



# Commonwealth of Virginia 2009 Strategic Plan for Statewide Communications Interoperability







# **COMMONWEALTH of VIRGINIA**

## *Office of the Governor*

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Assistant to the Governor  
for Commonwealth Preparedness

November 1, 2008

Greetings,

I am very pleased to provide to you the 2009 Commonwealth of Virginia Strategic Plan for Statewide Communications Interoperability (Statewide Plan). Through the support of the Kaine Administration in 2008, Virginia made remarkable progress towards the improvement of statewide communications interoperability. This is the fifth version of the Statewide Plan and it shows the Commonwealth's continued commitment to the public safety practitioner community and marks the next step towards achieving the 2015 Vision of a system of systems on a local, regional, state and federal level.

The State Interoperability Executive Committee (SIEC) and my office, the Office of Commonwealth Preparedness' (OCP) Commonwealth Interoperability Coordinator's Office (CICO), collaborated to refine and enhance the Statewide Plan in compliance with Virginia Code Section 9.1-1200 that requires the update and implementation of the Plan annually. As a result, this Statewide Plan reflects new and ongoing initiatives throughout the Commonwealth of Virginia that will affect interoperability in the coming years.

In 2008, the SIEC and additional local, regional, and state stakeholders ably represented the public safety community, drove the planning process, and played an integral role in the implementation of the initiatives contained in the Statewide Plan. In 2009, we hope to continue our work with organizations statewide to implement the strategic initiatives fully and effectively to increase awareness, and address challenges across disciplines, localities, and state agencies.

As we move towards the July 1, 2015 deadline for state agencies and localities to achieve consistency with the Statewide Plan, we must remain dedicated and continue to improve our ability to communicate between disciplines and across jurisdictional boundaries. With help from all practitioners statewide, we will achieve our 2015 Vision and continue to be a model for statewide interoperability.

Sincerely,

A handwritten signature in black ink that reads 'Constance McGeorge'.

Constance McGeorge  
Commonwealth Interoperability Coordinator

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## SAFECOM Criteria Compliance Matrix

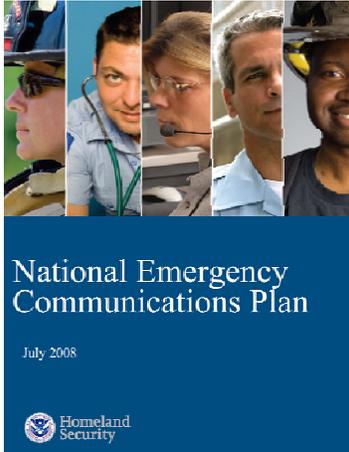
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11.4	Describe how authorized non-governmental organizations' interoperable communications needs have been included in the planning process and how their needs are being addressed (if applicable).	N/A

**Figure 1. SAFECOM Criteria Compliance Matrix**

## Alignment to the National Emergency Communications Plan



In June 2008, The Department of Homeland Security's (DHS) Office of Emergency Communications (OEC) developed a National Emergency Communications Plan (NECP) which provides short- and long-term guidance to address national emergency communications deficiencies<sup>1</sup>. A priority for Virginia is to ensure alignment with the following Milestones from the NECP<sup>2</sup>. Below each Milestone explains how Virginia has addressed or is planning to address each one.

1. *"Within 12 months, all States and territories should establish full-time statewide interoperability coordinators or equivalent positions."*
  - a. Virginia has a full-time interoperability coordinator.
2. *"Within 12 months, SIECs (or their equivalents) in all 56 States and territories should incorporate the recommended membership as outlined in the SCIP Guidebook and should be established via legislation or executive order by an individual State's governor."*
  - a. The State Interoperability Executive Committee (SIEC) was codified during the 2008 Legislative Session.
  - b. The SIEC has Federal, State, regional, and local representation.
  - c. The SIEC includes representation from each public safety agency.
3. *"Within 18 months ... programs an appropriate set of frequency-band-specific nationwide interoperability channels into all existing emergency responder radios..."*
  - a. Virginia is building out the national interoperability channels.
  - b. Virginia supports the expansion of national interoperability channels in all bands to allow responders to use their home system's radio regardless of location within the Commonwealth of Virginia.
  - c. Virginia needs to develop policies and procedures for a potential statewide overlay system that utilizes the national interoperability channels.
4. *"Within 24 months, all SCIPs reflect plans to eliminate coded substitutions throughout the Incident Command System (ICS), and agencies incorporate the use of existing nationwide interoperability channels into SOPs, training, and exercises at the Federal, State, regional, local, and tribal levels."*
  - a. Virginia has developed a common language protocol for use throughout the State and is a nationally recognized best practices model for other States in the nation.
5. *"Within 12 months, all Federal, State, local, and tribal emergency response providers within Urban Area Security Initiative (UASI) jurisdictions have implemented the Communications and Information Management section of the NIMS."*

<sup>1</sup> Department of Homeland Security Office of Emergency Communications Online Fact Sheet for the NECP: [http://www.dhs.gov/xnews/releases/pr\\_1217534334567.shtm](http://www.dhs.gov/xnews/releases/pr_1217534334567.shtm)

<sup>2</sup> Department of Homeland Security Office of Emergency Communications National Emergency Communications Plan, 2008, Section 3 beginning on page 9.

- a. Virginia endorses the use of the National Incident Management System (NIMS) and the Incident Command System (ICS) to guide how disciplines operate with one another for mutual aid. The CICO supports NIMS training and exercises and promotes NIMS compliance as well as the use of ICS.
6. *“Within 24 months, all Federal, State, local, and tribal agencies in UASIs will have defined alternate/backup capabilities in emergency communications plans.”*
- a. Virginia will continue to establish Strategic Technology Reserve (STR) to enhance back-up communications capability within the Commonwealth of Virginia. Currently, all three of the Urban Area Security Initiatives (UASIs) in Virginia have strategic technology reserves.
7. *“Within 12 months, tactical planning among Federal, State, local, and tribal governments occurs at the regional interstate level.”*
- a. Virginia works with neighboring states to accomplish this goal through its participation in the All Hazards Consortium (AHC). Currently, the AHC is detailing the project plan to conduct a multi-state baseline survey.
8. *“Within 24 months, complete disaster communications training and exercises for all 56 States and territories.”*
- a. Virginia needs to incorporate more interoperable disaster communications training and exercises into existing statewide exercises and grant recipient training.

## 1. Introduction

Virginia's public safety community has recognized the importance of interoperability since before the establishment of the State Interdepartmental Radios System (SIRS) in 1978. SIRS was developed under the basic goal that law enforcement agencies need to communicate across the state, not just within their individual jurisdictions, and be provided the equipment and frequencies needed to establish connections between localities and the Virginia State Police (VSP). By today's standards the SIRS system provides only basic functionality, but the goal remains the same; first responders must be able to communicate with each other over divergent radio systems as needed.

Since that time, the Virginia public safety community has continued to acquire equipment to create enhanced voice and data communications. In 2004, the VSP entered an agreement with Motorola to update its antiquated radio system, which was established in 1977. This VSP system was further developed into the Statewide Agencies Radio System (STARS), which interfaces with localities and also provides communications for a total of 21 state agencies throughout Virginia. It is important to note that while STARS will provide communications for 21 state agencies, it will not serve all needs. There are countless other voice and data communications systems and projects in localities, regions, and even other state agencies, that must continue to be coordinated.

No one system is robust enough, nor are there enough frequencies, to have all responders on one system. The lack of voice and data communications interoperability continues to represent a significant challenge for public safety responders in Virginia. After decades of experience with this issue, it is clear that public safety communications and interoperability cannot be solved by any one entity. It requires a partnership among local, state, and Federal public safety organizations, and private industry in order to effectively achieve a "systems of systems" approach within the Commonwealth.

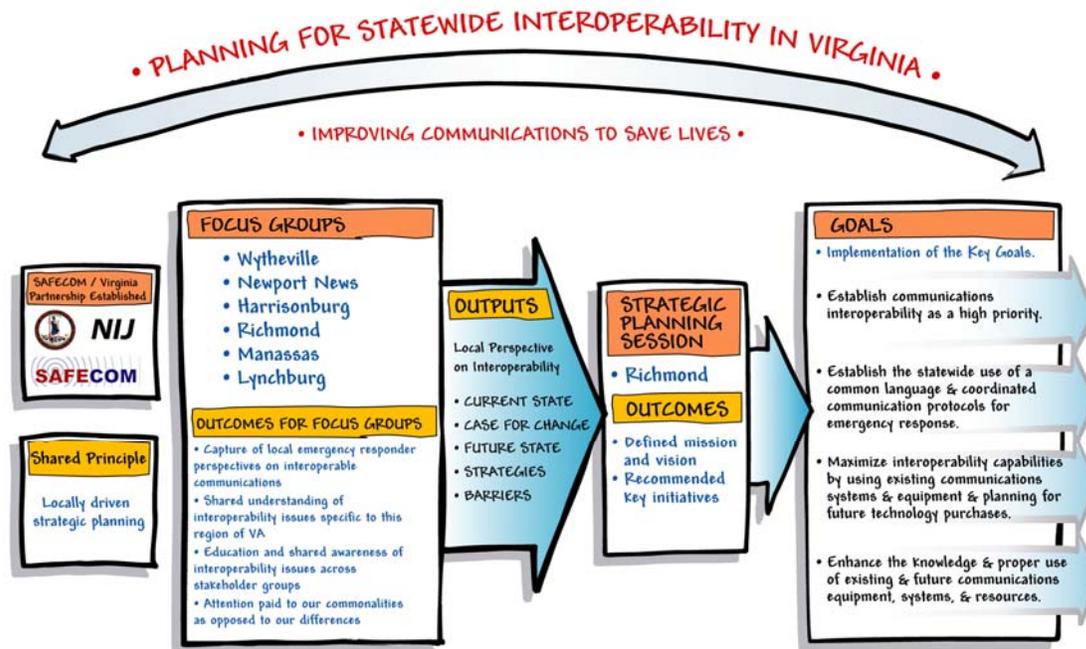
To address this requirement, the First Responder Sub-Panel, which was chaired by Senator Stolle of Governor Warner's Secure Commonwealth Panel (SCP) in 2004, identified radio communications interoperability as a critical post-9/11 priority for Virginia's first responders. In response to this directive, the SCP formed the Interoperability Working Group, which was composed of first responder participants from fire, rescue, and law enforcement agencies throughout the Commonwealth, to plan for improved communications interoperability statewide. Planning encompassed all interoperability efforts from the large STARS project, to the smallest local system. The participants in the process recognized that interoperability must be coordinated effectively for improved communications.

The first steps towards improved coordination for communications interoperability were the establishment of a full-time Commonwealth Interoperability Coordinator and the development of a Statewide Communications Interoperability Plan (SCIP). The Commonwealth of Virginia and SAFECOM<sup>3</sup>, a federal program managed by the

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<sup>3</sup> SAFECOM, a communications program of the Department of Homeland Security's Office for Interoperability and Compatibility, works with its Federal partners to provide research, development, testing and evaluation, guidance, tools, and templates on communications-related issues to local, tribal, state, and Federal public safety agencies.

Department of Homeland Security (DHS), entered into a Memorandum of Understanding (MOU) in 2004 to develop the FY 2005 Strategic Plan for Statewide Interoperable Communications (Statewide Plan). Through this partnership, the Commonwealth adopted the SAFECOM practitioner driven approach to provide a forum for responders to drive statewide planning. The National Institute of Justice (NIJ) also came to Virginia's aid by providing resources and equipment.<sup>4</sup> Figure 2 shows the initial planning process used to develop the FY 2005 Statewide Plan, which included the design and facilitation of six regional focus groups (comprised of local elected officials, first responders, and representatives from NIMS outlined emergency support functions) to identify stakeholder needs, and assess the current status of interoperability.



**Figure 2. Initial Strategic Planning Process**

A major part of the development of the FY 2005 Statewide Plan was the establishment of the practitioner-based governance structure consisting of the Office of Commonwealth Preparedness' Commonwealth Interoperability Coordinator's Office (CICO), the State Interoperability Executive Committee (SIEC), and Initiative Action Teams (IATs). In 2008, Virginia's governance structure was further refined to ensure efficiency and inclusion of all levels of public safety stakeholders. Additional elements were established; these include three SIEC Standing Subcommittees (Operations, Policy, and Technical), seven Regional Preparedness Advisory Committees (RPACs) and their interoperability subcommittees referred to as Regional Preparedness Advisory Committees for Interoperability (RPAC-Is). See Figure 11 in Section 4.1 for the visual representation of the layers of Virginia's governance structure and for a description of each element's responsibilities.

<sup>4</sup> This project was supported through a MOU between the Commonwealth of Virginia and the Department of Homeland Security's SAFECOM program and an U.S. Department of Justice grant (2003-IJ-CX-K027) from the National Institute of Justice.

Since 2004, four plans (FY 2005, FY 2006, FY 2007 and FY 2008<sup>5</sup>) have been developed, implemented, and updated to increase the availability of interoperable communications information, further establish governance, create standard operating procedures, coordinate state interoperability projects, and improve the technological capabilities of Virginia's practitioners. These plans (including 2009) reflect the need to address both voice and data communications, as both are needed to address the breadth of interoperability within the Commonwealth.

## 2. Background

### Overview

The Commonwealth of Virginia has a unique history, diverse geography, and population. Virginia is made up of 95 counties and 39 independent cities<sup>6</sup> with 7,642,884 residents occupying 39,594.07 square miles<sup>7</sup>. In 2006, 39 of the 42 independent cities in the United States were in Virginia<sup>8</sup>, and likewise, it was with this spirit of independence of local government that Virginia was founded. This self-government creates a unique dynamic for interoperability. In the past, counties and cities developed their own procedures for administering public safety and acquired the requisite equipment to provide communications within their own locality. The result is hundreds of independent communications systems providing sufficient coverage for localities in most cases, but lacking the technological or cultural ability to work together.

Virginia's geography can be divided into five geographical regions: the Atlantic Coastal Plain, the Piedmont, the Blue Ridge, the Appalachian Ridge and Valley Region, and the Appalachian Plateau (see Figure 3).

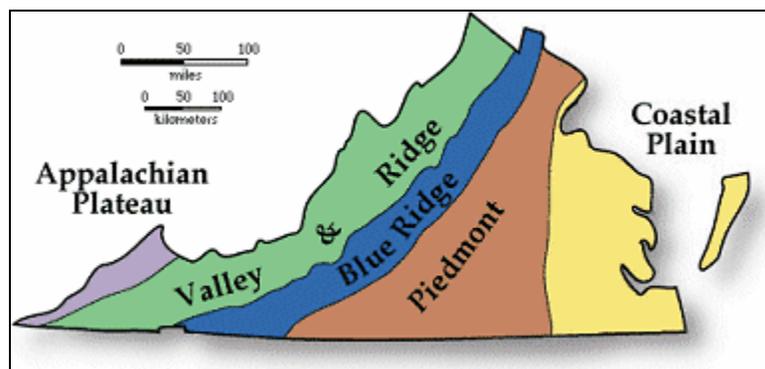


Figure 3. Five Geographical Regions of Virginia<sup>9</sup>

<sup>5</sup> Past Statewide Plans can be found on the Interoperability in Virginia website at: <http://www.interoperability.virginia.gov/StrategicPlans/PlanArchives.cfm>.

<sup>6</sup> Constitution of Virginia, Article VII, Section I describes a "city" as an independent incorporated community which became a city as provided by law before noon on the first day of July, nineteen hundred seventy-one, or which has within defined boundaries a population of 5,000 or more and which has become a city as provided by law

<sup>7</sup> 2000 Census, U.S. Census Bureau : <http://quickfacts.census.gov/qfd/states/51000.html>

<sup>8</sup> Counties and Equivalent Entities of the United States, Its Possessions, and Associated Areas; Change Notice No. 7 (2001).

<sup>9</sup> [http://www.netstate.com/states/geography/va\\_geography.htm](http://www.netstate.com/states/geography/va_geography.htm)

**Atlantic Coastal Plain:** The Atlantic Coastal Plain runs from north to south along the Atlantic Ocean. This area of lowlands stretches about 100 miles inland and is covered with salt marshes and swamps. It is often called the Tidewater because of the flow of water up and down the coastal inlets and bays as the tide moves in and out. The Atlantic Coastal Plain is divided into a mainland in the west and a peninsula, called the Eastern Shore, by Chesapeake Bay.

**Piedmont:** To the west of the Atlantic Coastal Plain is the Piedmont, Virginia's largest geographical land region. Sloping gradually upward from elevations of 200 to 300 feet above sea level in the east to 800 to 900 feet above sea level in the west, the rolling plain of the Virginia Piedmont covers most of central Virginia. About 40 miles wide in the northeast, the Piedmont expands to about 140 miles wide at the North Carolina Border. The rivers and streams of the Piedmont generally flow in a southeasterly direction, breaking into low waterfalls at the "fall line" where the Piedmont meets the Atlantic Coastal Plain.

**Blue Ridge:** To the west of the Piedmont, lies the Blue Ridge. Northeast of Roanoke, Virginia, the Blue Ridge rises steeply from the Piedmont in the east and the Appalachian Ridge and Valley Region in the west. It is the main eastern mountain range of the Appalachian Mountains. South of Roanoke, the Blue Ridge expands into a plateau with valleys, deep ravines, and the highest peaks in Virginia. Mount Rogers, the highest point in Virginia, is located in the Blue Ridge south of Roanoke.

**Appalachian Ridge and Valley Region:** Extending southwest to northeast along Virginia's western border is the Appalachian Ridge and Valley Region. The Great Valley, sometimes called the Valley of Virginia, lies against the Blue Ridge in the east. Actually, the Great Valley is a series of valleys divided by mountains. The largest and most well-known of these valleys is the Shenandoah Valley. The Appalachian Ridge and Valley Region are riddled with caverns carved into the abundant limestone.

**Appalachian Plateau:** In the far southwestern portion of Virginia lies the Appalachian Plateau. This plateau extends into Kentucky as the Cumberland Plateau. Covered with rivers, streams, and forests, the Appalachian Plateau averages about 2,000 feet above sea level.<sup>10</sup>

Virginia's most frequently occurring natural disasters are severe thunderstorms and flooding in its coastal regions. Less typical are tornadoes (approximately 2 per year), hurricanes (and their aftermath) and earthquakes (not typically above 4.5 on the Richter scale<sup>11</sup>). However, Virginia does experience a significant risk to terrorist threats and weapons of mass destruction because of its proximity to and direct interaction with the Nation's Capital. In the event of a major disaster in the District of Columbia, Virginia contains several major evacuation routes. The major North/South roadways of Interstates 95 and 81 traverse the state. Additionally, I-66 East/West in the North and I-64 East/West in the South are heavily traveled on a daily basis as the population heads to work and to play.

Virginia experienced significant loss during the September 11, 2001 terrorist attacks when the third plane hit the Pentagon (located in Arlington, Virginia) killing 184 citizens

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<sup>10</sup> The Geography of Virginia website: [http://www.netstate.com/states/geography/va\\_geography.htm](http://www.netstate.com/states/geography/va_geography.htm).

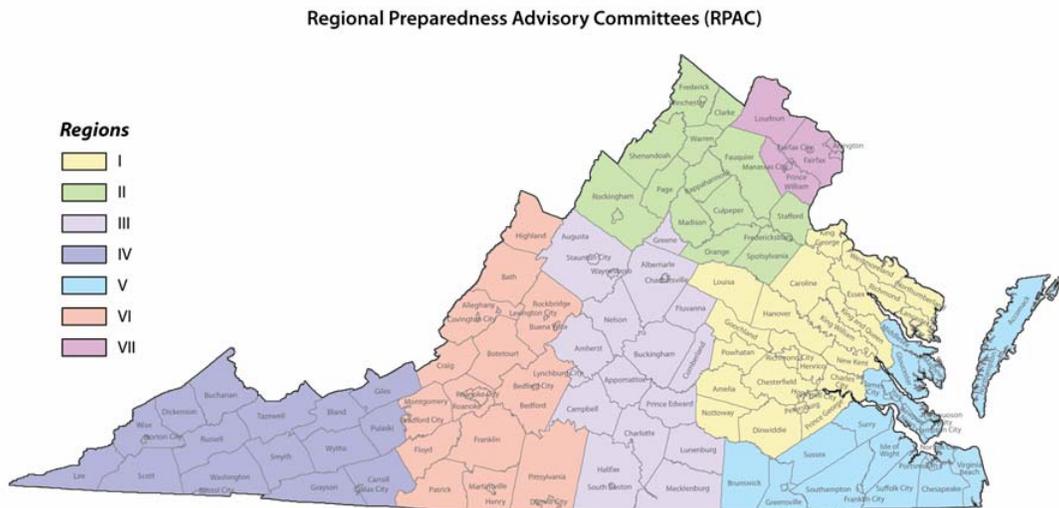
<sup>11</sup> Wikipedia entry on "September 11 attacks": [http://en.wikipedia.org/wiki/September\\_11,\\_2001\\_attacks](http://en.wikipedia.org/wiki/September_11,_2001_attacks)

and military personnel (59 on American Airlines, Flight 77, and 125 within the Pentagon<sup>12</sup>) and injuring countless others.

Virginia’s ports are also a significant entry for imported goods and must be sufficiently safe-guarded to protect against terrorist threats. The Hampton Roads area is the largest military community on the East Coast. Through effective communications in Northern Virginia on 9/11 and collaboration between the Federal government, Virginia Port Authority, and local public safety agencies in Tidewater, Virginia has demonstrated its competency in responding to major emergencies and risks. The Commonwealth must now take the steps necessary to bring the interoperability strategy into the full view of preparedness and implement technology that is sufficiently supported by standard operating procedures and training throughout the Commonwealth.

### Regions

To foster collaboration across the state, the Governor recognized the Virginia State Police Districts as the construct for homeland security planning purposes including communications interoperability (Figure 4).



**Figure 4. Regional Preparedness Advisory Committee Regions**

The counties and cities contained within each region are:

<b>Region 1: Richmond</b>		
Amelia County	Henrico County	Nottoway County
Caroline County	City of Hopewell	City of Petersburg
Charles City County	King and Queen County	Powhatan County
Chesterfield County	King George County	Prince George County
City of Colonial Heights	King William County	Richmond County
Dinwiddie County	Lancaster County	City of Richmond
Essex County	Louisa County	Westmoreland County
Goochland County	New Kent County	
Hanover County	Northumberland County	

<sup>12</sup> CNN Post-9/11 Reports

<b>Region 2: Culpeper</b>		
Clarke County	Madison County	Spotsylvania County
Culpeper County	Orange County	Stafford County
Fauquier County	Page County	Warren County
Frederick County	Rappahannock County	City of Winchester
City of Fredericksburg	Rockingham County	
City of Harrisonburg	Shenandoah County	

<b>Region 3: Central Virginia</b>		
Albemarle County	City of Charlottesville	Mecklenburg County
Amherst County	Cumberland County	Nelson County
Appomattox County	Fluvanna County	Prince Edward County
Augusta County	Greene County	City of South Boston
Buckingham County	Halifax County	City of Staunton
Campbell County	Lunenburg County	City of Waynesboro
Charlotte County	City of Lynchburg	

<b>Region 4: Southwest</b>		
Bland County	Giles County	Scott County
City of Bristol	Grayson County	Smyth County
Buchanan County	Lee County	Tazewell County
Carroll County	City of Norton	Washington County
Dickenson County	Pulaski County	Wise County
City of Galax	Russell County	Wythe County

<b>Region 5: Tidewater</b>		
Accomack County	Isle of Wight County	City of Portsmouth
Brunswick County	James City County	Southampton County
City of Chesapeake	Mathews County	City of Suffolk
City of Emporia	Middlesex County	Surry County
City of Franklin	City of Newport News	Sussex County
Gloucester County	City of Norfolk	City of Virginia Beach
Greensville County	Northampton County	City of Williamsburg
City of Hampton	City of Poquoson	York County

<b>Region 6: Roanoke</b>		
Alleghany County	City of Danville	Patrick County
Bath County	Floyd County	Pittsylvania County
Bedford County	Franklin County	City of Radford
City of Bedford	Henry County	Roanoke County
Botetourt County	Highland County	City of Roanoke
City of Buena Vista	City of Lexington	Rockbridge County
City of Covington	City of Martinsville	City of Salem
Craig County	Montgomery County	

<b>Region 7: Northern Virginia</b>		
Arlington County	Fairfax County	City of Manassas
City of Alexandria	City of Falls Church	City of Manassas Park
City of Fairfax	Loudoun County	Prince William County

### ***Largest Cities and Counties, UASIs, and TICPs***

Virginia's most populous cities are Virginia Beach (1), Chesapeake (2), and Norfolk (3)<sup>13</sup> which are located within the Tidewater Region (statewide Metropolitan Statistical Areas (MSAs) are listed in Appendix A). Virginia's most populous county is Fairfax County with slightly over 1 million residents<sup>14</sup>, located in the Northern Virginia Region. Tidewater (in which Hampton Roads is a part), Northern Virginia (part of the National Capital Region), and Central Virginia (which includes Richmond and the surrounding areas) have been designated Urban Area Security Initiatives (UASIs) by the DHS. These UASIs and the remaining region's interoperable communications activities including Tactical Interoperable Communications Plans (TICPs) are described in detail in Section 4.3 of this Plan.

### ***Current Communications and Interoperability Environment***

Virginia demonstrates quite significantly the difference between the "haves and have-nots." With a vast rural population, Virginia must continually ensure that its' rural communities are provided with basic operability while considering the minimal levels of acceptable interoperability. Virginia's long east-west axis means that Northern Virginia lies as close to New York City as it does its rural western panhandle counterpart. Communications interoperability must be redefined to exist in this type of environment where resources are not easily shared and the distance between the well-developed communities and their rural counterparts is vast.

### ***Problem Definition***

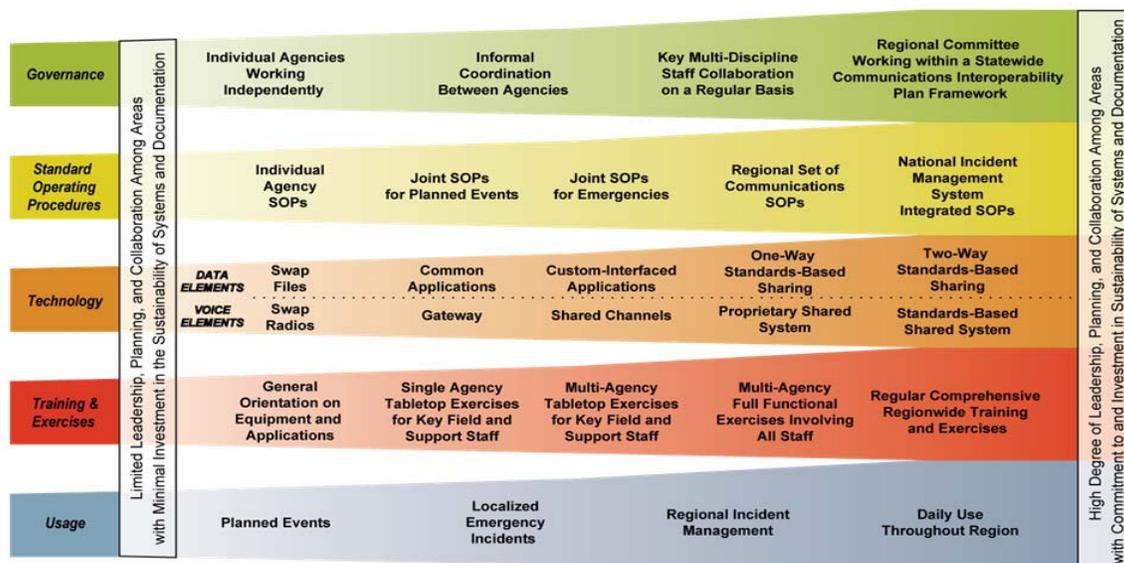
As is typical within the issue of interoperability, most feel the problem will be solved by technology. The Commonwealth approaches the issue in its entirety, aligned with the SAFECOM Interoperability Continuum (see Figure 5 below), and recognizes that technology can not work alone to bring about improved interoperable communications. Success requires participation from the local, regional, and state response communities in effective governance, standard operating procedures, consistent usage of technology, and regular training and exercises.

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<sup>13</sup> 2000 Census, U.S. Census Bureau

<sup>14</sup> 2000 Census, U.S. Census Bureau

## Interoperability Continuum



**Figure 5. SAFECOM Interoperability Continuum**

### ***Development of First Statewide Plan***

The Commonwealth has developed and implemented four annual Statewide Plans. The initial plan was developed in FY 2004 for FY 2005. This initial Plan was developed through the completion of six regional focus groups comprised of elected officials, local and state public safety agencies, and other support functions. This process was documented by the SAFECOM program into Statewide Communications Interoperability Planning (SCIP) Methodology that was provided as guidance for all states undergoing this planning process. This initial process included representatives from:

- Local Emergency Communications Officials and Dispatchers
- Local Emergency Medical Services and Hospitals
- Local Fire Response Agencies
- Local Government Representatives
- Local Law Enforcement Agencies (Police and Sheriffs)
- UASI – Central Virginia (Richmond)
- UASI – National Capital Region
- UASI – Tidewater Region

In addition to local participation, various state and federal agencies also participated including:

- Governor’s Office of Commonwealth Preparedness
- Secretary of Public Safety’s Office
- U.S. Department of Homeland Security
- U.S. Department of Justice
- Virginia Department of Agriculture

- Virginia Department of Fire Programs
- Virginia Department of Forestry
- Virginia Department of Game and Inland Fisheries,
- Virginia Department of Health
- Virginia Department of Transportation
- Virginia Information Technologies Agency
- Virginia National Guard
- Virginia Port Authority
- Virginia State Police Headquarters and Divisions

Since the initial Statewide Plan, the Commonwealth has updated and implemented the Plan leveraging the expertise and experience of its formal practitioner-driven governance structure. Figure 6 shows the stakeholders that were leveraged for the development of this 2009 Plan. The Virginia governance structure works to ensure that state, local and regional input continues to be the primary driver of the statewide planning and implementation.

