State of North Carolina

Statewide Communications Interoperability Plan

June 12, 2008

Record of Change

Change No.	Date	Description	Change Date	Signature
1	3/18/08	Modifications per initial peer assessment 3/7/08.	3/19/08	
2	6/12/08	Modifications per SIEC meeting on 6/12/08	6/26/08	

Executive Summary

The North Carolina Statewide Communications Interoperability Plan (SCIP) serves as a common reference for all stakeholders to use as a current source of information about the status of statewide communications interoperability. The process employed to produce this plan followed a bottom-up approach that sought out the input and advice of North Carolina's emergency response community on a federal, state, and local level.

It is the intent of the statewide strategic planning effort to provide an ongoing opportunity for all local, tribal, federal, and non-governmental emergency response agencies to share communications needs, discuss mutual solutions, share successful implementations and collaborate. Subsequent versions of the North Carolina SCIP will set new objectives, implement interoperability solutions and measure progress toward achievement of a highly efficient and cost effective means of statewide interoperability.

The North Carolina SCIP is based upon the criteria for interoperability plans established by the United States Department of Homeland Security, Office of Interoperability and Compatibility (OIC) SAFECOM. The criteria helps to define an actionable way forward for first responders and their leadership to improve emergency response through achievement of a high degree of interoperability.

The SAFECOM criteria aided the strategic planning process by providing clear and concise metrics by which to assess the level of statewide interoperability. This assessment is the foundation for the recommended technology and process actions addressed in this plan.

The SAFECOM program recommends the use of the Communications Interoperability Continuum as a tool to help the emergency response community and policy makers measure, analyze and address critical elements required for success as they plan and implement their short- and long-term interoperability efforts. The North Carolina SCIP is based upon this SAFECOM methodology. The Continuum depicts the core facets of interoperability according to the stated needs and challenges of the emergency response community. The ***elements*** of interoperability defined in the Continuum include governance, standard operating procedures (SOPs), technology, training and exercises and usage.

The State Interoperability Executive Committee (SIEC) assesses North Carolina statewide interoperability levels as follows:

GOVERNANCE: MODERATE TO HIGH. The SIEC and the Homeland Security Infrastructure provides a high degree of coordination and training opportunities. However, the state of North Carolina lacks regional interoperability committees, in all but one region, or effective processes for local jurisdictions to work with the SIEC for improvement and advancement of interoperability through use of technology.

STANDARD OPERATING PROCEDURES (SOPS): MODERATE. The State of North Carolina adopted the federally mandated National Incident Management System (NIMS) and established processes for compliance training at both state and local levels. Emergency Operations Centers across the state utilize information technologies to manage incidents. North Carolina continues to push forward SOPs specific to interoperable communications at the statewide level.

TECHNOLOGY: HIGH. The patching of legacy radio systems on a jurisdictional basis is accomplished through the use of a distributed, fixed network of Raytheon/JPS ACU-1000/2000 gateways accessed via a statewide digital microwave system, sharing of radio caches, along with the ability to utilize the state's growing VIPER statewide proprietary interoperable radio solution equates to North Carolina being able to connect emergency responders, on a county-by-county basis, together in time of emergency. North Carolina also utilizes this same gateway technology in a mobile platform with three (3) portable radio towers strategically located across the state. These mobile interoperable solutions are capable of sustaining both current and legacy communication systems.

TRAINING AND EXERCISES*:* HIGH. North Carolina conducts regular, comprehensive regional training and exercises that are inclusive of interstate and international participation. These exercises prepare the state to respond to a wide variety of emergency situations, varying in scale from local response to that requiring assistance from or providing assistance to outside jurisdictions, other states, and the federal government and Canada.

USAGE: MODERATE TO HIGH. North Carolina agencies that utilize both local and state gateway resources use the above mentioned technology during local and regional incidents. Those agencies that utilize the VIPER strategic solution or one of the regional 800 MHz systems experience day-to-day interoperability across multiple jurisdictions and disciplines.

The North Carolina SCIP sustains the momentum of the State Interoperability Executive Committee's (SIEC) strategic planning efforts by establishing a venue that expands local and regional participation in the statewide planning process. It identifies interoperability gaps and outlines ongoing emergency response communications implementation efforts to bridge those gaps in the short, mid and long terms.

Through local participation, the SIEC ensures the strategic planning process incorporates past interoperability successes and shares that knowledge across jurisdictions. Collaboration and combined local-state effort are the keys to development and deployment of future emergency response networks that are necessary to protect the state's first responders and their communities.

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1 Introduction

The State of North Carolina, through the State Emergency Response Commission (SERC), a representative body appointed by the Governor that includes members drawn from state and local emergency response agencies and disciplines, has identified the lack of interoperable communications as the number one unmet need facing the state's emergency responders today. Across North Carolina, continued instances where emergency responders are unable to communicate exist every day. The state's most densely populated counties of which most are located along interstate corridors, have invested in multi-disciplinary 800MHz trunked radio systems that provide maximum communications benefit to their emergency responders and represent the very best approach to the interoperability continuum. However, at the other end of the interoperability spectrum, there still exist a handful of counties in which all disciplines share not only the same frequency band but the same operational channels as well.

North Carolina began to address the lack of interoperable communications in 2003 when the Secretary of Crime Control and Public Safety (CCPS) directed the State Highway Patrol as a technical resource to implement a statewide solution. Working groups were formed to assess the need, define the problem and develop solutions. Meetings were held to seek input and promote involvement from state, local and tribal emergency responders. Additional county level meetings were held at the request of local governments to discuss not only the VIPER project and its deployment but also local needs and interoperability between the local legacy systems and the VIPER network. From that effort the **V**oice **I**nteroperability **P**lan for **E**mergency **R**esponders (VIPER) Network was initiated.

This project includes two distinct components:

1. A *Strategic* component that consists of a statewide 800 MHz voice communications system. This allows responders from all disciplines to work together across a common radio network utilizing common infrastructure designed and strategically located to provide adequate propagation on handheld devices regardless of geography or topology. This component is currently in its third of a five-phase build out schedule.

2. A *Tactical* component made up of two parts, allows interoperability between disparate and legacy radio systems including systems within VHF, UHF and 800 MHz radio bands. The first part consists of 18 fixed site gateways that are administered at State Highway Patrol (SHP) Communications Centers. Each of these gateways is equipped with local radio frequencies allowing interoperability patches when needed and as requested by the appropriate emergency response agency. The second part currently consists of three (3) self-contained, deployable trailers outfitted with gateway devices, radios and a telescoping tower to augment or replace existing communications when systems fail or in special event applications. Current plans call for increasing deployable assets pre-

positioned in 7 regions throughout the State to coincide with NC's adoption of 7 Domestic Preparedness and Response (DPR) Regions. Currently North Carolina has 5 mobile towers strategically placed throughout the state with the acquisition of the 2 additional mobile towers under PSIC, the state with have one mobile tower per DPR Region (See appendix H).

With the current infrastructure deployment through the second half of phase two, the state still requires additional infrastructure in 7 of the 78 counties currently funded for VIPER deployment and a further 22 counties in which VIPER has yet to be deployed. North Carolina has in place a strategic deployment plan for both its tactical and strategic VIPER initiatives. The areas where infrastructure is still not in place represents a significant gap in interoperability outside a localized area.

Prior to the interoperability effort, the State did not have a communication interoperability plan that addressed both the State's VIPER initiative and the legacy systems that exist at the federal, state and local levels. In addition, the state now has a governance structure that includes representation from all levels of federal, tribal, state and local government. This plan is intended to set up a governance structure, and develop and maintain a strategic initiative.

The state created the interoperability subcommittee from within the State Emergency Response Commission (SERC), the membership of which addresses the suggested representatives. This group is tasked with the creation of the statewide communications interoperability plan as well as providing oversight and guidance as North Carolina moves forward with interoperability improvements.

North Carolina's Statewide Communications Interoperability Plan (SCIP) is the result of a collaborative effort to synchronize the strategic planning of local, tribal, state and federal government emergency response agencies. This plan provides all stakeholders with improved communications systems, improved first responder safety and support to their communities. Non-governmental emergency response organizations are included in the stakeholder community.

The SCIP sustains the interoperable communications planning momentum of the State of North Carolina, started in 2003 and now vested in the State Interoperability Executive Committee (SIEC). The SIEC continues this strategic planning effort and establishes a venue for local and regional participation in the statewide planning process. This plan also provides stakeholders with current information on the statewide strategic direction for interoperable communications and provides a common point of reference.

It is the intent of the statewide strategic planning effort to provide an ongoing opportunity for all federal, state, local, tribal, and non-governmental emergency response agencies to share their communications needs, discuss mutual aid solutions, share successful implementations and collaborate across all levels.

Additionally, the Department of Homeland Security Grant Program requires all states and territories to produce a SCIP in order to be eligible for future funding.

North Carolina's SCIP executes the responsibilities of the State Interoperability Executive Committee (SIEC).

The SIEC provides the charter, leadership and authority to sustain the state's strategic planning momentum. Through a comprehensive outreach program and local participation, the SIEC ensures the North Carolina SCIP strategic planning process incorporates past interoperability successes and shares that knowledge across the state's jurisdictions.

It is also the intent of the statewide strategic planning effort to provide an opportunity for federal, state, local, tribal, and non-governmental emergency response agencies to share in the benefits of the state's voice interoperability network (VIPER).

Collaboration and combined effort are the keys to development and deployment of future emergency response networks that are necessary to protect the state's first responders and their communities.

The stakeholders of this plan are the state's emergency response providers that share the responsibility for ensuring statewide public safety. The State Emergency Response Commission makes up the formal governance structure of these stakeholders (Table 2-3).

2 Background

The State of North Carolina, through the SERC, has identified the lack of interoperable communications as the number one unmet need facing emergency responders today. Across North Carolina continued instances where emergency responders are unable to communicate exist. North Carolina has begun to address the lack of interoperable communications through the development of the Voice Interoperable Plan for Emergency Responders (VIPER).

The North Carolina State Highway Patrol serves as the management agency for VIPER, which is a multi-phase, statewide interoperable communications system designed to serve the entire State's emergency response community, regardless of discipline. This project consists of two distinct components, a strategic component that consists of implementing an 800 MHz voice trunking network and a tactical component which consists of a network of interoperable communication gateways that are connected via a statewide digital microwave network. The tactical solution also encompasses mobile towers and caches of deployable equipment to augment or replace communications systems.

To date the VIPER project has been financed through a combination of federal, state and local funding sources including Congressional appropriations, Department of Homeland Security (DHS) grant programs and State Legislative appropriated funds. Funds designated by DHS for local government have been applied to VIPER at the request of the local units of government and were committed towards the construction of the statewide infrastructure initiative. Agencies that have chosen to adopt the VIPER network as their primary or interoperable communications solution have directed local funding programs to provide subscriber radio devices. The State does not however charge subscriber usage fees to any agency. In addition, local governments have provided in-kind contributions to the success of the VIPER project in the form of land for towers, current tower inventories and in some cases have entered into lease agreements on VIPER's behalf with funds from local budgets.

Each phase of the VIPER project is treated as a separate initiative because of funding limitations and shortcomings. In order to better coordinate interoperable communications projects, the State Interoperability Executive Committee (SIEC) has been established.

The SIEC is a direct subcommittee of North Carolina's State Emergency Response Commission (SERC) which is directly responsible for providing guidance to all state and local agencies in areas such as anti-terrorism, disaster planning and mitigation and emergency response. The SERC recognizes the SIEC as advisors on interoperable communication matters and has designated this entity as the point of contact and leadership for all interoperable communication projects as they relate to funding made available to the State Administrative Agent (SAA), Mr. Bryan E. Beatty, Secretary of the Department of Crime Control and Public Safety. The SIEC has also been delegated

responsibility for the development of the Statewide Interoperable Communications Plan (SCIP). The Governance structure is outlined in detail under Section 4.1 of this document.

The SCIP is a collaborative effort involving the SIEC and other interested parties to participate in its formulation. The first organizational meeting to discuss SCIP requirements and development was held in July 2007 with subject matter experts from the original NGA planning conference and ICTAP staff. During this meeting ICTAP explained SCIP requirements and offered assistance in reviewing the plan.

On August 20-21, 2007, a kick-off meeting between the SIEC and ICTAP staff was held in Raleigh, NC. Based on this two-day meeting and initial development of the SCIP, ICTAP reviewed the draft plan. ICTAP completed its review in September 2007, and its feedback has been incorporated into the plan.

As part of the SCIP review process a draft was sent to the U.S. Department of Homeland Security (DHS) on September 28, 2007, for review. The SIEC received feedback in October 2007 and those suggestions and recommendations have been implemented into this final document. Table 2-1 below identifies the project timeline for the SCIP.

Table 2-1 SCIP Development Timeline

Project Timeline			
1.	1995	NC identifes need for statewide voice & data system for emergency responders	
2.	1997	CJIN construction of Mobile Data Network (MDN) commences	
3.	2002	CJIN Voice Trunking Network (VTN) revalidated by the Gartner Group	
4.	2003	CJIN/CCPS voice trunking planning commences and the VIPER concept is born	
5.	2004	VIPER plan presented to legislature and project construction commences	
6.	2004 - 2007	SERC adopts DHS grant guidelines for interoperable communications projects	
7.	August 17, 2007	Meeting with SERC and Project Team	Project Intiation
8.	August 20 & 21, 2007	Meeting of SIEC and Project Team	Information Needed
9.	September 12, 2007	Meeting of the Project Team	First SCIP Draft Completed
10.	October 5 & 8, 2007	Meeting of the Project Team	Second SCIP Draft Completed
11.	October 9 & 10, 2007	Meeting of SIEC and Project Team	Review of SCIP
12.	October 19, 2007	Meeting of SERC	Review of SCIP
13.	November 14 & 15, 2007	Meeting of SIEC and Project Team	Final Review of SCIP
14.	November 19, 2007	Meeting of the Project Team	SCIP Project Completion
15.	December 3, 2007	Submittal Date per DHS and NTIA	SCIP Submitted via Secure Web Portal

2.1 State Overview

2.1.1 Geographical

North Carolina lies between 33 1/2° and 37° north latitude and between 75° and 84 1/2° west longitude. The extreme length from east to west is 503 miles: greater than any other state east of the Mississippi and its extreme breadth from north to south is 187 miles. The total area of the State is 52,712 square miles, of which 49,142 square miles are land and 3,570 square miles are water. These 52,712 square miles, from the

mountains to the coast, are broken up into 100 counties and 1 Native-American Tribal reservation. (SEE APPENDIX A for complete demographic chart)

North Carolina's geographical location makes it vulnerable to not only man-made but natural disasters. According to statistics from the National Oceanic and Atmospheric Administration (NOAA), North Carolina has been significantly impacted by more weather related events in the last twenty years than any other state. At one time, three of the top ten disasters nationwide -- as classified in terms of the Federal Emergency Management Agency's (FEMA) disaster assistance payouts -- were three hurricanes which struck North Carolina -- hurricanes Hugo, Fran and Floyd. Over the years, North Carolina has experienced several devastating hurricanes that have had a major impact on its citizens.

