipient's jurisdiction. For example, a sheriff's department cannot use TEP-funded technology to provide contract law enforcement services to a neighboring county but can use TEP-funded technology to provide direct law enforcement services to towns within its own county.

> **Our assessment:** DPS' service population - all Vermont residents and visitors - is a superset of all other public safety service populations in the state. In-state use of DPS radio systems by others is benefiting its own service population.

Time, Scope, & Budget

Time is the largest COPS TEP II grant constraint. The initial 24-month period of performance was down to 15 month by the time of award in September 2023. Extensions were reasonably expected and needed: For practical purposes, the timeline at that point allowed a single "building season" during which critical-path work would be completed at high radio sites. The initial timeline targeted contract awards in February 2024.

Six months after award – 15 months after appropriation – a large change to the slate of projects has been proposed to meet the grant's relatively compressed time frame. A 12-month extension received as this report was being assembled and reduced site work for which DPS is responsible make the project schedule reasonable. Assuming COPS accepts the proposed changes, which is a reasonable assumption, and does so soon, the remaining grant performance period is again less than 20 months.

It should be apparent that significant time has been expended in project definition and redefinition.

The scope of these projects varies widely. Recognizing that the original plan to subgrant Congressionally Directed Spending funds for regional dispatch projects was shelved due to COPS grant restrictions, the project scope has also changed significantly since the grant award in September 2023. The scope will become more manageable when changes proposed last month are approved. We speak to specifics in the next section on proposed projects.

The projects were understandably scoped to fit within the earmarked grant total, so there is not a budget constraint, per se. There is no matching requirement and there is no supplanting issue to the best of our knowledge. Individual budgets are not much detailed within the grant proposal. More detail from internal project documents is examined in the following section.

Proposed Projects

The Department of Public Safety applied for the COPS TEP II grant in August 2023 with a proposal including 13 projects. The DPS Grant Award Modification submittal in March 2024 substantially changed the scope of several projects and adjusted budgets, but kept a largely consistent list of projects. An eleventh project titled “Network Security” was added.

We examine the latest proposed implementation plan and project list here.

The majority of projects are for land mobile radio (LMR) improvements, expansion, and resilience. Two others are described specifically for “dispatch improvements” for Vermont State Police (VSP) dispatch centers (2). The dispatch function will benefit from radio system improvements, as well. The network security project would serve both LMR and dispatch systems.

A total of $7.79M (87%) is slated for land mobile radio (LMR) improvements, expansion, and resilience, $749K (8%) for dispatch improvements, $388K (4%) for overhead, and $75K (1%) for network security. A total of 21 Requests for Proposal (RFPs) are anticipated.

For the sake of this review, the projects are grouped into five categories to simplify description and clarify our assessments: LMR Network Expansion and Improvements, P25 Simulcast, Dispatch Improvements, Miscellaneous, and Overhead.

For reference, the projects assessed by name and cost are as follows.

	COPS Technology Grant – Proposed Implementation Plan 3-15-2024			
	Item	**Project Title**	**Budget**	**Totals**
LMR Network Expansion and Improvements	1A	Co-location Site Resilience	$124,161.25	$2,163,786 (24%)
	1B	Co-location Site Expansion	$426,117.45	
	2	Standby Generators	$240,000.00	
	4	Microwave System Improvements	$675,545.00	
	5	Battery and Rectifier Improvements	$294,462.00	
	7	Antenna Combiner Systems	$354,000.00	
	8	Grounding Improvements	$49,500.00	
P25 Simulcast	3	P25 Simulcast Engineering	$621,000.00	$5,324,902 (59%)
	10A	Statewide P25 Simulcast Hardware	$2,858,101.88	
	10B	Statewide P25 Simulcast Antennas	$1,845,800.00	
Dispatch Improvements	9A	Dispatch Improvements Consoles	$576,678.20	$748,504 (8%)
	9B	Dispatch Improvements: Telephone	$171,825.98	
Overhead	12	Project Management	$200,000.00	$387,739 (4%)
	13	Administration	$137,739.04	
	14	Independent Review	$50,000.00	
Miscellaneous	6	Test Equipment	$300,000.00	$375,069 (4%)
	11	Network Security	$75,069.20	
		Totals	**$9,000,000.00**	

We admit having some difficulty following project documents. A good deal of that is due to how materials have to be submitted through the COPS online management system, JustGrants, which breaks up project artifacts. For example, DPS' original application provides high-level cost breakdown on 13 elements, yet the grant award lists only one of those ("Civilian or Non-Sworn Personnel"). The other 12 – over 98% of the total award – are combined into one line item: "Procurement Contracts". We understand that it is not possible to print a complete copy of a submission from the system.

The proposed grant modification (March 2024) included considerably more cost detail, but an internal cost estimation spreadsheet has been indispensable for our review. We found it necessary to break out some costs, such as services, for summaries included here and sort through other details.

National Association of State Procurement Officials (NASPO) Master Agreements within its Public Safety Communications Products, Services, and Solutions portfolio were used for spot price checks. The State of Vermont does not use this particular portfolio of master agreements, but does use other NASPO contracts. The agreements are based on highly credible specification, bid, evaluation, and award processes serving public procurement requirements in most states.

We offer the caveat that complex technology prices commonly include bundled components and services that make price comparisons difficult. For example, the largest line item in proposed VSP console upgrades (Item 9A) is for Avtec Scout EX upgrades. The price used for the current grant proposal is about 5% less than the NASPO price, which is already 5% off of the list price[8]. The additional discount is due to an existing, post-warranty software and hardware maintenance agreement that DPS has on consoles. Other parts of the console upgrade are estimated at or near list prices.

In the following, we examine the projects within the five groups previously described.

LMR Network Expansion and Improvements

Project 1A adds secondary backhaul at nine sites currently served by a single, terrestrial connection. Seven would be served by commercial cellular, one by a Vermont Electric Power Company (VELCO) connection, and the final by a new microwave hop. Almost 85% of the cost is attributable to the microwave hop.

Project 1B adds ten new sites to the LMR network and provides primary backbone connectivity. The sites are privately owned - eight by VELCO. Primary backbone connectivity will be provided by commercial cellular at six sites, new microwave hops at three, and commercial fiber at one. Backup connectivity at all ten sites will be provided by VELCO.