Recommended Representation from SAFECOM Guidance	2009 Plan Development Participants
Governor's Office	<b>Governor's Office of Commonwealth Preparedness</b> - Marc Follmer, <i>Deputy Assistant</i> <b>Commonwealth Interoperability Coordinator's Office</b> - Constance McGeorge, <i>Interoperability Coordinator</i>
State and Local Elected Officials	<b>Virginia Association of Counties</b> - Patricia O'Bannon, <i>Henrico County Supervisor</i> - John Kandris, Jr., <i>Director of Technical Services</i> <b>Virginia Municipal League</b> - Julian H. Taliaferro, <i>Council Member, City of Charlottesville</i>
State and Local Emergency Medical Services	<b>Virginia Department of Health Office of EMS</b> - Ken Crumpler, <i>Communications Coordinator</i> - William Webb <b>Virginia Association of Governmental EMS Administrators</b> - Bill Bullock - Lt. Kevin Sweet, <i>Roanoke County Fire/Rescue</i>
State and Local Health Officials	<b>Virginia Department of Health Office of EMS</b> - Ken Crumpler, <i>Communications Coordinator</i> - William Webb
State and Local Fire Response Services	<b>Virginia Fire Chiefs Association</b> - Chief Charles Werner, <i>Charlottesville Fire Department</i> - Capt. Chuck White, <i>EMS Coordinator, Williamsburg Fire Department</i> <b>Virginia Professional Firefighters Association</b> - Dean Cox, <i>Battalion Chief, Fairfax County</i> <b>Virginia State Firefighters Association</b> - Charlie Singleton - Richard Harris
State and Local Law Enforcement	<b>Secretary of Public Safety</b> - Erin Bryant, <i>Deputy Secretary of Public Safety</i> <b>Virginia Association of Chiefs of Police</b> - Douglas Lee Davis, <i>Waynesboro Police Department</i> - Dana Schrad, <i>Executive Director</i> <b>Virginia Sheriff's Association</b> - Ryant L. Washington, <i>Fluvanna County Sheriff</i>

	<ul style="list-style-type: none"> <li>- Scott Haas, <i>Greene County Sheriff</i></li> </ul> <p><b>Virginia State Police</b></p> <ul style="list-style-type: none"> <li>- Steven Flaherty, <i>Colonel</i></li> <li>- Robert Kemmler, <i>Lt. Colonel</i></li> </ul> <p><b>Statewide Agencies Radio System (Virginia State Police)</b></p> <ul style="list-style-type: none"> <li>- Mike Bolton, <i>Captain</i></li> <li>- John Furlough, <i>Captain</i></li> </ul> <p><b>Department of Criminal Justice Services</b></p> <ul style="list-style-type: none"> <li>- Ben Wood, <i>Chief of Technical Services</i></li> <li>- Butch Johnstone, <i>Senior Technical Analyst</i></li> </ul>
State and Local Homeland Security Offices	<p><b>Governor's Office of Commonwealth Preparedness</b></p> <ul style="list-style-type: none"> <li>- Marc Follmer, <i>Deputy Assistant to the Governor for Commonwealth Preparedness</i></li> </ul> <p><b>Commonwealth Interoperability Coordinator's Office</b></p> <ul style="list-style-type: none"> <li>- Constance McGeorge, <i>Interoperability Coordinator</i></li> </ul> <p><i>No local Homeland Security Offices exist in Virginia.</i></p>
Tribal Governments	In late FY 2007 five tribal entities were recognized by the Commonwealth. Input from these state-recognized tribes will be incorporated into the planning process for the development of the FY 2010 Statewide Plan.
State and Local Transportation Agencies	<p><b>Virginia Department of Transportation</b></p> <ul style="list-style-type: none"> <li>- Earl Sharp, <i>Assistant Manager, Transportation Emergency Operations Center</i></li> </ul>
Military Organizations operating in the State	<p><b>Virginia Military Advisory Committee</b></p> <ul style="list-style-type: none"> <li>- Daryl Francis, <i>Colonel</i></li> </ul> <p><b>Virginia Department of Military Affairs</b></p> <ul style="list-style-type: none"> <li>- William O'Neill, <i>Colonel</i></li> <li>- Edward Clendenning, <i>CW3, Flight OPS/TACOPS</i></li> </ul>
Federal Agencies that Need to be Interoperable with State and Local Emergency Responders	<p><b>Federal Partnership for Interoperable Communications</b></p> <ul style="list-style-type: none"> <li>- Claudia Wayne, <i>Department of Homeland Security Office of Emergency Communications</i></li> </ul>
Urban Area Security Initiatives (UASI)	<p><b>National Capital Region</b></p> <ul style="list-style-type: none"> <li>- Don Bowers, <i>Captain Fairfax Fire Department</i></li> </ul> <p><b>Hampton Roads</b></p> <ul style="list-style-type: none"> <li>- Hampton Roads Planning District Commission, Doug Onhaizer, <i>Communications Administrator, City of Virginia Beach</i></li> </ul> <p><b>Central Virginia</b></p> <ul style="list-style-type: none"> <li>- Richmond Regional Planning District Commission, Steve Parrott, <i>Battalion Chief, Chesterfield Fire &amp; Emergency Medical Services</i></li> </ul>
Critical Infrastructure	<p><b>Governor's Office of Commonwealth Preparedness</b></p> <ul style="list-style-type: none"> <li>- Mike McAllister, <i>Critical Infrastructure Coordinator</i></li> </ul>
Other non-government organizations such as Red Cross and Utility Companies	<p><b>Association of Public Safety Communications Officials</b></p> <ul style="list-style-type: none"> <li>- Jim Junkins, <i>Director, Harrisonburg-Rockingham Emergency Communications Center</i></li> <li>- Tom Hanson, <i>Executive Director, Albemarle Communications Center</i></li> </ul> <p><b>Virginia Emergency Management Association</b></p> <ul style="list-style-type: none"> <li>- Aubrey Cheatham, <i>Public Safety Director</i></li> <li>- Hui-Shan Walker, <i>Deputy Coordinator of Emergency Management, Chesapeake Office of Emergency Management</i></li> </ul>
Other organizations with abilities and resources for prevention, response to, and recovery from crises or disasters	<p><b>Virginia Information Technologies Agency</b></p> <ul style="list-style-type: none"> <li>- Lemuel C. Stewart, Jr., <i>Chief Information Officer</i></li> <li>- Steve Marzolf, <i>ISP Manager</i></li> </ul> <p><b>Virginia Department of Emergency Management</b></p> <ul style="list-style-type: none"> <li>- Harry Colestock, <i>Director, Operations Division</i></li> <li>- Vic Buisset, <i>Operations Officer/Interoperability Coordinator</i></li> </ul>

	<b>Secretary of Technology</b> <ul style="list-style-type: none"> <li>- Aneesh Chopra, <i>Secretary</i></li> <li>- Judy Napier, <i>Deputy Secretary</i></li> </ul>
Regional Planning Committee Chairpersons for 700 and 800 MHz	<b>Virginia Information Technologies Agency</b> <ul style="list-style-type: none"> <li>- Lemuel C. Stewart, Jr., <i>Chief Information Officer</i></li> <li>- Steve Marzolf, <i>ISP Manager</i></li> </ul>
Regional Representation	<b>Region 1: Richmond</b> <ul style="list-style-type: none"> <li>- Gerry Fuss, <i>Radio Shop Manager, Chesterfield County</i></li> <li>- Phil Heins, <i>Director of Emergency Communications, Hanover County</i></li> </ul> <b>Region 2: Culpeper</b> <ul style="list-style-type: none"> <li>- Phil Myer, <i>Fire Chief, Fauquier County, Department of Fire &amp; Emergency Services</i></li> <li>- Carol Adams, <i>Stafford County Sheriff's Office, Division of Emergency Communications</i></li> </ul> <b>Region 3: Central Virginia</b> <ul style="list-style-type: none"> <li>- Susan Rorrer, <i>Information Systems Director, Nelson County</i></li> <li>- Garland "Butch" Hamlett, <i>Board of Supervisors, Charlotte County</i></li> </ul> <b>Region 4: Southwest</b> <ul style="list-style-type: none"> <li>- Brenda Marrah, <i>Carroll County, Office of Resource Development</i></li> <li>- Tim Addington, <i>911 Director, Scott County</i></li> </ul> <b>Region 5: Tidewater</b> <ul style="list-style-type: none"> <li>- Harry Yeomans, <i>Wireless Communications Manager, City of Norfolk</i></li> <li>- Curt Shaffer, <i>City of Hampton</i></li> </ul> <b>Region 6: Roanoke</b> <ul style="list-style-type: none"> <li>- Dale Wagoner, <i>Henry County Public Safety</i></li> <li>- Neal Turner, <i>Emergency Services Coordinator, Montgomery County</i></li> </ul> <b>Region 7: Northern Virginia</b> <ul style="list-style-type: none"> <li>- Don Bowers, <i>Captain, Fairfax County Fire &amp; Rescue</i></li> <li>- Mark Penn, <i>Emergency Management Coordinator, City of Alexandria</i></li> </ul>
Other organizations with abilities and resources for prevention, response to, and recovery from crises or disasters	<b>Virginia Department of Emergency Management</b> <ul style="list-style-type: none"> <li>- Chris McIntosh, <i>Operations Section Chief, VDEM Emergency Operations Center</i></li> </ul> <b>User Agency Requirements Committee</b> <ul style="list-style-type: none"> <li>- Joe Pajic, <i>Captain, Department of Game and Inland Fisheries</i></li> <li>- G. Warren Wahl, <i>Department of Conservation and Recreation</i></li> </ul>

**Figure 6. Participation in the FY2009 Plan Development**

***Point of Contact***

To tap into the Commonwealth's interoperability and communication efforts statewide, the point of contact is:

Constance McGeorge  
Commonwealth Interoperability Coordinator  
Office of Commonwealth Preparedness  
Office of the Governor  
P.O. Box 1475  
Richmond, VA 23218  
(804) 692-0137 (office)  
(804) 371-7992 (fax)  
[cico@governor.virginia.gov](mailto:cico@governor.virginia.gov)  
[www.interoperability.virginia.gov](http://www.interoperability.virginia.gov)

The Commonwealth Interoperability Coordinator is a full-time, state funded position within the Governor's Office of Commonwealth Preparedness.

## **Scope and Timeframe**

In accordance with Virginia Code 9.1-1200, Virginia's Statewide Plan must be updated and implemented on an annual basis. Therefore, the timeframe for the 2009 Plan is one year. To reach towards the 2015 Vision, (presented in Section 6) each plan focuses on a core set of initiatives in the following areas in alignment with the Interoperability Continuum:

### **Governance** (Section 4.1)

Governance efforts enhance, foster, and maintain the interoperability effort in the Commonwealth of Virginia by involving an ever-increasing number of practitioners in the planning and implementation process. Initiatives and tasks are focused on creating a collaborative and inclusive practitioner driven process for interoperability decision-making.

### **Technology** (Section 4.2)

Technology initiatives and tasks focus on coordinating major statewide investments and assets, increasing the ability of practitioners to respond to major emergencies by establishing clear technical requirements, identifying technological gaps on a regional and state basis, and establishing a funding strategy.

### **Standard Operating Procedures** (Section 4.3)

Operational protocols are developed to help overcome operational and cultural barriers and improve practitioner-to-practitioner communications for day-to-day as well as during emergency situations. Additionally, operational requirements are considered for all technology purchases and, whenever possible, initiatives and tasks are focused on forecasting future needs to ensure operational procedures are established prior to purchase.

See section 4.3 on Standard Operating Procedures (SOPs) for more information on National Incident Management System/Multiagency Coordination System (NIMS/MACS), including NIMS training.

### **Training & Exercises** (Section 4.4)

Training and exercises are necessary to provide a standardized definition of interoperability, test existing equipment, and help localities obtain additional grant funds through improved grant writing. By leveraging the training plans throughout the state, the initiatives and tasks are focused on making interoperability a key part of statewide exercises.

### **Usage** (Section 4.5)

Training, exercises, and outreach will all be leveraged to use interoperability equipment regularly, whenever possible. Initiatives and tasks are focused on continued communication with stakeholders, especially those that have received funding from the state and must now consider its most effective usage. Outreach efforts bring interoperability information to Virginia's stakeholders, elected officials, and other stakeholders (such as private and non-profit partners).

In addition, the Statewide Plan presents the initiatives and on-going planning efforts of its regions and UASIs that are updated on an annual basis to demonstrate rightward movement on the Interoperability Continuum for all of Virginia's localities.

### ***Major Achievements to Date***

Each year, the CICO develops and distributes an Annual Report that catalogs the year's achievements. This report is delivered to the General Assembly by November 1 of each year and provides a good "in-road" to elected officials within the Commonwealth to review progress towards improved interoperable communications. Achievements for 2008 include:

- Continued recognition by the Department of Homeland Security as a Best Practices Model for Interoperable Communications Planning.
- Codified Statewide Interoperability Executive Committee (HB 839) in the Virginia Code during the 2008 legislative session.
- Enhanced the Interoperability Governance Structure by involving regional committees referred to as Regional Preparedness Advisory Committees for Interoperability (RPAC-Is), and by establishing three subcommittees of the SIEC (Policy, Operational, and Technical) to assist with statewide initiatives.
- Developed *The Commonwealth of Virginia Operations Model* which is a practitioner-driven document that guides the implementation of Virginia's interoperability strategy by defining a collection of future state capabilities. These future state capabilities complement Virginia's strategy by adding a layer of description to the high level vision, goals, and objectives listed in the 2008 Commonwealth of Virginia Strategic Plan for Statewide Communications Interoperability (Statewide Plan). The Ops Model complements the Statewide Plan by defining ideal operational capabilities that the Commonwealth, across all levels of government, can strive to implement by 2015.
- Developed the *2008 Commonwealth of Virginia Technical Plan Blueprint* which provides the CICO and SIEC with data to support the development of a detailed statewide Technical Plan. This document consolidates data gathered through stakeholder interviews, a series of regional meetings, and research from historical data sources. The Technical Plan Blueprint also provides next steps and a suggested outline for a technical strategy document, which will incorporate the many different regions and projects within the Commonwealth into a unified view of the current state across Virginia.
- Established Strategic Communications Caches and Sprint Emergency Response Team to provide supplemental and back-up communications statewide.
- Worked with state partners from the Mid-Atlantic All Hazards Consortium Interoperability Working Group on long term regional efforts to improve and coordinate interoperable communications. The Commonwealth, through the CICO, hosted the 2008 All Hazards Consortium Interoperability Working Group retreat in Winchester, Virginia where long term priorities to conduct a baseline study concerning interoperable communications for the states of Delaware, Maryland, North Carolina, New Jersey, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia were discussed.
- Funded 19 individual projects statewide through the Public Safety Interoperable Communications (PSIC) Grant. These projects impact most of the Commonwealth to include: six state agencies, 55 localities, and 25 cities and towns. Improvements ranged from revamping antiquated communications systems in rural, Southwest Virginia to improving data communications interoperability in Northern Virginia through improvements in data hubs. Projects include the Southern Virginia Interoperability Project that is enabling improvements in seven localities in a very rural and disaster prone area of the Commonwealth (Charlotte, Lunenburg, Halifax, Mecklenburg, Campbell, Appomattox, and Prince Edward Counties). Both Southern Virginia and

South Western Virginia had not received interoperable communications upgrades since the late 1970s.

- Hosted the Fifth Annual Virginia Interoperable Communications Conference (VICC) which convened over 250 local, state, and Federal stakeholders to discuss interoperability issues. Virginia remains a leader with the nation's first statewide conference dedicated to interoperable communications. The VICC is a key tool in creating a common understanding among stakeholders of interoperability and its' value across the Commonwealth. Among the issues affecting Virginia's interoperability effort are entrenched cultures using one unique communications system and language. The VICC and other outreach efforts for interoperability are designed to break down cultural barriers to achieve interoperability.

### **3. Methodology**

As stated previously, the initial Statewide Plan was developed in partnership with SAFECOM and focused on the facilitation of six regional focus groups to gather data related to the current status of interoperability and practitioner needs. After the completion of this initial FY 2005 Statewide Plan, the Virginia Code was modified to require the annual update and implementation of the *Strategic Plan for Statewide Interoperable Communications*. In addition to this directive, the code instructs state agencies and localities to align with the Statewide Plan in order to receive state and federal funds for communications interoperability by 2015. Language from Virginia Code 9.1-1200 is provided below:

#### **CHAPTER 221**

*An Act to amend the Code of Virginia by adding in Title 9.1 a chapter numbered 11, consisting of a section numbered [9.1-1200](#), relating to statewide communications interoperability.*

[S 963]

Approved March 20, 2005

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding in Title 9.1 a chapter numbered 11, consisting of a section numbered [9.1-1200](#), as follows:

#### **CHAPTER 11.**

#### **STATEWIDE COMMUNICATIONS INTEROPERABILITY.**

§ [9.1-1200](#). *Review of strategic plan; state and local compliance.*

*The office of the Governor shall ensure that the annual review and update of the statewide interoperability strategic plan is accomplished and implemented to achieve effective and efficient communication between state, local, and federal communication systems.*

All state agencies and localities shall achieve consistency with and support the goals of the statewide interoperability strategic plan by July 1, 2015, in order to remain eligible to receive state or federal funds for communications programs and systems.

The Commonwealth of Virginia now uses an annual planning lifecycle to update, implement, institutionalize, and measure the success of the Statewide Plan. This lifecycle (depicted in Figure 7) consists of four stages: **Plan**, **Implement**, **Assess & Measure**, and **Buy-In, Compliance & Build-Out**. The governance structure and additional stakeholders are leveraged in every stage of the lifecycle. (Section 4.1 of this Plan provides additional information related to the Commonwealth’s practitioner-driven governance structure and decision making process.) The SIEC and stakeholder teams focused on specific initiatives are convened on at least a quarterly basis to discuss progress towards the 2015 Vision and work to implement the Statewide Plan each year. Multiple sessions are held each year with the SIEC and the Regional Preparedness Advisory Committees (RPACs) to update the Statewide Plan and continue to work towards addressing specific practitioner needs.

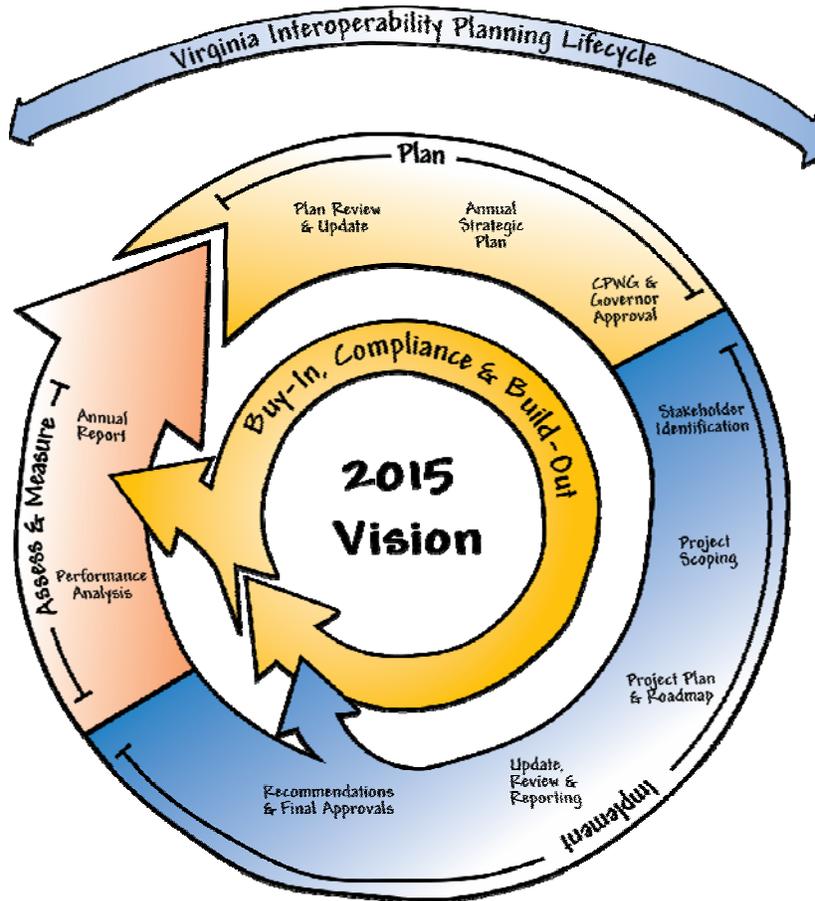


Figure 7. Virginia Interoperability Planning Lifecycle

**Plan**

Each year, during the planning stage, the Statewide Plan is updated and enhanced by the members of the interoperability governance structure (see Section 4.1).

Recommendations from the previous fiscal year and the current environment are considered to:

- Add new initiatives to be accomplished in the coming year
- Update and carry over incremental initiatives from the previous year that are still pertinent
- Add new content to provide stakeholders with the most up to date information about the status of interoperability in the Commonwealth

The final draft of the Statewide Plan is sent to the Governor's Office for consideration and approval. Once the Governor has signed-off on the Statewide Plan, another year of implementation begins.

### **Implement**

As the longest stage of the Lifecycle, the implementation stage engages stakeholders to bring expertise and experience together to achieve the initiatives within the Statewide Plan. Key activities include:

- At the statewide governance level - stakeholders are identified to assist in the achievement of initiatives and make key recommendations including statewide standard operating procedures, funding disbursement, and Virginia's endorsement for federal initiatives.
- At a state, regional or local level – decision-makers and stakeholders including statewide governance are convened to move forward with key initiatives including purchasing equipment, developing SOPs and managing system build-out.

As recommendations are born out of the implementation phase and accepted by members of the statewide governance structure, they move towards institutionalization in the "Buy-In, Compliance, & Build-Out" phase of the lifecycle. If recommendations are not approved or require additional work for acceptance, they will remain in the outer ring of the lifecycle to be measured and planned for in the following year. Complex initiatives may take multiple years to achieve buy-in and compliance while others may be institutionalized more quickly.

### **Assess & Measure**

Performance is measured annually for both long-term measures and critical success factors. This stage of the lifecycle requires the CICO to:

- Evaluate progress against the statewide baseline inventory of equipment and frequencies
- Reach out to stakeholders to receive input on the year's implementation
- Develop an annual report that shows progress, set backs, and areas for continued improvement in the year to come

### **Buy-In, Compliance, & Build-Out**

The process of achieving buy-in and compliance is continuous throughout the fiscal year. Once recommendations are approved on a state, regional or local level, and a course of action is determined, the process for achieving buy-in from all relevant stakeholders begins. While trying to obtain buy-in, the state pursues compliance with statewide efforts at the local and regional level through information sharing and collaborative sessions, adopting recognized best practices, and following Executive Directives and legislation (if appropriate). The Commonwealth utilizes a practitioner-driven process in which stakeholders participate in the development of key guidance for localities, therefore, buy-in and compliance are often achieved early on. Strengthened by stakeholder endorsement,

initiatives are set up for success through effective outreach lead by the governance structure.

#### **4. Statewide Assessment**

In FY 2007, Virginia began a study to determine a baseline for interoperable communications across the Commonwealth. Data collection for the Commonwealth Communications Baseline Survey (herein after “Baseline”) began on March 1, 2007 and ended May 31, 2007. During this time, counties, cities, and state agencies sent in at least one response to the survey that inventoried communications equipment and measured their current status against the Interoperability Continuum. The main goal of the Baseline is to create a statewide snapshot of the capacity for, and use of, interoperability in the Commonwealth. This includes establishing an inventory of interoperable communications equipment, and establishing performance metrics for the localities and agencies so future progress can be measured.

#### **Methodology**

The Commonwealth leveraged the SAFECOM Capabilities Assessment Request for Proposal (RFP) tool to procure the services of a contractor to develop the survey tool and collect data. Over the course of several weeks, the CICO worked with the contractor to determine the data points that were necessary for determining the overall status of interoperability in the Commonwealth as well as inform decision-making for grant funding. An Initiative Action Team (IAT) consisting of members from the state and local level was established to evaluate the information being collected and provide input into the survey questions. At the conclusion of the planning period, the following data points remained:

- Measurement against the Interoperability Continuum
- Communications System Specifications, Manufacturers and Frequency Bands
- Age of Equipment
- Equipment Used for Interoperability with Neighboring Jurisdictions, the State, and/or the Federal Government
- Radio Site Survey Information
- Interoperability Channel Usage

Survey deployment was also discussed during planning. The contractor recommended casting a wide net to ensure a high rate of response. The CICO collected e-mail information from the Virginia Sheriff’s Association, Chiefs of Police, College & University Police Departments, County Administrators, City Managers, Emergency Operation Centers, Public Safety Answering Points, Regional Jail Administrators, Training Academies, Virginia Association of Governmental EMS Administrators (VAGEMSA), Fire Chiefs (professional & volunteer), Volunteer Rescue Squads, Virginia Chapter of Association of Public Safety Communications Officials (APCO) members, and Public Works & Utilities Directors. Each possible respondent was sent an e-mail from the State with a link to the survey and a username and password.

Reminder e-mails encouraging survey completion were sent on a bi-weekly basis and as the survey neared its end, targeted outreach was also conducted to localities that had not yet submitted a response.

## Summary Results

Figure 8 shows the overall results of the Baseline (more detailed responses are provided in Sections 4.1-4.5).

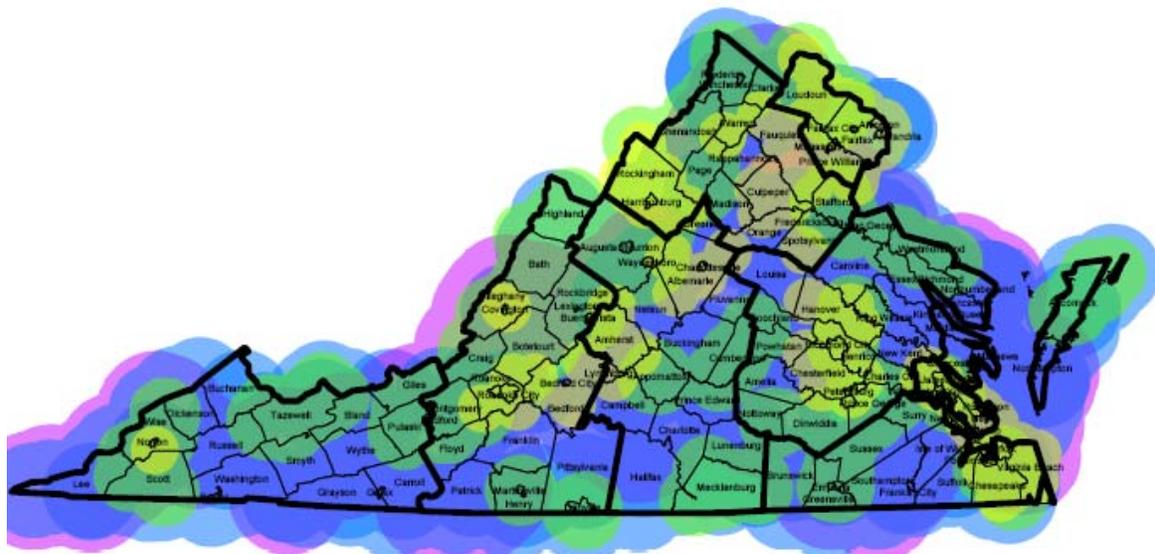
Data Point	State Level Results
Total Number of Responses	266
Total Police Responding	72
Total Sheriff Responding	51
Total Fire Responding	24
Total EMS Responding	12
Other Public Safety Communications Responded	32
Other Government Responded	25
Other Discipline Responded	20
Total Public Health Responded	21
Total Public Works Responded	6
Total Transit Responded	1
No Agency Discipline	1
Total Minerals & Energy Responded	1

**Figure 8. Overall Interoperability Baseline Study Results**

Figure 9 shows the coverage map that was generated from the Baseline data. The map shows that the Commonwealth uses a variety of frequencies including: 800 MHz, UHF, VHF, and Low Band.

### Legend

- 800MHz Coverage In Use
- UHF Coverage In Use
- VHF Coverage In Use
- Low Band Coverage In Use



**Figure 9. Virginia Estimated Mobile Coverage – All Frequency Bands**

## Continuing Collection

The Commonwealth will continue to collect data to measure performance and ensure a complete Baseline. For FY 2009, a review of the existing baseline data will be performed in preparation for a gap analysis. Additional targeted outreach will be needed to get responses from missing localities and ensure equal representation from the fire and law enforcement communities. The collection of data will be an on-going process for Virginia and its responder community. Additionally, Virginia’s raw data will be input into the Communications Assets Survey and Mapping (CASM) tool to allow the CICO to run current reports and have greater access to data.

The CICO recognizes the importance of working with other entities within the Commonwealth to ensure alignment with other existing and ongoing planning and data collection processes. This includes two Virginia Information Technologies Agency (VITA) Integrated Service Program (ISP) Plans: the E-911 agency with their published *911 Comprehensive Plan*, and the Virginia Geographic Information Network (VGIN) agency with the development of their *VGIN Comprehensive Plan*. Close coordination between CICO and VITA ISP will ensure more complete interoperability planning for the Commonwealth.