There are three principal physiographic divisions in North Carolina. From east to west, they are the Coastal Plain, the Piedmont, and the Mountains. The land and water areas of the Coastal Plain comprise nearly half the area of the State. It may be divided roughly into two sections: the tidewater area, which is in large part flat and swampy, and the interior portion, which is gently sloping and, for the most part, naturally well drained. Over the Piedmont, however, there is a great deal of hard rock near the surface. This area, comprising about one-third of the State, rises gently from about 200 feet at the fall line to near 1,500 feet at the base of the Mountains. Although most of the Piedmont is gently rolling, there are several ranges of rather steep hills within its area, mainly in the Uwharrie Range around Randolph County, and the Kings Mountain Range in Cleveland and Gaston Counties. The western region of North Carolina is the smallest of the three, comprising a little more than one-fifth of the total area of the State. Its range of elevation, however, is by far the greatest; it stretches upward from around 1,500 feet along the eastern boundary to 6,684 feet at the summit of Mount Mitchell. Some of the valleys drop to 1,000 feet above sea level while 125 peaks exceed 5,000 feet, 43 of them towering above 6,000 feet. The surface of the mountainous region is rocky and the soils are mainly weathered and eroded materials.

Within the western region is The Eastern Band of Cherokees Reservation just south of the Great Smoky Mountains National Park. The main part of the reservation lies in eastern Swain County and northern Jackson County, but there are smaller, non-contiguous sections to the southwest that exist in Cherokee and Graham counties.

2.1.2 Economics

North Carolina has within its boundaries several corporate offices for financial institutions which has brought recognition to the state as a major financial center, second only to New York. In addition, North Carolina is home to fourteen (14) Fortune 500 companies and 25 Fortune 1000 companies.

North Carolina has been named "The State with the Top Business Climate" five of the past six years by *Site Selection* magazine, a leading trade publication. The magazine mentioned the state's support for new and expanding businesses in terms of worker

training, available incentives, university and intellectual resources, and responsiveness of government.

In July 2007, Forbes magazine named North Carolina as the third best state for business in the U.S. This is the second year in a row the state has won that ranking from Forbes. And in that same week, CNBC ranked North Carolina fifth in its list of Best American Cities for Business.

The state's most populous city, Charlotte, is the nation's second-largest banking center, behind only New York City, with $1.7 trillion in assets. The number one and number four financial institutions in the United States--Bank of America and Wachovia, respectfully—are headquartered in Charlotte.

The Research Triangle Park (RTP) is a 7,000 acre development that is currently home to 157 companies employing over 39,000 full-time high-tech workers and an estimated 10,000 contract employees. Located at the core of the Raleigh-Cary and Durham metropolitan area, the Park is a globally prominent high-tech research and development center that serves as an economic driver for the region. RTP is home to a broad spectrum of companies -- from Fortune 100 multinational research and development operations, to university spin-outs and start-operations. In addition, a number of U.S. Federal agencies have a presence in the Park.

Tourism has grown into one of the state's largest industries. Annually, over 45 million people visit North Carolina and generate more than $15.4 billion. Tourism directly employs over 187,000 North Carolinians with a payroll of almost $4 billion. The majority of overnight tourists who visit NC are here on leisure travel to enjoy the state's scenic beauty, cultural opportunities and cuisine. NC ranked among the top 5 states for wine and culinary tourism this year.

Three professional level sports teams as well as several entertainment arenas provide for the assembly of large numbers of people that could be exposed to natural disasters and terrorist events.

Several large chemical manufacture/storage facilities, fuel transfer and storage facilities and military bases add to the potential for catastrophic harm to the public and damage to the infrastructure and economy of the Nation.

2.1.3 Transportation

The North Carolina Highway System consists of a vast network of Interstate highways, U.S. routes, and state routes, managed by the North Carolina Department of Transportation (NCDOT). North Carolina has the second largest state maintained highway system in the United States.

An extensive transportation arrangement of interstates, rail, air and sea ports provides for a large amount of domestic and foreign travel. North Carolina has a 78,000 mile

highway network plus numerous rail and ferry terminals across the State. The State has three (3) major airports scheduling international flights daily and several other airports that are serviced by many different domestic carriers.

NCDOT's purpose is to provide the citizens of North Carolina with a safe, reliable transportation network and to do so in a responsive, cost-effective manner. NCDOT is one of the largest and most complex state Departments of Transportation. It manages more lane-miles than any state other than Texas and oversees a complex and growing transportation network that includes roads, ferries, rail, aviation, public transport, bike paths, and pedestrian walkways.

An extensive transportation system of interstates, rail, air and sea ports provides for a large amount of domestic and foreign travel. North Carolina has a 79,009 mile highway network that includes 17,848 structures plus numerous rail and ferry terminals across the State. The State has three (3) major airports with international flights, nine (9) with scheduled passenger service and sixty seven (67) other general service airports.

NCDOT operates 3 major Transportation Management Centers (TMC) in Raleigh, Greensboro and Charlotte. The TMC manages traffic congestion and incidents through the use of a robust intelligent traveler information system. This system includes dynamic 511 and traveler information sites, message signs, speed detection, traffic cameras, media coordination, motorists' assistance patrol dispatch and multi-agency coordinated response to everything from reoccurring traffic congestion to major disasters. In addition to the TMCs across the state, the NCDOT patrols over 500 miles of freeway in the most heavily congested and highest populated areas of the state. These Incident Management Assistance Patrols (IMAP) make over 50,000 stops a year, clearing travel lanes of debris, wrecks and disabled vehicles and providing traffic control and assistance to disabled motorists.

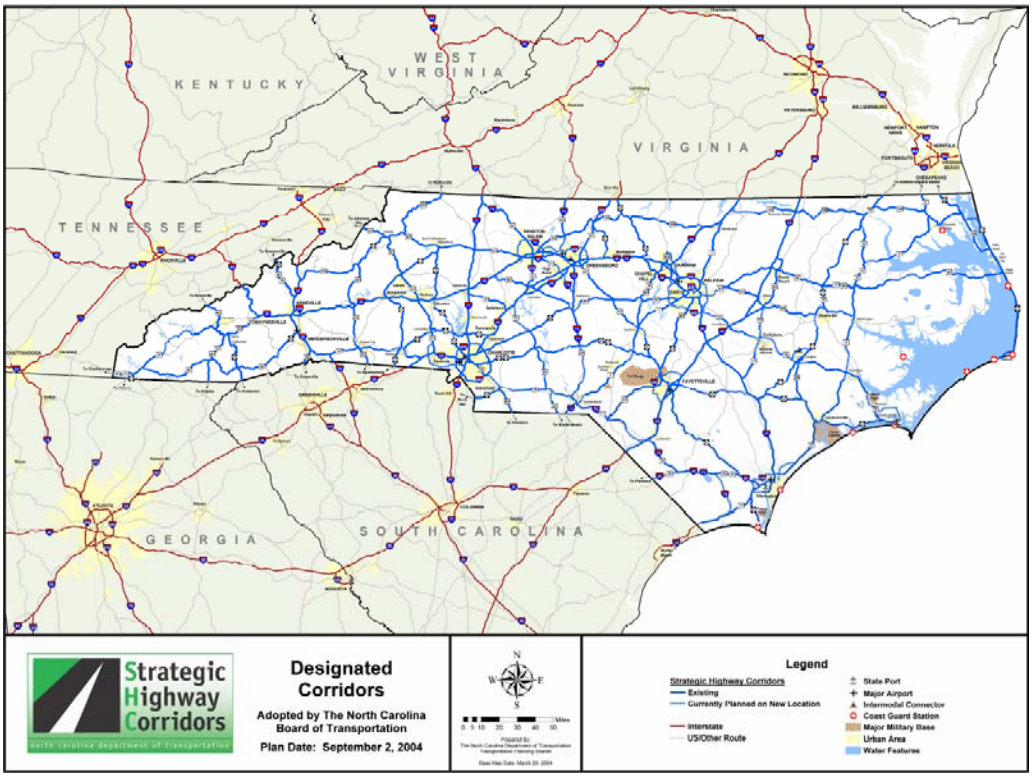


Figure 2-1 NC DOT Strategic Highway Corridors

2.1.4 Ferry Routes

Today, the NCDOT's Ferry Division extends over seven routes, has 24 ferries and employs over 400 workers. The operations are supported by a full service shipyard, dredge, military-style landing craft utility vehicles (LCU's), tugs, barges, and other support vessels.

Each year, North Carolina ferries transport over 1.1 million vehicles and more than 2.5 million passengers across five separate bodies of water - the Currituck and Pamlico sounds and the Cape Fear, Neuse and Pamlico rivers.

Ferries also carry essential goods to water-locked communities. Many residents depend on the ferries for transportation to school, work, and other needed services.

Figure 2-2 NC Ferry Routes

2.1.5 NC Airport Locations

North Carolina has 74 publicly-owned airports and nearly 300 privately-owned airports. Nine airports have regularly scheduled airline service; four are international. There are more than 7,000 registered aircraft based in the state and 15,000 licensed pilots. More than 35 million passengers fly to and from North Carolina each year and more than 800 million pounds of air freight originate annually in the state.

An Economic Impact Study, which was undertaken in 2006 and published in 2007, found that economic impacts of aviation total over $11.8 billion annually in the state. This number is up considerably over the results of the last study, published in 1996, which totaled $9.1 billion annually. Commercial Aviation grew by a little over a billion dollars annually, which amounted to an 11% growth. General Aviation grew by $1.7 billion dollars, or *over 944%*. It is evident that general aviation and business aviation are helping economies supported by general aviation airports across the state, not just at commercial service airports, and that trend continues to grow.

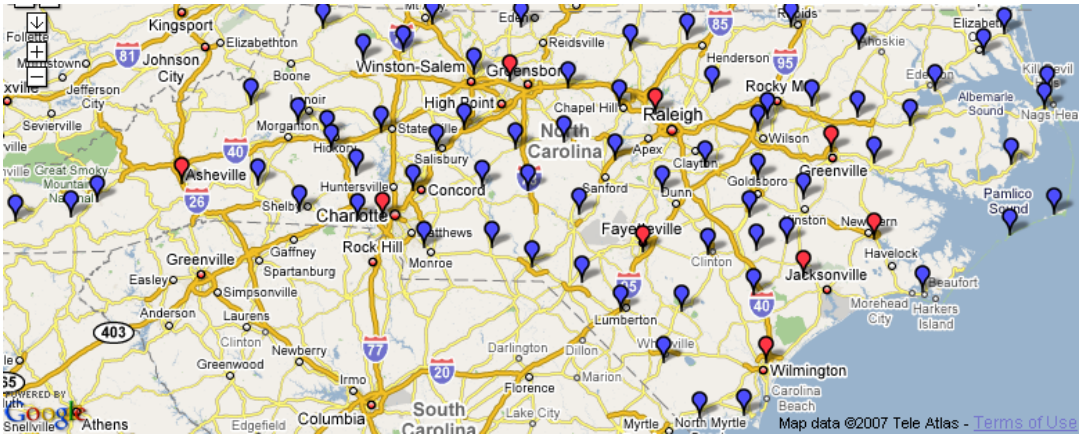


Figure 2-3 NC Airport Locations

2.1.6 NC Ports

With the volume of international trade expected to double by 2020, forward-looking businesses and industries can get ahead of the curve by taking advantage of the services offered by the North Carolina State Ports Authority. North Carolina's Ports of Wilmington and Morehead City, plus inland terminals in Charlotte and in the Piedmont Triad at Greensboro are able to serve as alternatives to ports in neighboring states for competitive access to the global markets. Owned and operated by the Ports Authority, North Carolina's port system combines modern facilities and abundant capacity with the commitment to excel in service to our customers.

- The Ports' central Eastern seaboard location is closest to the center of the southeast US market -- the fastest growing region in the country.
- The Ports Authority, along with the N.C. Department of Commerce, is actively recruiting retail distribution centers to the state.
- Excellent sites are available for distribution center placement, as well as a labor pool well suited to fill materials handling positions.
- The North Carolina community college system has developed a course of study specifically for retail distribution center training.
- Current and planned improvements in the regional transportation network provide a new platform for distribution when combined with upgraded capabilities at the Port of Wilmington to handle large quantities of imported goods.
- A unique NC Ports tax credit is also available to port users.

Improved Cost-effectiveness

- ✧ Competitive Pricing
- ✧ Lower cost per ship move than larger ports

- Reduced inland transportation costs through inland terminals at Charlotte and Greensboro.
- Flexible contracts to meet customer needs and requirements.

Sales Support Services

- Active marketing assistance provided by field sales personnel
- Customized market studies
- Best balance of port costs and nearness to market
- Foreign trade zone which can lower, defer or avoid import duties and accommodate special purpose sub-zones

Strategic Location

- One of the top manufacturing and distribution states in the U.S.
- Within 700 miles of more than 150 million American and Canadian consumers and 70 percent of the U.S. industrial base
- Within 190 miles of over 4.5 million tons of import/export, container and breakbulk cargo annually
- Closest to the center of the Southeastern U.S. market--one of the fastest growing markets in the nation
- Middle of North and South Atlantic shipping lanes
- Service on all major international trade lanes

North Carolina's Ports in Morehead City and Wilmington directly and indirectly support 85,000 jobs, which contribute $299 million annually in state and local tax revenues based on the Ports' fiscal 2005 cargo volumes.

Only 5,000 of those jobs are at the Ports, or otherwise directly related to maritime activity - including some 300 employees of the Ports Authority, members of the International Longshoremen's Association, trucking companies, ship's handlers, fuel companies and so forth. Another 6,500 jobs are created by the purchasing power of those direct jobs.