Projects 2, 5, and 8 make needed power and grounding improvements at sites. They will replace aging generators at nine sites, batteries and associated electronics at 29 existing sites, provide batteries and

8 NASPO ValuePoint Contract 00318 Public Safety Communications Equipment - Avtec, Item 172. See Appendix B, "Resources".

associated electronics at the 10 new sites, and improve grounding at nine sites. The total cost of these improvements is approximately $584K or 6% of the grant total.

Project 4 would upgrade 27 microwave antennas at 13 remote sites, upgrades 58 service aggregation routers, and installs an ice bridge at one site to protect antenna wave guide. Existing antennas are described as susceptible to ice buildup, which degrades microwave performance and risks damage to equipment below as it melts and falls. The router upgrades add modular network interfaces serving the multi-dimensional backbone design (microwave, fiber, and commercial cellular). The router upgrades account for 48% of this project.

Project 7 is for antenna combiners to reduce tower loading and allow multiple radios at a site to share a single antenna. Twenty-two of the devices would be deployed on DPS' UHF radio network based on analysis and specifications developed through Project 3, "P25 Simulcast Engineering". The majority (16) are for two-channel installations. The proposal also notes that a reduction of DPS antennas on towers will increase space for potential use by other agencies.

> **Our assessment**: This group of related projects accounts for nearly a quarter (24%) of planned grant expenditures. We estimate that 80% is for equipment and the remainder for services. Proposed budgets for Projects 2, 5, 7, and 8 do not completely distinguish the two categories.
>
> Based on interviews and review of materials, our general assessment is that the need for more radio sites and improvements to existing ones is well-founded. DPS appears to be reaching the limits of its conventional, analog LMR radio networks and coverage in some areas has been of concern for generations. Overall, costs, scope, and the current grant timeline are aligned for this group of projects considering most are to be contracted. The impact of this group of projects on RTS staff and management is likely to be the grant's greatest, dollar for dollar.
>
> Projects 1A and 1B serve DPS' current and future LMR needs. They serve other, current users of DPS LMR networks and likely serve PSCTF's conclusions, as well. Coverage and backbone reliability are fundamental for LMR networks – even more so as complexity increases. Without basis to assess how well and to what extent DPS sites serve other agencies' LMR networks, we do, however, conclude that the improvements will benefit any that co-locate with DPS. Within the limits of good engineering, more sites means better coverage.
>
> It is important to note that DPS plans for cellular backhaul are innovative, but the concept has been proven. The State of Missouri uses cellular backhaul and backup services for over 130 sites on its trunked P25 network[9]. Reports are that they are satisfied with the functionality.
>
> Projects 2, 5, and 8 make site improvements that serve a stated goal of hardening and improving LMR operations throughout the state. We accept on its face the necessity for them, but also strongly concur on their importance. Backup power and solid site grounding are indispensable for mission-critical LMR systems, particularly as they become more complex. Budgetary

9 "Land Mobile Radio/Long Term Evolution (LMR/LTE) Integration: Best Practices", U.S. Department of Homeland Security, May 2022. See Appendix B, "Resources".

estimates provided largely did not break out services and equipment from the total. We find the estimates reasonable since the projects will be carried out through competitive procurement.

Project 4, “Microwave System Improvements”, has been scaled back as a component of the grant by about $500K from the original proposal. We accept on its face the necessity for antenna and router upgrades, but also strongly concur on their importance. The multi-protocol/multi-service backbone network is growing in complexity, driving service aggregation router (SAR) upgrades. The project serves all current and future users of DPS LMR networks and sites. We find the estimates reasonable since the projects will be carried out through competitive procurement.

Project 7, “Antenna Combiner Systems”, is a positive project in principle. Its effective outcome will be shaped by Project 3, “P25 Simulcast Engineering”, discussed below. Combining antennas is a “best practice”, especially for shared sites, if radio engineering and equipment can meet the challenges. We concur on both the technical merits of the project and practical benefits in site co-location. Without further breakdown, we consider the cost estimate reasonable for budgeting purposes since competitive procurement is proposed and Project 3 could swing costs either way.

P25 Simulcast

Projects 3, 10A, and 10B were proposed in the March 2024 grant modification to add P25 digital simulcast to the Vermont State Police UHF (450-470 MHz) LMR network. The three are largely replacements for currently-approved projects for site resilience and expansion, microwave system upgrades, and VSP radio system upgrades. The March proposal notes that the original is untenable due to the amount of permitting and site evaluation work since determined to be required and not reasonably achievable within the grant performance period.

Simulcasting is used for spectrum efficiency and improved coverage. It also reduces need for mobile users to change channels when moving between the coverage of different sites, simplifying operation. DPS has mobile and portable radios capable of both analog and digital (P25) conventional radio communications. The conversion from analog to digital also opens encryption options.

Technically, simulcasting is simultaneous transmission of the same audio from two or more fixed sites on the same frequency. By contrast, VSP’s current analog multicast system transmits the same audio from multiple sites on different frequencies. Simulcasting requires careful time synchronization otherwise signals interfere destructively with one another at receivers, such as mobile and portable radios. This is particularly true with digital simulcast systems. Inadequately synchronized, analog simulcast transmissions are obvious to the listener, to the point of being intolerable. Inadequately synchronized, digital simulcast transmissions may never be heard because they can interfere enough with one another to preclude decoding.

In modern systems, backbone connectivity simplifies synchronization, but accurate and often expensive time standard equipment is still needed. Simulcasting is used in both conventional and trunked systems, as it has been in both analog and digital ones. To the extent of our knowledge, new simulcast systems are exclusively digital – P25 in public safety applications funded by grants. Simulcasting and multisite trunking are not synonymous, but similarly rely on backbone networks.

Project 3 is for P25 simulcast system design and engineering services. It constitutes 12% of this group of projects and 7% of the grant in total.

Projects 10A and 10B are for P25 simulcast hardware, software, and related implementation services. Project 10B is specifically for antennas and is noted to be determined by Project 3, the design and engineering phase. The proposal notes that Project 10A – and, by extension, this set of projects – is a step toward a likely trunked system.