### 4.1 Governance

#### Overall Status

The Baseline revealed that the degree of governance varies across the Commonwealth on a local and regional level, however statewide governance is strong and provides representation for all of Virginia’s responders. The Baseline provided the results presented in Figure 11 for Governance based on the Governance lane of the Interoperability Continuum (Figure 10.):



**Figure 10. Governance Lane of Interoperability Continuum**

Data Point	Placement on Continuum	Notes
Region 1 (Central Virginia UASI)	Moving towards “Regular Key Staff Collaboration” and “Regional Committee”	<ul style="list-style-type: none"> <li>COMLINC User’s Group established</li> </ul>
Region 2	Informal Coordination Between Agencies	
Region 3	Informal Coordination Between Agencies	
Region 4	Informal Coordination Between Agencies	
Region 5 (Hampton UASI)	Moving towards “Regular Key Staff Collaboration” and “Regional Committee”	<ul style="list-style-type: none"> <li>Established the Hampton Roads Interoperable Communications Advisory</li> </ul>

		Committee to support interoperable communications in the Tidewater/Hampton Roads area.
Region 6	Informal Coordination Between Agencies	
Region 7 (NCR UASI)	“Regular Key Staff Collaboration” and “Regional Committee Working with Statewide Interoperability Committee”	<ul style="list-style-type: none"> <li>• Has a strong governance structure in the Metropolitan Washington Council of Governments, with monthly meetings</li> </ul>
State and Statewide Agencies	Informal Coordination between Agencies	<ul style="list-style-type: none"> <li>• Quarterly meetings of a Secretarial Management Board and a User Agency Requirements Committee for STARS</li> </ul>

**Figure 11. Baseline Study Results for Governance**

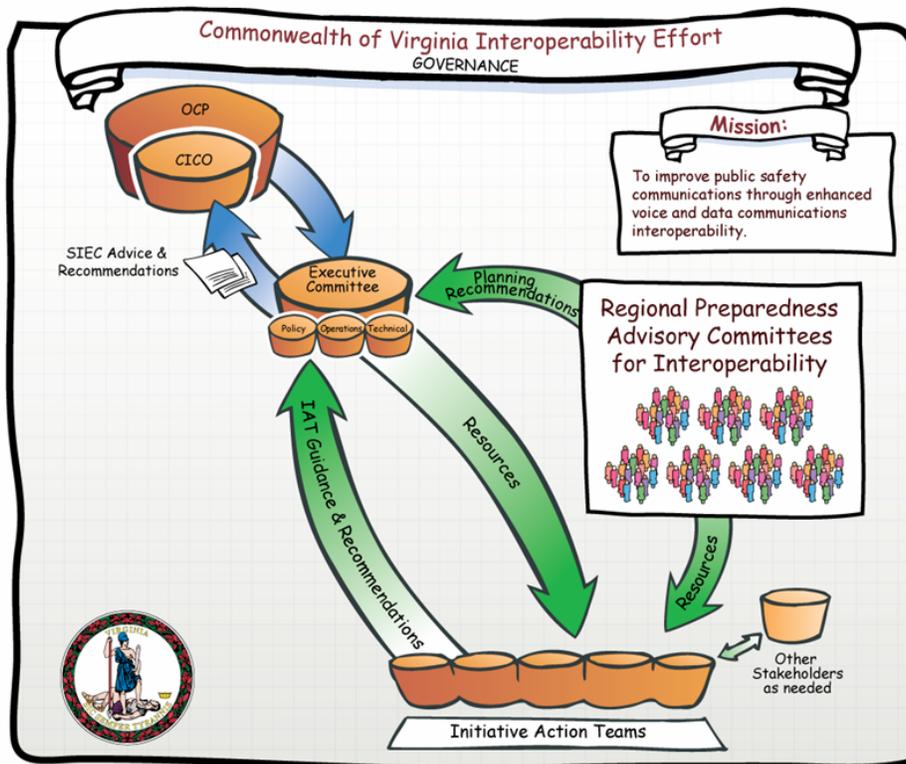
The Hampton Roads and Northern Virginia (as part of the National Capital Region (NCR)) governance structures are well established and provide a forum for localities within these regions to work together on key interoperability communications issues.

To allow for greater progression on the Continuum for the other regions, the OCP established seven Regional Preparedness Advisory Committees (RPACs) based on the Governor’s Homeland Security Regions. The RPACs focus on regional initiatives in training, equipment, communication, and strategy to ensure ready access to response teams in times of emergency; and to facilitate testing and training exercises for emergencies and mass casualty preparedness. Each RPAC provides a key forum for more organized regional governance for interoperable communications.

In 2008, the CICO utilized the RPAC structure and created regional Interoperability Subcommittees, referred to as Regional Preparedness Advisory Committees for Interoperability (RPAC-Is). These RPAC-Is assist the CICO and SIEC in implementing the initiatives written in this Statewide Plan. They also serve as a forum for local communities to coordinate and plan at the operational and tactical level prior to providing input to the strategic statewide planning level through the SIEC.

**Statewide Governance**

The public safety community must have a way to provide input to statewide communications interoperability efforts and planning. Public safety personnel participate in the Virginia interoperability governance structure at all levels in the graphic below (see Figure 12).



**Figure 12. Virginia Interoperability Governance Structure**

The Virginia Interoperability Governance structure relies on two primary objectives:

- Performance: contribution to the overall performance and delivery of services to the public safety community and, ultimately, the larger constituency they serve.
- Adherence: commitment to ensuring that requirements of the law, regulations, and community standards of accountability and transparency are met.

*\*The rules of engagement for the statewide governance structure are included in Appendix C of this Plan.*

### **Office of Commonwealth Preparedness**

Achieving interoperability requires partnerships from all levels of government. The Secure Commonwealth Panel (SCP) and the Commonwealth Preparedness Working Group (CPWG) consider recommendations that result from the interoperability governance structure to determine the overall direction for the Commonwealth.

The SCP is responsible for monitoring and assessing the implementation of statewide prevention, response, and recovery initiatives and, when necessary, reviewing, evaluating, and proposing final recommendations (related to emergency preparedness) to the Governor’s Office. Members of the panel include representatives of local and state governments, state legislators, and the private sector.

The CPWG is responsible for coordinating state operations related to preparedness and readiness. Members of the group have operations leadership roles in a broad range of state agencies.

The Office of Commonwealth Preparedness (OCP) houses the Commonwealth Interoperability Coordinator's Office (CICO) and provides the leadership and support necessary to coordinate preparedness and all hazards activities across state agencies. Working in collaboration with its committees, OCP provides a direct line to the Governor's Office through its Director, the Assistant to the Governor for Commonwealth Preparedness (Homeland Security Advisor).

### **OCP Responsibilities**

- Appoint and ensure attendance of one staff representative and an alternate to the SIEC
- Provide additional staff to the interoperability effort to support the Annual Interoperable Communications Conference and other events/initiatives
- Administer and support the RPACs
- Escalate recommendations to the Governor's Office for consideration

### ***Commonwealth Interoperability Coordinator's Office***

The CICO, led by the Commonwealth Interoperability Coordinator (CIC), is responsible for the daily operations of Virginia's interoperability efforts including implementing the initiatives outlined in the Statewide Plan. This involves developing and delivering reports and briefings, coordinating interoperability and communications projects, maintaining governance, and assembling IATs to implement key recommendations.

### **CICO Responsibilities**

- Liaise among the local and regional public safety community, state agencies and officials, and the Federal government
- Drive and coordinate the implementation of the Statewide Plan
- Establish and manage IATs
- Establish and coordinate a document review process for IAT recommendations
- Revise the Statewide Plan annually
- Develop and measure long-term performance measures and critical success factors to show progress towards improved interoperability
- Coordinate the compilation of state investment justifications and grants for communications interoperability
- Monitor the Commonwealth's interoperable communications grant opportunities, review potential projects, and provide documentation to the SIEC for consideration for endorsement
- Write endorsement letters for approved projects on behalf of the SIEC for grant applications
- Serve as a member of the CPWG, Capital Wireless Information Net (CapWIN) Board of Directors, the National Capital Region Regional Programmatic Working Group for Interoperability (RPWG-I), and other interoperability efforts
- Serve as a member of the Federal SAFECOM Emergency Response Council
- Work with the SIEC Chair to develop meeting schedule, agendas, and distribute information to SIEC members
- Maintain records for the effort including, but not limited to, charters, meeting minutes, correspondence, current membership enrollment, recommendation reports, and the Interoperability in Virginia website
- Provide guidance to the RPAC-Is and IATs to develop materials, presentations, issue summaries, etc., for SIEC consideration
- Escalate recommendations to OCP for consideration by the Governor's Office

- Chair of the All Hazards Consortium Interoperability Working Group, which includes of the FEMA Region 3 states (Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Virginia, and West Virginia)

*\*For more information, see the CICO One Pager in Appendix E.*

### **State Interoperability Executive Committee**

The members of the State Interoperability Executive Committee (SIEC) serve as the steering group for interoperability efforts and provide recommendations to the Commonwealth to determine statewide priorities. The SIEC evaluates guidance and recommendations provided by IATs, RPACs, and other stakeholders. The SIEC meets in person on at least a quarterly basis to review overall progress towards the 2015 Vision and identify priorities. Meeting dates are scheduled at least three weeks in advance to accommodate the members' schedules. The SIEC has been formalized through legislation in the Virginia code **2.2-2732** (see Appendix B), which provides the group with the authority to make all interoperable communications funding recommendations.

Some of the main responsibilities of the SIEC members are to assist the Commonwealth Interoperability Coordinator by:

- Conducting an annual review and update of the Statewide Plan
- Implementing the initiatives contained in the Statewide Plan
- Developing formal recommendations to the Commonwealth Preparedness Working Group, the Secure Commonwealth Panel, and the Governor on the use of interoperability grants to support local, regional, and state voice and data projects
- Reviewing most communications-related grant requests from state agencies and localities

As a practitioner-based steering group, the SIEC is made up of members from key organizations representing the first responder community, localities, and state agencies. Individual representatives were selected based on their technical and public safety knowledge which brings years of experience to this level of governance.

### **Membership**

All SIEC members and alternates are required to sign a nondisclosure form upon appointment to ensure confidentiality. Other organizations may be invited to participate in SIEC meetings to provide input beyond the members' existing capabilities or to provide subject matter expertise, however these organizations do not have voting powers.

The SIEC consists of the following member organizations:

- Commonwealth Interoperability Coordinator's Office
- Office of Commonwealth Preparedness
- Office of the Secretary of Public Safety
- Office of the Secretary of Technology
- Statewide Agencies Radio System
- Representatives from the seven Regional Preparedness Advisory Committees for Interoperability
- VA Association of Chiefs of Police
- VA Association of Counties
- VA Association of Governmental EMS Administrators
- VA Association of Public Safety Communication Officials
- VA Department of Criminal Justice Services

- VA Department of Emergency Management
- VA Department of Military Affairs
- VA Department of State Police
- VA Department of Transportation
- VA Emergency Managers Association
- VA Fire Chiefs Association
- VA Information Technologies Agency
- VA Military Advisory Committee
- VA Municipal League
- VA Office of Emergency Medical Services
- VA Professional Fire Fighters
- VA Sheriffs' Association
- VA State Firefighter's Association

SIEC members also serve on one of three Standing Subcommittees (Operations, Policy, or Technical). These Subcommittees were created in order to complete tasks that require research, discussion and project management of tactical teams that have the correct level of expertise and adequate time and resources to accomplish each task. By participating on these Subcommittees and the SIEC, members play an integral role in improving the ability of Virginia's public safety practitioners to talk with one another.

The Attorney General's Office is encouraged to participate and attend SIEC meetings in an advisory role, but is not a voting member of the SIEC.

The 2009 SIEC Chairman is Mr. Bill Bullock who represents the Virginia Association of Governmental EMS Administrators and the Vice Chairman is Don Bowers who represents the Fairfax County Fire Department.

*\*For more information, see the SIEC One Pager in Appendix F.*

### ***Regional Preparedness Advisory Committees***

The Office of Commonwealth Preparedness established Regional Preparedness Advisory Committees (RPAC) throughout the Commonwealth based on the Governor's Homeland Security Regions in 2007. The RPACs focus on regional initiatives including training, equipment, communication, and strategy to ensure ready access to response teams in times of emergency and to facilitate testing and training exercises for emergencies and mass casualty preparedness. The mission of the RPACs is to present the Office of Commonwealth Preparedness with recommendations regarding funding priorities, homeland security needs, and local concerns in an effort to make a stronger and more secure Commonwealth.

### **Membership**

Each RPAC contains membership from the region including:

- Campus Safety
- Chamber of Commerce
- City/County Emergency Management
- City/County Transit
- City/County/Regional Hospitals
- Department of Homeland Security
- Fire/EMS

- Higher Education
- Military Affairs/ National Guard
- Police
- Public Broadcasting
- Public Safety Access Point
- Red Cross
- Sheriff
- Special Needs Representative
- One Representative from each of the following areas of Business and Industry
  - Retail
  - Finance
  - Power
  - Communications

### **Responsibilities**

- To provide a forum for discussion of All-Hazards issues facing the region and guidance to the Governor through the Office of Commonwealth Preparedness. Given that role, each members has the responsibility to communicate to their peers within the region the information discussed at an RPAC meeting and to solicit from their peers any issues or topics that need discussion for upcoming RPAC meetings.

### ***Regional Preparedness Advisory Committees for Interoperability***

Regional Preparedness Advisory Committees for Interoperability (RPAC-Is) were established in 2008 by the CICO to provide a forum for local communities to coordinate and plan at the operational and tactical level prior to providing input to the strategic planning level through the SIEC. Each RPAC-I also assists the CICO and SIEC in implementing the initiatives written in the Statewide Plan. All of the seven regions have an elected RPAC-I representative on the SIEC to share the local perspective and ensure each region has a voice in the decision-making process regarding future communications projects and funding. This structure helps engage a broader community of communications specialists at the regional level. With the increasing focus on regional approaches to strategic planning, collaboration among the CICO, SIEC, and the RPAC-Is will form an essential foundation for achieving the Commonwealth's communications interoperability goals.

### **Membership**

Each RPAC-I contains membership from the region that may include:

- Amateur Radio Operators
- Department of Homeland Security Protected Security Advisors
- Fire
- Health/ Emergency Medical Services
- Higher Education/ Campus Safety
- Local Government
- Technology
- Military Affairs/ National Guard
- Non-Governmental Organizations
- Non-Profits
- Police
- Private Industry/Critical Infrastructure and Key Resources
- State Government

- UASI leadership (if applicable)

### **Responsibilities**

- Provide feedback from the grassroots of the region to the state with a united voice:
- Determine regional needs and ensure a regional perspective while considering each locality
- Contribute subject matter, discipline, and individual expertise to the statewide planning process
- Provide oversight on regional projects; review proposals from localities and provide technological assistance
- Share resources and assets within this region as much as possible
- Communicate the RPAC-Is progress and other relevant communications interoperability information to the regional communities

*\*For more information, see the RPAC-I One Pager in Appendix G.*

### **Initiative Action Teams**

Initiative Action Teams (IATs) are established as needed to assist in the implementation of the initiatives in the Statewide Plan. The IATs are informal groups of practitioners, assembled for a limited timeframe to work towards the accomplishment of a specific initiative.

### **Membership**

IATs are made up of local and regional public safety practitioners and other stakeholders as necessary to accomplish the initiatives. Membership may include:

- Association leadership
- Emergency support functions such as transportation and health care professionals
- Local first responders
- Regional organizations and coordinators including RPACs
- Self-selected participants from across the Commonwealth
- State information technology (IT) experts

### **Responsibilities**

- Vet the timeline and determine the project plan for initiative accomplishment
- Develop recommendation reports for consideration by the SIEC
- Establish an IAT Lead to coordinate activities, arrange meetings, and report back to the SIEC
- Pursue additional resources as needed to complete tasks

*\*For more information, see the IAT One Pager in Appendix H.*

### **Multi-jurisdictional, Multi-disciplinary Agreements**

No multi-jurisdictional, multi-disciplinary agreements are required for the implementation of the Statewide Plan. The SIEC has been codified to assist the Office of Commonwealth Preparedness and Commonwealth Interoperability Coordinator with implementation of the SCIP. Virginia Code Section 9.1-1200 requires the annual update and implementation of the SCIP. As a result, localities and state agencies throughout the Commonwealth shall support the SCIP and implementation of the initiatives and show how investments in communications support the SCIP in order to receive grant funding. State agencies, regions, and localities are involved in the SIEC or Regional Preparedness Advisory

Committees for Interoperability and have an influence on the priorities contained in the SCIP.

Although no multi-jurisdictional, multi-disciplinary agreements are required, agreements have been established for statewide mutual aid. The Virginia Department of Emergency Management provides administration for these agreements to coordinate mutual aid statewide through the Emergency Operations Center and provides support to secure reimbursement for localities.

### **Neighboring States**

Virginia proactively works with neighboring states to streamline response capabilities related to communications interoperability. Through the All Hazards Consortium, nine states work collaboratively to “create new resources and funding opportunities for the states to support regional multi-state collaboration efforts among the stakeholders from government, private sector, higher education and non-profit/volunteer organizations.<sup>15</sup>” The nine state partners are as follows: Delaware, District of Columbia, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Virginia, and West Virginia.

In the FY 2007 Homeland Security Grant Program (HSGP), Virginia, along with the other state All Hazards Consortium partners, applied for funding to create a standard baseline collection methodology and support a project management office to provide oversight and planning on a multi-state basis. This effort was not funded, but the Mid-Atlantic states will continue to work together through the Consortium to coordinate regionally. In addition to these efforts, the CICO interacts regularly with the State of North Carolina to share lessons learned and discover new communications efforts and challenges.

While more formal planning is yet to come, individual localities requiring direct interaction with neighboring jurisdictions in other states have worked directly with their counterparts to discover solutions. For example, the City of Danville has worked with neighboring jurisdictions within the Commonwealth and in the State of North Carolina to develop governance and a comprehensive interoperable system of communications.

## **4.2 Technology**

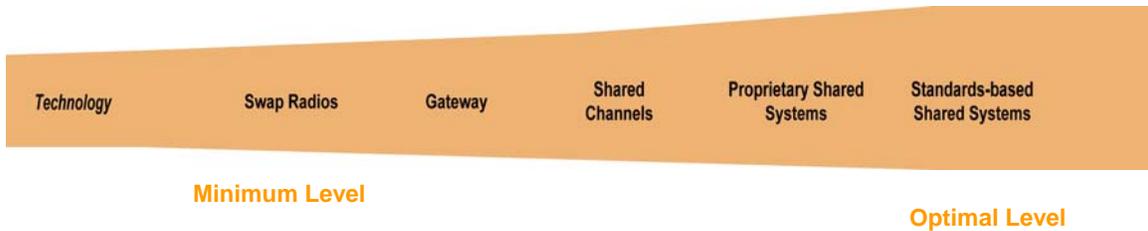
### **Overall Status**

The interoperability statewide governance structure serves to coordinate all communications interoperability projects in the Commonwealth. This oversight and coordination includes STARS, the statewide IT Infrastructure build-out by Virginia Information Technologies Agency (VITA), Commonwealth’s Link to Interoperable Communications (COMLINC), strategic radio caches, build out of national interoperability channels, and local/regional systems. The Commonwealth of Virginia statewide planning efforts allow the state to collaboratively work towards the system of systems Vision.

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<sup>15</sup> All Hazards Consortium website: <http://www.ahcusa.org/>

The Baseline revealed that technological capabilities vary across the Commonwealth on a local, regional, and state level. The Baseline provided the results in Figure 14 based on the Technology lane of the Interoperability Continuum (Figure 13).



**Figure 13. Technology Lane of Interoperability Continuum**

Data Point	Placement on Continuum	Notes
Region 1: Central Virginia (Richmond) UASI	Propriety Shared Systems	<ul style="list-style-type: none"> <li>▪ Characterized by diverse implementation of radio systems at primarily VHF and 800 MHz with some areas of UHF and low band</li> <li>▪ 800 MHz systems in Richmond area would place technology as “Propriety Shared Systems” on the Technology Continuum</li> <li>▪ For other localities, shared channels are utilized for agencies that use the same frequency band</li> <li>▪ SIRS radios are used for inter-jurisdictional interoperability</li> <li>▪ COMLINC is implemented in 16 localities. Virginia State Police and STARS agencies in VSP Division 1, which would place technology as “Gateway” on the Technology Continuum for the participants. This may present interoperability difficulties with localities that do not have COMLINC.</li> </ul>
	Gateways	
Region 2	Diverse	<ul style="list-style-type: none"> <li>▪ Characterized by UHF and 800 MHz, with some VHF</li> <li>▪ Will soon be shared regional 800 MHz system in Harrisonburg and Rockingham County</li> <li>▪ 800 MHz in Culpeper County</li> <li>▪ Hared 800 MHz for Warrenton and Fauquier County</li> <li>▪ With extensive use of UHF, there are shared channels that the agencies use for mutual aid</li> <li>▪ SIRS is used for inter-jurisdictional interoperability</li> </ul>
	Gateways	

Region 3:	Diverse  Gateways	<ul style="list-style-type: none"> <li>▪ Characterized by diverse implementation of radio systems at UHF, VHF and 800 MHz</li> <li>▪ Shared regional 800 MHz system for Lynchburg, Bedford County, Bedford City, and Amherst County</li> <li>▪ Shared regional 800 MHz system for Charlottesville, Albemarle County, and the University of Virginia</li> <li>▪ Nelson at VHF separates these two 800 MHz areas</li> <li>▪ Those localities that have a common frequency band can utilize a shared channel for interoperability</li> <li>▪ SIRS used for interoperability</li> <li>▪ Currently in the procurement phase for COMLINC which will enable them to have “Gateway” interoperability over an IP network</li> <li>▪ Interoperability problems may occur for localities that are not part of COMLINC</li> </ul>
Region 4:	Diverse	<ul style="list-style-type: none"> <li>▪ Characterized by primarily VHF with some UHF and low band</li> <li>▪ Use shared channels for SIRS</li> </ul>
Region 5 : (Hampton UASI)	Proprietary Shared Systems	<ul style="list-style-type: none"> <li>▪ Tidewater area uses 800 MHz</li> <li>▪ Tidewater is implementing Overlay Regional Interoperability Network (ORION) at 700 MHz as an interoperability system</li> <li>▪ Gaps may be in counties that are a part of Region 5 but are not considered part of the Tidewater or Hampton Roads area, or a part of ORION</li> </ul>
Region 6	Proprietary Shared Systems	<ul style="list-style-type: none"> <li>▪ Characterized by diverse implementation of radio systems at UHF, VHF, and 800 MHz</li> <li>▪ Shared 800 MHz system for Roanoke County, Roanoke City, and the town of Vinton which would place them at “Proprietary Shared Systems” on the Technology Continuum</li> <li>▪ For other localities shared channels are utilized for agencies that use the same frequency band</li> <li>▪ Danville and Pittsylvania County are implementing the Piedmont Regional Voice over IP Pilot Project in conjunction with North Carolina</li> <li>▪ Region is in the procurement phase for COMLINC which will connect to the COMLINC implementation in Region 3</li> <li>▪ Localities that will not be a part of the COMLINC implementation may have interoperability problems with those that are a part of COMLINC</li> </ul>
	Gateways	
Region 7 (NCR UASI)	Proprietary Shared Systems	<ul style="list-style-type: none"> <li>▪ Uses 800 MHz trunked radio systems and the users have common talk groups in each others radios which provides interoperability between localities</li> </ul>
State and Statewide Agencies	Standards-based Shared Systems	<ul style="list-style-type: none"> <li>▪ In process of implementing STARS</li> <li>▪ STARS is currently deployed in VSP Division 1 and VSP Division 5</li> <li>▪ COMLINC is an integral part of STARS system</li> </ul>
	Gateways	

**Figure 14. Baseline Study Results for Technology**

Effective coordination by the statewide effort is imperative to ensure wise investments are made throughout the state in alignment with the Statewide Plan and other technology

initiatives. Coordinated spending and technology sharing can result in significant savings for the Commonwealth and encourage localities, regions and the state to work together to reach better, more cost effective solutions.

### ***Technology Assistance***

In support of technology efforts statewide, the SIEC coordinates funding for interoperable communications including one-time local grants. During Fiscal Years 2004-2007, the SIEC recommended and received approval from the Governor's Office to distribute over \$35 million to localities within the Commonwealth of Virginia to support local interoperable communications projects. In addition, over \$100 million has been spent on communications within the National Capital Region (NCR) since 2003.

Because funding for interoperable communications is limited, the statewide effort also facilitates radio sharing/exchange programs, provides endorsement letters to localities that have identified and are pursuing other funding streams (if in alignment with the Statewide Plan), and has identified low interest loan options to fund technology projects.

### ***Technology Projects***

Several interoperability solutions have been employed to achieve interoperable communications. Solutions range from swap radio programs to sophisticated systems and all serve to fulfill the operational needs of the Commonwealth. In 2008, the SIEC, with the support of subject matter experts throughout Virginia, developed two comprehensive plans: the *Commonwealth of Virginia Operations Model* (Ops Model) and the *2008 Commonwealth of Virginia Technical Plan Blueprint* (Technical Plan Blueprint). The Ops Model and Technical Plan Blueprint show how the data and voice technology (both existing and new) will work together to achieve its interoperability goals at the local, regional, state, and Federal level. The two 2008 initiatives (which called for the development of the aforementioned plans) documented the complex system of systems that is the Commonwealth's interoperable communications vision. The Technical Plan Blueprint considered all existing technology installations, some include SIRS, STARS, COMLINC, system interfacing, and local and regional data and voice systems, etc. The 2009 detailed technical plan will include recommendations for sustainability of existing systems, as well as, providing support for legacy systems with backwards compatibility.

### ***State Interdepartmental Radios System***

State Interdepartmental Radios System (SIRS) is a low band frequency 39.54 MHz system developed in 1978 that is used statewide by local law enforcement to communicate between localities and the VSP, providing a highly reliable network for direct, real time car-to-car radio communications between law enforcement agencies. SIRS is not intended for routine radio traffic and is most commonly still used by rural localities to communicate with VSP. As technology is upgraded in localities a patch will be necessary to continue the use of SIRS.

SIRS is governed by the SIRS Advisory Board, which is appointed by the Secretary of Public Safety. The SIRS Board is responsible for policy formation, eligibility for membership, and research on matters relating to public safety communications problems affecting the Commonwealth's ability to deliver effective law enforcement services.

### **Statewide Agencies Radio System**

The Statewide Agencies Radio System (STARS) facilitates the communications of 21 state agencies and is an integrated, seamless, statewide, wireless voice and data communications system designed to meet the needs of these agencies. STARS also includes federal users allowing interoperability with their federal facilities, and coverage for six major tunnel systems within the Commonwealth.

STARS state agency members include:

- Alcohol Beverage Control
- Capitol Police
- Chesapeake Bay Bridge & Tunnel Police
- Conservation and Recreation
- Corrections
- Charitable Gaming
- Emergency Management
- Environmental Quality
- Fire Programs
- Forestry
- Game and Inland Fisheries
- Health
- Juvenile Justice
- Military Affairs
- Mines, Minerals, and Energy
- Motor Vehicles
- State Police
- Transportation
- Virginia Information Technologies Agency
- Virginia Port Authority
- Virginia Marine Resources Commission

STARS is being built upon the already powerful State Police Land Mobile Radio (LMR) network – upgrading it with state-of-the-art, Project 25 (P25) technology. STARS employs an Integrated Voice and Data (IV&D) land mobile radio architecture that uses the same mobile radio for both voice and mobile computer communications. Integrating the voice and data networks saves the Commonwealth the significant expense of a separate fixed data infrastructure with an additional radio/modem in each vehicle.

STARS also has a Transportable Site that is a self-contained and portable radio system. It consists of a five channel P25 system with 50 portable radios operating in the 800 MHz band.

The User Agency Requirements Committee (UARC) is a group comprised of two persons from each of the 21 agencies that have agreed to join STARS. The Commonwealth Interoperability Coordinator is also a member of the UARC as an advocate for the SIEC and OCP.

The current timeline (defined in October of 2008) for the STARS build out is as follow:

- Richmond - December 2005 (Currently Operational)
- Tidewater - May 2008 (Currently Operational)
- Culpeper - April 2009
- Northern Virginia - November 2009
- Salem - April 2010
- Appomattox - May 2010
- Wytheville - May 2010

### **State Tactical Solutions – Planning for Catastrophic Loss of Communications**

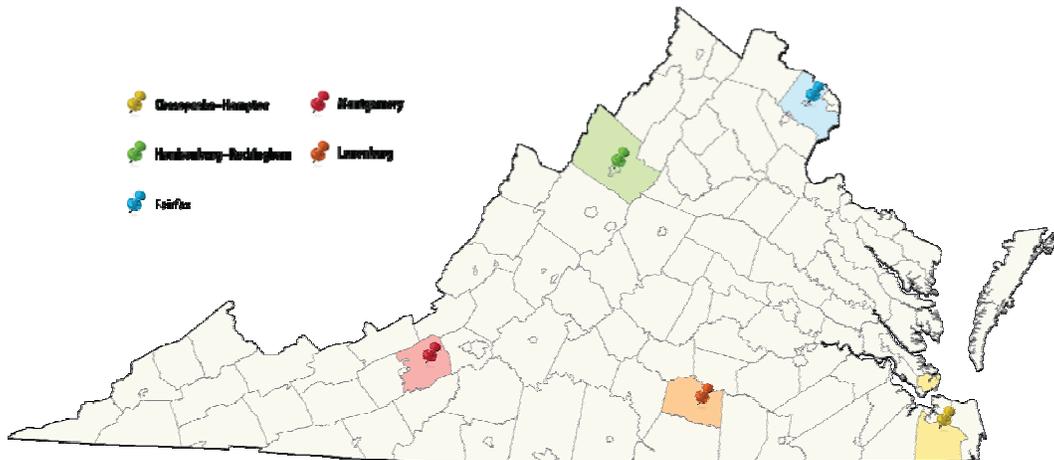
In light of the communication system failures during and following the events of 9/11, the Commonwealth has worked to develop tactical solutions that can be deployed to a situation within a few hours of an event to provide tactical communications interoperability in the event of catastrophic loss. These communication assets will assist the Commonwealth in establishing communications in the aftermath of large-scale events.

### **Statewide Deployable Strategic Communication Cache Resources**

In 2007, the interoperability effort developed policies and procedures based on the NIMS typing model (Radio Cache Typing Matrix provided in Appendix D) and secured funding for strategic communications cache resources statewide. The policies and procedures define radio cache resources in five types – Type I being the highest level of functionality and deployable resources. In FY 2007, the SIEC distributed a local grant application to localities for Types I-III communication caches and selected three locations within the state to support caches and statewide-deployment including portable towers. After the initial award was made for three Type II caches, the Commonwealth received PSIC funding to help upgrade the Type II caches to Type I strategic radio caches. Using Virginia Department of Emergency Management (VDEM) mutual aid agreements with each locality, these resources may be deployed anywhere in the state.

- Type I Cache located in Chesapeake (half) and Hampton (half)
- Type I Cache located in Harrisonburg
- Type I Cache located in Fairfax

Figure 16 shows where radio cache grants have been awarded throughout the Commonwealth.



**Figure 15. Communications Cache Locations**

Communication cache assets have been expanded in 2008 to provide smaller caches in strategic locations statewide as well as a Rapid Deployment Solutions Interoperability Project (RDSIP) in which a private entity can provide up-to-date tactical push-to-talk technology in the aftermath of an incident.

In FY 2008, the SIEC distributed a local grant application to localities for Types III-V radio caches and selected two more locations within the state to support caches and statewide-deployment, including portable towers.

- Type III Cache located in Montgomery County
- Type III Cache located in Lunenburg County

#### *Virginia State Police*

- Three command posts in Northern, Central, and Western Virginia that can be en route to an incident within two hours to create tactical interoperability.
- Fifteen radios at each of the seven division locations that can be deployed to an event and handed out at the scene.
- Eight Incident Commander's Radio Interface (ICRI) units that can allow up to five public safety agencies to achieve radio interoperability. The ICRI units can also be linked together to increase this number to ten radios.
- STARS Transportable Site as described above.