The other 70,000-plus jobs are the real reason the ports are such a key part of the State's economy. These jobs exist from the coastal plains to the mountains, in big manufacturing factories and in Mom-and-Pop startups. What they all have in common is that in order to exist, they need the momentum provided by the economic engine that is the State Ports Authority. They need access to the global markets where their products are sold and where their resources are found. The map below provides an overview of the economic impact of North Carolina's Ports by economic development regions, with both the Ports-related jobs and the annual tax revenue from Ports-related business indicated.

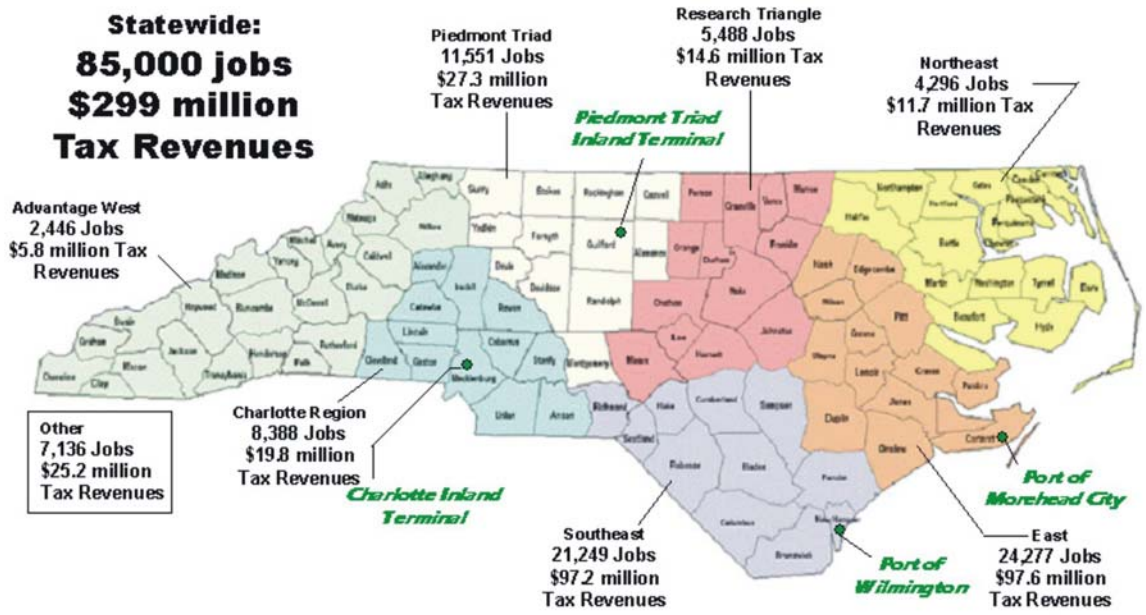


Figure 2-4 Economic Impact of NC Ports

2.1.7 Military Base Infrastructure

According to Governor Mike Easley, North Carolina is the "Most military friendly state in the nation". Fort Bragg Military Installation is the largest and most comprehensive military base in the United States and is the headquarters of the XVIII Airborne Corps, 82nd Airborne Division, and the U.S. Army Special Operations Command. Serving as the air wing for Fort Bragg is Pope Air Force Base, also located near Fayetteville, NC.

Marine Corps Base Camp Lejeune which, when combined with the nearby bases of Marine Corps Air Station (MCAS) Cherry Point, MCAS New River, Camp Geiger, Camp Johnson, Stone Bay and Courthouse Bay, makes up the largest concentration of Marines and sailors in the world. MCAS Cherry Point in Cherry Point, NC, is home of the MC Harrier, USN F/A-18 Hornet, and USN F/A-18E/F Super Hornet squadrons.

Seymour Johnson Air Force Base is located in Goldsboro, NC. Housed at this base is the Special Mission Training Center.

One of the largest concentrations of United States Coast Guard personnel and equipment is at Coast Guard Air Station Elizabeth City. Other Coast Guard stations include, CG Station Hobuken, CG Station Oregon Inlet, CG Station Emerald Isle, CG Station Hatteras, CG Station Oak Island, CG Station Wrightsville Beach, and CG Station Ocracoke. Also there is the CG Base Fort Macon located at Atlantic Beach. There is a Marine Safety Unit located in Wilmington.

2.1.8 Major Events

North Carolina is the site of many large events that attract thousands of people at a time, coming from places within and outside of the state. One example is the North Carolina Azalea Festival. Its location rotates each year, but it attracts as many as 300,000 people.

Sporting events play a major role in the lives of the people of North Carolina. North Carolina is home of the Charlotte Motor Speedway. Charlotte Motor Speedway has a capacity for over one hundred thousand spectators and is frequently used for events other than NASCAR races. With over 90% of NASCAR teams headquartered within 50 miles of each other, the Charlotte area is considered the heart of NASCAR.

North Carolina plays host to a number of amateur and professional golf tournaments each year. Most recently, the 2005 U.S. Men's Open Championship was played at the Pinehurst Resort in Moore County, North Carolina. The same resort has been selected to host the tournament in 2014. The U.S. Women's Open Championship has been played in North Carolina three times since 1996. The Greater Greensboro Open (GGO) in Guilford County is another frequent stop on the NGA tour.

The largest music festival in the southeast is held each year in downtown Asheville. The three-day event known as Belle Chere draws more than 350,000 spectators and participants, with events sprawling throughout the city.

The culture of the Scottish population is celebrated each year with the Highland Games festivals throughout the State of North Carolina. The Grandfather Mountain Highland Games is one of the biggest, and most well-attended, Highland Games in the country.

The North Carolina State Fair property is a two hundred acre complex located in Raleigh. The facilities on the property are utilized throughout the year by local, state and federal agencies. In 2006, the property was the site of over 500 non-fair events ranging from horse shows to an international festival. The grounds house ten (10) permanent buildings that are used to hold these events. It is estimated that over 2.8 million people visited the State Fair grounds during 2006. Annually, the grounds are used to host the N.C. State Fair with an attendance that can exceed 650,000 people over the 10 day period.

2.2 NIMS/Multi-Agency Coordination System (MACS)

The State of North Carolina incorporates concepts and principles of the National Incident Management System (NIMS) Chapter II, Command and Management, including Incident Command System (ICS) characteristics through use of a Multi-Agency Coordination System (MACS). The MACS provides the architecture to support coordination for incident prioritization, resource allocation, communications systems integration and information coordination.

By Executive Order of the Governor of the State of North Carolina, "Local comprehensive emergency management plans must specify the use of the incident command system for multi-agency/multi-jurisdictional operations."

That same Executive Order further defines an ICS as:

> An all-hazards, on-scene functional management system that establishes common standards in organization, terminology, and procedures; provides a means (unified command) for the establishment of a common set of incident objectives and strategies during multiagency/multijurisdiction operations while maintaining individual agency/jurisdiction authority, responsibility, and accountability; and is a component of the National Interagency Incident Management System (NIMS).

The elements of the North Carolina MACS include facilities, equipment, personnel, procedures and communications. Two of the most commonly used elements are Emergency Operations Centers (EOC) and MAC Groups. These systems facilitate the coordination of resources during response to an event or incident.

A MACS may incorporate the use of several local (city and/or county) EOC's, the state EOC and several Department EOC's. It includes the incident command site and dispatch centers. It may also include unified command sites and area command sites as required.

The State of North Carolina, in conjunction with local jurisdictions, developed and currently employs Emergency Operations Plans (EOP) and Standard Operating Procedures (SOPs) throughout all of the State's 101 jurisdictions. These plans and procedures are used by the EOC coordinators, managers and supervisors to respond to incidents. The EOPs address which agency or organization is responsible for certain areas of the response while the SOPs provide procedural guidance on how facilities should operate. This includes the use of the ICS command and management characteristics that are required to coordinate and support emergency incident and event management.

North Carolina EOP's utilize ICS characteristics as follows:

- Common terminology: Responders speak the same language, refrain from using acronyms or 10 codes and use the same titles for resources.
- Modular organization: Use of the ICS organizational structure; Command, Operations, Plans, Logistics, Finance, then branches, divisions, etc, adding or subtracting functions as needed.
- Management by objectives: Identify overarching objectives to accomplish during established operational periods.
- Incident action planning: Use of incident action planning concepts, develop and distribute a written Incident Action Plan to all personnel for all multi-operational period events.

- Manageable span of control: Limit the number of employees per supervisor to between 3 and 7.
- Pre-designated incident facilities: Use of fixed EOC and other facilities; pre-identified storage sites and points of resource distribution; identification of alternate sites.
- Comprehensive resource management: Inventory of and types of resources, developing a resource inventory management system. This characteristic is under development.
- Integrated communications: Established the capability to share voice and data information with other jurisdictions and levels of government with Voice Interoperability Plan for Emergency Responders (VIPER), NAWAS, WebEOC, internet, email and satellite systems.
- Transfer of command: Conduct appropriate briefings between operational periods and officially transfer command between old/new crews.
- Unified command: Establish to manage incidents where the preservation of unique command requirements for specific agencies is essential. Common objectives and goals are developed and incorporated into a single Incident Action Plan through a single Operations Section.
- Personnel and resource accountability: Develop staffing patterns, assignment charts and track resources.

The state of North Carolina incorporates the concepts and principles of NIMS Chapter II, Command and Management, including ICS characteristics through use of a Multi-Agency Coordination System (MACS) at all levels of government.

2.3 Regions/Jurisdictions

Stretching from the Outer Banks on the coast, to the Research Triangle Park in the piedmont, to the Appalachian Mountains in the west, North Carolina is comprised of 101 vibrant jurisdictions (100 counties and 1 Tribal entity - the Eastern Band of the Cherokee Indians) each unique and vital to the success of the state in all accounts. The needs and availability of resources in each jurisdiction are just as diverse as the state's geography, which is one reason why regional collaboration is such an important concept that has been embraced by North Carolina.

Regionalization is the benchmark for the future. It is the right thing to do to ensure that emergency capabilities are made available to local agencies within the State of North Carolina. Lessons learned from 9/11 and Hurricane Katrina has pushed NC to establish homeland security planning regions, known as Domestic Preparedness and Readiness Regions (DPRR). The DPR Regional concept organizes North Carolina jurisdictions into homeland security planning regions and provides a structure for identifying capabilities that will support the State Homeland Security Strategy (SHSS), Target Capabilities List (TCL) and National Goal and Priorities. By design, regionalization will ensure capabilities are developed in an efficient and effective manner in which all agencies have access to emergency response capabilities.

North Carolina has established six (6) DPR Regions in addition to its Urban Area Security Initiative (UASI) Urban Area Working Group (UAWG). These regions also have similar population numbers and each contain one major metropolitan urban area. (Figure 2-5)

Each DPR Region serves as a multi-jurisdictional and multi-disciplinary working group consisting of representatives from the response disciplines located within the region. The DPR Region working group include representation from the following core emergency response disciplines: Public Health; Municipal Police; Sheriff's Departments; Municipal Fire Departments; Rural Fire Departments; Hospitals; Emergency Management; Rescue; Public Works; and Emergency Medical Services. In addition, the core disciplines may receive support and subject matter expertise from the following disciplines: Division of Social Services; Agriculture Extension Agent; Mental Health; Nongovernmental Organizations (NGOs); Interoperable Communications; and Education. In addition, each DPR Region has been directed to appoint one of its members as the principal point of contact for NGOs in the region from both human services and utilities.

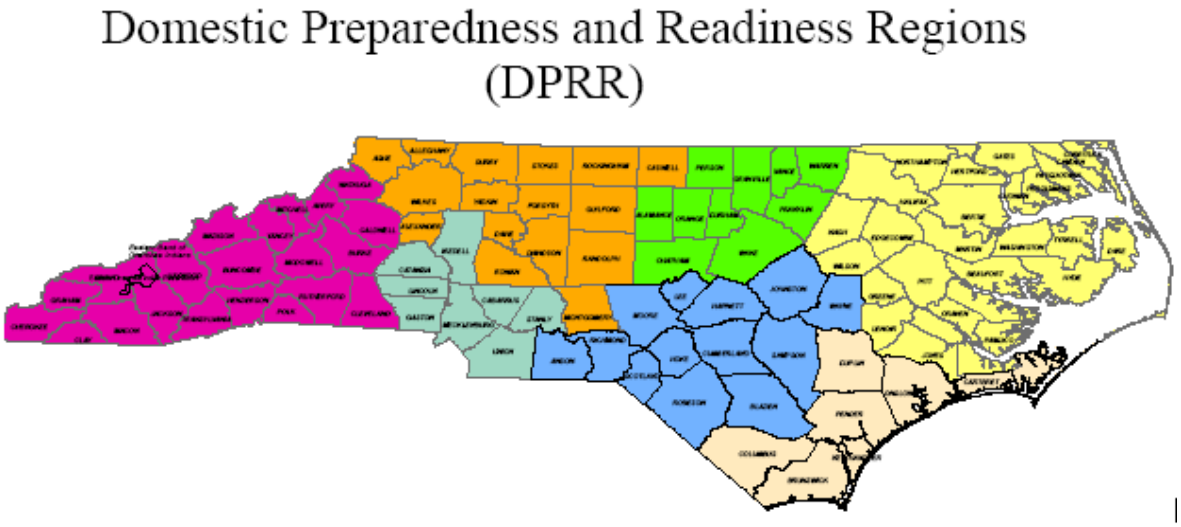


Figure 2-5 Domestic Preparedness and Readiness Regions (DPRR)

Through joint planning efforts made by DPR Region members, the regions determine what capabilities are needed to prepare and respond to all hazards. In addition, regions will decide how and where capabilities should be built and maintained. This will be accomplished through the DPR Region subcommittees for each working groups identified above to assess capability levels and identify gaps. This concept affords the ability for each discipline within the region to have a voice in interoperable communications planning and operations. In doing so, they will update strategies and plans to fulfill their mission of developing and expanding regional prevention, preparedness, response, and recovery capabilities for all hazards, both man-made and natural.