The estimated costs for these three, linked projects account for 59% of the grant budget.

Our assessment:

This component of the grant is a large project in itself. The proposal was necessarily based on broad budgetary estimates and was driven in part, at least, by compressed grant timelines making untenable the original projects focused on VSP radio system, microwave, and site upgrades. The grant extension received recently opens up two "building seasons" for radio site work, whereas previously there was one. Realistically, neither the original slate of projects, nor the proposed one, could be done in a single season unless all RFPs and staging work was completed beforehand.

Significant design and engineering effort (Project 3) is necessary before the remaining P25 simulcast budget could be refined to a meaningful degree. To demonstrate the scale and complexity of this set of projects, DPS estimated costs for P25 simulcast software/licensing total $848K and GPS-disciplined rubidium clocks for synchronizing transmitters total $916K. These two costs, alone, are nearly 20% of the grant total budget.

This group of projects will be carried out through contracts following four (4) RFPs. We see no reason why there should not be competitive bids. We expect that major system vendors will take interest, especially with the proposal's suggestion this is a step toward a trunked system.

While the grant proposal includes no specific items for encryption, it does note that encryption of VSP channels is one benefit of P25. Digital is inherently suited for encryption; analog is not.

The design and engineering RFP (Project 3) should be released as soon as possible and the others in sequence as soon as the design is available. Given the size of the project and budget, there may be bid protests that would further compress timelines.

In the process of investigating LMR spectrum availability in Vermont, we received a generous, *pro bono* offer of assistance to the state from the Association of Public-Safety Communications

Officials, Intl. (APCO). APCO is the predominate frequency coordinator for public safety authorized by the FCC. Mr. Farohk Latif, Director of APCO's Automated Frequency Coordination (AFC) subsidiary, offered to run frequency availability scans of their license database for DPS LMR tower sites. Mr. Latif asked that the AFC Local Advisor for Vermont, Chris Knox of DPS Radio Technology Services (RTS), contact him with site information.

Miscellaneous

We address Project 6 ("Test Equipment") and Project 11 ("Network Security") because they do not simply fall into the other categories.

Project 6 is a purchase ten Astronics Freedom R8200 service monitors. This element, without details, was included in the original grant application and award. No budget change has been proposed, but further detail was provided in the March 2024 application for grant modification. These are advanced service monitors with vector network analyzers suitable for complex work on analog and digital radio networks. There are no other costs proposed and a competitive procurement (RFP) is planned.

> **Our assessment**: The service monitors are appropriate for the work that RTS does and the budgeted cost is in line with current prices. We do not draw a conclusion as to the number needed or the suitability of current RTS equipment.

Project 11 proposes to purchase and implement network firewalls for each of the two Vermont State Police emergency communications centers (ECCs). Budgeted costs include the firewalls, installation, configuration analysis and implementation, and project management.

> **Our assessment**: While this network security project constitutes only 0.8% of the grant cost, it is an important element that brings considerations well beyond this review. We have direct experience doing similar for a statewide criminal justice information network with dozens of state and local ECCs. Our first work with Vermont over 20 years was, in fact, to mediate a networking dispute between DPS and Burlington Police Department resolved by an agreement on purchase and implementation of firewalls. Presently, we continue to consult on emergency communications cybersecurity at the highest levels.
>
> The need for this project is substantiated, its cost reasonable, and no reason evident why it cannot be executed in the grant timeline. Finding a working balance between the needs of public safety agencies and centralized information/communications technology (ICT) management agencies is a traditional challenge faced across all levels of government in the United States. We recommend use of the white paper noted in the "Resources" section of this report for ICT professionals seeking to understand land mobile radio.
>
> Conversely, we note that the traditional "walled garden" of public safety networks are no longer separate; they are not "air gapped" as some would say. In his Federal employment, GSI's principal initiated the first in-depth cybersecurity review of a statewide, trunked LMR network, which was also linked to a similar, large metropolitan network. Despite the resources of these

jurisdictions, they were unaware of the extent of their vulnerabilities at some of the most fundamental levels. Without the ability here to establish credibility on the topic, we must strongly caution all parties to work cooperatively to address this growing challenge[10].

Public safety agencies have responsibilities and authorities that have to be met and served by enterprise ICT management. They also have to recognize that their security or lack thereof can have drastic and cascading effects.

Overhead

Three of the proposed projects are grouped here as "Overhead". This is not to disparage their importance, but consider them as a related group indirectly part of the overall set of projects. They are Projects 12 through 14, "Project Management", "Administration", and "Independent Review".

In total, these items constitute a bit more than 4% of the entire budget. Project management is over half of the total. We note that the budget for "Administration" is the only distinct part already approved in the grant award (i.e., as "Personnel".) The approved and proposed plans describe it as for a temporary state employee. "Independent Review" was included in the approved grant proposal and described as potentially required by Vermont law. The proposed grant modification (March 2024) further describes DPS' intention here "to utilize the grant funding in a manner that provides the most value and benefits the broadest user base possible" and its difficulty in finding a qualified vendor.

Our assessment: We have little to say about these items other than that they are reasonable considering the size of the overall project, its complexity, and wide stakeholder interest. They apply across the entire timeline of the grant. Other proposed parts of the grant include elements of project management, but Item 12 addresses overall, contracted management. We consider that positively and the budget as reasonable. The size of the largest groups of projects (Simulcast P25 and LMR Network Expansion/Improvements) deserve dedicated project management serving DPS independently. Technology equipment vendors do not so serve.

Regarding "Administration" (Item 13), we find the need obvious and cost reasonable. DPS personnel costs in preparing for, managing, and implementing the grant are probably already considerably more.

Regarding "Independent Review" (Item 14), we consider independent review of project plans to be a best-practice.

10 For example, consider the City of Dallas ransomware incident, May 2023. https://dallascityhall.com/DCH%20Documents/dallas-ransomware-incident-may-2023-incident-remediation-efforts-and-resolution.pdf

Recommendations

We take the liberty of making recommendations that may appear outside of the scope of this review, but are intended as suggestions to serve goals of the grant program and DPS' award.