#### *Virginia Department of Emergency Management*

- One mobile command post, one Technical Support Unit and one communications trailer located in the Richmond region that contains VHF high band, VHF low band, UHF, VSP radio, VHF Marine, VHF Aircraft, Civil Air Patrol, cell phone, Wi-Fi hotspot, VoIP, IP over Satellite (IPoS) capability, dedicated cellular access and satellite (SATCOM) communication capabilities (voice and data). These command posts can be deployed within two hours of an incident.
- One command trailer located in the Southwest Region that contains VHF low and high band, UHF, ACU-1000, and satellite telephone capabilities.
- Two portable 60-foot towers and one portable 75-foot tower located in the Richmond region that can be deployed to an incident.
- Two brief case satellite phones that can be requested and deployed to a scene.
- Sprint Emergency Response Team (ERT) provides operations and response support by Sprint ERT personnel, a generator, dedicated cellular access, VoIP, IP over Satellite (IPoS) capability, Go Kits totaling 1000 push to talk instruments, and additional cellular bandwidth for localities coverage area.
- The MSAT-G2 Satellite Telephone (designed for use on the MSAT Network) supports continent-wide Push-to-Talk (PTT) Two-Way Radio and Circuit Switched Voice communications. In addition, the MSAT-G2 provides flexible interconnectivity to a variety of 3rd party interoperability interfaces, extending the reach of traditional Land Mobile Radio technology.

#### *Virginia Information Technologies Agency*

- A portable UHF 20-watt repeater and 30-35 UHF portables that can provide communications coverage within a 2-5 mile radius.

#### **Virginia Information Technologies Agency Integrated Services Program**

The Virginia Information Technologies Agency (VITA) created the Integrated Services Program (ISP) by consolidating the Virginia Geographic Information Network (VGIN), Public Safety Communications (E-911) Division and the two State radio engineers (formerly in VITA Telecommunications). This reorganization, which took effect on May 16, 2006, fulfilled the goal of streamlining and improving the delivery of existing and future services for public safety and emergency management. By leveraging the

strengths of both programs, the ISP can be more responsive to the changing needs of localities and state agencies.

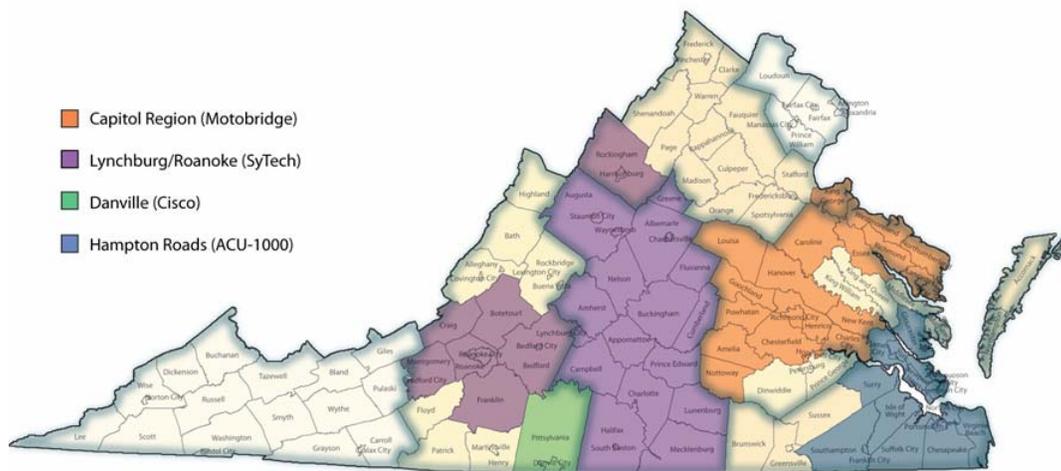
VITA is expanding the view of the statewide telecommunications network to include a high-reliability, managed IP-based network to all localities within Virginia. Part of this infrastructure already is planned for and funded through a partnership agreement between VITA and Northrop Grumman for the modernization of the IT infrastructure within the Commonwealth. The partnership agreement calls for the enhancement of the backbone of the telecommunications infrastructure to provide a point of presence in each of the seven rate centers in the state.

To expand that backbone to each locality, VITA and Northrop Grumman are working with potential users of the network to define the requirements for their applications to ensure the network will support them including geospatial applications and services. The SIEC is a critical partner in requirements definition.

**COMLINC**

Mutual aid situations require that multiple agencies, from different jurisdictions and with incompatible radio equipment, be able to communicate effectively. The COMLINC (Commonwealth’s Link to Interoperable Communications) project leverages Voice over Internet Protocol (VoIP) technology that will allow disparate radio systems to communicate within Virginia. When implemented, COMLINC can interface with the STARS network and enable communications between local and state agencies by eliminating the roadblocks of incompatible radio systems.

While some COMLINC projects are underway (Figure 17), the Commonwealth is continuing to explore the viability of VoIP technology in the long term. Often high and on-going connection fees can spell the end of large VoIP solutions and the Commonwealth wants to ensure that connecting to STARS and to one another does not mean a locality is saddled with large monthly fees.



**Figure 16. COMLINC Implementation Locations**

Current projects include:

- Region 1 Pilot - A \$1.65 Million combined grant from the Office of Domestic Preparedness (ODP) (\$1.5 Million) through the Commonwealth Preparedness Working Group and two local grants (\$75,000 each) through the SIEC funded COMLINC for 16 localities. Implementation was complete in June 2006 and the SIEC continues to collect lessons learned from the project and explore connection options.
- Lynchburg/Roanoke Regions Joint Project - The Lynchburg Metropolitan Statistical Area (MSA) was awarded approximately \$1.4 Million and the Roanoke Metropolitan Statistical Area (MSA) was awarded \$866,570 by the U.S. Department of Justice, Office of Community Oriented Policing Services (COPS) Interoperable Communications Technology FY 2005 Grant program and to implement COMLINC. Joining forces, Roanoke and Lynchburg developed a joint RFP to procure a COMLINC solution for 31 localities.

### **Crisis Management Software**

Crisis Management Software is a web-based, real-time incident viewing and resource tracking program. WebEOC is the crisis management system used by the Virginia Emergency Operations Center (VEOC) to maintain situational awareness in the Commonwealth, both during routine daily operations and during emergencies.

Jurisdictions, state agencies, other states, private and federal partners, and various support personnel enter data and view status boards through Crisis Management Software during daily operations and emergency situations – without purchasing a product. Because WebEOC is a web-based system, real time incident and request tracking is available to authorized users with an Internet connection. This allows all concerned agencies and jurisdictions to gain access to the same real-time information simultaneously. The 2008 Initiative six focused on ensuring that all instances of Crisis Management Software across the Commonwealth can interface with one another effectively.

### ***UASI Technical Capabilities***

#### ***Central Virginia UASI***

In February 2007 the Department of Homeland Security announced that the Richmond MSA had received the designation of an Urban Area Security Initiative.

The Central Virginia UASI is comprised of the following jurisdictions (see Figure 19):

- |                         |                            |
|-------------------------|----------------------------|
| ▪ Amelia County         | ▪ King William             |
| ▪ Caroline County       | ▪ Louisa County            |
| ▪ Charles City County   | ▪ New Kent County          |
| ▪ Chesterfield County   | ▪ Powhatan County          |
| ▪ Cumberland County     | ▪ Prince George County     |
| ▪ Dinwiddie County      | ▪ Sussex County            |
| ▪ Goochland County      | ▪ City of Colonial Heights |
| ▪ Hanover County        | ▪ City of Hopewell         |
| ▪ Henrico County        | ▪ City of Petersburg       |
| ▪ King and Queen County | ▪ City of Richmond         |



**Figure 17. Central Virginia (UASI) Map**

Over the past few years the Richmond area has been very proactive in addressing interoperability concerns and has worked together to overcome barriers to interoperability. The Capital Region consists of Henrico County, Chesterfield County and the City of Richmond operating as the Capital Region Communications Steering Committee. The Committee focuses on overcoming communications challenges and documenting/creating policies and procedures to take full advantage of interoperability capabilities.

One of the first steps to improve interoperable communications in the Capital Region was the purchase and installation of the Capital Region Radio System. Henrico County, Chesterfield County and the City of Richmond purchased 800 MHz Motorola digital trunked systems that are linked through a Smartzone controller. The Smartzone software and controller allow individual radio users to seamlessly roam between the three jurisdictional sub-systems, provided they are on a talkgroup that has been designated as a wide area resource.

Although a shared system is the best and most effective means of communications, the Capital Region and its surrounding localities have worked together to come up with creative solutions to achieve interoperability.

- Colonial Heights has joined the Capital Region by installing remote dispatch consoles connected to Chesterfield. They currently use the Chesterfield trunked system as their primary system as well as talk groups leveraging National Public Safety Planning Advisory Committee (NPSPAC) channels.

- The University of Richmond Police department has joined the capital region by purchasing radios to be used on the Henrico and Richmond trunked systems. The University of Richmond currently uses the trunked system as their primary radio system.
- Hanover County has entered a Memorandum of Understanding (MOU) with Henrico County to patch Henrico talkgroups to the Hanover Enhanced Digital Access Communications System (EDACS) through a control station located at the Henrico communications center.
- Hanover County and Goochland County received portable radios to operate on the Capital Region system
- Hanover County is spending \$20 million to join the regional 800 MHz system.
- Powhatan County and Hanover County work with Chesterfield through a control station patch setup that includes the installation of base stations for the Statewide EMS channel, a regional VHF fire mutual aid channel and SIRS
- The Capital Region with Goochland County and Hanover County are in the process of building an 8 site simulcast network to operate on the 800 MHz national mutual aid channels. The region has built a portable 106' antenna site that consists of the five 800 MHz national mutual aid repeaters as well as an ACU-1000 with permanently installed UHF, VHF, low band, and 800 MHz mobiles connected. The ACU-1000 also has 6 additional ports and multiple cables for connecting portable radios
- The Capital Region also manages a radio cache consisting of 100 800MHz portable radios; each participating locality houses 20 radios.
- During special events such as the NASCAR races, the Capital Region programs talkgroups into Virginia State Police portables. The talkgroups are on the Henrico system and provide direct interoperability.
- The City of Richmond has begun implementation of an innovative new advanced alerting system to complement the regional 800MHz radio system. This project uses established, Commercial Off-the-shelf Technologies (COTs) in an innovative way, bridging the critical gap in alerting capability. The advanced alerting system will increase efficiency among first responders across a variety of departments and functions, across a wide range of circumstances. The deployment of the advanced alerting system uses the Motorola ReFLEX standard, an open, commercial set of protocols for paging, messaging, telemetry, and mobile data. The City has secured a 900MHz authorization from the Federal Communications Commission (FCC) and is deploying two redundant network control points, four base stations, and approximately 1,600 two-way pagers. This network is anticipated to grow into a regional collaboration similar to the regional 800MHz radio system.
- Chesterfield County currently has a large command post vehicle that includes an ACU1000, VHF radios, 800 trucked radios, and satellite down link with internet capabilities. Cell phone service and hard line facilities are also on the unit. It can communicate on the Capital Region system in all 3 jurisdictions.

The following 16 localities currently operate on COMLINC:

- |                   |                         |
|-------------------|-------------------------|
| ▪ Powhatan County | ▪ Chesterfield County   |
| ▪ Caroline County | ▪ Goochland County      |
| ▪ Richmond County | ▪ Northumberland County |
| ▪ Hanover County  | ▪ Lancaster County      |
| ▪ Essex County    | ▪ Henrico County        |

- New Kent County
- Charles City County
- King George County
- Westmoreland County

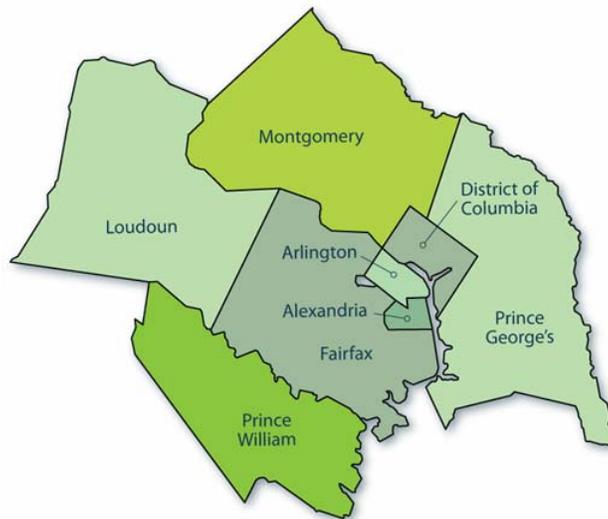
This COMLINC project is using the Motorola Motobridge IP solution. After the initial learning period, the Region has starting using the technology for day-to-day operations and major events. In FY 2007, the Region effectively used COMLINC to provide communications among the 16 localities for a racing event in the Richmond area.

**National Capital Region (UASI)**

The National Capital Region (NCR) was created pursuant to the National Capital Planning Act of 1952 (Title 40, U.S.C., Sec. 71). The Act defined the NCR as:

- Arlington County, Virginia
- District of Columbia
- Fairfax County, Virginia
- Loudoun County, Virginia
- Montgomery County, Maryland
- Prince George’s County, Maryland
- Prince William County, Virginia
- “And all cities now or here after existing in Maryland or Virginia within the geographic area bounded by the outer boundaries of the combined area of said counties” (see Figure 18).

Virginia localities included in the NCR comprise the entirety of Virginia Homeland Security Planning Region 7.



**Figure 18. National Capital Region Map**

The centers of all three branches of the U.S. federal government are in Washington, D.C., as well as the headquarters of most federal agencies. The NCR also serves as the headquarters for the World Bank, the International Monetary Fund, and the Organization of American States, among other international (and national) institutions.

The NCR is served by three major airports, two of them located in suburban Virginia and one located in Maryland. The Capital Beltway creates an artificial boundary for the inner suburbs of Washington and is the root of the phrase "inside the Beltway." The NCR is also bisected by the Potomac River. Major interstates include: I-66, I-295, and I-395. The

Washington area is also serviced by the Washington Metropolitan Area Transportation Authority (WMATA) public transportation system, which operates public buses (Metrobus) and the region's subway system (Metrorail). Many of the jurisdictions around the region also run public buses that interconnect with the Metrobus/Metrorail system. Additionally, Union Station is a critical transportation hub that interconnects Metrorail, MARC Train Service (MARC) and Virginia Rail Express (VRE) commuter trains, and Amtrak intercity rail.

Currently, all local first responders in the NCR can communicate either by direct or patched communications. It is anticipated that by 2012 patched communications will no longer be required for local NCR first responders, as all will communicate by direct communications. Communications with state and federal first responders will still require patching or issuance of "cache" 800 MHz radios.

Accomplishments in voice interoperability to date include:

- 800 MHz interoperability exists throughout the National Capital Region
- District of Columbia tri-band radio network enables interoperability with Washington Metropolitan Area Transportation Authority (WMATA) and regional Federal agencies using both UHF and VHF systems
- Interoperability gateways are deployed throughout the region to connect disparate radio systems for use during regional events and missions
- NCR Radio Cache – a 1,250 radio cache in the 800 MHz band was established to improve preparedness of the region
- Police Mutual Aide Radio Systems (PMARS) and Fire Mutual Aide Radio Systems (FMARS) – police and fire mutual aid radio systems provide greater connectivity between the region's dispatch centers
- Upgrades and implementation of radio systems within subway tunnel systems
- Regional Incident Communications and Coordination System (RICCS) established for incident based communications
- Washington Area Warning Alert System (WAWAS) established to convey warnings and situational awareness on a 24-hour basis
- Communication Asset & Survey Mapping Tool (CASM) – database and mapping tool containing all interoperable voice communication assets in the region
- Satellite back-up communications systems have been implemented for Emergency Operations Center (EOC) and Emergency Communications Center (ECC) operation.

The NCR is one of the most advanced data interoperability regions in the country. The NCR developed a program to provide a secure, robust communications infrastructure interconnecting wired and wireless communications transport across jurisdictions and with State and federal agencies, and enhance capabilities in exchanging data for seamless interoperability across disparate systems that enhances mutual response, incident coordination, intelligence gathering and recovery as well as communications survivability. Known as the NCR-IP, the approach developed by the NCR is being recognized as a national best practices model for government collaboration and preparedness. NCR-IP provides infrastructure and capabilities that also support key interoperability goals, and other Emergency Support Function (ESF) data sharing and critical infrastructure projects and needs.

Accomplishments to date in data interoperability include:

- 12 site wireless broadband network in the District of Columbia to provide interoperable multi-media (video, messaging, data exchange, imaging, etc.) capabilities
- Capital Wireless Information Net (CapWIN) provides data interoperability and a national model for governance by establishing desktop and mobile text messaging and access to multiple law enforcement databases throughout the NCR
- Data Exchange Hub (DEH) - Just as National Incident Management System (NIMS) can facilitate coordination and communication between first responders from different agencies or jurisdictions, the DEH Services Oriented Architecture (SOA) has been established and enables seamless flow of information between differing IT environments and legacy systems of local, state and federal systems. The DEH also allows various governmental entities and partners in response to share and analyze data supporting decision making in incident mitigation, response, and recovery. The DEH standards were adopted and published in 2006, with supporting infrastructure and hub-sites installed in the District of Columbia, Fairfax County, and Maryland. Several pilot exchanges currently developed. Use of the DEH will facilitate real-time information and intelligence sharing across the region for any ESF application, saving the cost of implementing and maintenance of separate information sharing systems for each individual program. The pilot DEH implementation successfully demonstrated the feasibility of secure, authorized exchange of incident data from existing Records Management Systems (RMS) and/or Computer Aided Dispatch (CAD) systems in the region, translating the data into standard format, and enabling access to applications as required to support collaborative decision making. These are long sought goals of the regional Fire and Rescue Emergency Medical Services (EMS). The data exchange technology architecture and approach includes approved DHS standards for data interoperability and has been adopted. Because it uses standards, it is easily reusable throughout the state and the country allowing for technology tool preferences that may already be in-place in participating localities.
- Regional Wireless Broadband Network (RWBN) which provides essential high speed, large volume throughput, on-scene access and sharing by responders of critical information in the field via mobile (from vehicles) and portable (handheld) devices. The RWBN system has been designed for reach around the beltway, with the District of Columbia RWBN core system implemented, demonstrated, and used by DC, NCR and Federal agencies in supporting events this summer. The system is designed to roam onto any other wireless network, which will provide for continuity and interoperability with partners as responders cross jurisdictional boundaries in mutual aid and response.
- Private fiber networks owned by several localities in the NCR including DC, Montgomery County and Prince Georges County, Maryland, and Fairfax County, Virginia networks have been successfully interconnected. Fairfax County's network is interconnecting five bordering localities. The interconnection of these assets is the 'NCRnet', which provides private, dedicated infrastructure to participating governments through a fiber optic and microwave backbone. Automated Fingerprinting Information Systems (AFIS) and video teleconferencing applications are launching across this secure backbone transport.
- EOC to EOC Communications - Video and Audio Teleconferencing System interconnecting 19 EOCs and ECCs in the National Capital Region enables

- reliable, secure voice communications, text messaging, and video conferencing enhancing live, collaborative incident and command center management.
- Regional Incident Communications and Coordination System (RICCS) provides additional data communications via pager, cell phone, and web for efficient information dissemination for emergency events
  - Emergency Alert Network (EAN) and Community Emergency Alert Network (CEAN) systems provide the ability to send coordinated emergency alert notifications throughout the region for incident coordination and public information through Roam Secure systems implemented in NCR jurisdictions.
  - WebEOC has been implemented throughout the region and local and state level for specific Emergency Operations information stores, providing a Common on-line Operational Picture.
  - Law Enforcement Information Exchange (LInX) is a comprehensive local, state and federal law enforcement regional data sharing tool for the entire NCR that is operational. This tool contains facial recognition investigative tools and can be available wirelessly.
  - First Responder Authentication Credential (FRAC) – FIPS201 compatible card for First Responder’s Positive Identity Verification at incidents. Cards are implemented in DC, Arlington County, Virginia, Virginia Department of Transportation (VDOT), and Maryland agencies.
  - GIS regional base-map is developed, also integrated with Maryland Emergency Management Agency (MEMA), Web-EOC, and the DEH architecture.
  - 211 metrodc was launched with a sortable database of 10,000 programs and 4,000 human services organizations in the NCR. This website is the result of collaboration between DC Answers Please, United Way of Maryland, and the Northern Virginia Regional Commission spearheaded by The Nonprofit Roundtable of Greater Washington. It provides a convenient resource for community members in their search for essential services information from the region’s 2-1-1 call centers, which are an essential part of recovery and reunification. 2-1-1metrodc.org is an important first step towards a regionally integrated 2-1-1 service. With this new capability, search for assisting resources is not bound by location.

Also, the Council of Governments (COG) membership jurisdictions have established an Interoperability Council (IC) charged with development of a governance model and master agreement that allows localities to share data with each other, establish local priorities and a sustainability model in support of NCR goals and objectives and related communications and information assets. The process of the IC includes incorporating data sharing agreements and authentication processes that exist between localities and state and federal entities.

The NCR is pursuing the completion of the following items that will greatly improve interoperable communications in the region:

- Fixed and Mobile Gateway system enhancements
- A 700 MHz P25 network in Prince George’s County by 2008/9 to advance seamless interoperability with regional 800 MHz users
- STARS implementation in the Commonwealth of Virginia to include 700 MHz portable radios to be used on the NCR 800 MHz radio networks by 2009
- A 700 MHz statewide deployment in Maryland
- Hospital Mutual Aid Radio System (HMARS)

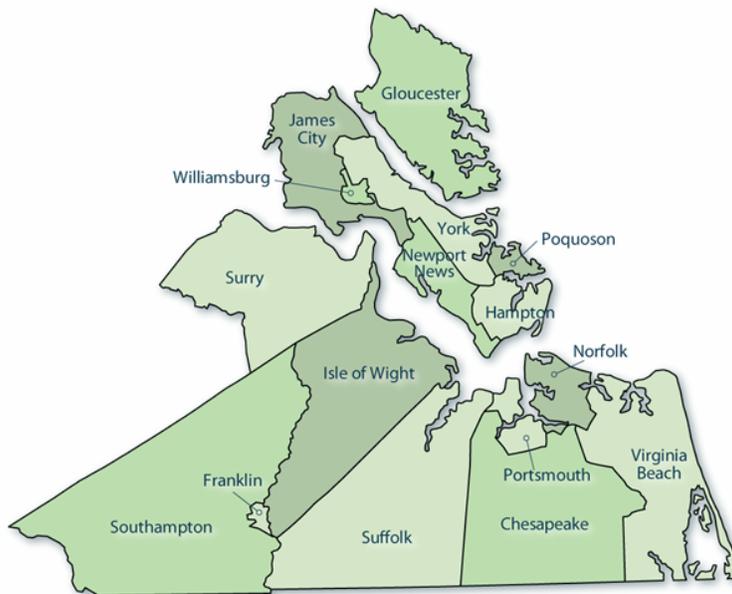
- Data Exchange Hub (DEH) – Implementation of the DEH continues with the CAD-to-CAD project. This collaborative effort is underway with the NOVA (Northern Virginia) Fire Departments on a CAD-to-CAD Interoperability Project to standardize and streamline the exchange of CAD information between the disparate CAD systems used by 911 centers throughout the region. This will allow local first responders greater speed in dispatching equipment and skills to incident scenes. The effort is focused on providing “real time unit status” and automating the “request for resource with incident information” transactions for participants. Planned capabilities include automatic vehicle location and unit status updates throughout the duration of an incident. This will enhance efforts to integrate this process with WebEOC, which is implemented in the NCR and Commonwealth’s VDEM. The CAD-to-CAD Interoperability project will result in automated inter-jurisdictional dispatch with both improved speed and increased efficiency in unit allocation to an incident scene regardless of jurisdictional boundaries.
- Implementation of the RWBN is slated to continue in the NCR. The system is designed to roam onto any other wireless network, which will provide for continuity and interoperability with partners as responders cross jurisdictional boundaries in mutual aid and response.
- Implementation of NCRnet interconnection of jurisdictional private fiber networks continues with interconnection of Prince William, Loudoun and Alexandria and state networks. Connection of Fusion Centers and CAPWin are also part of the on-going efforts.
- First Responder Authentication Credential – FIPS201 compatible card for First Responder’s Positive Identity Verification at incidents- on-going effort.
- LInX is a comprehensive local, state, and federal law enforcement regional data sharing tool for the entire NCR continues to be enhanced and expand throughout agencies.
- Automatic Fingerprint Identification System (AFIS) – unified fingerprint identification system which will enable improved work flow, booking process, criminal identifications and enhanced mugshot capabilities continues to be implemented over a more robust infrastructure through NCR-net
- Patient Tracking System – on-scene to hospital incident centric patient tracking
- NCR Syndromic Surveillance Network – health trend surveillance network for disease
- NCR-Information Services – this program is being established as the authorized structure for authorizing secure data exchange and management and maintenance of NCR interoperability assets (NCRnet, DEH, and others).

### ***Hampton Roads (UASI)***

The Hampton Roads Region of southeastern Virginia is the fourth largest metropolitan area in the southeastern United States and it includes the following jurisdictions (see Figure 20):

- |                        |                          |
|------------------------|--------------------------|
| ▪ City of Chesapeake   | ▪ City of Portsmouth     |
| ▪ City of Franklin     | ▪ City of Suffolk        |
| ▪ City of Hampton      | ▪ City of Virginia Beach |
| ▪ City of Newport News | ▪ City of Williamsburg   |
| ▪ City of Norfolk      | ▪ Gloucester County      |
| ▪ City of Poquoson     | ▪ Isle of Wight County   |

- James City County
- Southampton County
- Surry County
- York County



**Figure 19. Hampton Roads (UASI) Map**

These jurisdictions have a combined land mass of approximately 3,000 square miles and they serve a population of nearly 1.6 million residents, including 130,000 active duty military personnel, and 4 million visitors during the three month summer vacation period. Hampton Roads is home to the third largest port in the country and more than a dozen major military installations (including the NATO Allied Command Transformation). Considering these factors and the potential effect that a large-scale natural or man-made disaster could have on the region, communications and emergency preparedness are of critical importance to the region. Consequently, the Hampton Roads Planning District Commission (HRPDC) is facilitating regional work on communications related issues and found a need to establish a committee for interoperable communications issues from a regional perspective. The Hampton Roads Interoperable Communications Advisory Committee (HRICAC) was formally established in April 2006. This committee of communications professionals consists of sixteen members representing each of the HRPDC's member jurisdictions.

Interoperable communications initiatives in the Hampton Roads Region include:

- **Hampton Roads Tactical Regional Area Network (HR TacRAN):** The HR TacRAN was funded by a \$6 million Port Security Grant awarded to the HRPDC to improve communications for Port Security. This regional microwave network provides the emergency managers in the region with a secure and survivable method of teleconferencing and sharing information among themselves and with the Coast Guard Operations Center. The network is fully operational and being used by regional emergency managers and the Coast Guard for routine communications and exercises. The local public television station, WRHO TV, is also linked to the network to facilitate dissemination of important information to the public. Work is underway with WHRO TV and the Virginia Department of

Emergency Management to connect the State Emergency Operations Center to the network. Once that link is completed, state emergency management personnel will be able to teleconference and share information with all of the sixteen EOC's in the region, including the Coast Guard and WHRO TV.

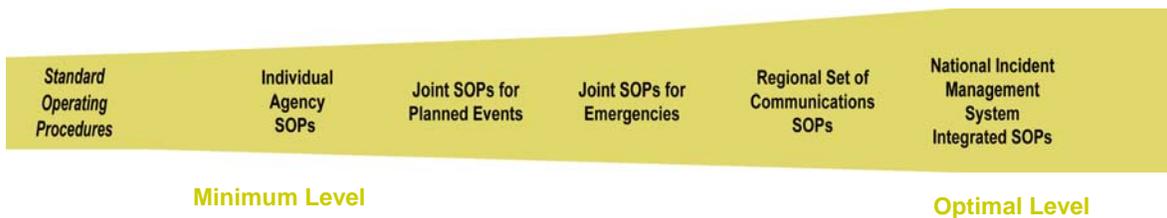
- **Overlay Regional InterOperability Network (ORION):** The ORION is a “state of the art” 700 MHz Project 25 (P25) voice system and 900 MHz high speed mobile data system, which provides wide area command and control communications for the region’s first responders. This multi-jurisdictional system currently provides voice and mobile data coverage in the Cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, Suffolk, and Virginia Beach. The regional Police Chiefs and Fire Chiefs associations jointly consider it a high priority to extend the capabilities of the ORION to other jurisdictions in the region. Consequently, the Hampton Roads Region is pursuing UASI Grant Funding to support the expansion of the ORION Infrastructure and replace legacy subscriber equipment to ensure compatibility with P-25 capable systems. The ORION Advisory Groups developed a Tactical Interoperable Communications Plan (TICP), which is intended to document what voice interoperable communications resources are available, who controls each resource, and what rules of use or operational procedures exist for the activation and deactivation of each resource.
- **York/James City County Radio System:** A “state of the art” 800 MHz Project 25 (P25) multi-jurisdictional radio system, which covers the northern part of Hampton Roads Region. Member jurisdictions include York County, James City County, The City of Williamsburg, National Park Service, College of William and Mary, and Kingsmill Police. This system continues to expand its coverage area and will soon include Gloucester County.
- **Interoperability Gateways:** Through the Port Security Grant funding, the HRPDC purchased ACU-1000 interoperability gateways to support communications with jurisdictions and agencies that do not have compatible radio communications systems. The gateways and radios they support are accessible to all sixteen jurisdictions via the HR TacRAN and will provide access to the following networks: ORION, York/James City County Radio System, Federal InterOperability (FIO) Channel, and Coast Guard VHF Marine Channels.
- **Strategic Radio Cache:** The City of Chesapeake (lead agency) and the City of Hampton were awarded a grant to establish a strategic radio cache. To ensure swift availability of these resources for agencies on either side of the James River, the radio cache will be split between Chesapeake for the Southside and Hampton for the Peninsula.
- **Tunnel Communications:** The first responders in the Hampton Roads Region had a long standing problem of not being able to access their primary 800 MHz communications systems when responding to incidents within the tunnels that serve the region. The Statewide Agencies Radio System (STARS) project team partnered with the local jurisdictions to address this problem and modified the STARS tunnel communications network to enable first responders to access their 800 MHz system while in the tunnel.

- **NPSPAC 800 MHz Interop Channels:** Several Hampton Roads jurisdictions implemented the national 800 MHz interoperability channels and these systems are operational.