2.4 UASI Areas/TIC Plans

A Tactical Interoperable Communications Plan (TICP) has been created for the Charlotte UASI area and Anson County, North Carolina. This eleven-county group is hereinafter referred to collectively as the Piedmont Area Communications Consortium (PACC). The PACC includes Charlotte/Mecklenburg and the following ten counties:

- Anson County, NC
- Cabarrus County, NC
- Catawba County, NC
- Gaston County, NC
- Iredell County, NC
- Lancaster County, SC
- Lincoln County, NC
- Stanly County, NC
- Union County, NC
- York County, SC

This UASI TICP is intended to apply to the PACC-area as defined above. Specifically, the Plan is intended to be used by emergency response agencies during day-to-day and regional or mutual aid response situations. These emergency response disciplines include:

- Law Enforcement
- Fire Service
- Emergency Medical Services
- HAZMAT
- Public Safety Communications
- Emergency Management/Homeland Security
- Public Works
- Public Health
- Transportation
- Urban Search and Rescue
- Government Administration
- Health Care
- Military

The Charlotte UASI TIC Plan was completed in 2005. On September 7, 2006, a full-scale validation exercise was held in Charlotte. The results of the Charlotte UASI TIC Plan were documented in an after-action report. Members from ICTAP and DHS were on-site to evaluate and validate the Charlotte UASI TIC Plan. Authorized persons may review the Charlotte UASI TICP by contacting the POC as indicated in Table 2-2. The Charlotte TICP is incorporated in the SCIP. To further demonstrate partnerships between state and local level emergency responders, the statewide interoperability plan will connect the VIPER Network to the Charlotte/Mecklenburg system. This interconnection will enhance the State's ability to integrate with the Charlotte UASI

TICP and enables immediate interoperability between compatible communications systems.

Table 2-2 UASI Areas/TIC Plans

UASI Area	Regions Jurisdictions	TICP Exercise Date	POC Name	POC Email
Charlotte, NC	SEE APPENDIX A	9/7/2006	Jeff Dulin	jdulin@ci.charlotte.nc.us

There are also twelve (12) designated Metropolitan Statistical Areas (MSA's) within the state:

- Asheville
- Charlotte/Gastonia/Rock Hill (South Central NC Portion)
- Fayetteville
- Goldsboro
- Greensboro/Winston Salem/High Point
- Greenville
- Hickory/Morganton/Lenoir
- Jacksonville
- Norfolk/Virginia Beach/Newport News (Northeast NC Portion)
- Raleigh/Durham/Chapel Hill
- Rocky Mount
- Wilmington

2.5 Participating Agencies and Points of Contact (SERC)

The creation of Statewide Communications Interoperability Plan was initiated by the members of the State Emergency Response Commission (SERC), through the formation of the State Interoperability Executive Committee (SIEC). The SIEC is a formal subcommittee of the SERC and is representative of all state and local emergency response agencies as well as certain private agencies such as utilities which are vital to response and planning in North Carolina. This subcommittee (SIEC) is responsible for the development, implementation and on-going maintenance of the Statewide Communications Interoperable Plan (SCIP).

Each committee representative provides input as it relates to the interoperability needs of their respective response disciplines. Their input is important to ensure that all aspects for interoperability were considered in the planning process. As such, each SIEC member is responsible to contact their constituents for input.

Additional focus groups and strategic planning sessions may become an integral part of the overall planning process. The SIEC also has five members who serve as subject matter experts (SME) as it relates to interoperable communications.

Table 2-3 State Emergency Response Commission (SERC)

Agency Name	Agency POC	POC Title	POC Telephone
Crime Control & Public Safety	Bryan E. Beatty	Chairman	(919) 733-2126
DENR	Kenneth Taylor	Commissioner	(919) 715-8016
Department of Agriculture	Sharon Stewart	Commissioner	(919) 807-4307
Department of Labor	Susan Haritos	Commissioner	(919) 807-2879
Department of Transportation	Bob Andrews	Commissioner	(919) 250-4200 Ext. 241
Emergency Management	H. Douglas Hoell	Vice-Chairman	(919) 733-3825
Emergency Mgmt Assoc	Roger Dail	Commissioner	(252) 526-6666
Fire Chiefs Association	Bryant Woodall	Commissioner	(919) 831-6501
Metro Coalition	Johnny W. Teeters	Commissioner	(336) 373-2297
NC Assoc Police Chiefs	Frank Palombo	Commissioner	(252) 672-4190
NC Community Colleges	Scott Bullard	Commissioner	(919) 807-7228
NC EMS Administrators	Tommy Cook, Jr	Commissioner	(910) 944-3172
NC Sheriffs' Association	B. J. Barnes	Commissioner	(336) 641-3272
NC State Highway Patrol	Walter J. Wilson, Jr.	Commissioner	(919) 733-7952
Office EMS	Drexdal Pratt	Commissioner	(919) 855-3950
Office State Fire Marshal	Larry Hughes	Commissioner	(919) 661-5880
Public Health	Leah Devlin	Commissioner	(919) 707-5001
State Bureau of Investigation	Robin Pendergraft	Commissioner	(919) 662-4500

2.6 Statewide Plan Point of Contact

The state of North Carolina has designated Captain Alan Melvin as its point of contact. Captain Melvin is the interim coordinator for the State Communications Interoperability Plan. The State is in the planning process of establishing the full time position of Interoperability Coordinator. It is expected the Interoperability Coordinator position will be placed within North Carolina's Department of Crime Control and Public Safety and will be filled when funding becomes available. The current POC's contact information is:

Captain Alan Melvin
North Carolina State Highway Patrol
Technical Services Unit
State Interoperability Executive Committee (SIEC) Ex-officio
3318 Garner Road Building #2
Raleigh, NC 27610
919.662.4440
amelvin@ncshp.org

2.7 Scope and Timeframe

The scope of the SCIP is to provide a template for interoperable communications for state, local and federal resources to ensure compatibility; to develop communication solutions/coordination; and a coordination framework. Provide guidance for all interoperability.

The critical components of the statewide plan will focus on technology, governance, SOPs, training and exercises, common frequencies, and nomenclature.

No interoperable issues are out of scope for this plan. This plan does not deal with specific equipment recommendations or the day-to-day operations between responding agencies. Currently, North Carolina is working with other states (South Carolina to include future coordination with other neighboring states is forthcoming). Interstate communications are addressed in Charlotte TICP. This plan does not include a detailed operational plan. The SIEC, acting as the oversight governance, will assist in the development and implementation of Tactical Interoperable Communication Plans based on the seven (7) DPR Regions within North Carolina.

North Carolina recognizes that the SCIP is a work in progress and will change as improvements to interoperable communications or new technologies are implemented. Ultimately, available funding will shape the scope of work more than available resources or the desire of agencies to improve the current capabilities. The State Emergency Response Commission (SERC) identified improvements to interoperable communications as the number one priority facing the state today and has directed a significant portion of the Department of Homeland Security (DHS) funds allocated to the state towards the VIPER project.

The statewide plan's implementation schedule will be discussed in depth in Section 6.0 of this document. Contained in the implementation plan are a series of strategic initiatives that are designed around a comprehensive statewide voice and data interoperable communications system. Included in the State's initiatives are: completing a statewide "backbone" infrastructure and giving all emergency responders access to NPSPAC repeaters. As a part of the PSIC grant, a strategic technology reserve (STR) will be added to augment existing STRs present in the state.

North Carolina considers 3-5 years a reasonable time period in which the state can accomplish the strategic initiatives identified in the statewide plan. The timeline is divided into three areas:

- Immediate: Within 12 months of SCIP approval
- Mid-term: 12-36 months of SCIP approval
- Long-term: 36-60 months of SCIP approval

Additional information is available in Section 5, as it pertains to the timeline of Goals, Objectives, and Strategic initiatives.

3 Methodology

3.1 Multi-Discipline/Multi-Jurisdictional Input

In the early stage of development, planning for statewide interoperable communications was under the auspices of the state's Criminal Justice Information Network (CJIN) work group. This group chartered the creation of both a statewide voice and data network. Interoperability strategic planning continued in 2003 when CCPS began a series of meetings to present a statewide strategy for interoperable communications. These meetings provided an opportunity for input on the design of a statewide system through partnerships with local emergency responders. Emergency response stakeholders from across the State participated in these planning sessions.

A statewide strategy plan was presented to the State legislature and initial funding was appropriated in 2004. At that time, the State, via the SERC, began directing DHS funds to the development of the statewide system designated as VIPER which includes a strategic 800 MHz voice trunking network as well as a tactical network which provides interoperability for disparate and legacy radio systems.

North Carolina's SERC is a representative body which includes members from all emergency response disciplines including Non Governmental Organizations (NGO). The SERC conducts quarterly meetings of the full membership and as needed sub-committee meetings including the SIEC. With the pending identification of regional interoperable communications coordinators outside of the already identified coordinator for the UASI, it is expected that each DPR Region will have a quarterly meeting to discuss interoperable communications needs specific to each region.

Representation in the DPR Regions includes tribal, state and local agencies. The SIEC has recommended inclusion of federal and NGO representation. As the state moves forward with identifying key players to provide frequency, channel nomenclature and equipment asset inventory information towards the compilation of the available communications resources through the use of the CASM (Communications Assets Survey Mapping) tool, agencies will be encouraged to participate in the planning process on a regional basis.

DPR Region 6 includes the Eastern Band of Cherokee Indians (EBCI). EBCI has a representative on the SIEC. As a result, EBCI has direct input on interoperability issues.

During the development of the PSIC Investment Justifications and consistent with the methodology used to solicit input from state, local and tribal emergency responders during the Homeland Security grant periods, the SERC directed NC's Division of Emergency Management to gather proposals from state, local and tribal agencies related to improvements in interoperable communications. Sixty-seven local agencies submitted proposals from all levels of government and these proposals were reviewed

by the full SIEC membership. This ensured state, local and tribal peer review. This included thirty-four requests to continue the construction of the VIPER strategic infrastructure of which twenty-nine originated at the local level. Two of NC's PSIC Investment Justifications (gateways and consolettes) will provide ninety-nine percent of the equipment directly to local or tribal units of government. Funding match for these two categories will be provided by local or tribal government. However, the VIPER strategic infrastructure sought by local governments will receive one hundred percent of its match from the State.

3.2 Incorporation of TICPs

The Tactical Interoperable Communications Plan (TICP) prepared by the Charlotte UASI and adopted by the Piedmont Radio Interoperable Communications Committee has been identified as the representative communications document for the UASI as it relates to the DPR Regions of the state. Once CASM data has been collected, each DPR Region will produce a TICP under the guidance of the SIEC.

The SCIP was developed by a group consisting of subject matter experts (SME) and the entire membership of the SIEC. The SIEC (Table 4-3) consists of multi-jurisdictional/multi-discipline membership allowing for maximum input and benefit for all citizens of North Carolina.

North Carolina's SIEC reviewed all PSIC investment justifications to ensure compliance with the State's adopted interoperable communication strategy prior to making recommendations to the DHS State Administrative Agent (SAA) for final approval.

4 Current Statewide Assessment

North Carolina began to define steps to improve interoperability amongst the emergency response community as early as 1994 during a period where the state's Legislative body and Governor's Office worked to improve crime statistics. Special Legislative sessions identified much needed improvements in the way that the state approached crime and included a provision to build both statewide voice and data networks. These two interoperable communications components became the foundation for the state's Criminal Justice Information Network (CJIN). The data system became a reality in 1996 and was completed in 2002 and consists of a 19.2 Kbps network with 172 transmitter sites providing criminal history information statewide to over ten thousand user devices. In 1999, North Carolina hosted the world Special Olympic Games, which brought an opportunity to partner with Motorola to install an 800 MHz trunked radio system to cover the greater Raleigh-Durham-Chapel Hill area, often referred to as the Research Triangle. This system provided the foundation from which the statewide VIPER network has evolved.

Funding for VIPER has come from multiple sources to include Congressional earmark funds, the use of Department of Homeland Security (DHS) funds for both infrastructure and subscriber radios for state and local users, as well as direct appropriations from the state Legislature. To date, a total of $83M has been spent furthering the construction of VIPER infrastructure across the state. Upon completion, 238 transmitter sites will have been made operational, providing 95% portable radio coverage to the state's 100 counties, covering 44,000 square miles, and providing an interoperable communications system available to all emergency responders.

In addition to the construction of the statewide 800 MHz network, referred to as the strategic component of VIPER, the state also worked to develop a tactical network to provide not only a rapidly deployable, temporary communications platform that could serve all levels of government, but also a means to connect the legacy communications systems already in operation across the state. This fixed interoperable gateway solution would be positioned across the state using Raytheon JPS ACU1000 master/slave units at seventeen sites along the State Highway Patrol's microwave backbone, such that it could access all 100 counties of the state. Each fixed site contains radio equipment along with the ACU1000 that allows connections to be made between county level law enforcement, fire and EMS personnel, both in county and across adjacent counties as well as to other external agencies that may be called upon to respond. Provisions are also available to bridge between the tactical and strategic components of VIPER as well as to other statewide communications such as the Medical Communications Network (NCMCN) that utilizes the national UHF medical channel layout.

The VIPER statewide rollout is based upon a phased approach and relies heavily on support from local agency partners, not only through the support of grant solicitation but also in the form of use of existing tower sites as well as providing land for new development. In return, local agencies further the VIPER system development while playing a key role as stakeholders in the system construction in their jurisdictions. This also allows the VIPER to justify to the state Legislature that access fees to utilize the

system should be waived since the local agencies make in kind contributions in lieu of a monthly user fee for subscribers.

North Carolina has recently participated in several efforts to improve communications interoperability across state lines. A collaborative effort with the National Institute of Justice (NIJ), the City of Danville (VA), the Virginia State Police, Caswell County, NC and the North Carolina Highway Patrol has recently been completed and demonstrated the use of VOIP technology from Cisco Systems. Through the continued support from Raytheon JPS, as the supplier of the VIPER tactical equipment, an ACU2000 IP based gateway was added to the VIPER ACU1000 network, allowing Cisco to connect their IPICS equipment and provide connectivity between the Virginia agencies to those in North Carolina. The North Carolina State Highway Patrol and its counterpart in South Carolina share the same technological approach to a statewide 800 MHz system with both agencies using an Astro 4.1 system from Motorola. This has allowed us to jointly share access to our respective systems for agency personnel working in the areas along the states bordering counties. During the fourth quarter of 2007, we will have a connection between communications centers in place to provide immediate access to each agency's personnel when operating across state lines. A similar approach is being discussed with the Virginia State Police.