Use Available Resources

We recommend that DPS and all public safety agencies undertaking technology projects use freely available resources to help them manage the project. Large projects deserve professional project management, but every sponsor, champion, and staff member responsible for substantial elements can benefit from using these resources. See Appendix B – Resources.

The COPS Office was the first Federal agency to address undesired side-effect of large, public safety technology grants. Its COPS MORE program[11] of 25 years ago distributed $1.3 billion – the equivalent of $2.3 billion today - for law enforcement technology projects expected to yield a specific, demonstrable number of more officers on the street as a result of grants. COPS quickly learned that few of the 4,500 agencies affected were prepared to manage the technology projects. Even the largest agencies struggled.

COPS belatedly created a technical assistance program to specifically help responsible agency personnel manage their projects. Typically, a mid-level supervisory officer on an upward career track would be assigned to the project. We learned in providing some of that assistance and similar under later programs just how hazardous technology projects could be to their career tracks. Grants exacerbated hazards, raising expectations and imposing outside constraints on projects.

COPS funded development of books, whitepapers, magazine articles, video, podcasts, and training to help grant recipients be successful. We were fortunate to be at the center of that for their Interoperable Communications Technology Program and contribute at the same time to building the U.S. Department of Homeland Security's related technical assistance programs.

Our book, *Communications Interoperability: A Guide for Interagency Communications Projects*, is a recommended starting point. It is available in electronic form at no cost from the COPS Office. The book has been published in multiple editions, some with and others without the "Law Enforcement Tech Guide" supertitle used by COPS. It is not specific to law enforcement.

Report Widely on the Project

We encourage the project manager engaged under this grant (Item 12) to produce roll-up documentation of budgets, deliverables, levels of effort, timelines, and milestones for project sponsors and interested others. As always, this will help with upper management (sponsors), as well as staff responsible for varied pieces of the project, grant managers, the PSCTF, and interested others.

11 Office of Community Oriented Policing Services, "COPS Fact Sheet: Making Officer Redeployment Effective (MORE) - Using Technology To Keep America's Communities Safe". See Appendix B, "Resources".

The PSCTF is already doing a remarkable job on this front. Its website greatly served our review and assessment. We commend the effort put forth serving open meetings laws, sharing recordings and transcripts of meetings, and making project artifacts available.

DPS' projects under the COPS grant are similarly of interest to a broad audience and group of stakeholders. The Department's LMR systems and capabilities serve all Vermont public safety agencies to lesser and greater extents. Stakeholders would be served by written status reports, roll-up budgets, and other summary project materials.

Outreach in writing and person to stakeholder groups will also serve the project goals of improving LMR operations throughout the state and transition to statewide regional emergency communications.

Promote LMR Site Sharing

We recommend that DPS aggressively promotes LMR site sharing and co-location with other agencies. In our experience, the cost and technological benefits of site sharing that bring agencies together ultimately pale in comparison to the benefits realized from better understanding of each other's operational requirements. Operational requirements always drive the design of technological systems, but shared systems bring competing ones. Agencies often tacitly recognize where their requirements converge and diverge, but co-locating services brings recognition and cooperation to a new level. By contrast, isolating services promotes a parochialism detrimental to every concept of shared systems.

The Regional Dispatch Working Group made a strong, useful point about emergency communications being a service. We couldn't agree more. It is a service to both the public and emergency response agencies. Managed as such, consolidation of emergency communications infrastructure, including LMR, is simplified. Responsibilities are clearer, authorities stronger, and accountability more prevalent.

DPS will undoubtedly be the anchor tenant of any future, shared statewide LMR network and its current infrastructure the logical foundation. A strong site sharing program would benefit Vermont's goal of a statewide public safety communications system on multiple levels.

Continue Innovative Use of Wireless Broadband Services

We encourage support for continued innovative use of wireless broadband services, notably cellular, and offer our perspective on the relative role and long-term strategic value of land mobile radio for emergency communications. It is informed by decades of national and international work on technical and operational standards for LMR and wireless broadband, as well as in implementations by commercial carriers including FirstNet by AT&T.

Wireless broadband services have become indispensable for emergency response. While not ubiquitous, they are certainly desired to be. It is a rare first responder today without access to a cellular telephone one way or another. The least of those ways provides little advantage to the dispatch

function, but most jurisdictions would be well-served by location information for computer-aided dispatch (CAD), for example, if they could afford and manage it.

Many decision-makers at all levels of government have considered whether commercial cellular service will replace LMR. High policymakers at the national level have promoted the idea, to which we openly and strenuously objected in our role chairing the operational committees of national and international bodies focused on public safety broadband. We still consider the idea that commercial cellular service can replace LMR to be as ill-founded as it is irresponsible in effect.

However, the value of commercial cellular in emergency communications is almost without measure. From public alerts and warnings, to public 9-1-1 access, to bidirectional dispatch data communications, to public communications among themselves during emergencies, cellular is a huge and growing part of emergency communications. FirstNet, alone, has been a grand and expensive exercise to shape underpinnings of those aspects of emergency communications.

Land mobile radio serves additional needs in ways shaped by the geographic and political nature of the United States. Where a European nation, such as France, has a density of population, general geography, simple division of emergency responsibilities, and lesser expectation of emergency services, commercial cellular serves their dispatch and first responder communications needs. The United States is vastly different. From the smallest rural fire department to the largest Federal agency, responsibility for emergency services is tiered, thus communications needs vary. Even at a county level, we see differing requirements by emergency service and geographic location.

Managing a single wireless system that meets requirements from the smallest to largest agency, across all disciplines and jurisdictions – if it could be built – is practically impossible. We have worked with many states and tribal nations where the vision was considered and are convinced that the time is spent with dreams of technological silver bullets with little attention to the complexity of operational needs and realities of cost and managerial capacity.

DPS plans to use commercial cellular for site backhaul are at the leading edge of blending LMR and cellular infrastructure, as well as mixing in private fiber and microwave for the backbone. These plans are a good example of innovative thinking that makes the systems more resilient, thus reliable for mission-critical communications.

Alternatives

We are reluctant to suggested alternatives for three reasons.