### 4.3 Standard Operating Procedures

#### Overall Status

The Baseline revealed that operating procedures vary across the Commonwealth on a local, regional, and state level. The Baseline provided the results in Figure 21 for the Standard Operating Procedures (SOPs) lane of the Interoperability Continuum, which is shown below in Figure 20.



**Figure 20. Standard Operating Procedures Lane of Interoperability Continuum**

Data Point	Placement on Continuum	Notes
Region 1: (Richmond UASI)	Diverse	<ul style="list-style-type: none"> <li>▪ Diverse for SOPs</li> <li>▪ Localities using 800 MHz use National Incident Management (NIMS) integrated SOPs</li> </ul>
Region 2	Individual Agency SOPs	<ul style="list-style-type: none"> <li>▪ Over half of the agencies reported “Individual Agency SOPs”</li> </ul>
Region 3	Individual Agency SOPs	<ul style="list-style-type: none"> <li>▪ Diverse for SOPs</li> <li>▪ One-half of agencies responding rated themselves at “Individual Agency SOPs”</li> </ul>
Region 4	Individual Agency SOPs	
Region 5 (Hampton UASI)	National Incident Management Integrated SOPs	
Region 6	Individual Agency SOPs	<ul style="list-style-type: none"> <li>▪ Diverse for SOPs</li> <li>▪ One-half of responders are at “Individual Agency SOPs” for the SOP Continuum</li> </ul>
Region 7 (NCR UASI)	Between “Regional Set of Communications SOPs” and “National Incident Management Integrated SOPs”	
State and Statewide Agencies	Between “Individual Agency SOPs” and “National Incident Management Integrated SOPs”	

**Figure 21. Baseline Study Results for SOPs**

## **Statewide SOPs**

The effort of developing statewide operating procedures has been a top priority in Virginia because they can help improve communications interoperability. Most notably, the Commonwealth developed a Common Language Protocol (Appendix E) for use throughout the state and used NIMS typing as a model for statewide deployable communication cache resources (Appendix D). Additionally, the Commonwealth participated in the National Public Safety Telecommunications Council's (NPSTC) efforts to create standard nomenclature for national interoperability channels by establishing an IAT to review recommendations and provide direct input to the effort.

Whenever possible the CICO and SIEC work to develop the needed operational protocols prior to the purchase of technology through a collaborative multi-jurisdictional and multi-discipline approach through IATs, for example: the process to procure and deploy the FY 2007 communication cache resources. In the event that this is not possible, the CICO and SIEC work with users to leverage existing operating procedures and documented best practices as appropriate from localities, regions, and even other states. The Commonwealth is dedicated to the endorsement and usage of the NIMS and the Incident Command System (ICS) to guide how disciplines operate with one another for mutual aid.

In Homeland Security Presidential Directive (HSPD)-5, Management of Domestic Incidents, the President directed DHS to develop and administer NIMS. NIMS provides a consistent nationwide approach for federal, state, territorial, tribal, and local governments to work effectively and efficiently together to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. On March 1, 2004, DHS issued NIMS to provide a comprehensive national approach to incident management, applicable at all jurisdictional levels and across functional disciplines.

Many of the NIMS requirements are specific to local jurisdictions. In order for NIMS to be implemented successfully across the nation, it is critical that states provide support and leadership to tribal and local entities to ensure full NIMS implementation. On November 1, 2005, Governor Warner signed Executive Order 102 requiring the adoption of NIMS and use of the National Preparedness Goal for preventing, responding to and recovering from crisis events in the Commonwealth. NIMS has been adopted nationally and is being implemented in Virginia as the federally required incident management system. To achieve this goal, the Executive Order places the State Coordinator of the Virginia Department of Emergency Management as the responsible party for NIMS implementation.

An important point of the Executive Order is its requirement that "all emergency plans and procedures shall be developed in consonance with NIMS, the National Response Plan and in accordance with the National Preparedness Goals." The CICO will continue to address the requirement in 2009 by building on the common language roll-out, the adoption of standard nomenclature, use of national interoperability channels, continued support for NIMS training and exercises, and ongoing promotion of NIMS compliance and the use of Incident Command System.

## ***Tactical Interoperable Communications Plans***

As previously stated, Virginia has three UASIs: National Capital Region (NCR), Hampton Roads and Central Virginia. The NCR Tactical Interoperable Communications Plan (TICP) was evaluated by DHS in the Urban/Metropolitan Area Tactical Interoperable Communications Scorecard. The build-out of the Commonwealth's Strategic Radio Caches (Initiative 3) is a direct result of the scorecard recommendation for the NCR to build-out programs that will assist in state and federal tactical interoperability efforts.

However, Virginia acknowledges that more tactical planning is necessary to achieve the goals of all of Virginia's diverse regions. For example, Virginia has leveraged the baseline assessment to develop and publish the Ops Model (2008 Initiative 1) and a Technical Plan Blueprint (2008 Initiative 2). The Ops Model and Technical Plan Blueprint are a preliminary step to the development of regional TICPs outside of the UASI regions that, when combined, will formulate a statewide TICP.

### **National Capital Region UASI**

In June 2006, the Department of Homeland Security's Office of Grants & Training approved the NCR's Tactical Interoperable Communications Plan (TICP). The NCR's TICP documents what voice interoperable communications resources are available within the NCR, who controls each resource, and what rules of use or operational procedures exist for the activation and deactivation of each resource.

This document provides local, state, and Federal public safety agencies serving the NCR with a reference document and guide to use when interoperable communications are required to support emergency operations. The guide includes voice interoperability solutions, Points Of Contact (POC) for learning about or participating in the solutions, POCs for gaining permission to access each voice interoperable communications approach, communication agency contact information, and examples of MOUs, MAAs, and SOPs as starting points for the appropriate stakeholders in developing policies and practices that best meet their needs.

The Regional Programmatic Working Group for Interoperability (RPWG-I) as directed by the Senior Policy Group (SPG) oversees and maintains the NCR TICP. The TICP is reviewed every six months to update procedures and policies and updated as needed to reflect changing inventory and POCs in the region. In addition to providing this information, this document strongly recommends to the participants in each solution that they test plans, procedures, and equipment periodically to ensure proficiency in deploying the various interoperability solutions.

The first phase of the NCR's TICP addressed law enforcement and fire and rescue agencies. Future phases will include additional public safety agencies, such as emergency management, transportation and health and additional jurisdictions that are contiguous to the NCR. Future versions will also include how the region intends to address the challenges of data communication interoperability.

In 2007, the National Capital Region held an exercise to test its TICP and was ranked as one of the top five areas in the nation by DHS for its interoperable communications scorecard.

For more information on the National Capital Region Tactical Interoperable Communications Plan, please contact Captain Don Bowers at (703) 280-0634.

**Hampton Roads UASI**

Hampton Roads was designated a UASI just prior to the announcement for FY 2007 HSGP funding. Since that time, the area has embraced its UASI status and will be using the Overlay Regional Interoperability Network (ORION) TICP as a foundation for developing a TICP that includes all sixteen jurisdictions. The estimated time of completion of the TICP is August 2009.

For more information on the Hampton Roads Tactical Interoperable Communications Plan, please contact Harry Yeomans at (757) 441-5800.

**Central Virginia UASI**

The Central Virginia (UASI), established in 2008, is comprised of four independent cities and sixteen counties. While the original 2004 UASI designation only included the City of Richmond and four contiguous counties, the 2008 designation encompasses the entire 20 jurisdiction Metropolitan Statistical Area. This new geographical area has an estimated population of 1.2 million residents and is the third largest urban area within the Commonwealth of Virginia. This UASI is currently being developed the area’s strategic plan. The estimated time of completion of the TICP is February 2010.

**4.4 Training and Exercises**

**Overall Status**

The Baseline revealed that training and exercises vary across the Commonwealth on a local, regional, and state level. The Baseline provided the results in Figure 23 for the Training and Exercises lane of the Interoperability Continuum (Figure 22).



**Figure 22. Training and Exercises Lane of Interoperability Continuum**

Data Point	Placement on Continuum	Notes
Region 1: (Richmond UASI)	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional training and exercises are conducted less than once a year for               <ul style="list-style-type: none"> <li>○ Multi-Agency Tabletop Exercise</li> <li>○ Multi-Agency Live Field Exercises and Training</li> <li>○ Regular Comprehensive Regional Training and Exercises</li> </ul> </li> </ul>

Region 2	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional training and exercises are conducted annually or less than once a year for: <ul style="list-style-type: none"> <li>○ Multi-Agency Table Top Exercise</li> <li>○ Multi-Agency Live Field Exercises and Training</li> </ul> </li> <li>▪ Training and Exercises are conducted less than once a year for Regular Comprehensive Regional Training and Exercises</li> <li>▪ One-third of the respondents do not conduct any type of multi-agency or regional training</li> </ul>
Region 3	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional training and exercises are conducted annually or less than once a year for: <ul style="list-style-type: none"> <li>○ Multi-Agency Table Top Exercises</li> <li>○ Multi-Agency Live Field Exercises and Training</li> <li>○ Regular Comprehensive Regional Training and Exercises</li> </ul> </li> <li>▪ One-third of the respondents do not conduct any type of multi-agency or regional training</li> </ul>
Region 4	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional multi-agency or regional training and exercises are not conducted by over one-half of the agencies</li> </ul>
Region 5: (Hampton Roads UASI)	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional training and exercises are conducted less than once a year for: <ul style="list-style-type: none"> <li>○ Multi-Agency Table Top Exercises</li> <li>○ Multi-Agency Live Field Exercises and Training</li> <li>○ Regular Comprehensive Regional Training and Exercises</li> </ul> </li> <li>▪ One-third of the respondents do not conduct any type of multi-agency or regional training</li> </ul>
Region 6	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional training and exercises are conducted less than once a year for multi-Agency Table Top Exercises</li> <li>▪ Training and exercises conducted less than once a year or not at all: <ul style="list-style-type: none"> <li>○ Multi-Agency Live Field Exercises and Training</li> <li>○ Regular Comprehensive Regional Training and Exercises</li> </ul> </li> <li>▪ One-third of the respondents do not conduct any type of multi-agency or regional training</li> </ul>
Region 7: (NCR UASI)	Diverse	<ul style="list-style-type: none"> <li>▪ Inter-jurisdictional training and exercises are conducted annually for: <ul style="list-style-type: none"> <li>○ Multi-Agency Table Top Exercises</li> <li>○ Multi-Agency Live Field Exercises and Training</li> <li>○ Regular Comprehensive Regional Training and Exercises</li> </ul> </li> </ul>
State and Statewide Agencies	Diverse	<ul style="list-style-type: none"> <li>▪ Over one-half reported that they do not conduct multi-agency or regional live field exercises</li> <li>▪ Multi-Agency Table Top Exercises are</li> </ul>

		conducted by over 60 percent of those reporting
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**Figure 23. Baseline Study Results for Training and Exercises**

### **Statewide training and exercises**

The Virginia Department of Emergency Management (VDEM) is responsible for offering training and conducting exercises statewide to better prepare for emergencies. While not all courses and exercises contain an interoperable communications component, the CICO works closely with VDEM to increase the frequency by which interoperability is tested. VDEM offers training on Emergency Management, Radiological Emergency Response, Search and Rescue, Terrorism, and Professional Development. Specific topics in the 2007 calendar year under these headers included Disaster Damage Assessment, Incident Command System (ICS) Beginner, Intermediate and Advanced Courses, ICS Train the Trainer, Community Emergency Response Team (CERT), and Incident Response for Terrorist Bombings. VDEM also advertises and supports attendance at sessions at the National Emergency Management Training Center in Emmitsburg, Maryland. Training courses are advertised via the VDEM website, communications through the CICO list serve, newsletters, and briefings.

The Commonwealth also conducts exercises in compliance with the Homeland Security Exercise and Evaluation Program (HSEEP), which consists of both doctrine and policy for designing, developing, conducting, and evaluating exercises. In compliance with HSEEP, VDEM and the OCP developed the Commonwealth of Virginia Homeland Security Exercise and Evaluation Program, which presents a multi-year exercise plan for the state. The Program sets up a series of functional exercises, full-scale exercises, table-tops and simulations. VDEM works to conduct exercises on a statewide level as well as regional level (approximately 20 total per year).

Recognizing the importance of incorporating interoperable communications into existing exercises and scenarios, the CICO worked with VDEM to incorporate a communications related inject into the April 2007 functional exercise testing Emergency Operations Center communications and notification during a Hurricane scenario. The CICO will continue its relationship with VDEM to incorporate interoperable communications and local practitioners into exercises as possible in 2009.

## **4.5 Usage**

### **Overall Status**

The Baseline survey revealed consistent capabilities across the Commonwealth on a local, regional, and state level. The Baseline provided the results in Figure 25 for the Usage lane of the Interoperability Continuum (Figure 24).



**Figure 24. Usage Lane of Interoperability Continuum**

Data Point	Placement on Continuum	Notes
Region 1 (Richmond UASI)	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only,” “Regular for Emergencies” or “Regular for Day-to-Day”</li> </ul>
Region 2	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only,” “Regular for Emergencies” or “Regular for Day-to-Day”</li> </ul>
Region 3	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only,” “Regular for Emergencies” or “Regular for Day-to-Day”</li> </ul>
Region 4	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only” or “Regular for Emergencies”</li> </ul>
Region 5 (Hampton UASI)	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only” or “Regular for Emergencies”</li> </ul>
Region 6:	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only,” “Regular for Emergencies” or “Regular for Day-to-Day”</li> </ul>
Region 7 (NCR UASI)	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only,” “Regular for Emergencies” or “Regular for Day-to-Day”</li> </ul>
State and Statewide Agencies	Diverse (planned events/localized emergency incidents)	<ul style="list-style-type: none"> <li>Inter-jurisdictional usage on the SAFECOM Continuum is reported as either “Seldom, Planned Events Only” or “Regular for</li> </ul>

		Emergencies”
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**Figure 25. Baseline Results for Usage**

### **Statewide Usage Efforts**

To continue to improve usage of interoperable communications equipment and establish a common understanding of the issue, the CICO and SIEC developed a comprehensive outreach plan in FY 2006. This outreach plan works to educate elected officials about the importance of the issue, acknowledge outside influencers in the form of citizens, the press, the federal government, and works through the governance structure so the practitioners on the ground can convey the interoperability message.

To encourage greater usage of interoperable communications equipment, the CICO uses communications mechanisms as well as grant guidance to bring about a greater level of buy-in and compliance with the Plan. Users are encouraged to utilize equipment regularly during exercises and training opportunities but also planned events and day-to-day operations to improve their usage and competency.

This compliance criteria is supported by Virginia Code 9.1-1200 that states that “all state agencies and localities shall achieve consistency with and support the goals of the statewide interoperability strategic plan by July 1, 2015, in order to remain eligible to receive state or federal funds for communications programs and systems.”<sup>16</sup>

### **Compliance with the Statewide Plan**

As stated previously, the SIEC has been designated as the authority for the review of all interoperable communications funding statewide. The SIEC reviews grant applications, and determines compliance with eligibility requirements and the Statewide Plan. The SIEC also reviews the project plan to discover connections with existing technology projects. Compliance includes the following criteria:

1. Grant requests must support the Statewide Plan.
2. Applicants must be able to clearly define how the project or equipment purchase improves interoperable communications on a multi-discipline and multi-jurisdictional basis.
3. Applicants must be NIMS certified and compliant. For more information please visit <http://www.fema.gov/nims>.
4. Agencies and organizations must endorse Virginia’s Common Language Protocol for day-to-day and major emergency situations.
5. Equipment purchased must be on the Department of Homeland Security’s Grants and Training (G&T) Authorized Equipment List (AEL) or an exception letter must be on file and approved.
6. Subscriber radios purchased must be programmed with mutual aid and the national interoperability channels within that radio’s frequency band.
7. Data sharing equipment purchased must comply with the Department of Homeland Security’s and Emergency Interoperability Consortium’s Extensible Markup Language (XML).
8. When procuring equipment for communication system development and expansion, a standards based approach should be used to begin migration to

<sup>16</sup> Virginia Code 9.1-1200 page 24

multi-jurisdictional and multi-disciplinary interoperability. Specifically, all new voice systems should be compatible with the ANSI/TIA/EIAA-102 Phase 1 (Project 25 or P25) standards unless approval is received.

## **Statewide Strategy**

The statewide strategy was developed through a consensus-driven process with the statewide interoperability governance structure and additional stakeholders from the emergency response and support communities. The strategic initiatives are updated each year per the Virginia Code to promote incremental movement towards the 2015 vision.

This Statewide Plan was developed in line with the goals and objectives of the National Response Plan (NRP) and NIMS and is compliant with both. The Statewide Plan promotes and supports NIMS throughout the Commonwealth and NIMS is integrated into the SOP development process as detailed in Section 4.3. In addition, as detailed in Compliance with the Plan in Section 4.5, grant applicants must be in compliance with the Statewide Plan, requiring that applicants be NIMS certified and compliant and that agencies and organizations endorse Virginia's Common Language Protocol for day-to-day and major emergency situations. In addition, the Commonwealth has an on-going initiative (referenced in Section 7) to promote NIMS compliance and the use of ICS throughout the Commonwealth. To demonstrate this plan's compliance with NIMS/NRP, the goals and objectives in section 6 have been aligned with the key concepts of NIMS/NRP.

## **5. Vision and Mission**

### **2015 Vision**

By 2015, agencies and their representatives at the local, regional, state, and federal levels will be able to communicate using compatible systems, in real time, across disciplines and jurisdictions, to respond more effectively during day-to-day operations and major emergency situations.

### **Mission**

Improve public safety communications in the Commonwealth of Virginia through enhanced voice and data communications interoperability.

## **6. Goals and Objectives**

In support of the strategic vision, the following goals were identified to improve interoperable communications by 2015:

### **Goal 1**

Create a common understanding of communications interoperability throughout the Commonwealth

This goal aligns with several of the NRP Key Concepts requiring coordination and interagency efforts such as coordinating incident communication, worker safety and health, and private sector involvement as well as organizing interagency efforts to minimize damage and restore impacted areas to pre-incident conditions. This type of

coordination depends on ensuring that emergency responders, elected officials, and public safety organizations have a common understanding of communications interoperability. In addition, establishing a common operating picture is a Key Component of NIMS, which aligns directly with this goal

### **Goal 2**

As appropriate utilize common language, coordinated protocols and standards statewide

This goal aligns with the NIMS principle of Standardization. By adopting, promoting, and utilizing common language, standards, and protocols, the Commonwealth fosters collaboration and enhanced communications between all disciplines, organizations, and jurisdictions involved in an incident.

### **Goal 3**

Integrate existing and future communications systems

This goal aligns with the NIMS Communications and Information Management Component. Integrating existing and future communications systems directly aligns with the component's focus on properly planned, established, and utilized communications. In addition, by integrating these systems and increasing interoperability throughout the Commonwealth, this goal reinforces the use of communications allowing emergency responders to maintain constant information flow during an incident.

### **Goal 4**

Facilitate training to enhance effective use of communications systems

This goal aligns with the NIMS Preparedness Component to integrate planning, SOPS, training and exercises, and equipment. This goal also aligns with the Communications and Information Management Component as training utilizing interoperable systems and equipment is essential for achieving integration communications. The NRP also focuses on interagency /intergovernmental training.

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Strategic objectives were developed to cut across the strategic goals and the Interoperability Continuum and focus the Commonwealth on the breadth of interoperable communications and the steps required to get there. The strategic objectives leverage existing agreements and establish new agreements as necessary to improve response capabilities on a local, regional, and statewide basis for both voice and data communications.

### **Objective 1**

Manage statewide interoperability governance and outreach

### **Objective 2**

Achieve communications operability as necessary to support interoperability

### **Objective 3**

Achieve voice and data interoperable communications within each locality to enhance multi-discipline response capabilities

### **Objective 4**

Achieve multi-discipline and multi-jurisdiction voice and data interoperable communications to enhance regional response capabilities

**Objective 5**

Enhance state agencies' voice and data interoperable communications across the Commonwealth to provide comprehensive support during emergencies

**Objective 6**

Provide region to region and region to state voice and data interoperable communications to enhance mutual aid response capabilities

**Objective 7**

Create communications back-up and redundancy for interoperability systems to ensure communications are maintained following catastrophic events (*Reference Section 4.2 for more on Virginia's plan for catastrophic events.*)

**Objective 8**

Support interoperable communications with federal entities and other states to respond to national and multi-state emergencies (*Reference Section 4.1 for more on Virginia's communications with Federal entities and neighboring states.*)

**Objective 9**

Achieve the integration of private entities identified as part of critical infrastructure/key resources and the participants in the state emergency operation plan (EOP) into interoperability efforts to ensure communications are maintained during emergencies and recovery efforts

<b>7. 2009 Initiatives</b>
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**On-going Initiatives**

The Statewide effort has several on-going initiatives that will continue to be implemented and monitored throughout 2009. These initiatives are conducted and overseen by the CICO and the SIEC. See Section 3 for more information on review and revision of the initiatives include in the state plan.

- Coordinate interoperable communications projects at the local, regional, and state level
- Maintain the governance structure and its components through regular meetings and practitioner-based decision-making to make grant, procedural, and policy recommendations to the Governor's Office
- Develop, distribute, and promote interoperable communications information to stakeholders
- Reach out to local, state, and federal agencies as well as neighboring states to encourage and foster adoption of the common language protocol
- Manage the Public Safety Interoperable Communications (PSIC) grant and the collaborative process that supports regional communication projects
- Promote NIMS compliance and the use of the Incident Command System (ICS)

- Incorporate interoperable communications into existing statewide exercises and grant recipient training
- Develop and distribute an Annual Report to the Governor's Office

## 2009 Statewide Initiatives

The 2009 Strategic Plan for Statewide Communications Interoperability builds upon previous initiatives and expands the breadth of the Office of Commonwealth Preparedness' overall efforts to improve interoperable communications throughout the Commonwealth.

The 2009 initiatives were developed in compliance with the SAFECOM requirements for statewide planning.

**Initiative 1:** Define minimum levels of operable and interoperable communications capabilities for each region

- Conduct outreach through the RPAC-Is to communicate the importance of the *Commonwealth of Virginia Operations Model*
- Update and utilize the *Commonwealth Communications Baseline Survey* to help localities determine their specific operational needs for voice and data communications
  - Engage RPAC-Is to obtain guidance from regional stakeholders
- Identify operational gaps for each region so that they may be addressed to the extent possible with available resources
  - Focus on operability projects in rural communities that will enhance regional interoperability

**Initiative 2:** Match specific voice and data solutions to identified regional operational needs, and address connectivity and sustainability.

- Develop a technology strategy that includes a description of the system of systems vision and the overall direction of interoperability in the state
- Evaluate existing technology systems by region to develop best practices and to inform future plans for technology installations
- Identify opportunities in the technical strategy to leverage the statewide IT infrastructure projects
  - Coordinate planning and execution strategies with the E911 comprehensive plan and other existing regional and statewide plans.
- Address connectivity and sustainability for interoperability solutions

**Initiative 3:** Continue to establish the Strategic Technology Reserve (STR) to enhance back-up communications capability within the Commonwealth of Virginia

- Provide information to localities regarding the availability of the existing state Communications Caches and the other STRs available through VDEM and how to request the resource
  - Further refine and field an exercise, and training program so that the Communication Caches and STRs can be included into pre-existing exercises
  - Monitor existing radio caches and other strategic reserves, and document Lessons Learned, and make recommendations to address identified gaps
- Expand local grant process for Type III-V caches (dependent upon funding)

**Initiative 4:** Promote the establishment of regional systems of systems and interface existing statewide systems to localities and regions to expand communications among disparate systems

- Compile and distribute lessons learned from existing COMLINC installations
- Review capabilities and limitations of all possible patching solutions
- Explore costs and sustainability for connectivity options

**Initiative 5:** Support expansion of national interoperability channels in all bands to allow responders to use their home system's radio regardless of location within the Commonwealth of Virginia

- Encourage the use of standard nomenclature for national interoperability channels in all user radios in alignment with National Public Safety Telecommunications Council (NPSTC) guidance
- Encourage programming of National Interoperability Channels in all radios

**Initiative 6:** Support the expansion, deployment and integration of Crisis Management Software and Geographic Information Systems (GIS) statewide to coordinate incident management data interoperability

- Provide regional demonstrations of what this software is capable of, including a recommended deployment strategy
- Monitor current projects for Crisis Management Software/GIS and develop lessons learned
- Coordinate with VDEM and VITA (and regions) for strategic planning and to establish new instances of Crisis Management Software/GIS within the state and across state borders and coordinate interfacing among existing instances of the software

**Initiative 7:** Ensure portable and mobile radio purchases and replacements are compliant with recognized existing national standards.

- Require the national interoperability frequencies to be programmed into portable and mobile radios when purchased with grant funds
- Conduct outreach to communicate the importance of P-25 standards and the narrowband requirements from the Federal Communications Commission

### ***2009 Regional and Local Initiatives (PSIC Grant Program)***

In preparation for PSIC funding allocations and grants distribution in 2008, the SIEC and CICO conducted a regional process leveraging the RPACs to identify regional and local projects that align with the Statewide Plan and work to enhance overall interoperable communications statewide.

#### **Critical Sub-Element 11.1**

Through its collaborative and practitioner driven process, detailed in Section 11.3, the Commonwealth created PSIC Investment Justifications that align with the Statewide Plan and met the PSIC criteria to plan and coordinate, acquire, deploy, and train on interoperable communications equipment, software, and systems that improve the interoperability of public safety communications systems that utilize other public safety spectrum bands. Below are descriptions of the Investment Justifications (IJs) and how they relate to improving the interoperability of public safety communications systems that

utilize other public safety spectrum bands. Information on planning and coordinating, acquiring, deploying, or training on the equipment detailed below can be found in the related Initiatives above.

- **Operability IJ** - This IJ aligns with Initiative 1 in this Statewide Plan to focus on operability in rural communities. Without addressing operability in these communities, it is impossible to achieve interoperability. This IJ includes adding towers or adding repeaters at existing towers to expand communities' existing footprints and increase interoperability between disparate systems. The repeaters will allow the national interoperability channels to be utilized in various frequency bands.
- **Connectivity and Sustainability IJ** - This IJ aligns with Initiative 2 in this Statewide Plan to focus on connectivity and sustainability. This IJ includes projects that provide either new microwave connections or leverage existing microwave systems, which provide enhanced backbone sustainability for radio systems while eliminating recurring commercial carrier service charges. The IJ also provides projects that include wireless data connectivity or data sharing technologies that can enhance response to an incident and also act as backup communications when the primary voice systems are either overloaded or have experienced a failure.
- **Tactical Interoperability Solutions/Gateways IJ** - This IJ aligns with Initiative 2 to address connectivity and sustainability and includes funding gateways and tactical audio switches to allow communication between disparate systems. In addition, mobile solutions will allow connections to be made in various frequency bands including VHF, UHF, and 700/800MHz.
- **National Interoperability Channels IJ** - This IJ aligns with Initiative 5 to support expansion of the national interoperability channels in all bands to allow responders to use their home system's portable/mobile radios regardless of location within the Commonwealth of Virginia. Projects funded within this IJ will provide a communications vehicle with repeaters in all frequency bands programmed with the national interoperability frequencies and establish a regional footprint (by installing fixed repeaters) where the national interoperability frequencies in the VHF, UHF, 700 MHz and 800 MHz frequency bands will be available to responders. This IJ also includes programming the national interoperability frequencies into Strategic Technology Reserve (STR) radios.
- **New Portables and Mobiles (P25 and Narrowband Compliant) IJ** - This IJ aligns with Initiative 7 to ensure portable and mobile radio purchases and replacements are P-25 and narrowband compliant. P-25 systems can be configured to work with older analog mobile and portable radios. In addition, narrow-banding is an efficient way to use radio spectrum and this IJ translates into an immediate benefit – more availability of existing radio spectrum for public safety.

### **Critical Sub-Element 11.2**

The Commonwealth established Strategic Radio Cache Resources to provide supplemental and back-up communications statewide. The Commonwealth issued state grants to several localities for the procurement of STRs, which will be made available statewide and will be strategically pre-positioned within the state. These existing caches, detailed in Section 4.2, include portable radios, transportation, portable repeaters, power, training, support personnel, and other elements necessary to sustain, maintain, and provide rapid delivery of the radio caches wherever and whenever necessary. The existing caches have worked together to buy the same portable towers,

radios, repeaters, and gateways to ensure common training and the ability to have staff augment each other on long deployments.

As part of its Statewide Plan, the Commonwealth of Virginia will continue establishing STRs to enhance back-up communications capability. This initiative includes completing the Type I strategic radio caches in Harrisonburg/Rockingham, Chesapeake, and Fairfax County, providing assistance and coordination to newly awarded Type III caches, providing information to localities on how to request the Type I-III caches, finalizing statewide deployable radio cache policies and procedures with the Virginia Department of Emergency Management (VDEM), monitoring existing caches and documenting lessons learned, and supporting the Rapid Deployment Solutions Interoperability Project (RDSIP) pilot to provide a statewide resource for emergency communications.

***Tactical Interoperable Solutions/STR IJ*** - The Commonwealth received PSIC funding through an STR IJ to complete the Type I strategic radio caches in Harrisonburg/Rockingham, Chesapeake, and Fairfax County. These STR projects will impact the entire Commonwealth of Virginia, by providing mobile command vehicles and radios, which are connected to VHF, 700/800 MHz, UHF, and national interoperability frequencies necessary for effective emergency coordination and communication anywhere in the Commonwealth. These STRs can be requested for dispatch throughout the State in the event of major disaster and will be supported by trained personnel to ensure quick and effective operations when dispatched. In addition, through the RDSIP, a public private partnership with Sprint, 1,000 portable radios will be available to the Commonwealth, and 100 of these will be collocated with each of the three existing strategic radio caches.

### **Critical Sub-Element 11.3**

Project Idea Forms were issued to the Chief Administrative Officers (CAOs) in each region, as well as State Agency Heads for distribution to their localities/agencies. The Project Idea Form was also posted on the CICO website to ensure accessibility to all stakeholders. Localities and State Agencies who wanted to apply for PSIC funding were asked to complete the Project Idea Form, detailing their proposed use of PSIC funds and how it relates to the PSIC requirements. The forms were submitted to the CICO, collated by region and/or State Agency, and presented at the appropriate regional meeting.