Along with VIPER, each of the regional shared systems provides daily interoperability to over 20,000 first responders. Each of these systems has agreed and does make their systems available for interoperability use.

4.1 Accomplishments

North Carolina and its partner counties have made significant improvements in the area of interoperable communications since the special crime sessions in 1994-95. To date, we now have eighteen fixed tactical ACU1000/2000 sites operational serving all 100 counties. The State has purchased a total of three mobile communications towers (COWS) that can replace or supplement VHF, UHF and 800 MHz systems at either the state or local level as well as providing a communications gateway and a cache of deployable radios to any location within North Carolina in four hours. In addition, the Charlotte UASI and New Hanover County (Wilmington, NC) purchased similar equipment that can be used locally and in support of interoperable communications as a statewide resource.

The adoption of the Astro 4.1 platform for a statewide 800 MHz system provides not only a robust and tested interoperability solution but also took advantage of twenty eight (28) existing 800 MHz locally owned systems in operation across the state. In the State's second phase of the system deployment, a full Astro 7.x P25 all-digital IP based platform is being developed to overlay the current Astro 4.1 system to provide additional capabilities in the highest population areas.

Currently over 22,000 federal, state and local user devices are in operation on the VIPER strategic network and an average of 100 new users is added every week. Continued use of DHS funds allows local agencies to supplement their internal radio replacement funds to grow as VIPER users. To date Wake, Orange, Granville, Pitt,

Duplin, Pender, Sampson and Caldwell counties have made the decision to cease operating their legacy communications systems and utilize VIPER as their primary, day to day communications platform. A further ten counties are simply waiting for sufficient funds to make the change. In addition, 73 of the state's 100 counties have purchased or are slated to receive at least 20 radios to access the VIPER system as interoperability users, providing them access to outside agency assistance in times of need or to be available with enhanced capabilities in the event that they are called upon to respond outside of their normal response jurisdictions. To date, the state has secured funding to build out 147 of the identified 238 sites needed to complete the VIPER network statewide.

4.2 Existing Interoperability/Mutual Aid Channels

Table 4-1 Existing Statewide or Regional Interoperability Channels

Channels	TX Frequency	RX Frequency	Statewide/Regional
State Fire (1FIR9)	154.2800 - CSQ	154.2800 - CSQ	Statewide
State Rescue Calling	155.2800 - Various PL	155.2800 - Various PL	Statewide
State Hospital (1EMS14)	155.3400 - Various PL	155.3400 - Various PL	Statewide
NLECC (1LAW16)	155.4750 - 131.8 PL	155.4750 - CSQ	Statewide
MED 8	468.1750 - Various PL	463.1750 - Various PL	Statewide
MED 10	467.9750 - Various PL	462.9750 - Various PL	Statewide
Federal LE Call (1FCAL35D)	167.0875 - 167.9 PL	167.0875 - 167.9 PL	17 Fixed Sites Statewide
Federal LE Call (4FCAL45D)	414.0375 - 167.9 PL	414.0375 - 167.9 PL	17 Fixed Sites Statewide
Weather - WX1-WX7	None	162.XXXX	Various Sites Statewide
8CAL90	821.0125 - 156.7 PL	866.0125 - 156.7 PL	See Chart
8TAC91	821.5125 - 156.7 PL	866.5125 - 156.7 PL	See Chart
8TAC92	822.0125 - 156.7 PL	867.0125 - 156.7 PL	See Chart
8TAC93	822.5125 - 156.7 PL	867.0125 - 156.7 PL	See Chart
8TAC94	823.0125 - 156.7 PL	868.0125 - 156.7 PL	See Chart

Table 4-2 NPSPAC Conventional Repeaters in Operation and Programmed Channels

#	County	8Call/8Tac	Owner	#	County	8Call/8Tac	Owner	#	County	8Call/8Tac	Owner
1	Alamance	* 1 5	C S	34	Forsyth			67	Onslow	1+ 2+ 3+ 4	L
2	Alexander			35	Franklin	2	S	68	Orange	3 5	S
3	Alleghany			36	Gaston	1	S	69	Pamlico		
4	Anson			37	Gates			70	Pasquotank	5	S
5	Ashe			38	Graham			71	Pender	1	S
6	Avery			39	Granville	3 4 5	S	72	Perquimans		
7	Beaufort	2	S	40	Greene			73	Person		
8	Bertie	1	S	41	Guilford	1+ 2+ 3+ 4+ 5+	C S	74	Pitt	1 1	S
9	Bladen	5	S	42	Halifax	1 5	S	75	Polk		
10	Brunswick	1 2 5	S	43	Harnett	1+ 2+ 3+ 4+ 5	C S	76	Randolph	3	S
11	Buncombe	1+	S	44	Haywood			77	Richmond		
12	Burke			45	Henderson			78	Robeson	1	S
13	Cabarrus	1 2 3 4 5	L S	46	Hertford			79	Rockingham	5 5 5 5	S
14	Caldwell			47	Hoke	5	S	80	Rowan	1 2 3 4 5	L S-(1)
15	Camden	5	S	48	Hyde	5	S	81	Rutherford		
16	Carteret	1+	S	49	Iredell	4	S	82	Sampson	1 2	S
17	Caswell			50	Jackson			83	Scotland		
18	Catawba	1+ 5	L S	51	Johnston	1+ 2+ 3+ 4+ 5	C S-1	84	Stanly	1	S
19	Chatham	1	S	52	Jones			85	Stokes	1 5	S
20	Cherokee	5	S	53	Lee	4	S	86	Surry	4 5+	S
21	Chowan	1 5	S	54	Lenoir	1	S	87	Swain		
22	Clay			55	Lincoln	1	S	88	Transylvania		
23	Cleveland	1+	S	56	Macon	4 1	S	89	Tyrrell	1	S
24	Columbus			57	Madison			90	Union	1 3	S
25	Craven	2	S	58	Martin	1	S	91	Vance		
26	Cumberland	1 2 3 4 5	L S	59	McDowell			92	Wake	1+ 2+ 3+ 4+ 5+	C S
27	Currituck			60	Mecklenburg	1+ 2+ 3+ 4+ 5	C L S	93	Warren		
28	Dare	1+	S	61	Mitchell			94	North Carolina	5	S
29	Davidson			62	Montgomery			95	Watauga		
30	Davie	3	S	63	Moore			96	Wayne	1+	S
31	Duplin	1+ 2	S	64	Nash	1 2	S	97	Wilkes	5	S
32	Durham	1+ 2+ 3+ 4+ 5+	L S	65	New Hanover	1+ 2+ 3+ 4+ 5+	C	98	Wilson	4	S
33	Edgecombe	5	S	66	Northampton			99	Yadkin		
								100	Yancey		

The above chart does not indicate that the channels below 512 MHz have been narrow banded. We (North Carolina) cannot make this assessment until completion of the statewide inventory through the development of the seven (7) TICPs within their respective DPRR. The TICP development is anticipated to be complete in December 2009.

4.3 Governance Structure

The SIEC is a direct subcommittee of North Carolina's State Emergency Response Commission (SERC) which is directly responsible for providing guidance to all state and local agencies in areas such as anti-terrorism, disaster planning and mitigation and emergency response. The SERC recognizes the SIEC as experts on interoperable communication matters and designates it as the point of contact and leadership for all interoperable communication projects as the related funding made available to the State's Administrative Agency, Crime Control and Public Safety Secretary Bryan E. Beatty. The SIEC has also been granted responsibility for the development of the Statewide Communications Interoperability Plan (SCIP).

The SIEC will review and submit recommendations of PSIC investment justifications prior to submittal to the SAA Secretary Beatty.

The SIEC has no executive or legislative authority, however they perform under the authority of the State's Emergency Response Commission (SERC) which is a commission appointed by the Governor of North Carolina and whose body reports to the Secretary of the Department of Crime Control and Public Safety. SIEC has defined operating principles and decision making procedures as outlined in the charter. Figure 4-1 shows how the SERC & SIEC operate within state government. Table 4-3 identifies the membership of the SIEC.

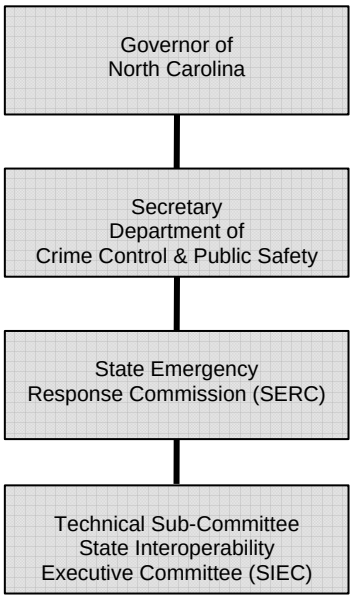


Figure 4-1 Organizational Chart Showing SIEC Place in NC State Government

Table 4-3 SIEC Membership

DPR Region	Agency	Name	Title	Representing
7	City of Charlotte	Dennis Baucom (SME)	IT Director	Charlotte UASI
4	Public Health	Dr. Julie Casani	PH Preparedness Coordinator	Public Health Agencies
7	Charlotte FD	Jeff Dulin	Deputy Chief	Charlotte UASI
6	City of Asheville	Jeremy Edmonds	Lieutenant (Fire and Rescue)	Local Fire Response Service
4	Governor's Office	Jennifer Epperson	Policy Advisor	NC Executive Branch
6	EB Cherokee	David Wachacha	EM Coordinator	Tribal Nation
4	NC SHP	Mike Hodgson (SME)	Network Specialist	700/800 MHz Region Chair
4	US Secret Service	Joe Jones	Agent	Federal Law Enforcement
2	New Hanover County	Warren Lee (SME)	EM Director	County Emergency Management
4	Granville County	Doug Logan (SME)	EM Director	County Emergency Management
1	Pitt County	Mac Manning	Sheriff	County Sheriffs/Elected Officials
4	NC Hwy Patrol	Alan Melvin (SME)	Captain	Interoperable Communications
4	NC EM	Mike Montague	Communications Coordinator	State Homeland Security
4	NC DOT	Brian Purvis	State Incident Mgmt. Engineer	State DOT
3	City of Fayetteville	Sam Sessoms	Assistant Chief	Local Law Enforcement
6	Haywood Co. EM	Greg Shuping	EM Director	County Emergency Management

DPR Region	Agency	Name	Title	Representing
5	NC OEMS	Carl VanCott	Communications Specialist	State Emergency Medical
4	NC SHP	Walter J. Wilson, Jr.	Colonel/SERC Commissioner	SERC
4	Raleigh Fire	Bryant Woodall	Asst. Fire Chief/ SERC Commissioner	SERC
4	NC NG	Ronnie Van Dyke	MSG/C4IT Sys Administrator	Department of Defense
1 & 2	NC EM	Lonnie Hill (SME)	Homeland Security Planner	State Homeland Security
1	NC EM	Mark Brown	Executive Director	DPR Region 1
2	Carteret County	Asa Buck	Sheriff	DPR Region 2
3	Harnett County	Larry Smith	EM Director	DPR Region 3
4	Wake County	Martin Chriscoe	EM Director	DPR Region 4
5	NC EM	Joe Wright	Executive Director	DPR Region 5
6	Mitchell County	Eric Wiseman	EM Director	DPR Region 6
7	Charlotte Fire	Greg Hauser	Communications Unit Leader	DPR Region 7

The SIEC has implemented the following subcommittees with a SME assigned to each:

1. Policy (SOP) Subcommittee:
   Mac Manning, Chair; David Wachacha, Jeff Dulin, Carl VanCott
   SME: Lonnie Hill

2. Technology Subcommittee:
   Brian Purvis, Chair; Jeremy Edmonds, Mike Hodgson, Martin Chriscoe
   SME: Dennis Baucom

3. Usage Subcommittee:
   Sam Sessoms, Chair; Dr. Julie Casani, Ronnie Van Dyke, Greg Hauser
   SME: Warren Lee

4. Governance Subcommittee:
   Jennifer Epperson, Chair; Greg Shuping, Joe Jones, Asa Buck
   SME: Alan Melvin

5. Training & Exercise Subcommittee:
   Mark Brown, Chair; Larry Smith, Mike Montague, Eric Wiseman
   SME: Doug Logan

Any funding opportunities brought before the SAA in the area of interoperable communications should be brought before the SIEC for review to ensure they are consistent with the state plan.

The SIEC meets quarterly to review progress towards improving interoperable communications as well as to bring forward recommendations in the form of changes and omissions to the SCIP.

The SIEC was organized in June 2007 and has conducted regular meetings since its inception as referred to in Section 3, Methodology. Refer to Table 2-1 for a list of meetings. The following is the list of meetings of the NCSIEC for the development of the SCIP and PSIC Investment Justifications:

Date	Purpose
✧ August 20-21, 2007	Initial Development of SCIP
✧ October 9-10, 2007	First Review of SCIP and PSIC Project Proposals
✧ November 14-15, 2007	Final Review of SCIP

The meeting schedule for the SIEC in calendar year 2008 is as follows:

Date	Location
✧ March 18, 2008	NCDOT Traffic Management Center, Raleigh
✧ June 10, 2008	Cherokee Indian Reservation, Western NC
✧ September 9, 2008	NCAPCO Conference, Brunswick County, NC
✧ December 9, 2008	TMC, Charlotte, NC

The SIEC Charter was executed at the meeting on October 9, 2007. The rules under which the SIEC operate are within the adopted charter (see Appendix C).

4.4 Technology

It is the intention of North Carolina, SERC, and SIEC to commence a detailed statewide communications capabilities assessment through the use of the Communications Assets Survey & Mapping (CASM) tool. This information will be collected on a DPR Region basis, under the guidance of the individual DPR Region Executive Director, as noted in Figure 2-5 (NCEM Disaster Preparedness & Response Regions Map). North Carolina expects to complete the CASM assessment during calendar year 2008. As an interim document to assist the state with realizing the available communications resources, DHS/FEMA Region IV recently completed a communications audit for North Carolina in preparation of hurricane disasters. This report is available through the interim interoperability coordinator/POC whose information can be found under Section 2.3, Statewide Plan Point of Contact. See Appendix G.