First, DPS has already put considerable work into obtaining this grant and planning for its implementation. Nearly sixteen months into the original 24-month grant performance period, a significant, proposed change to the project plan sits awaiting approval from the COPS Office. The 12-month extension alleviates some pressure, but the clock is ticking and the projects are extensive.

Second, the PSCTF has a large task before it in "the establishment of a statewide, reliable, secure and interoperable public safety communications system." Presently, the Task Force has contracted for an inventory and analysis to produce preliminary designs. It is impossible to separate this effort from the broad goals set for DPS' COPS-funded projects.

For example, the contractor, Mission Critical Partners, is tasked with identifying "communications dead zones in the State, meaning those areas where the present infrastructure does not support public safety land-mobile-radio (LMR) communications or cellular voice and data service."[12] DPS LMR network expansion and improvement projects under this grant are to improve coverage. Obviously, coverage will be affected during and after that assessment. To what extent those improvements benefit public safety agencies statewide is undetermined. The shape of agreements for shared use of radio sites or simulcast channel usage policy and procedures, to take two examples, will shape the LMR portions of a future Vermont public safety communications system – likely more than will technology choices.

PSCTF's needs analysis and design work would ideally proceed DPS' under this grant. Vermont is not the first to have to back into Federal grant funding. We empathize, having seen it time and again across the country, so are reluctant to suggest alternatives that would absorb more of the grant performance period and, perhaps, as likely restrict PSCTF's design options.

Finally, our reluctance arises from the limited scope of our review. The overarching goal of the grant, "Transition to Statewide Regional Emergency Communications", is easily met. It is hard to imagine a project that could not serve that goal other than a failure of governance. The subordinate goals of hardening and improving LMR operations throughout the state are clearly served by the proposed slate of projects.

Any broad suggestion to do otherwise would be based on our very limited review and assessment. The grant time frame particularly limits alternatives at this point other than falling back to the original slate of projects currently approved by COPS.

12 "Attachment A – Statement of Work", State of Vermont Contract #47635, March 2024, Section 2.4.

Conclusion

Vermont public safety agencies are on the cusp of large changes to their indispensable communications services. Congressionally Directed Funding has both opened opportunities and presented challenges. The projects to be undertaken with it will unavoidably shape a future statewide public safety communications system. DPS LMR systems are already a centerpiece of public safety communications statewide, so any changes to them will necessarily affect subsequent, larger conceptual designs.

It has been our privilege and honor to offer these observations and assessments. We hope this report will be a useful summary of the Department of Public Safety's projects planned under grant funding from the Office of Community Oriented Policing Services. It is offered with the expectation that the Department, COPS, and public safety stakeholders may find some part of it useful.

Appendix A – Review Participants

Jennifer Morrison, Commissioner, Vermont Department of Public Safety (DPS); PSCTF[13] Co-Chair

Barb Neal, Executive Director, Vermont Enhanced 9-1-1 Board; PSCTF Co-Chair

Paul White, Vice-Chair, Vermont Public Safety Communications Task Force (PSCTF)

Ron Kumetz, Chief, Alburgh Volunteer Fire Department; PSCTF Member

Corey Chase, Director, DPS Radio Technology Services (RTS)

Dan Badger, Supervisor, DPS RTS Public Safety Communications

Alastair Gee, Procurement Manager, DPS Administrative Services Division

Christian Pedoty, Emergency Communications Director, DPS-Vermont State Police (VSP)

Jim Cronan, Administrator, VSP Williston Communications Center

Robin Nilson, Information Technology Director for DPS, Vermont Agency of Digital Services

Deborah Myrick, Project Manager, DPS RTS (Contractor)

Robert Cornell, Principal, RSTelecom, Inc.

Rick Burke, Program Manager, Televate, Inc.

Dominick Arcuri, Project Manager, Televate, Inc.

Bonnie Maney, Project Sponsor, Mission Critical Partners, Inc.

Phil Sisk, Client Services Director, Mission Critical Partners, Inc.

Scott Neal, Senior Project Advisor, Mission Critical Partners, Inc.

Nick Falgiatore, Wireless Technical Group Leader, Mission Critical Partners, Inc.

13 Vermont Public Safety Communications Task Force

Appendix B – Resources

References Cited

Congressional Record – Senate, December 20, 2022, pp. S7936-S7944. See https://www.congress.gov/congressional-record/volume-168/issue-198/senate-section/page/S7819

FY 2023 COPS Technology and Equipment Program Award Owner's Manual. See https://cops.usdoj.gov/pdf/2023AwardDocs/tep/AOM.pdf

NASPO ValuePoint Contract 00318 Public Safety Communications Equipment – Avtec. See https://s3-us-west-2.amazonaws.com/naspovaluepoint/1694025103_91598862_NASPO%20Contract%20Pricing%208-2023.pdf

Office of Community Oriented Policing Services, "COPS Fact Sheet: Making Officer Redeployment Effective (MORE) - Using Technology To Keep America's Communities Safe". See https://cops.usdoj.gov/pdf/fact_sheets/e09061310.pdf

Other Resources

Dan M. Hawkins, and Mallorie F. Teubner and Bonnie B. Maney (contributors), *Law Enforcement Tech Guide for Communications Interoperability: A Guide for Interagency Communications Projects*, rev. ed., Washington, D.C.: U.S. Department of Justice, Office of Community Oriented Policing Services, 2013. First edition in 2006. See https://portal.cops.usdoj.gov/resourcecenter?item=cops-w0714.

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"Land Mobile Radio for Information Technology Professionals", U.S. Department of Homeland Security, December 2022, on behalf of stakeholder bodies (SAFECOM and NCSWIC). See

https://www.cisa.gov/sites/default/files/2023-03/22_1220_s-n_tech-policy_lmr-for-it-professionals_508c.pdf

"Communications and Cyber Resiliency Toolkit", U. S. Department of Homeland Security, Cybersecurity and Infrastructure Security Agency, Rev. August 2023. Note: The toolkit is a series of articles and white papers linked through a graphical navigation page. See https://www.cisa.gov/resources-tools/resources/communications-and-cyber-resiliency-toolkit.