Regional meetings were held in each of the seven RPAC regions (Richmond, Culpeper, Central Virginia, Southwest, Tidewater, Roanoke, and Northern Virginia) with an additional meeting in the Richmond region for State Agencies. The purpose of these meetings was to review and prioritize the PSIC project ideas. Additionally, PSIC criteria forms were used in each regional meeting to ensure that the proposed projects aligned with PSIC requirements. The prioritized projects were then submitted to the SIEC for consideration. The SIEC made recommendations for the final project list and funding allocations that are the Commonwealth's Investment Justifications. The Grants Coordinator of OCP prepared the Investment Justifications based on SIEC recommendations. Finally, the Investment Justifications were approved by the Governor.

## **8. Action Plan and Implementation**

The initiatives mark the end of the “Plan” phase of the planning lifecycle and the beginning of implementation and measurement of the 2009 Statewide Plan. The Commonwealth has been successful in previous years through the use of IATs to develop the core guidance and documentation needed to make key initiatives successful. In 2009, the Commonwealth will once again leverage stakeholders, CICO, and contractor resources to drive initiative completion.

The implementation of the Statewide Plan will be coordinated by the CICO and supported by the governance structure to ensure full completion of strategic initiatives. CICO project management and monthly SIEC meetings (coupled with more organized regional coordination) will provide the oversight and guidance to accomplish the 2009 initiatives, distribute and manage funding to locals, and develop the 2010 Statewide Plan. These SIEC meetings provide the forum for on-going input into implementation and update of the Plan.

IATs will be assembled and facilitated to implement the 2009 Initiatives. IATs typically consist of 5-15 stakeholders with specific expertise, experience, or influence that can bring about the development of core guidance and best practices for the subject matter under review.

Additional initiatives will be managed and conducted by the CICO including radio cache, COMLINC, and other strategic reserve activities. These initiatives were in their developmental phases last year and will be taken to further implementation, buy-in and compliance this year.

Finally, outreach will be conducted throughout the year to provide guidance to stakeholders through the annual conference, a list serve, and the website; to elected officials through the annual report and other briefings provided to the state delegation; to the media through press releases, interviews, and articles; and finally to the Federal Government through participation on key committees and continued work with the National Guard.

The Commonwealth has demonstrated its commitment to on-going update and implementation of the Statewide Plan through the establishment of a full-time Commonwealth Interoperability Coordinator (CIC). The CIC will continue to oversee the implementation of a Statewide Plan on an annual basis including the identification, development, and oversight of standard operating procedures, governance, usage, technology, and training and exercises.

## **9. Critical Success Factors**

To track the fiscal year’s accomplishments, the following critical success factors will be measured. These measures link directly to one or more of the 2009 Initiatives and Tasks and align with the long-term outcome performance measures to support the effort’s mission, vision, and goals.

- Complete build out of three existing Type I statewide caches and two additional Type III caches near Southwest and Southside Virginia
- Develop seven regional Tactical Interoperable Communications Plans (TICP) with gap analyses
- Create a statewide technical plan based upon the technical blueprint
- Document lessons learned from COMLINC Region 1 installation with 16 localities
- Successfully interface Crisis Management Software and GIS in at least one region

## 10. Long-Term Performance Measures

“Measurement is the first step that leads to control and eventually to improvement. If you can’t measure something, you can’t understand it. If you can’t understand it, you can’t control it. If you can’t control it, you can’t improve it.”

— **H. James Harrington**

SAFECOM established 13 core performance measurements in order to track jurisdiction’s or region’s movement toward achieving communications interoperability. The next step for Virginia is to quantify where municipal departments, regional working groups, and state agencies are on the Interoperability Continuum. The 13 criteria are:

1. Leadership
2. Decision-Making Groups
3. Agreements
4. Interoperability Funding
5. Strategic Planning
6. Policy, Practices, and Procedures
7. Command and Control
8. Approaches
9. Implementation
10. Maintenance and Support
11. Operator Training
12. Exercises
13. Frequency of Use and Familiarity

### **Assessment/Measurement:**

The process of specifically measuring interoperable communications involves three parts. The goal of using different assessment and measurement techniques is to develop a comprehensive information base. On its own, any one of the techniques would not necessarily provide a valid source of verifiable information to accurately assess a jurisdiction’s or region’s level of interoperable communications. However, together they provide a valid framework to appropriately measure performances and efforts.

1. The Commonwealth of Virginia has 7 designated Homeland Security Regions and for 2009 will be working towards completion of a **Tactical Interoperable Communications Plans** (TICP). Each TICP should include the following sections: a Regional Overview, Governance Structure, Communications Equipment Inventory, Standard Operating Procedures, Scenario, Response, and National Incident Management System (NIMS) training. Through the development of the TICPs, resources and assets will be identified, as well as agreements needed that will help prepare first responders for multi-agency and multi-jurisdictional emergencies. The TICP, recommended in the National

Emergency Communications Plan (NECP), would provide a working reference document.

2. As part of the above process, a **TableTop Exercise** should be conducted so that all participating agencies are included in a parallel quantified analysis of SAFECOM'S 13 criteria (listed above), noting the appropriate sample size. The data collected by a designated impartial Performance Measurement team (sponsored by the SIEC) would use an appropriate sample size of the core articulated Interagency Communications criteria.<sup>17</sup>

3. A **Full-Scale Exercise** should be conducted in the existing prescribed manner to include a parallel quantified analysis of SAFECOM'S 13 criteria (listed above), noting the appropriate sample size. In Virginia, this could be done in coordination with an exercise that is already established, such as the Virginia Emergency Response and Training Exercise (VERTEX), or another existing regional effort.

Combined, these techniques for analysis would provide an accurate measure of interoperable communications performance.<sup>18</sup>

**11. Funding**

Identifying on-going funding to support the statewide interoperability effort is a constant challenge. The Commonwealth has shown commitment for interoperability by funding through the budget several large projects including STARS and the VITA IT Infrastructure. Several localities and regions have also taken it upon themselves to manage their annual budgets to ensure technology is refreshed on a regular basis.

All other support for interoperable communications is grant funded or provided through the work of volunteers statewide. Figure 27 shows the grant funds that will be utilized in 2009 if awarded.

Grant Name	Total	Projects
FY 2008 SHSGP for Interoperable Communications	\$1,400,000	<ul style="list-style-type: none"> <li>• Operability</li> <li>• Connectivity and Sustainability</li> <li>• Tactical Interoperability Solutions/Gateways</li> <li>• Tactical Interoperability Solutions/STR</li> <li>• National Interoperability Channels</li> <li>• New Portable and Mobile Radios (P25 and Narrow broadband compliance)</li> </ul>
FY 2008 UASI Hampton Roads for Interoperable Communications	\$4,000,000	<ul style="list-style-type: none"> <li>• ORION enhancement</li> </ul>

<sup>17</sup> This process parallels steps 4 and 5 in the NIJ *Performance Measures Tech Guide*, "Establishing a system for collecting data" and "Analyzing the data."

<sup>18</sup> Adapted from an article from SEARCH "Performance Measurement and Interoperability" By Benjamin Krauss, USDOJ COPS

FY 2008 UASI Central Virginia for Interoperable Communications	\$57,620	<ul style="list-style-type: none"> <li>• Satellite Links in the Richmond Metro Region</li> </ul>
FY 2008 UASI NCR for Interoperable Communications	\$11,158,900	<ul style="list-style-type: none"> <li>• Radiation Detection Network</li> <li>• NCR Law Enforcement License Plate Reader</li> <li>• NCR LInX Integration</li> <li>• NCR AFIS Mug Shot Facial Recognition – Mobile</li> <li>• NCR Video Interoperability Plan</li> </ul>
FY 2008 IECGP	\$1,240,000	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Training</li> <li>• Exercises</li> </ul>
<b>Total</b>	\$17,856,560	

**Figure 26. Potential 2009 Funding for Interoperable Communications**

To make a case for continuing support for the effort, the CICO developed a Sustainment Plan in FY 2007 that describes in detail the resources needed to continue to coordinate statewide efforts for the next three years. The plan does not account for the sustainability of communications systems. The technical strategy that will be developed in 2009 will attempt to identify continual funding for sustaining systems statewide.

## **12. Closing**

The Commonwealth of Virginia continues to strive to improve interoperable communications. With this 2009 Plan, the Commonwealth demonstrates its willingness and ability to think creatively about the problem of interoperability to develop a working system of systems by 2015. By establishing an operational model and technical plan for the entire state with a regional focus, the Commonwealth will more effectively plan for the future and see how the investments of today contribute to the protection of citizens in the future.

## Appendices

### Appendix A: Virginia Metropolitan Statistical Areas

The following is a list of U.S. Metropolitan Statistical Areas (MSA) in Virginia\* as defined by the United States Office of Management and Budget (OMB) as of June 2003. Each MSA is listed by its counties, then cities, each in alphabetical order, and not by size.

*\*Note that since a change to the Virginia Constitution in 1871, all cities in the Commonwealth of Virginia are independent cities and they are not legally part of any county. The OMB considers these independent cities to be county-equivalents for the purpose of defining MSAs in Virginia.*

Blacksburg-Christiansburg-Radford, VA MSA	<ul style="list-style-type: none"> <li>▪ Giles County</li> <li>▪ Montgomery County</li> <li>▪ Pulaski County</li> <li>▪ City of Radford</li> </ul>
Charlottesville, VA MSA	<ul style="list-style-type: none"> <li>▪ Albemarle County</li> <li>▪ Fluvanna County</li> <li>▪ Greene County</li> <li>▪ Nelson County</li> <li>▪ City of Charlottesville</li> </ul>
Danville, VA MSA	<ul style="list-style-type: none"> <li>▪ Pittsylvania County</li> <li>▪ City of Danville</li> </ul>
Harrisonburg, VA MSA	<ul style="list-style-type: none"> <li>▪ Rockingham County</li> <li>▪ City of Harrisonburg</li> </ul>
Kingsport-Bristol-Bristol, TN-VA MSA (formed by merger of two MSAs in December 2003)	<ul style="list-style-type: none"> <li>▪ Hawkins County, Tennessee</li> <li>▪ Sullivan County, Tennessee</li> <li>▪ Scott County</li> <li>▪ Washington County</li> <li>▪ City of Bristol</li> </ul>
Lynchburg, VA MSA	<ul style="list-style-type: none"> <li>▪ Amherst County</li> <li>▪ Appomattox County</li> <li>▪ Bedford County</li> <li>▪ Campbell County</li> <li>▪ City of Bedford</li> <li>▪ City of Lynchburg</li> </ul>
Richmond, VA MSA – also known as Richmond-Petersburg	<ul style="list-style-type: none"> <li>▪ Amelia County</li> <li>▪ Caroline County</li> <li>▪ Charles City County</li> <li>▪ Chesterfield County</li> <li>▪ Cumberland County</li> <li>▪ Dinwiddie County</li> <li>▪ Goochland County</li> <li>▪ Hanover County</li> <li>▪ Henrico County</li> <li>▪ King and Queen County</li> <li>▪ King William County</li> <li>▪ Louisa County</li> <li>▪ New Kent County</li> <li>▪ Powhatan County</li> <li>▪ Prince George County</li> <li>▪ Sussex County</li> <li>▪ City of Colonial Heights</li> <li>▪ City of Hopewell</li> </ul>

	<ul style="list-style-type: none"> <li>▪ City of Petersburg</li> <li>▪ City of Richmond</li> </ul>
Roanoke, VA MSA	<ul style="list-style-type: none"> <li>▪ Botetourt County</li> <li>▪ Craig County</li> <li>▪ Franklin County</li> <li>▪ Roanoke County</li> <li>▪ City of Roanoke</li> <li>▪ City of Salem</li> </ul>
Virginia Beach-Norfolk-Newport News, VA-NC MSA (Virginia Portion: Hampton Roads)	<ul style="list-style-type: none"> <li>▪ Currituck County, North Carolina</li> <li>▪ Gloucester County</li> <li>▪ Isle of Wight</li> <li>▪ James City County</li> <li>▪ Mathews County</li> <li>▪ Surry County</li> <li>▪ York County</li> <li>▪ City of Chesapeake</li> <li>▪ City of Hampton</li> <li>▪ City of Newport News</li> <li>▪ City of Norfolk</li> <li>▪ City of Poquoson</li> <li>▪ City of Portsmouth</li> <li>▪ City of Suffolk</li> <li>▪ City of Virginia Beach</li> <li>▪ City of Williamsburg</li> </ul>
Washington-Arlington-Alexandria, DC-VA-MD-WV MSA (Virginia Portion: Northern Virginia)	<ul style="list-style-type: none"> <li>▪ Arlington County</li> <li>▪ Clarke County</li> <li>▪ Fairfax County</li> <li>▪ Fauquier County</li> <li>▪ Loudoun County</li> <li>▪ Prince William County</li> <li>▪ Spotsylvania County</li> <li>▪ Stafford County</li> <li>▪ Warren County</li> <li>▪ City of Alexandria</li> <li>▪ City of Fairfax</li> <li>▪ City of Falls Church</li> <li>▪ City of Fredericksburg</li> <li>▪ City of Manassas</li> <li>▪ City of Manassas Park</li> </ul>
Winchester, VA-WV MSA (Virginia Portion)	<ul style="list-style-type: none"> <li>▪ Frederick County</li> <li>▪ City of Winchester</li> </ul>

## Appendix B: SIEC Codification



COMMONWEALTH OF VIRGINIA  
Office of

### VA Code § 2.2-2732. State Interoperability Executive Committee; membership; responsibilities; terms; compensation.

#### STATE INTEROPERABILITY EXECUTIVE COMMITTEE

##### Importance of the Issue

Interoperability is a key issue in public safety communications to allow public safety agencies to communicate with one another in their common effort to protect the public. The public safety community must have a way to provide input to the Commonwealth's overall efforts to improve interoperable communications on a local, regional, statewide and multi-state level. Public safety practitioners bring decades of response experience to inform state-level decision-making and provide key recommendations. The Commonwealth must continue its efforts to involve relevant organizations to improve interoperable communication.

Section 9.1-1200 of the Code of Virginia requires the annual update and implementation of the Statewide Strategic Plan for Communications Interoperability. Additionally, all agencies and localities must comply with and achieve consistency with the Plan by July 1, 2015 to remain eligible to receive state or federal funds for communications programs and systems. By maintaining local, regional and state level involvement in decision-making for interoperable communications, the Commonwealth is better preparing and educating its local organizations to respond and recover from major emergencies.

##### **§ 2.2-2732. State Interoperability Executive Committee; membership; responsibilities; terms; compensation.**

- A. The State Interoperability Executive Committee (Committee) is established as an advisory committee within the meaning of § 2.2-2100 in the executive branch of state government. The purpose of the Committee is to make recommendations via the Office of Commonwealth Preparedness' Commonwealth Interoperability Coordinator to the Commonwealth Preparedness Working Group, Secure Commonwealth Panel, and the Office of the Governor concerning communications interoperability.
- B. The Committee shall consist of 30 members and alternates as follows:
  - the Commonwealth Interoperability Coordinator appointed by the Assistant to the Governor for Commonwealth Preparedness and the following 29 members to be appointed by the Governor:
  - one member representing the Virginia Association of Chiefs of Police;

- one member representing the Virginia Association of Governmental Emergency Medical Services Administrators;
  - one member representing the Virginia Fire Chiefs Association;
  - one member representing the Office of Commonwealth Preparedness;
  - one member representing the Virginia Sheriffs' Association;
  - one member representing the Virginia Association of Counties;
  - one member representing the Virginia Chapter of the Association of Public-Safety Communications Officials;
  - one member representing the Statewide Agencies Radio System;
  - one member representing the Virginia Information Technologies Agency;
  - one member representing the Virginia Municipal League;
  - one member representing the Secretary of Public Safety;
  - one member representing the Secretary of Technology;
  - one member representing the Virginia Military Advisory Council;
  - one member representing the Virginia Department of State Police;
  - one member representing the Virginia Department of Military Affairs;
  - one member representing the Virginia Department of Emergency Management;
  - one member representing the Virginia Department of Transportation;
  - one member representing the Virginia Emergency Managers Association;
  - one member representing Virginia Professional Fire Fighters;
  - one member representing the Virginia State Firefighter's Association;
  - one member representing the Virginia Department of Criminal Justice Services;
  - one member representing the Virginia Office of Emergency Medical Services; and
  - one member from each of the seven Regional Preparedness Advisory Committees.
- C. C. Each member shall serve a four-year term; provided that no member, other than the Commonwealth Interoperability Coordinator, shall serve more than two consecutive terms. All vacancies shall be filled for the balance of the unexpired term in the same manner as original appointments.
- D. D. The Committee shall elect a chair and may elect a vice-chair from its membership for two-year terms. The Committee shall meet at least six times per year as is deemed appropriate or on the call of the Committee chair. A majority of the members of the Committee shall constitute a quorum.
- E. E. Members of the Committee shall not receive compensation but shall be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties as provided in §§ 2.2-2813 and 2.2-2825 and as approved by the Commonwealth Interoperability Coordinator. Funding for the costs of expenses of the members shall be provided by the Office of Commonwealth Preparedness.
- F. (2008, cc. 306, 531.)

**§ 2.2-2733. Powers and duties of the Committee; staffing.**

- A. The Committee shall plan, promote, and offer assistance to the Commonwealth Interoperability Coordinator in the:
- Annual review and update of the Statewide Interoperability Strategic Plan (Statewide Plan) required by § 9.1-1200;
  - Implementation of initiatives contained in the Statewide Plan;

- Developing formal recommendations to the Commonwealth Preparedness Working Group, the Secure Commonwealth Panel, and the Governor on the use of interoperability grants to support local, regional, and state projects for the statewide development, deployment, and maintenance of voice and data communications technologies;
  - Reviewing all communications-related grant requests from state agencies and localities as required by § 2.2-305; and
  - Development of the annual report on the status of the Statewide Plan to the Governor required by November 1 of each year.
- B. The Commonwealth Interoperability Coordinator's Office within the Governor's Office of Commonwealth Preparedness shall provide staff support to the Committee.
- C. (2008, cc. 306, 531.)

## **Appendix C: SIEC Rules of Engagement**

### ***SIEC Rules of Engagement***

The governance structure is designed to develop recommendations from the bottom up to improve interoperable communications and establish buy-in throughout the implementation process.

### ***High Level Decision-Making***

Ultimate decision-making lies with the Governor's Office. All deliverables produced from the governance process are considered recommendations until approval by the Governor's Office is received.

### ***Meetings***

A meeting calendar is developed and maintained by the CICO at the start of the Fiscal Year. At a minimum the SIEC meets once a quarter. The CICO provides the SIEC with an agenda and as needed, read-ahead materials for each meeting. The outcomes of each meeting are documented in writing and provided on the Interoperability in Virginia website. IATs establish a meeting schedule in conjunction with the IAT at initiative kick-off meetings based on the scope of the work to be completed.

OCP determines the RPAC meeting schedule.

### ***Quorum and Voting***

Quorum is defined as a presence of at least 22 SIEC organizations. The SIEC operates by consensus whenever possible. However, there may be times when the group votes on issues. The Chair, Vice-Chair, or any voting member of the Committee may call a vote on an issue.

Each organization included in the SIEC has one vote. SIEC members can abstain from voting on any issue if they so choose. One member may give another member permission to serve as a proxy on any vote. When voting is necessary, decisions are confirmed by a simple majority. In a case of a tie, the SIEC Chair casts the deciding vote. At the discretion of the Chair, a vote via e-mail may be conducted after the scheduled meeting.

### ***E-Mail Voting Procedure***

These standard operating procedures address the voting by SIEC members through e-mail. A vote by e-mail may occur as deemed necessary by the SIEC Chair.

- Identification of item. Any issue to be voted on that the SIEC members could not vote on during the regular meeting time period can be placed for voting by members through electronic mail. The specified issue or item to be voted on must have a standardized response, e.g., multiple choice or yes/no.
- Request for vote. The SIEC Chair, upon approval by SIEC members, will solicit a vote by electronic mail.
- Voting organization. There will be one vote from each standing member organization. One designated member will cast the vote through e-mail.
- Vote Notification. The vote will be coordinated, through e-mail, through the SIEC Chair or Vice-Chair, via a "Vote Notification." Vote notification e-mails will be sent to

one designated member per organization, determined by the SIEC members. The designated voting member will be listed in the vote notification e-mail.

- Voting Period. Vote responses will be due one week after initial vote notification, or an alternate time-frame approved by SIEC members as necessary. E-mail responses will be sent to the CICO.
- Results. Results of the vote will be posted through e-mail one day after close of voting period. Results will include organization response and member submitting vote. The results will be e-mailed to all SIEC members and designated alternates.

### **Costs**

The CICO pays travel-related costs incurred as a result of participating on the SIEC and IATs if funding is available. When possible, conference calls are held to minimize the travel burden for participants.

## Appendix D: Communication Cache Policies & Procedures

### Communication Cache Compliance Documentation

#### Definition of Common Terminology

- **Incident Commander: (Type I-V)**
  - On the ground leading/commanding person who may request the radio cache for an emergency incident
- **Cache Contact: (Type I-V)**
  - Persons responsible for processing initial emergency request for radio cache deployment: might not be true to every situation. Might be another available number to call rather than Dispatch. Smaller localities might just have a POC.
  - Liaisons between Incident Commander and Radio Cache Manager and/or Cache Decision Leader
- **Radio Cache Manager: (Type I-III)**
  - Person from hosting locality responsible for maintaining the radio caches operational capacity
  - Person from hosting locality responsible for the physical deployment and set up of cache at requested destination
- **Cache Decision Maker: (Type I-III)**
  - Person from hosting locality responsible for deciding if an emergency or planned activity request within the region or from the state is granted
    - *Note: In some situations the radio cache manager and decision maker may be the same person*
- **Deployable Trained Personnel: (Type I-III)**
  - Team from hosting locality that accompanies the cache through deployment, set-up, distribution, use and collection
  - Works closely with Radio Cache Manager

#### Minimum Capabilities & MOU Requirement Guidelines Based on Radio Cache Type

	Type I	Type II	Type III	Type IV	Type V
<b>Number of Radios</b>	501+ radios	301-500 radios	101-300 radios	101-200 radios	25-100 radios
<b>Radio Interoperability Standard</b>	<ul style="list-style-type: none"> <li>• P-25 compatibility</li> <li>• Statewide-deployable cache equipment must be compatible with other statewide-</li> </ul>	<ul style="list-style-type: none"> <li>• P-25 compatibility</li> <li>• Statewide-deployable cache equipment must be compatible with other statewide-</li> </ul>	<ul style="list-style-type: none"> <li>• P-25 compatibility</li> <li>• Statewide-deployable cache equipment must be compatible with other statewide-</li> </ul>	<ul style="list-style-type: none"> <li>• P-25 compatibility unless exception is granted</li> </ul>	<ul style="list-style-type: none"> <li>• P-25 compatibility unless exception is granted</li> </ul>

	deployable caches	deployable caches	deployable caches		
<b>Additional Equipment</b>	<ul style="list-style-type: none"> <li>• 2 rechargeable and one high shelf life disposable batteries per portable radio</li> <li>• 1 speaker mic</li> <li>• 1 carrying case or clip per radio</li> <li>• Appropriate charging capacity for 100% of fleet within 24 hours</li> <li>• At least one audio interconnect (portable gateway)</li> <li>• Consider: Satellite communications (phone, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• 2 rechargeable and one high shelf life disposable batteries per portable radio</li> <li>• 1 speaker mic</li> <li>• 1 carrying case or clip per radio</li> <li>• Appropriate charging capacity for 100% of fleet within 24 hours</li> <li>• At least one audio interconnect (portable gateway)</li> <li>• Consider: Satellite communications (phone, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• 2 rechargeable (all) and one high shelf life disposable (deployable radios only) batteries per portable radio</li> <li>• 1 speaker mic</li> <li>• 1 carrying case or clip per radio</li> <li>• Appropriate charging capacity for 100% of fleet within 24 hours</li> <li>• At least one audio interconnect (portable gateway)</li> </ul>	<ul style="list-style-type: none"> <li>• 2 rechargeable (all) and one high shelf life disposable (deployable radios only) batteries per portable radio</li> <li>• 1 speaker mic</li> <li>• 1 carrying case or clip per radio</li> <li>• Appropriate charging capacity for 100% of fleet within 24 hours</li> </ul>	<ul style="list-style-type: none"> <li>• 2 batteries per portable radio</li> <li>• 1 speaker mic</li> <li>• 1 carrying case or clip per radio</li> <li>• Appropriate chargers</li> <li>• Extra Batteries charged with 10 year shelf life</li> </ul>
<b>System Requirements.</b>	<ul style="list-style-type: none"> <li>• Trunking capable based on baseline study</li> <li>• Blend of frequencies - at least 100 radios per band</li> <li>• Radio programming capability on-site</li> <li>• Repeaters</li> <li>• Power (generator)</li> </ul>	<ul style="list-style-type: none"> <li>• Trunking capable based on baseline study</li> <li>• Blend of frequencies - at least 75 radios per band</li> <li>• Radio programming capability on-site</li> <li>• Repeaters</li> <li>• Power (generator)</li> </ul>	<ul style="list-style-type: none"> <li>• Trunking capable based on baseline study</li> <li>• Blend of frequencies (need to have all four bands to go with gateway device)</li> </ul>	<ul style="list-style-type: none"> <li>• Trunking capable unless exception is granted based on baseline study</li> </ul>	<ul style="list-style-type: none"> <li>• Trunking capable unless exception is granted based on baseline study</li> </ul>
<b>700/800 MHz</b>	<ul style="list-style-type: none"> <li>• Spectrum use</li> </ul>	<ul style="list-style-type: none"> <li>• Spectrum use</li> </ul>	<ul style="list-style-type: none"> <li>• Spectrum use</li> </ul>	<ul style="list-style-type: none"> <li>• Spectrum use</li> </ul>	<ul style="list-style-type: none"> <li>• Spectrum use</li> </ul>

	<p>defined by operating region</p> <ul style="list-style-type: none"> <li>○ 800 MHz should be able to do both 700 and 800 MHz</li> <li>○ Must have the spectrum available to support cache</li> </ul> <ul style="list-style-type: none"> <li>• Minimum 500 talk groups (upper tier radio) – system type specific</li> <li>• ITAC, VTAC, UTAC, in all radios</li> <li>• Encryption capable (no cost?)</li> </ul>	<p>defined by operating region</p> <ul style="list-style-type: none"> <li>○ 800 MHz should be able to do both 700 and 800 MHz</li> <li>○ Must have spectrum available to support cache</li> </ul> <ul style="list-style-type: none"> <li>• Minimum 500 talk groups (upper tier radio) – system type specific</li> <li>• ITAC, VTAC, UTAC, in all radios</li> <li>• Encryption capable (no cost?)</li> </ul>	<p>defined by operating region</p> <ul style="list-style-type: none"> <li>○ 800 MHz should be able to do both 700 and 800 MHz</li> <li>○ Must have spectrum available to support cache</li> </ul> <ul style="list-style-type: none"> <li>• Minimum 500 talk groups (upper tier radio) – system type specific</li> <li>• ITAC, VTAC, UTAC, in all radios</li> <li>• Encryption capable (no cost?)</li> </ul>	<p>defined by operating region</p> <ul style="list-style-type: none"> <li>○ 800 MHz should be able to do both 700 and 800 MHz</li> <li>○ Must have spectrum available to support cache</li> </ul> <ul style="list-style-type: none"> <li>• Minimum 500 talk groups (upper tier radio) – system type specific</li> <li>• ITAC, VTAC, UTAC, in all radios</li> <li>• Encryption capable (no cost?)</li> </ul>	<p>defined by operating region</p> <ul style="list-style-type: none"> <li>○ 800 MHz should be able to do both 700 and 800 MHz</li> <li>○ Must have spectrum available to support cache</li> </ul> <ul style="list-style-type: none"> <li>• Minimum 500 talk groups (upper tier radio) – system type specific</li> <li>• ITAC, VTAC, UTAC, in all radios</li> <li>• Encryption capable (no cost?)</li> </ul>
<b>UHF, VHF, Low Band</b>	<ul style="list-style-type: none"> <li>• State Interoperability Channels</li> <li>• National Interoperability Channels</li> </ul>	<ul style="list-style-type: none"> <li>• State Interoperability Channels</li> <li>• National Interoperability Channels</li> </ul>	<ul style="list-style-type: none"> <li>• State Interoperability Channels</li> <li>• National Interoperability Channels</li> </ul>	<ul style="list-style-type: none"> <li>• State Interoperability Channels</li> <li>• National Interoperability Channels</li> </ul>	<ul style="list-style-type: none"> <li>• State Interoperability Channels</li> <li>• National Interoperability Channels</li> </ul>
<b>Designated personnel (Cache owner determines level of effort of personnel. I.e. FTE vs. additional responsibility of existing staff)</b>	<ul style="list-style-type: none"> <li>▪ Radio cache manager</li> <li>▪ Appropriate decision maker</li> <li>▪ Deployable trained personnel</li> </ul>	<ul style="list-style-type: none"> <li>▪ Radio cache manager</li> <li>▪ Appropriate decision maker</li> <li>▪ Deployable trained personnel</li> </ul>	<ul style="list-style-type: none"> <li>▪ Radio cache manager</li> <li>▪ Appropriate decision maker</li> <li>▪ Deployable trained personnel</li> </ul>	<ul style="list-style-type: none"> <li>▪ Designated contact personnel</li> </ul>	<ul style="list-style-type: none"> <li>▪ Host location general support</li> </ul>
<b>Deployable</b>	At least 4 designated	At least 4 designated	At least 2 designated	N/A	N/A

<b>Personnel</b>	and trained personnel are available for deployment (one team member is COML). Personnel can be multi-jurisdictional/multi-agency.	and trained personnel are available for deployment (one team member is COML). Personnel can be multi-jurisdictional/multi-agency.	and trained personnel are available for deployment (one team member is COML). Personnel can be multi-jurisdictional/multi-agency.		
<b>Deployment ratio</b>	100% deployable within region; 100% deployable outside of region (with spectrum/frequency considerations)	100% deployable within region; 100% deployable outside of region (with spectrum/frequency considerations)	100% deployable within region; 50% deployable outside of region (with spectrum/frequency considerations)	100% deployable within region; 25% deployable outside of region (with spectrum/frequency considerations)	100% deployable within region; 0% deployable outside of region
<b>Transportation Requirements</b>	<ul style="list-style-type: none"> <li>• En-route within 2 hours</li> <li>• Trailer or dedicated vehicle</li> <li>• Tower with a trailer (elevated antennae system)</li> </ul>	<ul style="list-style-type: none"> <li>• En-route within 2 hours</li> <li>• Trailer or dedicated vehicle</li> </ul>	<ul style="list-style-type: none"> <li>• En-route within 2 hours</li> <li>• Trailer or dedicated vehicle</li> </ul>	En-route within 2 hours	En-route within 2 hours
<b>Inventory Management</b>	Yes-automated preferred	Yes-automated preferred	Yes-automated preferred	Yes	Yes
<b>Training and Exercises</b>	Yes	Yes	Yes	Yes	Yes
<b>Additional requirements</b>	Self sustaining team (people, power, food, water, shelter, etc) – 72 hours	Self sustaining team (people, power, food, water, shelter, etc) – 48 hours	N/A	N/A	N/A
<b>Regional MOU Requirements</b>	<p>Same as Type V plus MOU will also:</p> <ul style="list-style-type: none"> <li>▪ Commit region to 100% cache availability for state-wide deployment</li> <li>▪ Identify on call</li> </ul>	<p>Same as Type V plus MOU will also:</p> <ul style="list-style-type: none"> <li>▪ Commit region to 100% cache availability for state-wide deployment</li> <li>▪ Identify on call</li> </ul>	<p>Same as Type V plus MOU will also:</p> <ul style="list-style-type: none"> <li>▪ Commit region to 50% cache availability for state-wide deployment</li> <li>▪ Identify</li> </ul>	<p>Same as Type V plus MOU will also:</p> <ul style="list-style-type: none"> <li>▪ Commit region to 25% cache availability for state-wide deployment</li> <li>▪ Identify</li> </ul>	MOU between hosting locality and participating region. MOU will: <ol style="list-style-type: none"> <li>1) Identify host locality</li> <li>2) Identify host organization</li> </ol>

	radio cache manager, appropriate decision maker, and deployable trained personnel.	radio cache manager, appropriate decision maker, and deployable trained personnel.	deployable equipment <ul style="list-style-type: none"> <li>Identify on call radio cache manager, appropriate decision maker, and deployable trained personnel.</li> </ul>	deployable equipment	3) Identify and provide 24/7 contact information for cache location 4) Identify regions' operational protocols and procedures 5) Identify all first responder organizations within the region that will be provided a detailed and up to date cache inventory, regional deployment form and cache contact list.
<b>Region to State MOU Requirements</b>	Same as Type IV plus MOU will also: <ul style="list-style-type: none"> <li>Agree to Virginia EOC deployment form for cache</li> <li>Identify radio cache manager, appropriate decision maker, and deployable trained personnel</li> </ul>	Same as Type IV plus MOU will also: <ul style="list-style-type: none"> <li>Agree to Virginia EOC deployment form for cache</li> <li>Identify radio cache manager, appropriate decision maker, and deployable trained personnel</li> </ul>	Same as Type IV plus MOU will also: <ul style="list-style-type: none"> <li>Identify 50% of cache that is statewide deployable</li> <li>Agree to Virginia EOC deployment form for statewide-deployable equipment</li> <li>Identify radio cache manager, appropriate</li> </ul>	MOU will: <ul style="list-style-type: none"> <li>Identify 25% of cache that is statewide-deployable</li> <li>Agree to Virginia EOC deployment form statewide-deployable equipment</li> <li>Owner commits to providing the Virginia EOC a detailed cache</li> </ul>	<ul style="list-style-type: none"> <li>No MOU required</li> <li>Owner commits to providing the Virginia EOC a detailed cache inventory and cache contact list and maintaining an updated inventory list</li> </ul> <p><i>(Note: While this type is not intended for state wide deployment, it is</i></p>

			<p>decision maker, and deployable trained personnel</p> <p><i>(Note: While 50% of this type is not intended for state wide deployment, it is helpful for the Virginia EOC to maintain a central list of all radio cache resources)</i></p>	<p>inventory and cache contact list and maintaining an updated inventory list</p> <p><i>(Note: While 75% of this type is not intended for state wide deployment, it is helpful for the Virginia EOC to maintain a central list of all radio cache resources)</i></p>	<p><i>helpful for the Virginia EOC to maintain a central list of all radio cache resources)</i></p>
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**Commonwealth Radio Cache  
Policies, Procedures and Operational Protocols by Type**

The following statewide policies, procedures and operational protocols are developed as a minimum requirement for each of the 5 Types of radio caches purchased with state interoperable communications grant funding. Radio cache host agencies shall understand and comply with the responsibility of radio cache ownership. Additionally, the host agency shall agree to adhere to and enforce these policies, procedures, and operational protocols.