Emergency response communications infrastructure varies greatly across North Carolina, driven primarily by local government budgetary commitments. Many communities across the state still have not begun migrating towards digital technology, limiting options for interoperable communications within county or regional boundaries. VIPER's strategic solution gives local emergency response agencies a cost effective alternative that provides an optimal level of communications interoperability. For local governments that choose not to join the VIPER shared system, the VIPER Tactical solution, with its gateway technology approach, provides county-level connectivity among legacy systems including VHF and UHF frequency bands within each of the DPR Regions. This tactical application is also used across State lines to include the Danville, VA metropolitan area.

The SERC supports annual funding to state and local agencies from the state's DHS allocation to promote both day-to-day and interoperability user communications with the newly available statewide platform.

While the State of North Carolina does not mandate adoption of the VIPER strategic solution, the SERC has taken the position that funding will not be directed to support legacy communications infrastructure. However, funding has and will continue to be provided to promote interoperability with federal, state, local or tribal legacy communication systems. The VIPER tactical network and the PSIC investment justification for gateways support the ability to interoperate with legacy systems. The VIPER Tactical and Strategic Networks also provide connectivity with other regional 800 MHz radio systems within North Carolina. Refer to table 4-4 for a listing of other 800 MHz systems operating in North Carolina.

Table 4-4 POCs for Maintenance/Service of 700/800 MHz Trunking Systems

Area 800MHz System	Manager	Phone Number	E-mail address
Asheville	Jeremy Edmonds	(828) 768-1435	jedmonds@ashevillenc.gov
Cary	Terry Yates	(919) 123-4567	Terry.Yates@TownofCary.org
CHAR/MECK	Dennis Baucomb	(704) 336-5349	dbaucom@ci.charlotte.nc.us
Concord	Chris Linker	(704) 920-5590	linkerc@ci.concord.nc.us
Duke University	Sam Wickline	(919) 684-5989	Samuel.Wickline@duke.edu
Durham	Rik Rasmussen	(919) 560-4175	rik.rasmussen@durhamnc.gov
Fayetteville	Laura Leatherwood	(919) 433-1915	lleatherwood@ci.fay.nc.us
Greensboro	Bechinger Martin	(336) 772-2201	bech.martin@greensboro-nc.gov
Harnett	Gary Pope	(910) 893-7580	gpope@harnett.org
Hickory	Jim Kurz	(828) 261-2637	jkurz@ci.hickory.nc.us
High Point	Steve Lingerfelt	(336) 883-3286	steve.lingerfelt@highpointnc.gov
Johnston	Jason Barbour	(919) 989-5611	jason.barbour@johnstonnc.com
Kernersville	Neal Stockton	(336) 996-3177	stocktonn@ci.kernersville.nc.us
Kinston/Lenoir	Jerry Daffron	(252) 559-6126	jdaffron@co.lenoir.nc.us
Mooresville	Al Linker	(704) 213-6204	alinker@salisbury.net
New Bern	John West	(252) 672-4100	westj@newbernpd.org
New Hanover County	Warren Lee	(910) 279-5615	wlee@nhc.gov
RDU Airport	Jaime Karp	(919) 840-2100	Jaime.Karp@rdu.com
Rocky Mount	Roy Lincoln	(252) 972-1583	LincolnR@ci.rocky-mount.nc.us
Salisbury	Terry Buff	(704) 638-5304	tbuff@salisburync.gov
Tarboro	Keith Hales	(252) 641-5610	Khale@tarboro-nc.com
Thomasville	Al Linker	(704) 213-6204	alinker@salisbury.net
VIPER	Michael Hodgson	(919) 662-4440	mhodgson@ncshp.org
Wake County	Frank Hall	(919) 856-5215	frank.hall@co.wake.nc.us
Winston Salem	Charles Ashton	(336) 703-2192	ashtoncf@forsyth.cc

4.4.1 700 MHz Regional Planning

The Region 31 700 MHz Regional Planning Committee has been holding regular meetings and recently completed a draft to submit for peer review at the North Carolina Association of Public Safety Communications Officials (APCO) meeting. This draft plan was however negated through the actions of the Federal Communications Commission (FCC) on September 11, 2007 through the altering of the frequency allocation plan. The Region 31 Chairman, Mr. Michael Hodgson indicated to the attendees that a rewrite of the plan would be forthcoming as soon as the CAPRAD database had been updated to

a accommodate the frequency allocation changes. A revised draft would be submitted for peer review once the changes were made.

4.4.2 800 MHz Re-banding

The FCC entered into an agreement with Sprint-Nextel Communications to migrate all radio systems in the 800 MHz radio band to other frequencies within that same frequency band. Currently, commercial cellular communications occupy frequencies adjacent to public safety frequencies, increasing the risk of harmful interference with emergency response communications. The migration will move emergency response communications and commercial cellular communications to frequencies far enough apart to reduce the risk of interference. This 800MHz re-banding effort affects the State of North Carolina as well as 28 other emergency response jurisdictions operating on an 800MHz trunking platform.

On September 25, 2007, North Carolina entered into a formal Planning Funding Agreement (PFA) with Sprint-Nextel. North Carolina has engaged the firm of RCC Consulting to assist the state in the identification of equipment to be re-banded and to assist in the preparation of the Frequency Reconfiguration Agreement (FRA) with Sprint Nextel. North Carolina is in Wave Three and expects to submit an extension to the Transition Administrator (TA) and the FCC on the grounds that it will be impossible to complete its PFA process in the time allotted in the FCC's actions of 9/11/07.

North Carolina continues to submit Station Temporary Authorization (STA) requests to the FCC for station license as part of the **V**oice **I**nteroperability **P**roject for **E**mergency **R**esponders (VIPER) system due in part to the Wave 1 freeze in the areas of the state within 70 miles of the State of Virginia (Wave 1) and for those areas directly affected by the freeze on Wave 3 applications.

4.4.3 700 MHz Re-banding

North Carolina is a state that will be affected by re-banding in the 700 MHz spectrum. North Carolina, like other states, received its narrow band State licensed frequencies from the FCC and designated four of the narrow band channels: 764.150, 764.175, 764.200 and 764.400 for simplex interoperability across all units utilizing the VIPER system. In addition the 764.400 channel was paired with 794.400 for vehicular repeater use. With the re-allocation of the 764.XXX channel by the FCC on 9/11/07, North Carolina will be forced to reprogram over 10,000 radios after the "D" block license is granted. North Carolina is also preparing to submit a waiver request to the FCC for permission to continue to program the frequencies in new units until such time that the "D" block licenses is prepared to provide compensation to the state for reprogramming services.

4.5 Standard Operating Procedures (SOPs)

Through a collaborative effort among state, local and tribal jurisdictions, North Carolina has developed Emergency Operation Plans (EOPs) and Standard Operating

Procedures (SOPs) throughout all of the State's 100 counties and the jurisdiction of Eastern Band of Cherokee Indians. These plans and procedures are used by the EOC coordinators, managers and supervisors to respond to incidents. The EOPs address which agency or organization is responsible for certain areas of the response and includes mutual aide and interoperability agreements. The SOPs provide procedural guidance of access and use of facilities and communications assets. They provide guidance on incident command and radio use including procedures for gateway activation, radio cache deployment and unit identification.

In addition, the State has an MOA with all users on the VIPER Network. Agencies that have adopted the VIPER Tactical & Strategic networks are required to sign a formal MOA. The Charlotte UASI also has an MOA with the ten North Carolina counties and two South Carolina counties within the urban area. (See appendix B)

With the development of the DPR Regions SOPs will be reviewed and revised in consultation with local level emergency responders. In addition, consistent with DPR Region 7, the UASI, each DPR Region will work with the SIEC to develop Tactical Interoperable Communications Plan (TICP) for its region. This TICP will serve as the interoperable communications SOP for the respective regions.

The SIEC will work to assist the DPR Regions with the data collection and preparation of the TICPs and shall review the documents to ensure consistency across regions prior to inclusion in the statewide plan. The SIEC will include copies of the regional TICPs on a secure website which may be used as a reference and in the development of other documentation. Periodic updates of the TICPs will be required and the responsibility will be shared between the DPR Regions and the SIEC.

The SIEC will be responsible for overseeing any of the development of state level SOPs and all agencies accessing state owned or operated interoperable communications networks will be expected to comply with the state SOP.

As is the case in the county-level emergency operations plans (EOP), any SOPs formally adopted by the SIEC will also mandate NIMS compliance consistent with the above referenced Executive Order.

It will be the intent of the State's SOP to include:

- Common language
- Develop State and Regional operational plans and procedures for operating communications equipment that include all Federal and State level agencies
- Development of Regional TICP for the seven DPR Regions

4.6 Training and Exercise

4.6.1 Training and Exercise Plan

North Carolina has adopted a formal training and exercise program. Currently, all jurisdictions are required to hold two exercises annually. These exercises can take various forms including tabletops, functional or full scale. NCEM conducts Training and Exercise Planning Workshops (TEPWs) annually to assess training and exercise needs. The workshop participants include emergency management personnel from all 101 jurisdictions. The product of these workshops is the identification of training and exercise requirements and opportunities. The NCEM Training Division uses this information to develop training programs targeted to the needs of the local emergency responders. The schedule of courses is made available at www.nccrimecontrol.org/ncem. These courses are offered throughout the State through the local community college system.

Additionally, as the VIPER system has expanded, training needs have been identified. Historically this training burden has been assigned to an individual within VIPER. VIPER has delivered end-user training to various emergency responders statewide. Plans are currently under development to standardize training for interoperable communications. In the future, this training will be delivered through the community college system and will incorporate the community colleges' instructor and lesson plan credentialing requirements. This training will be available to emergency responders from all disciplines including but not limited to police, fire, emergency medical services and tribal entities. The VIPER training coordinator will be intricately involved in this training effort.

Most recently, North Carolina has had interoperable communication exercises in the following locations:

- Charlotte UASI - September 2006
- Williamston, NC - August 2007
- Ocracoke Island, NC – February 2008

Under the direction of NCEM, training courses and exercises are delivered periodically and/or as requested by local emergency response agencies. A process exists for evaluation of exercise effectiveness and for providing feedback to participants regarding needed improvements through the HSEEP. Training and exercise information is disseminated to the necessary audience through NCEM, community college system and professional organizations. The training and exercises integrate local, tribal, state and Federal agencies. Recently NCEM has mandated that whenever possible, interoperable communications will be included in the assessment and after action reports of exercises.

Training certifications are tracked at the local level. NCEM tracks local NIMS competencies which roll into a NIMSCAST report.

SEARCH has recently offered a pilot COML course and two people from NC have attended the course. Core competencies of the COML Course can be referred to in Appendix F.

4.6.2 Training and Exercise Goals

- Expand the cadre of certified communications instructors at the community college level (train-the-trainer)
- Develop training modules to instruct communications and end user personnel on the function and capabilities of the VIPER tactical solution
- Target VIPER tactical solution training to emergency responders operating on legacy systems
- Conduct statewide communications exercises to ensure functionality and integration of communications systems
- Conduct TICP training on the DPR Region level to ensure consistent and complete CASM tool entry
- Conduct local and regional communications exercises to demonstrate capabilities
- Develop COML

4.7 Usage

Communications interoperability is promoted daily at the local, regional, tribal and state level through shared communications resources and through multi-agency incident responses and exercises.

Interoperability at the local or single agency level generally occurs through shared talk groups or common channels on local communications systems. At the regional level, interoperability occurs through “bridge” systems, gateways, shared systems and cache radios. Throughout the state the use of this interoperability occurs on a daily basis.

Opportunities for utilization of local/regional interoperable communications vary by community and scale of event. Larger, more metropolitan communities tend to rely on shared communications systems more than smaller more rural communities, increasing the chances for interoperability. Large regional incidents or emergencies increase the likelihood that interoperability will be relied upon. Events such as hurricanes draw together agencies that normally don’t work together, even those within the same governmental jurisdiction. In North Carolina, the VIPER network is available to agencies in most of the metropolitan areas and along/adjacent to the major interstate routes.

A statewide mutual aid agreement is in place through the NC Division of Emergency Management. This agreement provides for the sharing of resources across governmental jurisdictions. Interoperable communications is frequently accomplished through the exchange of radios or establishment of “bridges” or patches.

North Carolina's emergency response community has experienced a wide range of interoperable communications opportunities. Some communities are involved in daily cross-jurisdictional communications events, ranging from multiple agencies within a single jurisdiction working together, to two or more counties working together on regional incidents, such as traffic accidents, wild land fires, hurricanes, winter storms, or floods.

4.7.1 Strategic Usage

Emergency responders operating on the VIPER strategic solution, use its interoperable capabilities on a daily basis. Likewise, emergency responders operating on local systems (P25 compliant, VHF, UHF and 800 MHz) such as those located within Charlotte-Mecklenburg use their interoperable capabilities on a daily basis. (See appendix G).

These systems are also used during large scale planned events, i.e. NC State Fair, NASCAR events at Charlotte Motor Speedway and the Azalea Festival.

4.7.2 Tactical Usage

The tactical solution is also used on a daily basis. It is frequently deployed when police are in pursuit across jurisdictional lines or when a large wildland fire encompasses several jurisdictions. For example, Johnston County operates on an 800 MHz EDACS system and adjacent Wake County operates on a Motorola SmartZone system (VIPER). Routine mutual aid often results in a Johnston County Fire Unit responding to a Wake County emergency call to assist Wake County EMS personnel. Interoperable communications is accomplished in these daily events by means of a VIPER tactical solution console patch. In this case, this is a permanent tactical patch that is maintained at the Wake County VIPER tactical site.

The fixed site gateways are tested monthly. Mobile resources are tested on a quarterly basis. Testing on the mobile resources require that staff assigned to the equipment deploy the assets within the region and ensure its functionality. These activities are coordinate with local emergency responders.

5 Strategy

5.1 Interoperability Vision

To establish and maintain legitimate partnerships with federal, state and local agencies in order to cultivate compatibility among all emergency responders through not only voice and data communications but also in daily operations to include common terminology, training and response methodologies. This ensures quality response capabilities to mitigate loss of life and property due to the ability of responders to effectively work together on a multi-agency, multi-jurisdictional incident.

5.2 Mission

To provide a communications network backbone throughout the State of North Carolina and the appropriate organizational structure needed to support the highest level of interoperability between all agencies supporting public safety in North Carolina through the sharing of resources, the integration and coordination of local systems where appropriate and through routine planning, training and usage of all communication resources within the state.

