COMMONWEALTH OF VIRGINIA STATEWIDE COMMUNICATION INTEROPERABILITY PLAN (SCIP)

October 24, 2023

LETTER FROM THE SECRETARY

Greetings,

I am pleased to provide to you the 2023 Virginia Statewide Communication Interoperability Plan (SCIP). This SCIP represents Virginia's continued commitment to improving emergency communications interoperability and supporting the public safety practitioner. It provides strategic direction to Virginia emergency communications stakeholders at all levels. In addition, this update fulfills the requirements Virginia Code Section 2.2-222.2. It also meets requirements of the Department of Homeland Security (DHS) grant guidelines.

Representatives from Virginia's Statewide Interoperability Executive Committee (SIEC) and a variety of emergency communications specialists collaborated to update the SCIP with actionable and measurable strategies. Beyond traditional emergency response communications, this SCIP addresses the full emergency communications ecosystem, including all functions of information exchange before, during, and after an event. Communications to and from the public, as well as between and among agencies and levels of government (including tribes) must all be considered. This SCIP is designed to support the Commonwealth in planning for new technologies and navigating the ever-changing emergency communications ecosystem in a people-first manner.

As we continue to enhance interoperability, breaking down barriers to communicating and collaborating, we must remain dedicated to maintaining our existing systems and improving our ability to communicate among disciplines and across jurisdictional boundaries. With help from the SIEC and public safety practitioners across the Commonwealth, we will work to achieve the goals set forth in this SCIP and become a nationwide model for statewide interoperability.

Sincerely,

Terrance C. Cole
Secretary of Public Safety and Homeland Security,
Commonwealth of Virginia

SIEC Representation

- Secretary of Public Safety and Homeland Security
- Superintendent, Virginia State Police
- Director, Virginia Department of Fire Programs
- State Coordinator, Virginia Department of Emergency Management
- Director, Virginia Department of Health - Office of EMS
- Director, Virginia Department of Health - Office of Emergency Preparedness
- Adjutant General of the Department of Military Affairs
- Chief Information Officer, Virginia Information Technology Agency
- Commissioner, Virginia Department of Transportation
- State Forester, Department of Forestry
- SWIC (ex officio)
- Region 1 Regional Preparedness Advisory Committee – Interoperability (RPAC-I)
- Region 2 RPAC-I
- Region 3 RPAC-I
- Region 4 RPAC-I
- Region 5 RPAC-I
- Region 6 RPAC-I
- Region 7 RPAC-I
- Virginia Association of Counties
- Virginia Association of Chiefs of Police
- Association of Campus Law Enforcement Administrators
- Virginia Fire Chiefs Association
- Virginia Association of Government EMS Administrators
- Virginia NENA
- Virginia APCO
- Virginia Municipal League
- Virginia Local Government IT Executives
- Virginia Sheriff's Association
- Virginia State Firefighters Association
- Virginia Amateur Radio Emergency Services/RACES
- Virginia Professional Firefighters
- Virginia State Police Association
- Tribal governing councils
- State Council of Higher Education
- Virginia Military Advisory Council

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INTRODUCTION

The Virginia Statewide Communications Interoperability Plan (SCIP) is a stakeholder-driven, multi-jurisdictional, and multi-disciplinary strategic plan to enhance interoperable and emergency communications as we move forward. This document contains the following components:

- Introduction – Provides the context necessary to understand what the SCIP is and how it was developed

- Vision and Mission – Articulates Virginia's vision and mission for improving emergency communications operability, interoperability, and continuity of communications at all levels of government

- Governance – Describes Virginia's interoperability governance structure

- Interoperable and Emergency Communications Overview – Provides an overview of Virginia's current and future emergency communications environment

- Areas of Emphasis – Outlines the multithreaded approach to interoperability in Virginia