"Land Mobile Radio/Long Term Evolution (LMR/LTE) Integration: Best Practices", U.S. Department of Homeland Security, May 2022, on behalf of stakeholder bodies (SAFECOM and NCSWIC). See https://www.cisa.gov/sites/default/files/2023-02/Land%20Mobile%20Radio%20%28LMR%29%20Long%20Term%20Evolution%20%28LTE%29%20Integration%20Best%20Practices%20Whitepaper%20508C.pdf

"National Special Security Events (NSSE)/Special Event Assessment Rating (SEAR) Communications Planning Toolkit", U. S. Department of Homeland Security, Cybersecurity and Infrastructure Security Agency, July 2021. Note: This toolkit is not online, but can be obtained by through CISA's Emergency Communications Division. See https://www.cisa.gov/news-events/news/cisa-releases-national-special-security-events-nssespecial-event-assessment-rating

Appendix C – Statement of Qualifications

GeoSpectrum, Inc., (GSI) capabilities and experience relevant to strategic planning for public safety communications are evidenced our principal's long career. Dan Hawkins spent five years in local government as a sworn police officer, 15 years in state government, 10 years in the Federal government, and 12 in private consulting. He was a licensed EMT First Responder for 25 years, serving in a large, volunteer search and rescue organization as an incident manager and technical rescue specialist. He founded GSI in 1995 for geographic information systems (GIS) propagation modeling.

Mr. Hawkins' state government career included seven years as arguably the Nation's first statewide interoperability coordinator (SWIC) and six as the information technology operations bureau chief for Montana's Department of Justice. His last position was in the state chief information officer (CIO) office initiating a statewide trunked radio system.

Between his state and Federal career stints, Mr. Hawkins was director of public safety programs for SEARCH Group, Inc., a non-profit consortium of the states. He built programs supporting a portfolio of Federal cooperative agreements and contracts to provide technical assistance to U.S. Departments of Justice and Homeland Security grantees. This assistance included project management training, on-site analysis and written recommendations, and evaluations for granting agency management. In addition to producing national training conferences and regional workshops, he authored and contributed to books, podcasts, an extensive video, articles, and white papers highlighting best practices and success stories for public safety communications. He worked extensively with DHS building interoperable communications technical assistance programs and providing support to grantees, including serving as national project manager for development of National Incident Management System (NIMS) training and instructors for Incident Command System (ICS) communications positions. He was a principal contributor to the first National Emergency Communications Plan (NECP), particularly its goals and measurement tools, and subsequent versions.

Mr. Hawkins' seminal book, *Communications Interoperability: A Guide for Interagency Communications Projects* (2006, 2013), was produced by the Office of Community Oriented Policing Services (COPS) specifically to serve its grant recipients. The book was extensively peer reviewed and endorsed by SAFECOM, a DHS national practitioner body. A special edition was also produced by DHS. Mr. Hawkins served on SAFECOM at the time, as well as on the International Associations of Chiefs of Police (IACP) Communications & Technology Committee for 15 years spanning that period.

As SWIC, Mr. Hawkins was also responsible for statewide LMR and cellular term contracts, was the Association of Public-Safety Communications Officials, Intl., (APCO) local advisor for frequency coordination, served on the APCO International Executive Council, and chaired the committee overseeing its frequency coordination subsidiary. He served two years as Montana chapter president.

Nationally, Mr. Hawkins was a principal contributor in development of three generations of APCO automated frequency coordination systems, being awarded two Presidential Awards and one

Presidential Award of Excellence at APCO annual conferences for the work. He was awarded APCO's highest membership award, life membership, upon nomination by the board of directors for lifetime achievement at age 36. From 2003 to 2010, he represented APCO on the international standards body for public safety broadband (Project MESA, a project of the Telecommunications Industry Association for North America and the European Telecommunications Standards Institute for other regions.) He chaired its user committee, as well as that of the subsequent national Broadband Task Force in the U.S.

Mr. Hawkins' Federal service was as Western Sector Coordinator within the U.S. Department of Homeland Security, Cybersecurity and Infrastructure Security Agency (CISA), Emergency Communications Division, being hired under a superior qualifications appointment from the assistant secretary. He was specifically responsible for planning and emergency support in six states and 29 tribal nations, serving as a strategic advisor to state interoperability governing boards (SIGBs) and SWICs. Based on prior experience, Mr. Hawkins also had assignments to the North Atlantic Treaty Organization (NATO) Civil Emergency Planning Committee as a communications expert, National Response Framework (NRF) Emergency Support Function (ESF) #2 (Communications) national team, NIMS development projects, each edition of the National Emergency Communications Plan (NECP), and the central devolution role in the agency's continuity of operations plan. He spent five weeks in Puerto Rico following Hurricane Maria leading a 10-man unit of the national ESF2 team.

Presently, Mr. Hawkins continues serving DHS Emergency Communications Division senior staff and program managers in a consulting capacity as a subject matter expert. Recent work has focused on land mobile radio (LMR) systems cybersecurity, a rewrite of the All-Hazards ICS Communications Unit Leader (COML) course, and 5G cellular cybersecurity. He had editorial responsibilities with the National Special Security Events (NSSE) Communications Planning Toolkit.

From the COPS Office director in his cover letter for the second edition of Mr. Hawkins' book,

> *"You have in your hand the revised and updated version of a guidebook that has been used by public safety first responders across the country to establish and enhance voice and data communications across jurisdictions and disciplines. The original Law Enforcement Tech Guide for Communications Interoperability: A Guide for Interagency Communications developed as a response to the growing concern over public safety agencies' inability to talk to each other during mission critical incidents and in daily operations that crossed jurisdictional and disciplinary lines.*
>
> *"From 2003–2007, the COPS Office awarded more than $400 million dollars to law enforcement agencies across the country to establish and enhance communications interoperability. During that time, we were aware of the obstacles these awardees could face if they started their journey without a guiding document to help them on their way. Thus, the Law Enforcement Tech Guide for Communications Interoperability was designed to meet their needs for guidance.* ***With an endorsement from the U.S. Department of Homeland Security, we could assure our readers the guidebook was the definitive federal voice in communications interoperability guidance.****" [emphasis added]*

Vermont Public Safety Communications Task Force - Statewide Public Safety Communication System Planning - Data Collection Questionnaire

Mission Critical Partners (MCP) is conducting a Statewide Public Safety Communication System Planning assessment for the Vermont Public Safety Communications Task Force. To support our data gathering efforts, we are asking you to complete this questionnaire, which will provide us with valuable quantitative and qualitative data to provide a more complete picture of the operational environment and may support future recommendations.