As stated in the Vision and Mission statements, the state will implement both a strategic and a tactical solution to interoperability by building out new infrastructure to provide capabilities where none existed and to provide a new platform capable of allowing responders to communicate on a common network, as well as providing fixed and mobile gateway devices strategically located to provide links between existing disparate radio systems.

5.3 Challenges

NC, like many states, has not yet achieved an optimal level of interoperability between all emergency responders. Effective interoperable communications is impeded by both technology and procedural shortcomings.

The technology solution chosen by NC (VIPER), though supported by state and local emergency responders, is not yet fully implemented. One impediment to migrating to VIPER is funding. The lack of funding on the local level causes hesitancy of local units of government to upgrade their systems. Many of these local units of government choose instead to maintain end of life legacy systems.

Where the tactical solution of VIPER is to serve as the interoperability solution, it is not yet fully deployed.

The VIPER tactical solution is deployed throughout the State via fixed and mobile sites. However, the existing or current procedures sometimes cause patches to be made between primary dispatch gateways, thus interfering with day-to-day normal operations. There is a need to complete an inventory of frequencies, channels and talk groups to ensure that interoperable patches are accomplished so as not to interfere with routine communications between emergency responders.

Like other States, NC is required to accomplish narrow-banding within the timeframe set by the Federal Government. NC seeks to take advantage of the APCO-P25 standard. Funding is one of the impediments in realizing these objectives. However, there is also a need to make use of new technologies for communications such as VoIP and satellite communications.

5.4 Goals & Objectives

The following are a series of goals and objectives that will be achieved in order to enable the ultimate goal of statewide interoperability. In August 2007, the SIEC kickoff meeting identified those goals:

Goal 1	**Ensure communications interoperability with all levels of federal, state, local and tribal government agencies as well as non-governmental agencies**	
Objective:	**1. Development of Standard Operating Procedures**	
	Implementation Steps	**Completion Date**
	1. Develop operational plans for utilizing communications equipment that include Federal, State, regional, local and tribal level agencies	2008
	2. Development of Regional Tactical Interoperability Communications Plan (TICP) for the Domestic Preparedness and Readiness Regions (DPRR)	2009
	3. Incorporate common language usage into all communication SOPs	2008
	2. Enhance Training	
	1. Conduct statewide communications exercise to ensure functionality and integration of communications systems.	2009
	2. Conduct local and regional communications exercises to demonstrate capabilities	2009
	3. Develop training modules to instruct communications and end user personnel on accessing communication systems.	2009
	3. Use of COMLS during events and exercises	
	1. Develop Communications Unit Leaders (ComL) position	2012
	2. Identify individuals to serve as ComL	2012
	3. Integrate ComL into Incident Management Teams	2012
Goal 2	**Complete the VIPER project as the *strategic* interoperable communications "backbone" for the state**	
Objective:	**1. Technology**	
	Implementation Steps	**Completion Date**
	1. In conjunction with best practices, engineer a survivable communications system capable of providing daily usage for response agencies and incorporate surge capacity for large-scale incidents involving multiple responders from various jurisdictions.	2010
	2. Establish funding sources for capital purchases to build-out statewide infrastructure and for recurring maintenance/system upgrades.	2009
	3. Actively seek and harbor partnership efforts with the public and private sectors to utilize existing infrastructure when possible.	2008
	2. Enhance Governance Structure Responsibilities	
	1. Initiative 1- Seek and apply for grant opportunities that can provide increased access to the VIPER network through subscriber radios for both day-to-day and interoperability communications.	2010
	2. Work closely with the SERC to ensure the SCIP is coordinated into all state initiatives/strategies	Ongoing
	3. Utilize communications committees in DPRR to serve as a means for data and information sharing; establish the POC with each region to be represented on the SIEC	2008 / 2009
	4. Appointment or process for getting a FULLTIME Interoperability Coordinator; Make recommendation to SERC that a full time interoperability coordinator within the Department of Crime Control and Public Safety be a high priority for NC	2009
	5. Enhance legislative support for funding, initiatives; Provide the SAA with recommendations concerning SIEC activities and interoperability needs across the State	2008
	6. Address the involvement of appropriate groups across state and get buy-in, i.e. Police Execs, Police Chief's Association, Sheriff's Association, EMS Association, State IT Group (governance)	Ongoing

Goal 3	Provide access to both NPSPAC conventional mutual aid repeaters, as well as strategically locate VHF and UHF interoperability fixed stations in the State.		
Objective:	**1.**	**Tactically locate technology devices across the state to provide links between existing communications systems when required**	
		Implementation Steps	**Completion Date**
	1.	Survey existing technology and communications systems to establish a baseline of current networks.	2008
	2.	Obtain required permissions from local system administrators/owners for access to required frequencies.	2008
	2.	**Establish Training & Exercise on tactical solutions**	
	1.	Provide education to response agencies on the capabilities of the devices as well as when and how to activate the gateway.	2009
	3.	**Establish SOPs for tactical solutions**	
	1.	Develop partnerships with other state and local agencies to create SOPs that govern the use of the tactical solutions.	2008
Goal 4	**Expand and upgrade interoperable communications systems compatible with VIPER**		
Objective:	**1.**	**Enhancement of Communications Technology**	
	Implementation Steps		**Completion Date**
	1.	Develop strategies to integrate other communications technologies and statewide platforms, including satellite, VoIP and public networks into VIPER.	2010
	2.	Complete rebanding of the 700 and 800 MHz spectrum.	2010
	3.	Migrate and/or construct APCO P-25 infrastructure while addressing the integration of data interoperability.	2010
	4.	Initiative 4: Acquisition of cache subscriber units to include mobile communications systems/platforms as identified in the STR	2010

5.5 Strategic Initiatives

5.5.1 Strategic Technology Reserve

North Carolina currently has a Strategic Technology Reserve (STR) in place throughout the state. As discussed and outlined in this document, the Domestic Preparedness and Readiness Regions provides an avenue for the state to perform planning for interoperable communications as well as a regional approach for STR deployment.

The State's STR deployment plan consists of the following:

EACH PORTABLE TOWER - one (1) per DPR Region:

- 1 VHF Repeater
- 1 UHF Repeater
- 1 800MHz Conventional Repeater
- 1 800MHz IR Site (4 towers only)
- Rack mounted Tactical Patch Solution
- Minimum of 80' telescoping tower
- Rack mounted control stations - 1 VHF Low Band; 3 VHF High Band; 2 UHF; 4 800MHz

DEPLOYABLE CACHE RADIO TRAILER - One (1) per DPR Region:

- 12 foot double axle trailers
- Laptop for programming
- accountability and tracking software
- rack chargers for every radio
- Pelican Cases for radio storage
- VHF/UHF/800MHz portables ***(P25 compliant for 800MHz)***
  1. 20 VHF Portable Radios
  2. 20 UHF Portable Radios
  3. 20 800MHz Portable Radios
  4. 20 Family Service Radios
- Portable generator(s)
- Workbench/Chair
- Basic Maintenance Toolkit

These deployable communications products purchased with PSIC funds will allow each DPR Region to have interoperable communications in times of emergency. In case of multiple events, more than one DPR Region can respond, based on the size of the events.

5.5.2 Infrastructure

North Carolina has begun to address the lack of interoperable communications through the development and implementation of the Voice Interoperable Plan for Emergency Responders (VIPER). This plan contains a strategic component that builds statewide 800 MHz voice radio communications infrastructure throughout the State.

By following the VIPER plan, the State of North Carolina has developed an 800 MHz P25 CAI system that will ultimately consist of 238 voice radio transmitter sites and it is this system that NC wishes to expand through the PSIC program. The State Highway Patrol is the lead agency tasked with implementation and management of the VIPER system and has access to a considerable number of radio tower locations and has conducted site surveys for the installation of voice and data communications systems and had developed a matrix to determine the suitability for use and the associated costs for doing so. Many local counties and municipalities have contributed to the success of the VIPER project, yet they are not capable of developing their own VIPER infrastructure. In almost every instance where a partnership already exists with a local government, efforts have been made to improve radio tower site environment, not only to support the VIPER Strategic project, but to also afford improvements to local agencies as well.

The State of North Carolina wishes to use PSIC funding as means to continue and fulfill the Strategic component of the VIPER plan. To support the VIPER plan, this investment will use PSIC funds to construct communications towers in 34 NC Jurisdictions. The development and construction of these new radio tower sites will assist producing a

radio system with statewide coverage and provide the communications backbone needed for emergency response agencies to communicate with each other using a single, common radio system.

5.5.3 Gateway Enhancement

Across North Carolina communications systems represent all points on the interoperability continuum. The disconnect between these systems is often due to awkward terrain or long distances which has adverse impacts on coverage in the higher frequency bands. Due to technical difficulties caused by geography, there are numerous agencies within these regions with different radio frequencies. These frequencies are VHF High Band, VHF Low Band, UHF and 800 MHz. The lack of seamless communication has been a problem for years and creates much confusion among service agencies when trying to resolve an emergency situation. It is North Carolina's desire to provide immediate relief to improving the lack of communication between legacy communications systems operated by federal, state and local agencies, by providing interconnection between the different radio frequency bands. Interconnect systems allow radios to communicate even if they are on different frequencies or have the same frequency band but different protocols. These systems can link emergency responders using an older legacy radio system with responders using a newer technology or radios from a different vendor. In effect, the interconnect system establishes a patch between otherwise incompatible systems. This investment looks to connect Low Band, VHF and UHF and 800 MHz radios by providing agencies with bridging and patching equipment in areas where VIPER (800 MHz) is not currently a comprehensive solution for the region.

5.5.4 Enhancement of Control Center Communications

The Strategic communications solution for VIPER is the construction of a statewide 800 MHz radio system that will provide interoperable communications for all emergency response agencies in North Carolina. While the strategic portion of the plan is underway and expanding, many agencies do not have the capability to communicate directly with other emergency response agencies. This is due to the fact that agencies have limited access to mobile 800 MHz radios. Therefore, equipment within communications centers and control stations is often shared and limited to one conversation at a time. In addition, communications within communication centers can be limited due to the number of talk groups programmed into a single radio. Until the strategic solution has been fulfilled throughout the State, numerous agencies need 800MHz radio consoles and consolettes to grant them appropriate access to the VIPER Network and eliminate the need to constantly add talk groups as they become available.

The installment of consolettes will allow for dedicated monitoring and interoperability along the South Carolina/North Carolina border with the South Carolina Palmetto 800 Voice Trunking Network.

5.5.5 Interoperability with Bordering States

NC continues to work with South Carolina on interoperable solutions. York County, SC is part of the Charlotte UASI. Representatives of VIPER and the South Carolina Palmetto 800 Voice Trunking Network as well as agents of the bordering counties have been meeting regularly to discuss interoperability options. The objective of these meetings is to develop technology and procedures for interoperable communications. The two states share the same technological approach to a statewide 800 MHz system with both agencies using an Astro 4.1 system from Motorola. This has allowed us to jointly share access to our respective systems for agency personnel working in the areas along the states bordering counties. NC has the ability to connect two NCSHP communication centers (Elizabethtown in the east and Monroe in the west) to the State of SC for emergency responder interoperability coordination between the two states.

A similar approach is being discussed with the Virginia State Police. A collaborative effort with the National Institute of Justice (NIJ), the City of Danville (VA), the Virginia State Police, Caswell County, NC and the North Carolina Highway Patrol has recently been completed and demonstrated the use of VoIP technology from Cisco Systems. Through the continued support from Raytheon JPS, as the supplier of the VIPER tactical equipment, an ACU2000 IP based gateway was added to the VIPER ACU1000 network, allowing Cisco to connect their IPICS equipment and provide connectivity between the Virginia agencies to those in North Carolina. Not only has the Danville project provided interoperability along the US 29 corridor in NC, it has given access to the entire VIPER tactical network with the ability to have interoperable communications with emergency response agencies with varied legacy radio systems (UHF, VHF, 800 MHz).

5.5.6 Data Interoperability

Although its legislative charter is primarily for governance of the law enforcement Mobile Data Network (MDN), the CJIN Governing Board has begun expanding into all disciplines. Through coordination with the NC State Information Technology Department sharing of all data between State departments as well as between local agencies, through a common platform, has taken the forefront of future CJIN activities. Although this is in the initial planning and discussion phases, more deliberate planning activities will commence in 2009.

5.5.7 Public Transportation and Ports

Efforts are underway to include additional public and mass transit systems (bus and rail) in interoperable communications. These efforts include establishing DPR Region level interaction with individual public transportation systems. The transportation authorities will be included in planning and implementation of interoperable communications. The public and mass transportation systems will be addressed through the DPR Region level TICPs. The NCDOT representative to the SIEC is responsible for addressing rail interests throughout NC.

NC Port Authority is a partner and a daily user of interoperable communications through both the VIPER tactical and strategic solutions. NC has two port locations (Wilmington and Morehead City). The Port Authority is a member of DPR Region 2 as a subject matter expert. As a result, the NC Ports have direct input to the SIEC on their interoperable communication needs.

5.6 National Incident Management System (NIMS) Compliance

Through Homeland Security Presidential Directive (HSPD)-5, Management of Domestic Incidents, the President directed the Secretary of Homeland Security to develop and administer a unified, national system for managing incidents. The NIMS provides a consistent nationwide approach for federal, state, local, and tribal governments to work effectively and efficiently together to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity.

The NIMS incorporates the best practices currently in use by incident managers at all levels and represents a core set of doctrine, concepts, principles, terminology, and organizational processes to enable effective, efficient, and collaborative incident management at all levels. HSPD-5 requires all Federal Departments and agencies to adopt the NIMS and to use it in their individual domestic incident management and emergency prevention, preparedness, response, recovery, and mitigation programs and activities, as well as in support of those actions taken to assist state, local, or tribal entities.

Achieving cohesive emergency response is imperative. Therefore, NIMS compliancy has been recognized as a priority for the State of North Carolina. As a priority, a statewide letter of proclamation has been distributed by the Governor. This proclamation makes NIMS compliance a requirement for all first responder agencies in NC. NIMS compliance requirements were also incorporated into the Division of Emergency Management's formal Strategic Plan in order to assist first responders in receiving the training and tools necessary to move NIMS from written concept into a working reality.

North Carolina has added NIMS elements to all courses where appropriate. Federal funds are being used to offer courses including Incident Command and NIMS training. In accordance with DHS guidance, 80% of all training funds are allocated to local jurisdictions to conduct NIMS training and incorporate ICS into exercise activities.