The Emergency Communications Ecosystem consists of many inter-related components and functions, including communications for incident response operations, notifications and alerts and warnings, requests for assistance and reporting, and public information exchange. The primary functions are depicted in the National Emergency Communications Plan (NECP)[1]. The NECP is the nation's roadmap to ensuring emergency communications interoperability at all levels of government and is foundational to emergency communications in Virginia and across the country.
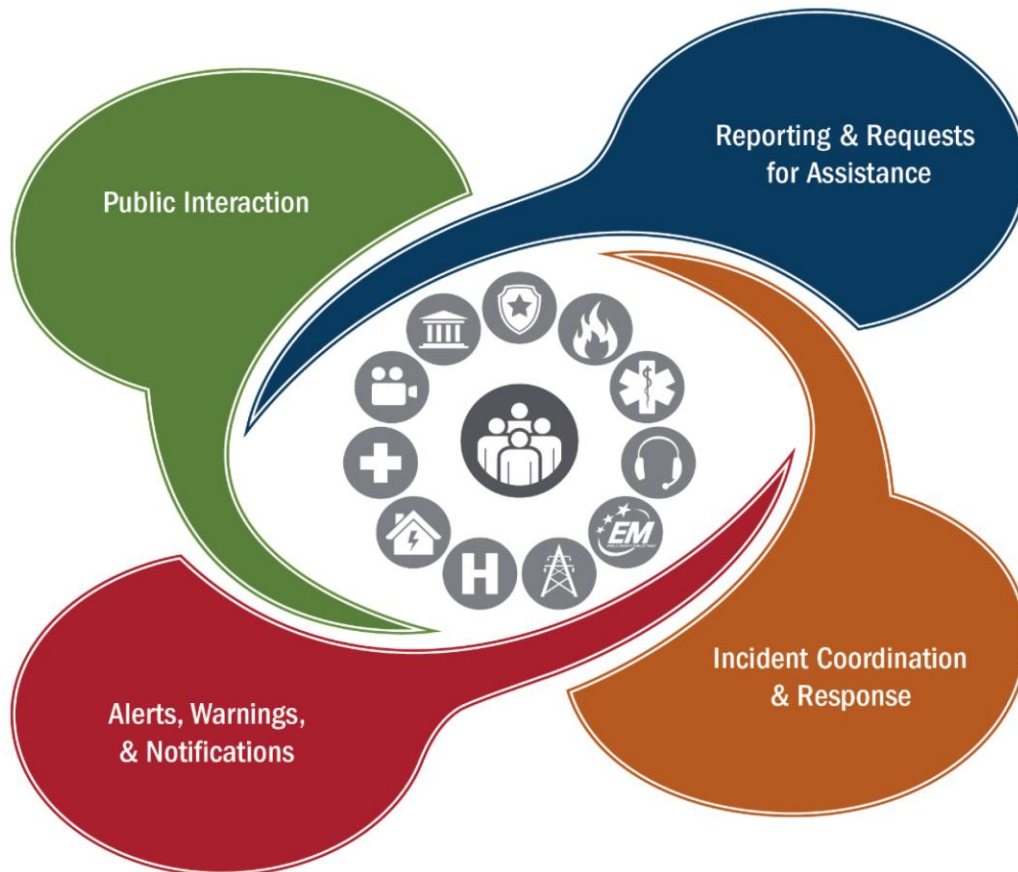
Figure 1: Emergency Communications Ecosystem

In Virginia, the Ecosystem includes more than traditional public safety, emergency management, and other government partners. Successful interoperability includes such partners as healthcare, public health, commercial carriers, private air/ground emergency medical services, military, nonprofits, and volunteer organizations and individuals.

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[1] The 2019 NECP (current as of SCIP adoption) is available here.