Questions related to data gathering can be directed to:
Rance Duffy
ranceduffy@missioncriticalpartners.com

CONTACT INFORMATION - DEMOGRAPHICS

1. PSAP/Communication Center name:

2. PSAP/Communication Center full address:

3. Point of Contact for questionnaire (We understand that other personnel may answer some the questions below. The person listed here needs to be a contact for the agency in case we have follow up questions.):

4. Email address:

5. Contact phone number:

6. What is the population of the total jurisdiction served?

7. What are the square miles the PSAP/Communication Center covers?

8. Law enforcement agencies served (dispatched):
If none enter N/A

9. Fire/Rescue agencies served (dispatched):
If none enter N/A

10. EMS agencies served (dispatched):
If none enter N/A

11. Are there any other agencies served by the PSAP/Communication Center (please list):
If none enter N/A

12. List any accreditations (related to the PSAP/Communication Center or agency served e.g., CALEA, Tri-Ace, APCO, etc)

TECHNOLOGY

13. Computer Aided Dispatch (CAD) system manufacturer:

14. CAD version:

15. Year current CAD system was installed:

16. Do you have a hardware upgrade or major CAD change planned in the next two years?

Mark only one oval.

- Yes
- No

17. Does the PSAP/Communication Center have a CAD to CAD or hosted CAD system with any other PSAP/Communication Center? If yes, please indicate which one(s)?

18. Records Management System (RMS) manufacturer:

19. RMS version:

20. Year current RMS system was installed:

21. Jail Management System (JMS) manufacturer:

22. JMS version:

23. Year current JMS system was installed:

24. Please check all of the following CAD interfaces and applications that apply:

Check all that apply.

- [ ] Mobile data terminals
- [ ] Call Handling Protocols (e.g., ProQA, PowerPhone, APCO)
- [ ] NCIC/NLETS Interface
- [ ] Other: _____

25. If you selected "other" for the question above, please detail here:

26. What manufacturer and model are the radio consoles?

27. Describe the radio system used for your agency (e.g., UHF, VHF, trunked)

28. Describe any challenges with interoperability and communicating with regional jurisdictions:

29. Manufacturer and model of the master logging recorder?

30. Does the PSAP/Communication Center use fire station alerting? Please describe.

31. Does the PSAP/Communication Center use over the top applications or other integrated applications and software (Rapid SOS, IamResponding, ActiveAlert, other)?

32. Is the 911 call-handling equipment Internet Protocol (IP) based and ready to accept NG911?

33. What non-mission critical systems does the PSAP have?

FACILITIES & EQUIPMENT

34. How many workstations are in the PSAP/Communication Center? Please indicate if they are full positions, call-take only, dispatch only, training, overflow/surge, etc.

35. Is there room in the PSAP/Communication Center for expansion? If yes, please explain.

36. Is there space in the equipment room to expand and add additional systems?

37. Does the PSAP/Communication Center have adjacent rooms (restroom, conference room, training room, quiet room, gym, kitchen, other)? Please list.

38. Is the PSAP/Communication Center in a secure facility? Please describe.

39. Does the PSAP/Communication Center have backup power- UPS battery and/or generator?

40. Does the PSAP/Communication Center have a backup facility? If yes, how many workstations? Are they fully equipped with CAD, radio and 911 phones?

OPERATIONS

41. List any existing service level benchmarks, metrics or adopted national standards (NFPA, NENA, etc)? Any state standard?

42. Do telecommunicators use structured call-handling protocols (e.g., EMD, EFD, EPD protocols)?

Mark only one oval.

- Yes
- No

43. If yes to the above question, please indicate below the manufacturer:

Mark only one oval.

- Priority Dispatch
- Power Phone
- APCO
- Other: _____

44. If you selected "other" for the question above, please detail here:

_____

_____

_____

_____

_____

45. If you have dispatch shift supervisors, do they work a call taker or dispatcher position most of the time or are they dedicated supervisors?

_____

_____

_____

_____

_____

46. Operational configuration - Are call taking and dispatching responsibilities separate or does a telecommunicator have responsibilities for both at a single position?

47. What are the responsibilities of each radio position in the PSAP/Communication Center (number of radio frequencies/channels actively monitored, number of agencies dispatched, maximum number and type of units on each radio frequency/channel)?

48. Average number of units per dispatch position:

49. Please check all of the ancillary duties that the telecommunicators are responsible for in addition to answering emergency calls and dispatching field responders (check all that apply)

Check all that apply.

- [ ] Jail Duties
- [ ] Security (active camera monitoring)
- [ ] Administrative Duties
- [ ] Walk-up window
- [ ] Vehicle releases
- [ ] Support city services
- [ ] Tornado sirens (early warning system activation)
- [ ] Warrants
- [ ] Records support
- [ ] Other: _____

50. If you selected "other" for the question above, please detail here:

_____

_____

_____

_____

_____

51. Does the PSAP/Communication Center have a structured quality assurance program?

Mark only one oval.

- ◯ Yes
- ◯ No

PERSONNEL & STAFFING

52. What shift schedule do the operational staff work (e.g., 8's, 10's, 12's)? Please include the shift hours

53. Number of shifts (squads):

54. How many telecommunicators (not supervisors) are assigned to each shift?

55. What is the minimum staffing needed for each shift? If call-taker and dispatcher duties are separated, please list minimum number of dispatchers and minimum number of call-takers needed to staff a shift.