**Minimum Policies, Procedures and Operational Protocols Guidance/Requirements for Types I-V**

<b>Prior to Radio Cache Purchase</b>	<ul style="list-style-type: none"> <li>• Develop a strategy for procuring radio cache or enhancements to existing cache</li> <li>• Leverage interoperability baseline information (estimated completion date June 30, 2007)</li> <li>• Develop regional emergency and scheduled event deployment forms and procedures for internal use</li> <li>• Develop Inventory Control Strategy</li> <li>• Establish dedicated personnel as appropriate based on Type</li> </ul>
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	<ul style="list-style-type: none"> <li>• Develop/update MOUs with relevant jurisdictions</li> <li>• Adopt and agree to enforce statewide policies, procedures, and operational protocols</li> <li>• Agree to standardize compatibility of all statewide-deployable caches by coordinating with peer radio cache managers throughout the Commonwealth</li> </ul>
<b>By the first grant reporting period</b>	<ul style="list-style-type: none"> <li>• Show progress towards the region’s radio cache strategy</li> <li>• Inventory radios and develop an authorized cache list</li> <li>• Send authorized cache list and cache point of contact to regional and Virginia EOCs</li> </ul>
<b>Maintenance</b>	<ul style="list-style-type: none"> <li>• Fully maintain and ensure the cache is ready for deployment at all times</li> <li>• Exercise rechargeable batteries at least twice a year</li> <li>• Label authorized cache equipment appropriately</li> <li>• Consider and coordinate maintenance costs (replacement or upgrading) for cache equipment within the host jurisdiction or region</li> </ul>
<b>Operational</b>	<p><b>Rules of Use:</b> All agencies shall conform to the following <b>rules of use</b> for their cache radios:</p> <ul style="list-style-type: none"> <li>• <b>National Incident Management System:</b> Use of an Incident Command System compliant with the National Incident Management System is required for use of any regional interoperability resource.</li> <li>• <b>Plain/Common language:</b> All Communications shall be in plain or common language. Radio codes, acronyms and abbreviations are to be avoided as they may cause confusion between agencies. Additionally, it should be understood that plain words such as “help”, “assistance”, “repeat” and “back-up” may have different operational meanings to different agencies. The word “Help” should be used alone unless in the context of a life-threatening situation. Requests for assistance or backup should clarify the reason for the request.</li> <li>• <b>Unit Identification:</b> Agency name or identifier shall precede unit identifier.</li> </ul>
<b>Statewide Deployment</b>	<p>Requests may be made for emergency incidents, training &amp; exercises</p> <p><b>Deployment within regions may be conducted following the regional policies and procedures developed by the cache owner(s). When in use within the region the radio cache manager or point of contact must inform the Virginia EOC of its status for Types I-III.</b></p>

**Interoperable Communications Request: Emergency (Outside of Region)**

- Responsible party within the locality must request statewide-deployable resources from the Virginia EOC providing the following information:
  - SALTT – Size, Amount, Location, Type and Time (deployment and duration)
  - User’s agency
  - On-scene agencies requiring interoperability
  - Reason for request/type of event
  - User/requestor and/or servicing dispatch contact phone number
- It is the requesting agency’s responsibility to maintain appropriate internal procedures to ensure that requests are only passed to the Virginia EOC if the request originated from, or was approved by, a person with the authority to accept fiscal responsibility for radio cache deployment costs
- The request for deployment of a radio cache indicates acceptance of fiscal responsibility for the cost of any damaged or lost equipment

**Interoperable Communications Request: Scheduled Events and Training (Outside Region)**

- Application for deployment of the radio cache for scheduled events should be initiated no later than 30 days and no more than 120 days prior to the event
  - Some events will require last minute requests, i.e. funerals, protests, etc.
- The request shall be made using the proper request form directly to and be granted by the cache decision maker (Type I-III) or appropriate personnel (Type IV-V) for the host radio cache
- The request shall be granted by the priority of the request and by date the request was received
- The requesting jurisdiction may be responsible for pick-up and return of cache equipment
- Inventory and inspection will occur upon return of the radios and any lost or damaged radios will be billed to the jurisdiction returning the radios
- Any radios loaned for scheduled events will be subject to recall for a higher priority emergency incident
- The host agency receiving a request for radio cache deployment will notify the other regional radio cache host agencies of the deployment, if applicable
- Once a radio cache has been committed or deployed for a special event, contact shall be made to provide information regarding the number of radios deployed, the host locality name, the receiving localities name, and the name and date of the event to:
  - Communications
  - Firefighter, HazMat, Urban Search and Rescue
  - Information and Planning

	<ul style="list-style-type: none"> <li>○ Law Enforcement</li> <li>● A request for tactical repeaters and interconnect devices will involve a planning meeting with the cache manager or COML to review the events communications plan and will require the deployment of Cache personnel to maintain the equipment during the event</li> <li>● The radio cache manager is responsible for telling the Virginia EOC about the status of their cache when in use</li> </ul> <p><b>Radio Cache Deactivation</b></p> <ul style="list-style-type: none"> <li>● The Incident Commander in conjunction with the Emergency Manager determines when the radio cache is no longer required</li> <li>● The Incident Commander is responsible for coordinating the return of cache</li> <li>● At the end of the incident, the Incident Commander or a designee is responsible for inventorying all radios returned to the cache <ul style="list-style-type: none"> <li>○ Before leaving the incident scene, the Incident Commander will determine if any radios have not been returned to the radio cache and note the user and/or agency to which the radio was distributed</li> <li>○ If the missing radios can not be recovered at the incident scene, information will be provided to the appropriate point of contact for resolution</li> </ul> </li> <li>● The radios will be returned to the host radio cache site within 72 hours after the incident is over</li> </ul> <p><b>Problem reporting and Resolution</b></p> <ul style="list-style-type: none"> <li>● Agencies using radio caches may report any problems with the specific radio cache to the radio cache manager (Type I-III) or appropriate personnel (Type IV-V) from which the cache was obtained</li> <li>● The cache manager (Type I-III) or appropriate personnel (Type IV-V) from which the cache was obtained will be responsible for ensuring effective resolution to problems that exist</li> </ul>
<b>Training &amp; Exercises</b>	<ul style="list-style-type: none"> <li>● Cache resources within a jurisdiction shall be used for training and exercise activities at a minimum of twice per year</li> <li>● A training report shall be provided annually to the Commonwealth Interoperability Coordinator’s Office</li> <li>● Equipment shall be maintained in a consistent operational condition and users shall be familiar with its function</li> </ul>
<b>Inventory Control</b>	<ul style="list-style-type: none"> <li>● A complete inventory of the caches personnel and equipment shall be conducted on an annual basis and sent to regional and Virginia EOCs</li> <li>● Each radio cache must be maintained in a condition available for immediate deployment within 2 hours of a request</li> </ul>

	<ul style="list-style-type: none"> <li>• It is the responsibility of the host jurisdiction(s) to maintain control over their equipment</li> <li>• Replacement or upgrading of cache equipment shall be coordinated by the host jurisdiction(s)</li> </ul>
<b>Governance</b>	<ul style="list-style-type: none"> <li>• MOUs shall be developed between host locality, region, and the state</li> <li>• Existing Mutual Aid MOUs will be acknowledged</li> <li>• All radio cache managers for Type III and above will participate on the State Interoperability Advisory Group and fulfill the responsibilities of membership of the group</li> <li>• Conflict resolution: The State Interoperability Executive Committee will make final recommendations to resolve conflicts</li> </ul>

## Appendix E: CICO One Pager



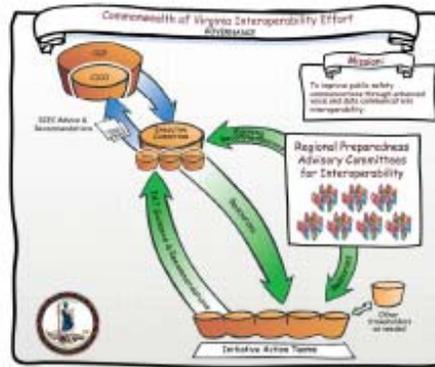
### Commonwealth Interoperability Coordinator's Office

#### The Governor's Office of Commonwealth Preparedness

The Office of Commonwealth Preparedness was first created by Governor Warner's Executive Order 07 (02), continued by Executive Order 69 (04), and is responsible for translating vision into reality by synchronizing actions, both public and private, and by insuring that financial resources are being expended on shared statewide preparedness goals.

The Office's role is one of policy, coordination, leadership and resource allocation between agencies of state government entrusted with public safety and security responsibilities. The Office serves as a direct liaison between the Governor and Virginia's local governments and first responders on issues of emergency preparedness. It helps educate the public on homeland security issues and responds to inquiries for support and guidance.

The CICO reports directly to the Assistant to the Governor for Commonwealth Preparedness and facilitates the development of the state's overarching strategy for communications interoperability.



The Commonwealth Interoperability Coordinator's Office (CICO) is responsible for the coordination of daily operations of Virginia's interoperability efforts including ensuring that the Strategic Plan for Statewide Interoperable Communications is implemented and updated each year. The CICO works closely with the State Interoperability Executive Committee (SIEC), the State Interoperability Advisory Group (Advisory Group), and other public safety practitioners, experts and stakeholders to provide direction and management to the effort.

Recognizing that communications interoperability spans multiple disciplines and scenarios, the CICO provides overarching collaboration that spans all public safety and state agencies. The CICO and its project management office build consensus among disparate public safety disciplines, provide a conduit directly to the Commonwealth Preparedness Working Group and the Governor's Office, manages the knowledge and work products of the effort, and facilitates key practitioner meetings to keep the effort focused on practitioners and their needs while not allowing one discipline to dominate the effort.

#### The Commonwealth Strategic Plan for Statewide Interoperable Communication

The Statewide Plan is the guiding document for all interoperable communications activities. Virginia Code mandates the annual update of the Plan and statewide compliance to the Plan by 2015. The CICO provides oversight for the update of the plan through facilitating key stakeholder sessions and for the implementation of the plan by setting up and providing a liaison to Initiative Action Teams.

Constance McGeorge has served in the Governor's Office of Commonwealth Preparedness since 2002, most recently as Statewide Critical Infrastructure Coordinator, and has chaired the National Capital Region's Critical Infrastructure Working Group. She has also been a member of the State Interoperability Executive Committee since its creation. She has a B.A. in foreign languages from Tulane University and an M.B.A. from Auburn University. She is also a volunteer with the Goochland County Fire and Rescue Department.

For more information: <http://www.interoperability.virginia.gov/> or  
Constance McGeorge, CIC, [constance.mcgeorge@governor.virginia.gov](mailto:constance.mcgeorge@governor.virginia.gov), (804) 225-3800

## Appendix F: SIEC One Pager



### INTEROPERABILITY IN VIRGINIA



#### State Interoperability Executive Committee

##### Member Organizations

- Commonwealth Interoperability Coordinator's Office
- Office of Commonwealth Preparedness
- Office of the Secretary of Public Safety
- Office of the Secretary of Technology
- Statewide Agencies Radio System
- Representatives from the seven Regional Preparedness Advisory Committees for Interoperability
- VA Association of Chiefs of Police
- VA Association of Counties
- VA Association of Governmental EMS Administrators
- VA Association of Public Safety Communication Officials
- VA Department of Criminal Justice Services
- VA Department of Emergency Management
- VA Department of Military Affairs
- VA Department of State Police
- VA Department of Transportation
- VA Emergency Managers Association
- VA Fire Chiefs Association
- VA Information Technologies Agency
- VA Military Advisory Committee
- VA Municipal League
- VA Office of Emergency Medical Services
- VA Professional Fire Fighters
- VA Sheriffs' Association
- VA State Firefighter's Association

The members of the State Interoperability Executive Committee (SIEC) provide recommendations to the Commonwealth to determine statewide priorities related to interoperable communications. As a practitioner based steering group, the SIEC is made up of members from key organizations representing the first responder community, localities, and state agencies. Individual representatives were selected based on their technical and public safety knowledge which brings years of experience to this level of governance.

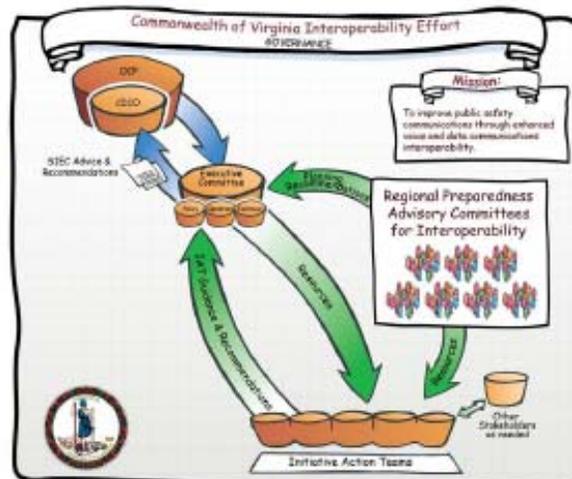
Some of the main responsibilities of the SIEC members are to assist the Commonwealth Interoperability Coordinator by:

1. Conducting an annual review and update of the Statewide Plan
2. Implementing the initiatives contained in the Statewide Plan
3. Developing formal recommendations to the Commonwealth Preparedness Working Group, the Secure Commonwealth Panel, and the Governor on the use of interoperability grants to support local, regional, and state voice and data projects
4. Reviewing most communications-related grant requests from state agencies and localities

SIEC members also serve on one of three Standing Subcommittees (Operations, Policy, or Technical) in order to complete tasks that require research, discussion and project management of tactical teams that have the correct level of expertise and adequate time and resources to accomplish each task. By participating on these Subcommittees and the SIEC, members play an integral role in improving the ability of Virginia's public safety practitioners to talk with one another.

#### The Commonwealth Strategic Plan for Statewide Interoperable Communications

The Statewide Plan is the guiding document for all interoperable communications activities. Virginia Code mandates the annual update of the Plan and statewide compliance to the Plan by 2015. The CICO provides oversight for the update of the plan by facilitating key stakeholder sessions and for the implementation of the plan by setting up and providing a liaison to specialized working groups, committees, and initiative action teams.



For more information on the SIEC please contact the CICO at [cico@governor.virginia.gov](mailto:cico@governor.virginia.gov) or (804) 225-3000, or visit our website <http://www.interoperability.virginia.gov/Governance/ExecutiveCommittee/index.cfm>

# Appendix G.1: RPAC-I One Pager (Front)



## INTEROPERABILITY IN VIRGINIA



### Regional Preparedness Advisory Committees for Interoperability (RPAC-I)



#### RPACs

The Office of Commonwealth Preparedness established Regional Preparedness Advisory Committees (RPAC) throughout the Commonwealth based on the Governor's Homeland Security Regions in 2007. The RPACs meet and focus on regional initiatives in training, equipment, communication, and strategy to ensure ready access to response teams in times of emergency and to facilitate testing and training exercises for emergencies and mass casualty preparedness.

Membership for each RPAC includes representatives from emergency management, fire, law enforcement, local government, the private sector, and institutions of higher learning.

#### RPAC-I

The Commonwealth Interoperability Coordinator's Office (CICO) established Interoperability Subcommittees of the RPACs, referred to as the Regional Preparedness Advisory Committees for Interoperability (RPAC-Is). Each RPAC-I assists the CICO and the State Interoperability Executive Committee (SIEC) in implementing the initiatives written in the Statewide Strategic Plan for Interoperable Communications (Statewide Plan). Each RPAC-I also provides a forum for local communities to coordinate and plan at the operational and tactical level prior to providing input to the strategic statewide planning level through the SIEC. Each RPAC-I has an elected representative on the SIEC to share the local perspective and ensure each region has a voice in the decision-making process regarding future communications projects and funding.

This structure helps engage a broader community of communications specialists at the regional level. With the increasing focus on regional approaches to strategic planning, collaboration among the CICO, SIEC, and the RPAC-Is will form an essential foundation for achieving the Commonwealth's communications interoperability goals.

#### The Commonwealth Strategic Plan for Statewide Interoperable Communications

The Statewide Plan is the guiding document for all interoperable communications activities. Virginia Code mandates the annual update of the Plan and statewide compliance to the Plan by 2015. The CICO provides oversight for the update of the plan through facilitating key stakeholder sessions and for the implementation of the plan by setting up and providing a liaison to specialized working groups, committees, and Initiative Action Teams.

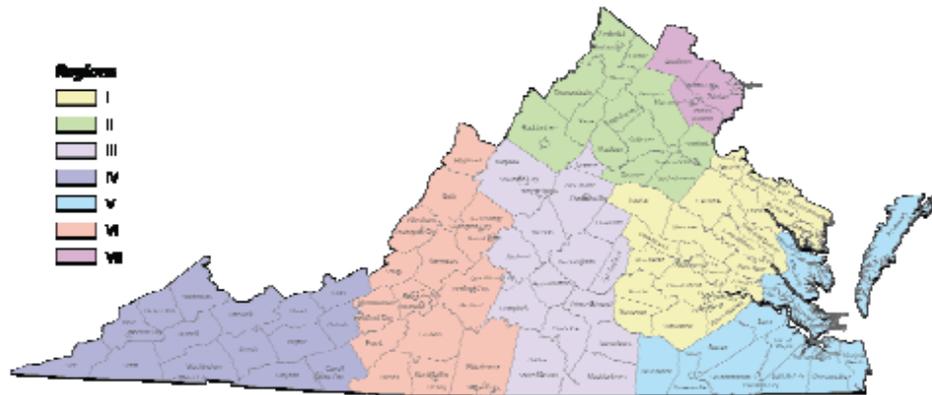


Constance McGeorge has served in the Governor's Office of Commonwealth Preparedness since 2002, most recently as Statewide Critical Infrastructure Coordinator, and has chaired the National Capital Region's Critical Infrastructure Working Group. She has also been a member of the State Interoperability Executive Committee since its creation. She has a B.A. in foreign languages from Tulane University and an M.B.A. from Auburn University. She is also a volunteer with the Coochland County Fire and Rescue Department.

For more information on the RPACs or RPAC-Is please contact the CICO at [cico@governor.virginia.gov](mailto:cico@governor.virginia.gov) or (804) 225-3800. Visit our website at: <http://www.interoperability.virginia.gov/>

## Appendix G.2: RPAC-I One Pager (Back)

### Regional Preparedness Advisory Committees (RPAC)



#### Region I: Richmond

- Amelia County
- Caroline County
- Charles City County
- Chesterfield County
- City of Colonial Heights
- Dinwiddie County
- Essex County
- Goochland County
- Hanover County
- Henrico County
- City of Hopewell
- King & Queen County
- King George County
- King William County
- Lancaster County
- Louisa County
- New Kent County
- Northumberland County
- Nottoway County
- City of Petersburg
- Powhatan County
- Prince George County
- Richmond County
- City of Richmond
- Westmoreland County

#### Region II: Culpeper

- Clarke County
- Culpeper County
- Fauquier County
- Fredericks County
- City of Fredericksburg
- City of Harrisonburg
- Madison County
- Orange County
- Page County
- Rappahannock County
- Rockingham County
- Shenandoah County
- Spotsylvania County
- Stafford County
- Warren County
- City of Winchester

#### Region III: Central Virginia

- Albemarle County
- Amherst County
- Appomattox County
- Augusta County
- Buckingham County
- Campbell County
- Charlotte County
- City of Charlottesville
- Cumberland County
- Fluvanna County
- Greene County
- Halifax County
- Lunenburg County
- City of Lynchburg
- Mecklenburg County
- Nelson County
- Prince Edward County
- City of Staunton
- City of South Boston
- City of Waynesboro

#### Region IV: Southwest

- Bland County
- Buchanan County
- Carroll County
- City of Bristol
- Dickenson County
- City of Galax
- Giles County
- Grayson County
- Lee County
- City of Norton
- Pulaski County
- Russell County
- Scott County
- Smyth County
- Tazewell County
- Washington County
- Wise County
- Wythe County

#### Region V: Tidewater

- Accomack County
- Brunswick County
- City of Chesapeake
- City of Emporia
- City of Franklin
- Gloucester County
- Greenville County
- City of Hampton
- Isle of Wight County
- James City County
- Matthews County
- Middlesex County
- Northampton County
- City of Newport News
- City of Norfolk
- City of Poquoson
- City of Portsmouth
- Southampton County
- City of Suffolk
- Surry County
- Sussex County
- City of Virginia Beach
- City of Williamsburg
- York County

#### Region VI: Roanoke

- Alleghany County
- Bath County
- Bedford County
- City of Bedford
- Botetourt County
- City of Buena Vista
- City of Covington
- Craig County
- City of Danville
- Floyd County
- Franklin County
- Henry County
- Highland County
- City of Lexington
- City of Martinsville
- Montgomery County
- Patrick County
- Pittsylvania County
- City of Radford
- Roanoke County
- City of Roanoke
- Rockbridge County
- City of Salem

#### Region VII: Northern Virginia

- Arlington County
- City of Alexandria
- City of Fairfax
- City of Falls Church
- Fairfax County
- Loudoun County
- City of Manassas
- City of Manassas Park
- Prince William County

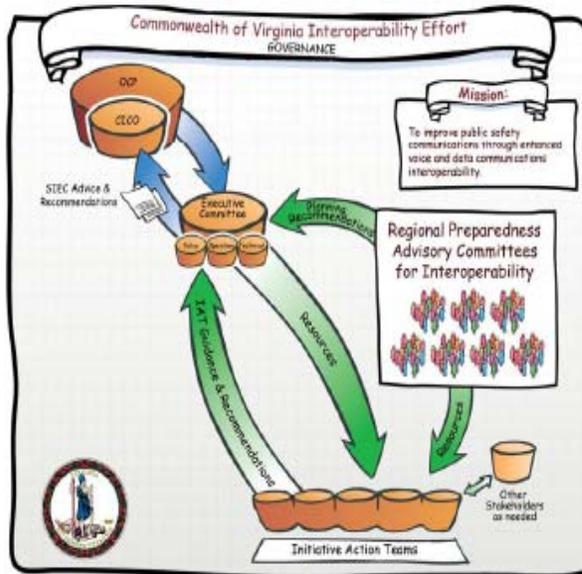
## Appendix H: IAT One Pager



# INTEROPERABILITY IN VIRGINIA



## State Interoperability Initiative Action Teams



Initiative Action Teams (IATs) are established on an as-needed basis to assist in the implementation of the initiatives in the Commonwealth's Strategic Plan for Statewide Interoperable Communications (Statewide Plan). The IATs are directed primarily by the Commonwealth Interoperability Coordinator's Office (CICO) working in conjunction with the State Interoperability Executive Committee (SIEC). To ensure maximum stakeholder involvement, each IAT is made up of SIEC members, members from the stakeholder community, subject matter experts, and other stakeholders at the national, state, and local level. The outcomes of the IATs directly influence how policy decisions are made regarding interoperable communications.

Some of the main responsibilities of IAT members are to:

1. Assist the CICO and the SIEC by providing recommendations for how to endorse, promote, and implement the goals and initiatives in the Statewide Plan.
2. Pursue needed resources to successfully complete assigned tasks in coordination with the CICO
3. Assign an IAT Lead to coordinate activities, arrange meetings, and report back to the SIEC and CICO
4. Establish a project timeline with interim milestones, resources, and task owners
5. Prepare monthly progress reports for the CICO

### Past Initiative Action Teams

- Common Language Protocol
- Operational Protocols and Technical Standards
- Interoperable Communications Equipment and Services on State Contracts
- Communication Cache Procurement and Operations (including equipment standardization and typing)
- Mutual Aid Channels
- 800 MHz Rebanding
- Statewide 700 MHz Plan
- Operations Model, Version 1

### The Commonwealth Strategic Plan for Statewide Interoperable Communications

The Statewide Plan is the guiding document for all interoperable communications activities. Virginia Code mandates the annual update of the Plan and statewide compliance to the Plan by 2015. The CICO and the SIEC provide oversight for the implementation of the plan by setting up Initiative Action Teams (IATs). The initiatives of the Statewide Plan directly reflect the needs of stakeholders to address overarching interoperability issues. Because the Statewide Plan is update annually, there is no term for IAT membership; the expertise and commitment required to achieve each initiative are considered when creating the IATs.

For more information, please contact the CICO at [cico@governor.virginia.gov](mailto:cico@governor.virginia.gov) or (804) 225-3000 or visit our website <http://www.interoperability.virginia.gov/>

## Appendix I.1: Common Language Protocol One Pager (Front)



### INTEROPERABILITY IN VIRGINIA



## Commonwealth of Virginia Best Practice: Common Language Protocol

#### Coded Language Scenarios\*

**Responder in immediate danger**  
A situation in which either the responder or dispatcher has identified an immediate threat and must convey this to a partner, other responders or dispatcher without alerting the subject.

**Responder needs backup/assistance**  
A situation that is unstable, but there is no immediate life threat. Backup/law enforcement should expedite, but an over request could escalate the situation.

**Responder taking subject into custody**  
A situation in which a responder wishes to alert a partner, other responders or dispatcher that the intention is to take a subject into custody and resistance is anticipated. This could also be in the context of a directive to take the subject into custody and expect resistance.

**Holding transmission of sensitive information**  
Indicates caller is holding sensitive information relating to an individual(s) that is possibly within earshot.

\*The actual codes for these transmissions have been removed for confidentiality. Public safety practitioners can contact the Commonwealth Interoperability Coordinator's Office at (804) 225-3800 to receive the codes.

Historically, public safety agencies used a coded language to communicate information; however these codes were not standardized across jurisdictional lines. Therefore, a code could have one meaning in one locality and a different meaning in another locality. To improve interoperability during multi-jurisdictional and multi-disciplinary events, the National Incident Management System (NIMS) directs that "codes should not be used for radio communication; a clear spoken message...reduces the chances for error<sup>1</sup>."

In 2004, Virginia's State Interoperability Executive Committee (SIEC) recommended the establishment of a statewide common language protocol as a major initiative for the Commonwealth Interoperability Coordinator's Office (CICO). The Commonwealth of Virginia officially released the Common Language Protocol in October of 2006 which enables public safety practitioners to use plain English for radio communications (day-to-day and during emergencies) and a limited number of statewide coded transmissions to help ensure responder safety.