The Interoperability Continuum (Figure 2), developed by SAFECOM[2], serves as a framework to address challenges and barriers to interoperability, and continue improving interoperable public safety communications. It is designed to assist public safety agencies and policy makers with planning and implementing interoperability solutions for communications across multiple technologies, jurisdictions, and disciplines. The Continuum breaks work into lanes of effort and moves from least to most sophisticated along its progression. More information on the Interoperability Continuum is available in the Emergency Communications Division (ECD's) Interoperability Continuum brochure.[3]
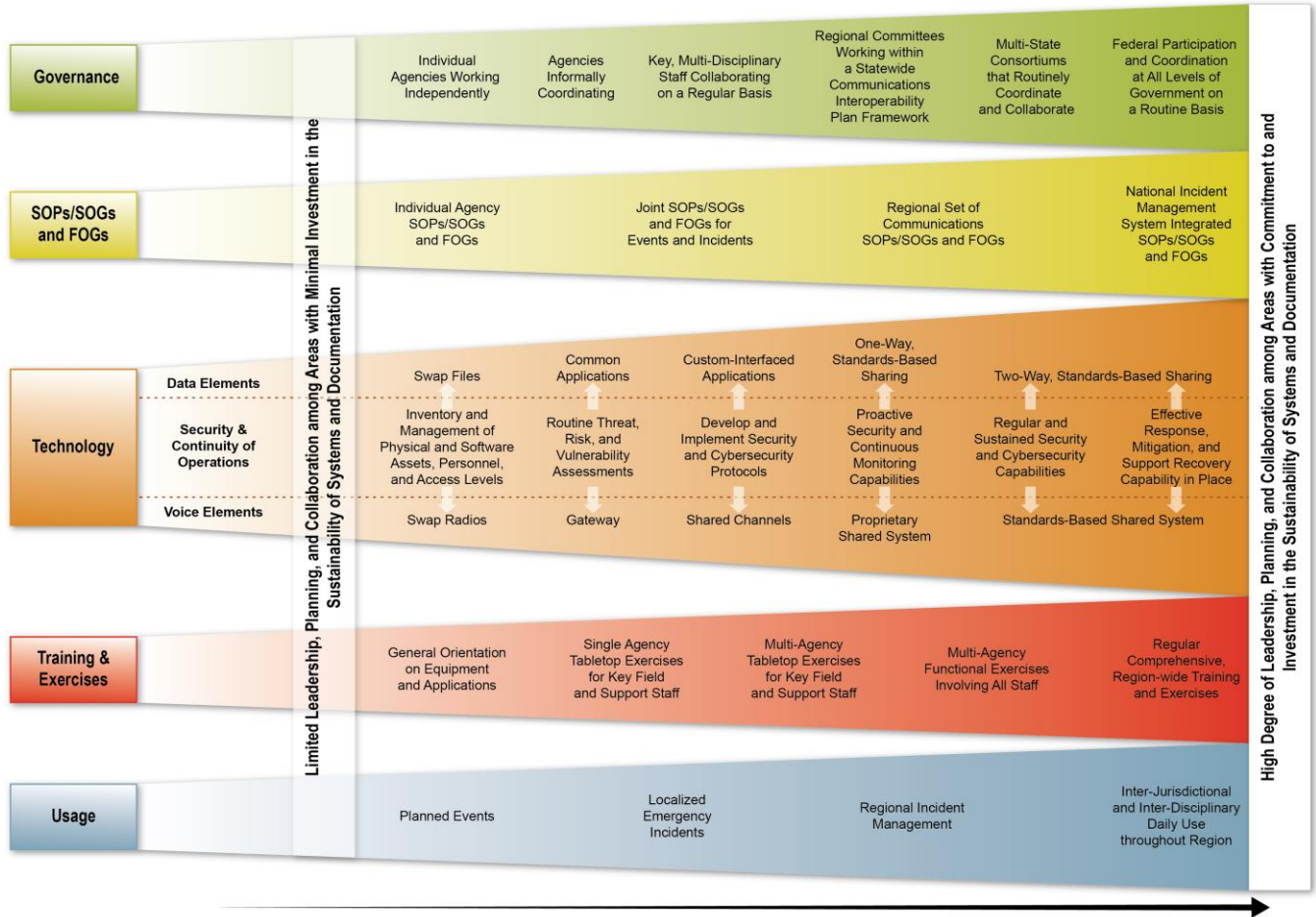
Figure 2: Interoperability Continuum

VISION AND MISSION

The following section describes Virginia's vision and mission for improving emergency communications operability, interoperability, and continuity of communications statewide:

Vision:

Virginia leads the nation by making information sharing a reality for everyone every day.

Mission:

Stakeholder-driven governance that delivers standard operating procedures, ideal and sustained technology, functional training, relevant exercises, and smart usage.

And

To provide a statewide strategic plan for inclusive, scalable, sustainable, and reliable systems that align with the NECP, effectively addressing the unique requirements of public safety users and supporting entities.