56. If you have PSAP/Communication Center shift supervisors, how many are assigned to each shift?

57. Number of AUTHORIZED full-time and part-time telecommunicators for the last 3 full years (by year, not including supervisors):

58. Number of ACTUAL full-time and part-time telecommunicators for the last 3 full years (by year, not including supervisors):

59. Number of AUTHORIZED supervisors for the last 3 full years (by year):

60. Number of ACTUAL supervisors for the last 3 full years (by year):

61. Total number of employees at the HIGHEST staffing level for the last 3 full years (need totals for each year):

62. Total number of new hires the last 3 full years (need totals for each year):

63. Number of new hires that failed to complete the probationary/training period during the last 3 full years (need totals for each year):

64. Number of experienced employees that left for any reason the last 3 full years (need totals for each year):

65. Total number of employees (full and part time) as of the date of this questionnaire:

66. Number of Training Staff (not assigned to operations floor):

67. Number of QA Staff (not assigned to operations floor):

68. Average meal and break time allotted per shift:

69. Total leave usage in hours for the last full calendar year:

70. ***(For the following questions, total all leave in the respective category and divide by the highest staffing number for the last full year:***

    Average annual leave used per person for the last full year:

71. Average annual holiday time used per person for the last full year:

72. Average annual sick leave used per person for the last full year:

73. Average annual personal leave used per person for the last full year:

74. Average comp time used per person for the last full year:

75. Average FMLA used per person for the last full year:

76. Average military time used per person for the last full year:

77. Average other time (meetings, etc.) used per person for the last full year:

911 CALLS & INCIDENT DATA

78. Total call volume to date for the current year:

79. Total law enforcement, fire, and EMS volume data to date for the current year (broken out by discipline):

80. Total 9-1-1 Wireline call volume for the last 3 full years (need totals for each year, broken down by shift, if possible):

81. Total 9-1-1 Wireless call volume for the last 3 full years (need totals for each year, broken down by shift, if possible):

82. Total abandoned call volume for the last 3 full years (need totals for each year, broken down by shift, if possible):

83. Total VoIP call volume for the last 3 full years (need totals for each year, broken down by shift, if possible):

84. Total 7-/10-digit emergency and non-emergency call volume for the last 3 full years (need totals for each year, broken down by shift, if possible):

85. Total outbound call volume for the last 3 full years (need totals for each year, broken down by shift, if possible):

86. Text-to-911 call volume and duration (if implemented) for the last 3 full years

87. Total NCIC/state queries for the last 3 full years (need totals for each year):

88. Total Law Enforcement incidents for the last 3 full years (need totals for each year) (broken down by agency, if more than one): this should include self-initiated, but not out-of-services for meals, court, etc.

89. Total Fire incidents for the last 3 full years (need totals for each year) (broken down by agency, if more than one):

90. Total EMS incidents for the last 3 full years (need totals for each year) (broken down by agency, if more than one):

91. 911 Analytics data for call answering time percentages for busiest and slowest months of the current year and preceding year:

92. Total 9-1-1 calls for busiest and slowest months of the current year and preceding year, broken down by hour of the day

93. Total non-emergency calls for busiest and slowest months of the current and preceding year, broken down by hour of the day

94. Average time to process a 9-1-1 call from pick-up to disconnect (one month average is acceptable):

95. Average time to process a 7/10 (administrative) call from pick-up to disconnect (one month average is acceptable):

96. Average time to process an NCIC/state request and relay information (one month average is acceptable):

97. Average time of a Law Enforcement incident from time of dispatch to time clear of scene (one month average is acceptable):

98. Average time of a Fire incident from time of dispatch to time clear of scene (one month average is acceptable):

99. Average time of an EMS incident from time of dispatch to time clear of scene (one month average is acceptable):

LEADERSHIP & PLANNING

100. The PSAP/Communication Center has the following formal plans (please check all that apply)

Check all that apply.

- [ ] Strategic Plan
- [ ] Continuity of Operations
- [ ] Change Management
- [ ] Security Policy/Plan
- [ ] Cybersecurity Policy/Plan
- [ ] Evacuation Plan
- [ ] Other: _____

101. If you selected "other" for the question above, please detail here:

_____

_____

_____

_____

_____

102. What is the organizational structure of the PSAP/Communication Center:

Mark only one oval.

- ◯ Independent Board of Directors
- ◯ Division the Sheriffs Office
- ◯ Division of a Police Department
- ◯ Division of the Fire Department
- ◯ Separate Division within the City/Municipality/County (not within a fire, police, sheriffs organization)
- ◯ Other: _____

103. If you selected "other" for the question above, please detail here:

104. What are the three top challenges of the PSAP/Communication Center

BUDGET & FINANCE

105. Personnel Costs: Please include reported costs (wages and benefits) for telecommunicators, supervisors, administrative, technical, and management positions for the PSAP/Communications Center only or you have the option to upload budget documentation with a link provided later on this questionnaire.

106. Other Costs: Please include maintenance costs for technology and other misc. recurring costs directly related to PSAP/Communications Center operations or you have the option to upload budget documentation with a link provided later on this questionnaire.

107. Overhead: Please include technology costs and other miscellaneous overhead directly related to PSAP/Communications Center operations or you have the option to upload budget documentation with a link provided later on this questionnaire.

108. What are the PSAP/Communication Center revenue sources (check all that apply):

Check all that apply.

- [ ] General Fund
- [ ] 911 Tax
- [ ] Dispatch Fees
- [ ] State Funding
- [ ] Other: _____

109. If you selected "other" for the question above, please detail here:

_____

_____

_____

_____

_____

DATA REQUEST CHECKLIST

The following items on this checklist are items that we would like to have uploaded to the link below. If you do not have any of the items on the list it is not required to create them. Just need to upload what you already have available.

Upload link [Insert Link]

110.

Check all that apply.

- [ ] Organizational structure diagram
- [ ] Roles, responsibilities, position descriptions (including IT)
- [ ] Current/Past studies (if applicable)
- [ ] Current/Past strategic plans (if applicable)
- [ ] Communications recruiting & hiring workflow
- [ ] Communications list of accreditations
- [ ] Documentation of cost sharing formula for contracting agencies
- [ ] List of communications related planned/in-progress initiatives
- [ ] Existing Contract/Service Level Agreement
- [ ] Communications budget
- [ ] Capital Equipment Replacement Fund (CERF)
- [ ] Copy of existing ILA (if applicable) or contract with a contracting agency. MOUs
- [ ] Annual reports
- [ ] List of any existing service level benchmarks/metrics
- [ ] Operational support model (who provides H/R, legal, payroll, tech support, etc.)
- [ ] List of adopted national standards