To implement this Best Practice, follow these steps:

1. Based on the NIMS Requirements and Governor Warner's Executive Order 102; adopt, practice, and use Common Language for all situations requiring mutual aid.
2. Endorse and begin using plain English for all day-to-day operations observing the Coded Language Scenarios (presented to the left).
3. Adopt the International Phonetic Alphabet below (if needed)
4. Simplify internal common phrases to eliminate confusion that could arise when speaking to another agency.
5. Ask your training academy to contact the Commonwealth Interoperability Coordinator's Office (CICO) to standardize training in your locality or region.

For more information please contact the CICO at [cico@governor.virginia.gov](mailto:cico@governor.virginia.gov) or (804) 225-3800 or visit our website: <http://www.interoperability.virginia.gov>

More information can also be found at the Lesson Learned Information Sharing (LLIS) website: [http://www.interoperability.virginia.gov/pdfs/LLIS\\_CommonLanguageProtocol.pdf](http://www.interoperability.virginia.gov/pdfs/LLIS_CommonLanguageProtocol.pdf)

<sup>1</sup> Department of Homeland Security, NIMS Integration Center. *NIMS Alert: NIMS and Use of Plain Language*. 19 Dec 2006. [https://www.llis.dhs.gov/member/secure/detail.cfm?content\\_id=22482](https://www.llis.dhs.gov/member/secure/detail.cfm?content_id=22482)

## Appendix I.2: Common Language Protocol One Pager (Back)

### Endorsement from Across the Commonwealth

The Virginia Association of Chiefs of Police, Virginia Fire Chiefs Association, Virginia Sheriff's Association, Virginia Association of Public-Safety Communications Officials, Virginia Port Authority, and Virginia State Police have officially endorsed the Commonwealth's Common Language Best Practice. If your organization/agency is interested in formally endorsing this Best Practice, please provide the Commonwealth Interoperability Coordinator's Office with a formal letter on your organization's/agency's letterhead to the following address: 111 East Broad Street,, Richmond, VA 23218.

### The Initiative Action Team for Common Language Protocol

The CICO and the SIEC established an Initiative Action Team (IAT) in fall 2005 to develop a common language protocol that reflects the needs and interests of all affected response disciplines. The organizations/agencies that collaborated to develop this Best Practice include:

- Chesterfield County Sheriff's Department
- City of Virginia Beach
- Commonwealth Interoperability Coordinator's Office
- Fairfax County Fire and Rescue
- Henrico County Division of Police
- Powhatan County
- Office of Commonwealth Preparedness
- Virginia Association of Chiefs of Police
- Virginia Association of Governmental Emergency Medical Services Administrators
- Virginia Association of Public-Safety Communications Officials
- Virginia Department of Corrections
- Virginia Department of Fire Programs
- Virginia Department of Forestry
- Virginia Department of Transportation
- Virginia Fire Chiefs Association
- Virginia State Firefighters Association
- Virginia State Police

### The International Phonetic Alphabet

A Alpha	J Juliet	S Sierra
B Bravo	K Kilo	T Tango
C Charlie	L Lima	U Uniform
D Delta	M Mike	V Victor
E Echo	N November	W Whiskey
F Foxtrot	O Oscar	X X-Ray
G Golf	P Papa	Y Yankee
H Hotel	Q Quebec	Z Zulu
I India	R Romeo	

## Appendix J: Interoperability Channels

The FCC has designated several frequencies as primary status for interoperable communications within VHF, UHF and 800 MHz. These frequencies can be used on a non-routine basis for interoperable communications between any local, state or federal entity. Additionally, these frequencies can be used across interstate borders with neighboring public safety jurisdictions.

### **VHF High Band (150 – 174 MHz) CTCSS 156.7 Hz, narrowband operation. \*\***

155.7525 TX & RX	VCALL10 (Hailing Frequency)
151.1375 TX & RX	VTAC 11 (Working Frequency)
154.4525 TX & RX	VTAC 12 (Working Frequency)
158.7375 TX & RX	VTAC 13 (Working Frequency)
159.4725 TX & RX	VTAC 14 (Working Frequency)

\*\* Mobile and Portable operations are licensed by FCC rule. Base Station/Fixed operations require FCC license

### **UHF (450 – 470 MHz) CTCSS 156.7 Hz, narrowband operation\*\***

TX 458.2125MHz	RX 453.2125 MHz	UCALL40	(Hailing Frequency – Repeater)
TX 453.2125 MHz	RX 453.2125 MHz	UCALL40D	(Hailing Frequency Portable to Portable)
TX 458.4625 MHz	RX 453.4625 MHz	UTAC 41	(Working Frequency)
TX 453.4625 MHz	RX 453.4625 MHz	UTAC41D	(Working Frequency)
TX 458.7125 MHz	RX 453.7125 MHz	UTAC42	(Working Frequency)
TX 453.7125 MHz	RX 453.7125 MHz	UTAC42D	(Working Frequency)
TX 458.8625 MHz	RX 453.8625 MHz	UTAC43	(Working Frequency)
TX 453.8625 MHz	RX 453.8625 MHz	UTAC43D	(Working Frequency)

\*\* Mobile and Portable operations are licensed by FCC rule. Repeater/Fixed operations require FCC license

### **800 MHz, CTCSS 156.7 Hz, (CURRENT)**

TX 821.0125 MHz	RX 866.0125 MHz	8CALL90
TX 866.0125 MHz	RX 866.0125 MHz	8CALL90D
TX 821.5125 MHz	RX 866.5125 MHz	8TAC91
TX 866.5125 MHz	RX 866.5125 MHz	8TAC91D
TX 822.0125 MHz	RX 867.0125 MHz	8TAC92
TX 867.0125 MHz	RX 867.0125 MHz	8TAC92D
TX 822.5125 MHz	RX 867.5125 MHz	8TAC93
TX 867.5125 MHz	RX 867.5125 MHz	8TAC93D
TX 823.0125 MHz	RX 868.0125 MHz	8TAC94
TX 868.0125 MHz	RX 868.0125 MHz	8TAC94D

### **800 MHz, CTCSS 156.7 Hz, (AFTER FCC MANDATED REBANDING)**

TX 806.0125 MHz	851.0125 MHz	8CALL90
TX 851.0125 MHz	851.0125 MHz	8CALL90D
TX 806.5125 MHz	851.5125 MHz	8TAC91
TX 851.5125 MHz	851.5125 MHz	8TAC91D
TX 807.0125 MHz	852.0125 MHz	8TAC92

TX 852.0125 MHz	RX 852.0125MHz	8TAC92D
TX 807.5125 MHz	RX 852.5125 MHz	8TAC93
TX 852.5125 MHz	RX 852.5125 MHz	8TAC93D
TX 808.0125 MHz	RX 853.0125 MHz	8TAC94
TX 853.0125 MHz	RX 853.0125MHz	8TAC94D

**700 MHz Interoperability Channels (Proposed)**

<u>FCC Channel (Subscriber Load)</u>		<u>Primary Use</u>	<u>NPSTC ID</u>
Receive Ch.	Transmit Ch.		
23-24	983-984	General Public Safety	7TAC51
	23-24		7TAC51D
39-40	999-1000	Calling Channel	7CALL50
	39-40		7CALL50D
63-64	1023-1024	EMS	7MED65
	63-64		7MED65D
79-80	1039-1040	EMS	7MED66
	79-80		7MED66D
103-104	1063-1064	General Public Safety	7TAC2
	103-104		7TAC52D
119-120	1079-1080	General Public Safety	7TAC55
	119-120		7TAC55D
143-144	1103-1104	Fire	7FIRE63
	143-144		7FIRE63D
159-160	1119-1120	Fire	7FIRE64
	159-160		7FIRE64D
183-184	1143-1144	General Public Safety	7TAC53
	183-184		7TAC53D
199-200	1159-1160	General Public Safety	7TAC56
	199-200		7TAC56D
223-224	1183-1184	Law Enforcement	7LAW61
	223-224		7LAW61D
239-240	1199-1200	Law Enforcement	7LAW62
	239-240		7LAW62D
263-264	1223-1224	General Public Safety	7TAC54
	263-264		7TAC54D
279-280	1239-1240	Mobile Data	7DATA69
	279-280		7DATA69D
303-304	1263-1264	Mobile Repeater	7MOB59
	303-304		7MOB59D
319-320	1279-1280	Other Public Service	7GTAC57
	319-320		7GTAC57D
641-642	1601-1602	EMS	7MED86
	641-642		7MED86D
657-658	1617-1618	General Public Safety	7TAC71
	657-658		7TAC71D
681-682	1641-1642	Calling Channel	7CALL70
	681-682		7CALL70D
697-698	1657-1658	EMS	7MED87
	697-698		7MED87D
721-722	1681-1682	Fire	7FIRE83
	721-722		7FIRE83D

737-738	1697-1698 737-738	General Public Safety	7TAC72 7TAC72D
761-762	1721-1722 761-762	General Public Safety	7TAC75 7TAC75D
777-778	1737-1738 777-778	Fire	7FIRE84 7FIRE84D
801-802	1761-1762 801-802	Law Enforcement	7LAW81 7LAW81D
817-818	1777-1778 817-818	General Public Safety	7TAC73 7TAC73D
841-842	1801-1802 841-842	General Public Safety	7TAC76 7TAC76D
857-858	1817-1818 857-858	Law Enforcement	7LAW82 7LAW82D
881-882	1841-1842 881-882	Mobile Repeater	7MOB79 7MOB79D
897-898	1857-1858 897-898	General Public Safety	7TAC74 7TAC74D
921-922	1881-1882 921-922	Mobile Data	7DATA89 7DATA89D
937-938	1897-1898 937-938	Other Public Service	7GTAC77 7GTAC77D

Ref: [http://www.apco911.org/frequency/documents/700\\_NB\\_channel\\_centers.pdf](http://www.apco911.org/frequency/documents/700_NB_channel_centers.pdf)

The Commonwealth of Virginia has designated the following VHF frequencies as interoperability frequencies for law enforcement across the Commonwealth

**VHF Low Band, (30 – 50 MHz) Standard squelch**

		Wideband Channel	Narrowband Channel
		<u>Name/ID</u>	<u>Name/ID</u>
39.54 TX & RX	SIRS (State Interdepartmental Radio System)		
155.475 TX & RX	SIRS	VLAW31W	VLAW31
155.4875 TX & RX	SIRS		
155.4825 TX & RX	LE		VLAW32

**MUTUAL AID FREQUENCIES BY DISCIPLINE**

**VHF Low Band (30 – 50 MHz) Standard Squelch**

39.46 TX & RX	LAW ENFORCEMENT	LLAW1	CTCSS 156.7 HZ
<b>Requires FCC License</b>			
45.86 TX & RX	LAW ENFORCEMENT	LLAW1	CTCSS 156.7 HZ <b>NEW</b>
<b>Requires FCC License</b>			

Note existing Commonwealth of Virginia users who are non Law Enforcement and have existing/Valid FCC licenses may continue to operate/update new sites without Law Enforcement authorization.

**VHF Low Band (30 – 50 MHz) Standard Squelch**

39.48 TX & RX	FIRE (PROPOSED)	LFIRE2	CTCSS 156.7 HZ	NEW
<b>Requires FCC License</b>				
45.88 TX & RX	FIRE (PROPOSED)	LFIRE4	CTCSS 156.7 HZ	NEW
<b>Requires FCC License</b>				

**VHF High Band (150-174 MHz) Standard squelch \*\*\***

		Wideband Channel	Narrowband Channel
		<u>Name/ID</u>	<u>Name/ID</u>
154.280 TX & RX	FIRE	VFIRE21W	VFIRE21
154.265 TX & RX	FIRE	VFIRE22W	VFIRE22
154.295 TX & RX	FIRE	VFIRE23W	VFIRE23
154.2725 TX & RX	FIRE		VFIRE24
154.2875 TX & RX	FIRE		VFIRE25
154.3025 TX & RX	FIRE		VFIRE 26
155.340 TX & RX	EMS	VMED28W	VMED28
155.3475 TX & RX	EMS		VMED29

\*\*\* Requires FCC license

**UHF MED Channels**

<b>Wideband</b>		<b>Narrowband</b>	
<u>Mobile RX/TX (MHz)</u>		<u>Mobile RX/TX (MHz)</u>	
462.950/467.950	MED-9	462.9625/467.9625	MED-92
462.975/467.975	MED-10	462.9875/467.9875	MED-102
463.000/468.000	MED-1	463.0125/468.0125	MED-12
463.025/468.025	MED-2	463.0375/468.0375	MED-22
463.050/468.050	MED-3	463.0625/468.0625	MED-32
463.075/468.075	MED-4	463.0875/468.0875	MED-42
463.100/468.100	MED-5	463.1125/483.1125	MED-52
463.125/468.125	MED-6	463.1375/468.1375	MED-62
463.150/468.150	MED-7	463.1625/468.1625	MED-72
463.175/468.175	MED-8	463.1875/468.1875	MED-82

## Appendix K: Additional Resources

### Virginia Interoperability Web Page

- [www.interoperability.virginia.gov](http://www.interoperability.virginia.gov)

### 800 MHz Rebanding

- 800 MHz Transition Administrator (<http://www.800ta.org/default.asp>)

### Communications Spectrum

Federal agencies that manage the commercial and public communications spectrum:

- Federal Communications Commission (<http://wireless.fcc.gov/publicsafety>)
- National Telecommunications and Information Administration ([www.ntia.doc.gov](http://www.ntia.doc.gov))

### Federal Interoperability General Information

- AGILE Program ([www.ojp.usdoj.gov](http://www.ojp.usdoj.gov))
- Joint Tactical Radio System (<http://jtrs.army.mil>)
- GAO Report on interoperable communications ([www.gao.gov/new.itmes/d04740.pdf](http://www.gao.gov/new.itmes/d04740.pdf))
- National Incident Management System (NIMS) training (<http://training.fema.gov/EMIWEB/IS/is700.asp>)
- National Law Enforcement and Corrections Technology Center ([www.nlectc.org](http://www.nlectc.org))
- SAFECOM ([www.safecomprogram.gov](http://www.safecomprogram.gov))
- National Institute of Standards and Technology ([www.nist.gov](http://www.nist.gov))
- SEARCH ([www.search.org](http://www.search.org))
- National Public Safety Telecommunications Council (<http://www.npstc.org/index.jsp>)

### Grants Information

- Access to Federal Grant Opportunities (<http://www.grants.gov/>)
- Department of Homeland Security ([www.dhs.gov/dhspublic/display?theme=18](http://www.dhs.gov/dhspublic/display?theme=18))
- National Institute of Justice (<http://www.ojp.usdoj.gov/nij/funding.htm>)
- Office of Community Oriented Policing Services ([www.cops.usdoj.gov](http://www.cops.usdoj.gov))
- Office of Domestic Preparedness ([www.ojp.usdoj.gov/odp/grants\\_programs.htm](http://www.ojp.usdoj.gov/odp/grants_programs.htm))
- Public Safety Interoperable Communications (PSIC) Grant Program (<http://www.ntia.doc.gov/psic/>)

### Local Public Safety Organizations

- Hampton Roads Planning District Commission (<http://www.hrpdc.org/>)
- Metropolitan Washington Airport Authority (<http://www.metwashairports.com/>)
- Virginia Association of Chiefs of Police ([www.vachiefs.org](http://www.vachiefs.org))
- Virginia Association of Counties (<http://www.vaco.org/>)
- Virginia Association of Governmental EMS Administrators ([www.vagemsa.org](http://www.vagemsa.org))
- Virginia Association of Public Safety Communications Officials (<http://www.virginia-apco.org/>)
- Virginia Association of Volunteer Rescue Squads (<http://www.vavrs.com/default2.cfm>)
- Virginia Fire Chiefs Association ([www.sfcav.org](http://www.sfcav.org))
- Virginia Hospital and Healthcare Association (<http://www.vhha.com/>)
- Virginia Information Technologies Agency (<http://www.vita.virginia.gov/>)

- Virginia Municipal League (<http://www.vml.org/>)
- Virginia Professional Firefighters Association (<http://www.vpff.org/>)
- Virginia Sheriffs' Association ([www.virginiasheriffs.org](http://www.virginiasheriffs.org))
- Virginia Wireless E-911 Services Board (<http://www.911.virginia.gov/index.html>)

### **Narrowbanding**

- Federal Communications Commission (<http://www.fcc.gov/>)

### **State Partners**

- Virginia Department of Criminal Justice Services (<http://www.dcjs.virginia.gov/>)
- Virginia Department of Emergency Management ([www.vaemergency.com](http://www.vaemergency.com))
- Virginia Department of Fire Programs ([www.vafire.com](http://www.vafire.com))
- Virginia Department of Forestry (<http://www.dof.virginia.gov/>)
- Virginia Department of Game and Inland Fisheries (<http://www.dgif.virginia.gov/>)
- Virginia Department of Health (<http://www.vdh.state.va.us/>)
- Virginia Department of Rail and Public Transportation (<http://www.drpt.virginia.gov/>)
- Virginia Department of Transportation ([http://www.virginiadot.org/default\\_flash.asp](http://www.virginiadot.org/default_flash.asp))
- Virginia National Guard (<http://www.virginiaguard.com/>)
- Virginia Office of Commonwealth Preparedness ([www.commonwealthpreparedness.virginia.gov](http://www.commonwealthpreparedness.virginia.gov))
- Virginia Office of the Secretary of Public Safety (<http://www.publicsafety.virginia.gov/index.cfm>)
- Virginia Office of the Secretary of Technology (<http://www.technology.virginia.gov/>)
- Virginia Port Authority (<http://www.vaports.com/>)
- Virginia STARS ([www.publicsafety.virginia.gov/Initiatives/STARS.cfm](http://www.publicsafety.virginia.gov/Initiatives/STARS.cfm))
- Virginia State Firefighters Association (<http://www.vsfa.org/>)
- Virginia State Police ([www.vsp.state.va.us](http://www.vsp.state.va.us))

### **Technology and Standards Information**

Standards bodies working to promote interoperable communications technology:

- Association of Public-Safety Communications Officials, International ([www.apcointl.org](http://www.apcointl.org))
- Capital Wireless Information Net (CapWIN) ([www.capwin.org](http://www.capwin.org))
- Institute of Electrical and Electronics Engineers ([www.ieee.org](http://www.ieee.org))
- International Telecommunication Union ([www.itu.int](http://www.itu.int))
- National Institute of Justice's Technology Programs ([www.ojp.usdoj.gov/nij/sciencetech](http://www.ojp.usdoj.gov/nij/sciencetech))
- National Institute of Standards and Technology ([www.nist.gov](http://www.nist.gov))
- Project 25 ([www.project25.org](http://www.project25.org))
- Project Mobility for Emergency and Safety Applications (MESA) ([www.projectmesa.org](http://www.projectmesa.org))
- Telecommunications Industry Association ([www.tiaonline.org](http://www.tiaonline.org))

## Appendix L: Glossary of Terms

### *Glossary of Terms*

**Analog:** A signal that may vary continuously over a specific range of values.

**Band:** the spectrum between two defined limited frequencies. For example, the Ultra High Frequency (UHF) is located from 300 MHz to 3,000 MHz in the radio frequency spectrum.

**Bandwidth:** The range within a band of frequencies; a measure of the amount of information that can flow through a given point at any given time.

**Block grant:** Federal grant funding that is allocated to state and localities based on a pre-determined statutory formula.

**Channel:** A single unidirectional or bidirectional path for transmitting or receiving, or both, of electrical or electromagnetic signals.

**Communications interoperability:** The ability of public safety agencies to talk across disciplines and jurisdictions via radio communications systems, exchanging voice and/or data with one another on demand, in real time, when needed, and as authorized.

**Communications system:** A collection of individual communication networks, transmission systems, relay stations, tributary stations, and data terminal equipment usually capable of interconnection and interoperation to form an integrated whole. The components of a communications system serve a common purpose, are technically compatible, use common procedures, respond to controls, and operate in unison.

**Coverage:** The geographic area included within the protected range of a wireless radio system based upon their FCC licenses.

**Cycle:** One complete performance of a vibration, electrical oscillation, current alternation, or other periodic process.

**Digital:** Voice communication occurs as an analog signal; that is, a signal with a voltage, frequency, or phase level that continuously varies. Digital signals at baseband occur as the presence or absence of electronic pulses, often representing only one or many values. Voice transmissions may be sent over digital radio systems by sampling voice characteristics and then converting the sampled information to a digital format.

**Discretionary grant:** Federal grant funding distributed at the discretion of the agency administering the program funding, usually through a competitive process.

**Emergency Management:** Public protection, central command and control of public safety agencies during emergencies

**Environmental Health/Hazardous Materials specialists:** environmental health personnel

**First responders:** Individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers, as well as emergency management, public health, clinical care, public works, and other skilled support (such as equipment operators) that provide immediate support services during prevention, response, and recovery operations<sup>19</sup>.

**Formula grant:** Federal grant that is allocated based on a predetermined statutory formula.

**Frequency\*:** The number of cycles or events of a periodic process in a unit of time.

**Frequency bands:** Where land mobile radio systems operate in the United States, including:

High HF	25-29.99 MHz
Low VHF	30-50 MHz
High VHF	150-174 MHz
Low UHF	450-470 MHz
UHF TV Sharing	470- 512 MHz
700 MHz	764-776/794-806 MHz
800 MHz	806-869 MHz

**Grant:** Funding made available to local agencies from State and Federal government agencies, as well as from private sources, such as foundations. Grants usually require the submission of a formal application to justify one's funding request.

**Hertz:** Abbreviation for cycles per second.

**Infrastructure:** The hardware and software needed to complete and maintain the radio communications system.

**Interference:** Extraneous energy, from natural or man-made sources, that impeded the reception of desired signals.

**Jurisdiction:** The territory within which power or authority can be exercised.

**Local revenue fund:** Funding obtained by local governments through local taxes (e.g. sales tax, property tax), user fees, and other user charges, as well as through the issuing of debt instruments, such as bonds.

**Locality:** A particular neighborhood, place, or district.

**Metropolitan Statistical Areas:** United States metropolitan areas are defined by the Federal Government as MSAs.

**Modem:** An acronym for modulator/demodulator, which is a device that translates digital signals coming from a computer into analog signals that can be transmitted over standard

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<sup>19</sup> First Responder as defined the December 17, 2003, Homeland Security Presidential Directive/HSPD-8, Subject: National Preparedness

telephone lines. The modem also translates the analog signal back into a digital signal that a computer can understand.

**Mutual aid:** The mutual aid mode describes major events with large numbers of agencies involved, including agencies from remote locations. Mutual aid communications are not usually well planned or rehearsed. The communications must allow the individual agencies to carry out their missions at the event, but follow the command and control structure appropriate to coordinate the many agencies involved with the event.

**Mutual aid channel:** A radio channel specifically allocated for use during emergency mutual aid scenarios.

**Narrowbanding:** Generally, narrowband describes telecommunication that carries voice information in a narrow band of frequencies. For state and local public safety, narrowbanding typically refers to the process of reducing the useable bandwidth of a public safety channel from 25 kHz to 12.5 kHz. The FCC issued the migration of PLMR systems using frequencies in the 150-174 MHz and 421-512 MHz bands to narrowband technology. These rules set deadlines on applications for new wideband systems, modifications of existing wideband systems, manufacture and importation of 25 kHz equipment, the requirement for public safety to migrate to 12.5 kHz systems by January 2018.

**Receiver:** The portion of a radio device that converts the radio waves into audible signals.

**Refarming:** An administrative process being conducted by the FCC to reallocate channel bandwidths and, as a result, promote spectrum efficiency.

**Repeater:** In digital transmission, equipment that receives a pulse train, amplifies it, retimes it, and then reconstructs the signal for retransmission; in fiber optics, a device that decodes a low-power light signal, converts it to electrical energy, and then retransmits it via an LED or laser source. Also called a “regenerative repeater”.

**Spectrum:** The region of the electromagnetic spectrum in which radio transmission and detection techniques may be used.

**Spectrum efficiency:** The ability to optimize the amount of information sent through a given amount of bandwidth.

**Strategic Technology Reserve:** PSIC defines a Strategic Technology Reserve as a “deployable communications equipment in the event of an emergency or major disaster. These reserves should be available with advanced communications technology in pre-determined regions for immediate deployment, including equipment and personnel. This Strategic Technology Reserve must also be addressed within the Statewide Communications Interoperability Plan, if not already considered.”<sup>20</sup>

**Steering committee:** A group of usually high-level officials charged with setting policy for a project.

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<sup>20</sup> Source FEMA’s Website: <http://www.fema.gov/txt/government/grant/bulletins/info262.txt>

**Supplemental responders:** Responders who provide support to first responders during incidents requiring special assistance.

**Transmitter:** The portion of a radio device that sends out the radio signal.

**Trunked radio system:** A system that integrates multiple channel pairs into a single system. When a user wants to transmit a message, the trunked system automatically selects a currently unused channel pair and assigns it to the user, decreasing the probability of having to wait for a free channel for a given channel loading.

## Appendix M: Acronym Table

Acronym	Meaning
AEL	Authorized Equipment List
AFIS	Automated Fingerprinting Information Systems
AMPS	Advanced Mobile Phone System
APCO	Association of Public Safety Communication Officials
CAD	Computer Aided Dispatch
CAPRAD	Computer Assisted Pre-Coordination Resource and Database System
CapWIN:	Capital Area Wireless Information Net
CASM	Communications Assets Survey and Modeling
CEAN	Community Emergency Alert Network
CERT	Community Emergency Response Team
CIC	Commonwealth Interoperability Coordinator
CICO	Commonwealth Interoperability Coordination Office
COG	Council of Governments
COML	Communications Unit Leader
COMLINC	Commonwealth's Link to Interoperable Communications
COPS	Office of Community Oriented Policing Services
COTS	Commercial off the Shelf
CPWG	Commonwealth Preparedness Working Group
DEH	Data Exchange Hub
DHS	Department of Homeland Security
DoD	Department of Defense
DOJ	Department of Justice
EAN	Emergency Alert Network
ECC	Emergency Communication Centers
EDACS	Enhanced Digital Access Communications System
EDXL	Emergency Data Exchange Language
EMS	Emergency Medical Services
EOC	Emergency Operations Center
ESF	Emergency Support Function
FCC	Federal Communications Commission
FIO	Federal InterOperability
FMARS	Fire Mutual Aid Radio Systems
FRAC	First Responder Authentication Credential
G&T	Department of Homeland Security's Grants and Training
GIS	Geographic Information Systems
HF	High Frequency
HMARS	Hospital Mutual Aid Radio System
HR TacRAN	Hampton Roads Tactical Regional Area Network
HRICAC	Hampton Roads Interoperable Communications Advisory Committee
HRPDC	Hampton Roads Planning District Commission
HSEEP	Homeland Security Exercise and Evaluation Program
HSGP	Homeland Security Grant Program
HSPD	Homeland Security Presidential Directive
IAT	Initiative Action Team
IC	Interoperability Council
ICR	Incident Command Response
ICRI	Incident Commander's Radio Interface
ICS	Incident Command System
ICTAP	Interoperability Communications Technical Assistance Program
IECGP	Interoperable Emergency Communications Grant Program

ISP	Integrated Services Program
IT	Information Technology
IV&D	Integrated Voice and Data
kHz	Kilohertz (1 thousand cycles per second)
LInX	Law Enforcement Information Exchange
LMR	Land Mobile Radio
MACS	Multiagency Coordination System
MARC	MARC Train Service
MEMA	Maryland Emergency Management Agency
MHz	Megahertz (1 million cycles per second)
MOU	Memorandum of Understanding
MSA	Metropolitan Statistical Area
NCR	National Capital Region
NECP	National Emergency Communications Plan
NENA	National Emergency Numbers Association
NIJ	National Institute of Justice
NIMS	National Incident Management System
NOVA	Northern Virginia
NPSPAC	National Public Safety Advisory Committee
NPSTC	National Public Safety Telecommunications Council
NRP	National Response Plan
OCP	Office of Commonwealth Preparedness
ODP	Office of Domestic Preparedness
OEC	Office of Emergency Communications
ORION	Overlay Regional Interoperability Network
Ops Model	<i>Commonwealth of Virginia Operations Model</i>
P25	Project 25
PLMR	Private Land Mobile Radio
PMARS	Police Mutual Aide Radio Systems
PMO	Project Management Office
POC	Point Of Contact
PSIC	Public Safety Communications Interoperability grant program
RDSIP	Rapid Deployment Solutions Interoperability Project
RFP	Request for Proposal
RICCS	Regional Incident Communications and Coordination System
RMS	Records Management Systems
RPAC	Regional Preparedness Action Committee
RPAC-I	Regional Preparedness Action Committee for Interoperability
RPWG-I	Regional Programmatic Working Group for Interoperability
RWBN	Regional Wireless Broadband Network
SATCOM	Satellite
SCIP	Statewide Communications Interoperability Planning
SCP	Secure Commonwealth Panel
SHSGP	State Homeland Security Grant Program
SIEC	State Interoperability Executive Committee
SIRS	Statewide Interdepartmental Radio System
SOA	Services Oriented Architecture
SOPs	Standard Operating Procedures
SPG	Senior Policy Group
SPS	Office of the Secretary of Public Safety
STARS	Statewide Agencies Radio System
Statewide Plan	<i>2009 Commonwealth of Virginia Strategic Plan for Statewide Communications Interoperability</i>
STR	Strategic Technology Reserve

SWAN	State Wide Alert Network
Technical Plan Blueprint	<i>2008 Commonwealth of Virginia Technical Plan Blueprint</i>
TICP	Tactical Interoperable Communications Plan
UARC	User Agency Requirements Committee
UASI	Urban Area Security Initiatives
UHF	Ultra High Frequency
VACP	Virginia Association of Chiefs of Police
VAGEMSA	Virginia Association of Governmental EMS Administrators
VBMP	Virginia Base Mapping Program
VDEM	Virginia Department of Emergency Management
VDFP	Virginia Department of Fire Programs
VDH	Virginia Department of Health
VDOT	Virginia Department of Transportation
VEOC	Virginia Emergency Operations Center
VFCA	Virginia Fire Chiefs Association
VGIN	Virginia Geographic Information Network
VHF	Very High Frequency
VITA	Virginia Information Technologies Agency
VoIP	Voice over Internet Protocol
VPFF	Virginia Professional Fire Fighters
VRE	Virginia Rail Express
VSA	Virginia Sheriffs' Association
VSP	Virginia Department of State Police
WAWAS	Washington Area Warning Alert System
WMATA	Washington Metropolitan Area Transportation Authority
XML	Extensible Markup Language

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