GOVERNANCE

Statewide Interoperability Executive Committee (SIEC)

The Virginia SIEC is established under the direction of Virginia's Secretary of Public Safety and Homeland Security (SPSHS) to be the statewide interoperability governing body serving as the primary steering group for the Virginia SCIP[4] and meeting the requirements in Section 2.2-221 of Virginia Code. The SIEC is made up of representatives from various state and local agencies, including:

- Locality executives
- Information technology (IT) professionals
- Operations personnel
- RPAC-I chairs
- Public safety associations

The SIEC meets quarterly or as needed. There is substantial involvement and input from the RPAC-I representatives into the efforts pushed forward by the SIEC to the Commonwealth for decision-making.

Figure 3: Emergency Communications Governance in the Commonwealth of Virginia

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[4] The SIEC charter is available here

INTEROPERABLE AND EMERGENCY COMMUNICATIONS OVERVIEW

Reliable, real-time communications among public safety responders, public safety agencies, and with the public are crucial to effectively carrying out public safety and public service missions.

Traditional voice capabilities, such as land mobile radio (LMR) and landline 9-1-1 services, have long been and continue to be critical tools for communications. However, the advancement of emerging technologies in public safety has increased the type and amount of information responders receive, the number of tools they communicate with, and the complexity of new and interdependent systems. New technologies enhance coordination across public safety disciplines, communications functions, and levels of government to ensure emergency communications capabilities are interoperable, reliable, and secure. Virginia will always strive to embrace emerging technologies, as exemplified by being first to "opt in" to FirstNet in 2017.

Similarly, the transition of emergency communications centers (ECCs, also known as public safety answering points, or PSAPs) to Next Generation 9-1-1 (NG9-1-1) emergency services IP network (ESINet) technology will enhance sharing of mission-critical information in real-time using multimedia - such as pictures, video, and text - among the public, ECCs, and field responders. While the benefits of NG9-1-1 are tremendous, interfacing systems along with governance, standard operating procedures (SOPs) and training are necessary to fully realize these benefits and ensure the security of information. Emerging 9-1-1 technologies will bring new challenges and opportunities.

VIRGINIA INTEROPERABLE COMMUNICATIONS – AREAS OF EMPHASIS

Advancing interoperability in the Commonwealth is, and will be, a continuous, iterative process. Virginia's regional approach to improving interoperable communications will help address interoperability issues in both the short- and medium-terms and is divided into the following areas of emphasis.

Emphasis #1 – Lifecycle Funding

Funding equipment and system procurement and sustainment remains challenging in Virginia and across the country. The SWIC will continue to work with VDEM (the State Administering Agency, or SAA), and other partners to support grant and sustainment funding for interoperability projects. This funding will help support local planning projects and the governance structures that bind them, equipment purchases and upgrades, training and exercises, as well as the communications caches. Collaboration on regional projects can maximize funding efficiency, but consideration must be given to timelines and the tension between the desire to collaborate and readiness to execute.

Coordinating funding requests will ensure a strong return on the Commonwealth's interoperability investments.

Lifecycle Funding – Example Goals and Objectives
- Ensure all communications grants align with the SCIP
- Identify Virginia emergency communications funding priorities and gaps

- o Analyze funding requirements and/or support existing state or local assessments
- o Develop positions and decision briefs on funding gaps and priorities
- o Address challenges in funding Auxiliary Communications (AUXCOMM) and amateur radio related to volunteer organizations
- Encourage and support locality participation in state- and federally-mandated surveys to document capability gaps requiring funding

Emphasis #2 – Commonwealth's Link to Interoperable Communications (COMLINC)

COMLINC offers a standardized method for bridging communication barriers by interconnecting disparate land mobile radio systems with a network of IP-connected gateways, standardized computer consoles, and available mobile applications. The COMLINC initiative has grown from its inception in 2005 and encompasses jurisdictions across the Commonwealth, Virginia's five communications caches, as well as multiple state agencies, healthcare organizations, and federal partners. COMLINC, like any system, has limitations, but provides a robust, standardized system-of-systems approach to interoperable communications across the state.

Announced in 2019, the "COMLINC 2.0" program upgraded all hardware and software across the state. New technicians and a program manager, housed within the Virginia State Police Communications Division, are dedicated to upgrades, installs, support, training, and operations of Virginia COMLINC. The addition of ongoing support, dedicated budget funding, and dedicated technicians has resulted in improved communications outcomes during planned and unplanned events.

COMLINC – Example Goals and Objectives
- Complete COMLINC 2.0 deployment in 2023
- Document and share best practices and successes
- Build COMLINC into operational communications plans
- Develop and promulgate additional training
- Identify resilient, secure connectivity
- Identify and examine possible future evolutions of COMLINC system

Emphasis #3 – Communication Caches

Virginia has five regional communications caches strategically located throughout the Commonwealth. In addition to technology, these teams, staffed and supported by localities, provide highly skilled and committed personnel with broad technical, operational, and leadership abilities. Cache teams provide and support technology, planning, and operations for planned and unplanned events, including but not limited to land mobile radio, voice over IP and telephony, satellite, Internet and IP, and tactical dispatch. Cache team members also form the core of the Virginia communications unit training cadre.

Cache teams and equipment have been deployed numerous times over the years for incidents and events across the state. Funding models for deployments and operations, as well as technology sustainment and upgrades are critical priorities.

Communications Caches – Example Goals and Objectives

- Identify funding for Cache program sustainment
  - Funding for technology upgrades/replacements
  - Funding for deployment without a Governor's Emergency Declaration
- Document and share best practices for Cache requests and utilization
- Document and share successes
- Expand mutual aid capability by executing statewide MOUs/MOAs with localities, regions, and states on behalf of Cache

Emphasis #4 – Planning, SOPs, Training and Exercises

While the Commonwealth has made significant progress toward to inclusion of comprehensive planning, development of SOPs, and training, more remains to be done. Continued attention must be given to these areas in order to ensure proper use of the communications technology, teams, and planning in which the state has invested. The technologies require plans that are efficient, comprehensive, and accessible. Continuous, adaptable training is needed to improve capabilities and maximize the Commonwealth's resources. Consistent, sustainable credentialing is required.

Planning, SOPs, Training and Exercises – Example Goals and Objectives

- Establish unified COMU position task book process
- Establish communication protocols between levels of government for local, regional, and statewide events
- Review after-action reports (AARs)
  - Establish collection and dissemination process
- Develop guidelines for integration of amateur radio and Auxiliary Communications
  - Capabilities across levels of government, jurisdictions, organizations
  - Coordinated statewide and regional training and exercising of resources
- Identify and share local and regional best practices, including integration of interoperability into local emergency operations plans (LEOPs)
- Sustain and expand cadres of Virginia COMU trainers
- Establish annual training and exercise rhythm and strategy
- Effectively integrate interoperability into existing exercises

Emphasis #5 – Broadband

A cautious but intentional approach to broadband is required, given its fast-paced development and sometimes unclear risks. Robust requirements and innovative business practices must be developed to safely take advantage of its many benefits. The deployment of proprietary technologies in broadband risks creating new silos. Breaking the bounds of LMR coverage opens doors for interoperable connections across systems and distance but introduces risk and reliance on commercial infrastructure. Where standards are unavailable, Virginia should push industry to develop them.

Broadband – Example Goals and Objectives

- Support Virginia NG9-1-1 implementation plan
  - Seek/offer (inter)connection opportunities
  - Leverage broadband investments for NG9-1-1
- Explore broadband opportunities and risks to address interoperability gaps
  - LMR interconnection, including LMR-LTE
  - Expanded coverage footprints
- Identify and share (outreach) existing broadband-based interoperability systems and projects in Virginia
- Establish and sustain relationships with Virginia broadband stakeholders
  - Carriers / private sector / utilities
  - Virginia Department of Housing and Community Development (DHCD)
  - Associations and industry groups engaged in broadband expansion

Emphasis #6 – Information Sharing

As communication and information sharing opportunities continue to expand (examples include geographic information system (GIS), data and voice communications, computer-aided dispatch (CAD), NG9-1-1, and video-streaming technologies), the Commonwealth should continue to strive for collaborative information-sharing strategies and initiatives.

Information Sharing – Example Goals and Objectives

- Identify applications and their interoperable capabilities and risks
- Document and share existing data-sharing (example: CAD2CAD) arrangements, configurations, and available contracts
- Identify common file and data sharing platforms and standards in use and available in Virginia
- Evaluate feasibility of a CAD and/or records management data sharing clearinghouse working group

Emphasis #7 – Shared Interoperable Channels and Common Language Protocol

Improving voice interoperability requires common access to shared channels with standardized names, including those listed in the National Interoperability Field Operations Guide[5] (NIFOG) as well as Virginia-specific channels. All state and national interoperability channels, including but not limited to, 700 and 800 megahertz (MHz), UCALL/UTAC, VCALL/VTAC, fire-ground, emergency medical services (EMS), and law enforcement channels must be programmed into all radios as applicable. The Commonwealth executed an MOU in 2018 allowing statewide access to Federal interoperability channels for authorized intercommunication with federal entities. The SIEC will publish a statewide channel nomenclature and zone programming reference. The use of Common Language during all incidents is required.

Shared Interoperable Channels and Common Language Protocol – Example Goals and Objectives
- SIEC-sanctioned P25 radio ID and encryption (collision avoidance) standards
- Identify and establish missing governance (MOU, MOA, licenses) required for federal and state interoperable channel sharing

Emphasis #8 – Regional System-of-Systems Approach

The regional systems-of-systems approach incorporates targeting investments in order to allow jurisdictions to partner together in a cooperative manner in an effort to create regional communications capabilities that maximize existing investments and expand communications footprints. This includes supporting the interconnection of existing systems through programs such as COMLINC, the sharing of mutually beneficial infrastructure, and the development or expansion of cooperative governance and funding structures.

Regional System-of-Systems – Example Goals and Objectives
- Explore requirements for regional systems
- Identify and share best practices for regional governance, voice and data sharing, technical interconnections, and funding

Emphasis #9 – Outreach and Education

Outreach strategies, products, and efforts are fundamental to building a statewide coalition supporting the SCIP and promoting common emergency communications initiatives. Outreach efforts bring interoperability information to Virginia's public safety community, elected officials, and stakeholders such as private-sector and non-profit partners.

Outreach and Education – Example Goals and Objectives
- Develop outreach products, including newsletters, white papers, and best practices
- Identify additional distribution channels, including associations, agencies, and other partners
- Share timely and current information

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[5] The current NIFOG can be found at https://www.cisa.gov/safecom/field-operations-guides

- Investigate and share emerging technology information

APPENDIX A: LIST OF ACRONYMS

AAR	After-Action Report
CAD	Computer Aided Dispatch
CISA	Cybersecurity and Infrastructure Security Agency
COML	Communications Unit Leader
COMLINC	Commonwealth Link to Interoperable Communications
COMT	Communications Unit Technician
COOP	Continuity of Operations
DHS	United States Department of Homeland Security
EAS	Emergency Alert System
ECD	Emergency Communications Division
ECC	Emergency Communications Center
EMS	Emergency Medical Services
FirstNet	First Responder Network Authority
GIS	Geographic Information System
HSEEP	Homeland Security Exercise and Evaluation Program
ICS	Incident Command System
IFOG	Interoperability Field Operations Guide
IoT	Internet of Things
IP	Internet Protocol
ITSL	Information Technology Service Unit Leader
LMR	Land Mobile Radio
LTE	Long-Term Evolution
MHz	Megahertz
MOU	Memorandum of understanding
NCR	National Capital Region
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
NIMS	National Incident Management System
NPSBN	National Public Safety Broadband Network
ORION	Overlay Regional Interoperability Network
P25	APCO Project 25
PDC	Planning District Commission
PSAP	Public Safety Answering Point
RCR	Richmond Capital Region
RMS	Records Management System
RPAC-I	Regional Preparedness Advisory Committees for Interoperability
SAA	State Administering Agency
SCIP	Statewide Communication Interoperability Plan
SIEC	State Interoperability Executive Committee
SIRS	Statewide Interdepartmental Radio System
SOPs	Standard Operating Procedures
SPSHS	Secretary of Public Safety and Homeland Security
STARS	Statewide Agencies Radio System
SWIC	Statewide Interoperability Coordinator
TICFOG	Tactical Interoperable Field Operations Guide
VDEM	Virginia Department of Emergency Management
VDH	Virginia Department of Health
VDOT	Virginia Department of Transportation

VHF	Very High Frequency
VITA	Virginia Information Technologies Agency
VML	Virginia Municipal League
VSP	Virginia State Police