In addition to incorporating NIMS into first responder training, North Carolina utilizes the National Incident Management System Capability Assessment Support Tool (NIMSCAST) to evaluate the effectiveness training and implementation of doctrine, concepts, principles, terminology, and organizational processes. The NIMSCAST uses readiness metrics to measure progress toward achieving the national preparedness goal, and Nation's overall preparedness to respond to major events. state agencies, each of the 100 counties and the Eastern Band of the Cherokee Indians must complete a NIMSCAST report which is for rolled together for a single uniform document. According to our 2007 NIMSCAST report, North Carolina has fulfilled all of the NIMS requirements however, some elements need strengthening. (See Appendix E.)

5.7 Review and Update Process

SIEC will meet quarterly to review the plan for potential changes. The SIEC meeting schedule is referred to in Section 4.1, Governance Structure. Recommended changes or additions from agencies throughout the state will be forwarded through the regional committees to the SIEC. After review/update, it is then sent to SERC for final approval/implementation.

The adoption of the SCIP does not signal the end of the interoperable communications planning process for North Carolina. Continuous monitoring and evaluation of the SCIP are essential steps in the ongoing planning process. It is important to regularly evaluate what issues should be addressed, and what goals and objectives the State should update to ensure that the vision is being achieved. By monitoring and evaluating the SCIP, North Carolina will accomplish three tasks: 1) ensure that its goals and objectives do not inadvertently change, 2) determine whether the desired results are being achieved, and 3) determine if updates or modifications to the SCIP are warranted. For this reason, North Carolina has decided to adopt a goal-based model of evaluation to determine if the State is achieving its stated goals and objectives.

Specific SIEC Committees have been identified as lead responsible for the implementation of each objective. A quarterly survey of these committees will be conducted. This survey will be due for completion prior to scheduled meeting of the State Emergency Response Commission (SERC). The data collected in the survey will be linked to the implementation steps that are identified in the Goals, Objectives and Initiatives section of the SCIP. Each initiative is associated with a performance measure that is tangible, specific, finite, and provides a clear indication as to the progress of accomplishing the objective. This data will be reported to the SERC quarterly and will serve as the regular reporting mechanism for the progress of the SCIP.

The continuous monitoring of the SCIP will ensure that the desired outcomes are compared with the actual outcomes of current planning efforts. The gaps will indicate where improvements in planning must be made and the relative priorities will determine the schedule for improvement.

6 Implementation

The SERC has been the lead oversight organization within North Carolina for interoperable communications. The interoperable communications responsibility has now been shifted to the SIEC. Because the SIEC has a narrower focus of interoperable communications, it is better able to manage the strategic initiatives set forth in this plan. With the addition of the DPR Regions, local and tribal emergency responders are ensured opportunities to not only influence the direction taken by the state, but also to assist in accomplishing the goals and objectives set forth herein.

The Executive Directors of each of the DPR Regions have been put in place and they or their communication subcommittee members are now participating as members of the SIEC. Each DPR Region was assigned a State Homeland Security Planner to provide support and continuity to the regions. These positions reside within the Department of Crime Control and Public Safety's Division of Emergency Management. (See section 2.3 for a detailed description of the DPR Region structure.)

6.1 Strategic Technology Reserve – Mid-Term Implementation (12-36 Months

The *continued* implementation of North Carolina's STR began in 2005 and will be expanded through the PSIC grant program as outlined in Section 5.4. The final implementation of all STR products throughout the DPR Regions will take place within an 18 month period. The stages of this implementation can be found under Section 5.3, Goal 3 coupled with a time line.

Performance Measure - Deployment and staging of STRs in all seven (7) DPR Regions.

6.2 Infrastructure of Statewide System - Long Term Implementation (36-60 Months)

The effort of completing a statewide interoperability network for all North Carolina emergency responders can be credited to the SERC. The leadership of the SERC, as authorized by the Governor, has carried interoperability further on the road toward 100% completion.

Performance Measure - Completion of all 238 sites of the statewide communications system across the state.

6.3 Gateway Enhancements

Gateway enhancements will allow current legacy radio systems to be tactically patched to other disparate radio systems. The SCIP outlines the objectives and goals to ensure the successful completion of gateway enhancements.

Performance Measure - Installation of Gateways across the state and successful testing of the ability to patch legacy radio systems across multiple jurisdictions.

6.4 Control Center Communications

The installation of consolettes within various communications centers around the state will allow for enhanced interoperable communications for emergency responders. The consolettes give emergency response agencies the ability to have dedicated monitoring of designated statewide calling talkgroups. Consolettes will give bordering agencies interoperability with South Carolina, which uses the same voice trunking technology as North Carolina. The SCIP, under Goal 3, will ensure the completion of consolettes.

Performance Measure - Installation of consolettes and completion of SOPs & training on use of statewide calling talkgroups

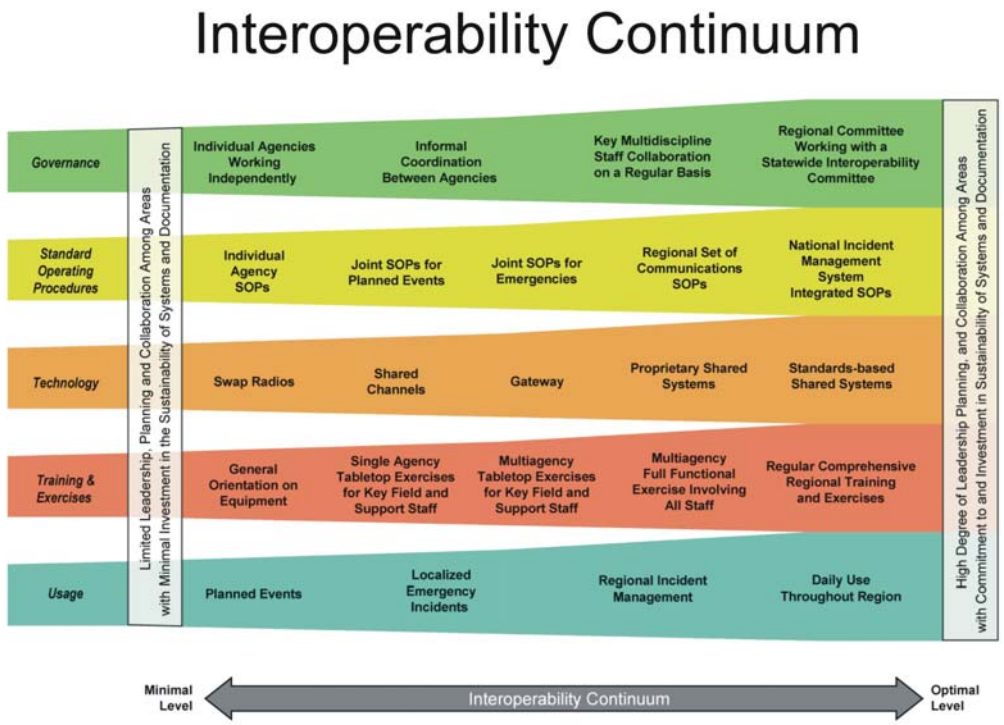
6.5 Critical Success Factors

The SCIP provides a structured avenue to interoperable communications that will be ever evolving. Programs within this SCIP will be completed, initiatives will be implemented and interoperability will continue to be enhanced.

Success factors for the North Carolina SCIP's goals and objectives include many items that are identified throughout this plan. The complete deployment of STRs, gateways, consolettes and the completion of statewide infrastructure will all be indications of success.

Critical success factors include an effective governing body (SIEC) that will manage the interoperability assets within the state. Another critical success factor is the continued funding of the strategic initiatives outlined in Section 5.4. Training and SOPs will be a critical element to bring all interoperability resources to a sufficient level of usability where they will be valuable on a daily basis to all emergency responders in North Carolina.

The Interoperability Continuum will be used as a measuring tool for critical success factors and performance measurements for the statewide plan.



Maturity Levels of Tactical Interoperable Communications

The scorecard employs a capabilities maturation model with four stages—Early Implementation, Intermediate Implementation, Established Implementation, and Advanced Implementation. Each of the three elements (Governance, SOPs, and Usage) has its own measure, the results of which are displayed using the Harvey Ball representations illustrated to the right. Because each of the urban/metropolitan areas has already developed and exercised a Tactical Interoperable Communications Plan (TICP), it was determined that the minimum score would be a quarter of a Harvey Ball ("Early Implementation") instead of an empty Harvey Ball. Summary definitions of each score, included below, provide an understanding of what each urban/metropolitan area generally demonstrated in achieving a given maturity level.

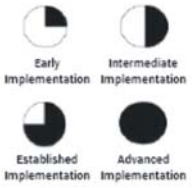


Figure 6-1 SAFECOM Interoperability Continuum

7 Funding

As early as 1995, North Carolina identified the need to improve both voice and data interoperability amongst its emergency responders. A Blue Ribbon study was conducted by Price Waterhouse that recommended that the State Legislature fund the construction of a statewide voice and data communications system, managed by the State Highway Patrol, to serve all emergency response agencies via a single platform. In 2004, the Patrol delivered to the Legislature a plan for a multi-year, phased implementation of a statewide voice communications system, referred to as the Voice Interoperability Plan for Emergency Responders (VIPER). This comprehensive plan included both Strategic (long term) and Tactical (short term) components to improve interoperability. The

Tactical solution not only leveraged existing communications architecture at the federal, state and local level, but also includes the state's deployable assets in the event of an unusual occurrence or emergency (Technology Reserve). In addition to providing a funding breakdown for capital projects (construction and equipment purchases), the plan also identified to the Legislature a stepped, ongoing financial commitment that would be required to support the project in the absence of a user fee.

In addition to Legislatively directed funding to support interoperability in North Carolina, the state's Administrative Agent, Crime Control Secretary Bryan E. Beatty, believed early on that the State Emergency Response Commission (SERC) should adopt the task of improving communications interoperability as its number one priority when considering the use of federal Department of Homeland Security (DHS) funds directed to North Carolina. Since 2004, a significant portion of the DHS funds have been used to assist in the construction of a unique phase of the VIPER statewide interoperable communications system. This has afforded the state the ability to maximize state dollars directed to the project. Each funding opportunity, to include the Public Safety Interoperable Communications (PSIC) grant is treated as an independent implementation phase and funding reconciliation is considered separate.

The VIPER Plan shows the state's plan for each unique phase of the project and the stepped funding requests for both construction and maintenance of the project. A full time, PMP certified project manager is part of the VIPER communications interoperability management team to ensure that the project remains on schedule, to make necessary adjustments in the project plan and to assist in the reporting of project milestones. In addition to an on staff project manager, the VIPER project by nature of its size and complexity as well as being a significant IT project, is required to be observed by North Carolina's Office of Information Technology Services (OITS) and is subject to independent, monthly review through their internal Project Management Office (PMO).

Given the volume of equipment implemented through the multiple phases of VIPER (currently in Phase Three), a significant increase in manpower has been necessary to provide not only personnel to perform installation and optimization task but also to provide ongoing maintenance and support. The need for these additional personnel, like the overall funding, is included in the VIPER Plan. To date, an additional thirty-two (32) support positions have been added to ensure that equipment and infrastructure purchased to support interoperability received ongoing maintenance, testing and is exercised regularly.

North Carolina's SERC supports improvements in interoperable communications as the number one statewide project within the emergency response community. All communications related projects seeking federal funds must be compared against the state's strategy when being considered to receive funds. This applies to Fire Act Grants, HRSA (now ASPR) funds, CDC Grants, DHS as well as PSIC funding opportunities. The state has as a subcommittee to the SERC an interoperable communication steering committee, in accordance with the PSIC and DHS recommendations. This State Interoperability Executive Committee (SIEC) is responsible for reviewing requests for funding related to improving interoperable communications and to recommend approvals to the SERC.

The VIPER project plan identifies how North Carolina will provide ongoing funding and support personnel to ensure that suitable maintenance and support for equipment or facilities purchased and/or improved with both state and federal dollars will be maintained.

Funding has been identified and allocated to support implementation activities that correspond with the strategic initiatives of the SCIP. A combination of both state and federal dollars have been identified and utilized in each of the phases of North Carolina's plan to improve communications interoperability. These funds have been directed to procure equipment and to provide core infrastructure as well as to provide ongoing, long term sustainability.

Short term funding has been derived from both state and federal funding sources. These sources have provided funds for capital improvement expenditures, however no federal funding is being used or sought to support long term sustainability. State funds will be solely used to maintain the statewide interoperability system.

Funding is available from internal sources (state) as well as known external sources (federal). Every available opportunity to seek funding to improve communications interoperability is considered, to include but not limited to; DHS funds, PSIC funds, Byrne Grants, Assistance to Firefighters Grants, HIRSA/ASPER funds.

The state has directed through the SERC grants for improving communications interoperability in a coordinated effort since 2003 and is submitting a multi-investment justification to the PSIC program in consort with the State Communications Interoperability Plan (SCIP).

The state will provide funding to provide the necessary funding to maintain, upgrade and provide operation support (equipment and personnel) for interoperable communications equipment purchased.

The State has already begun to provide a cache of equipment for deployment in times of emergency or during unusual occurrences. In the event of an emergency or disaster, the North Carolina Emergency Management will direct necessary emergency funds to support the maintenance, improvement and deployment of communications assets.

The position of State Interoperability Coordinator is currently being filled on a limited basis by a member of the North Carolina State Highway Patrol. It is anticipated that a request to fill this position permanently will be made during the 2008.

Travel expenses for the SIEC during the development of the SCIP were taken from a portion of the state's allocation for the PSIC project.

North Carolina Emergency Management provides funding for training and exercises of interoperable communications capabilities to include participation from federal, state and local emergency responders.

8 Close

North Carolina's Statewide Communications Interoperability Plan (SCIP) signifies partnerships and innovative thinking for solutions to the interoperable communications problems that hinder our federal, state and local emergency responders.

The SCIP provides a clear, concise and disciplined format in which federal, state and local jurisdictions can work together to develop technical solutions for interoperable communications needs and assist in identifying the funding sources required to implement the goals and initiatives of the SIEC.

North Carolina's next steps are to secure funding to implement the plan laid out here in this document and fill the gaps in interoperable communications identified through this detailed analysis.

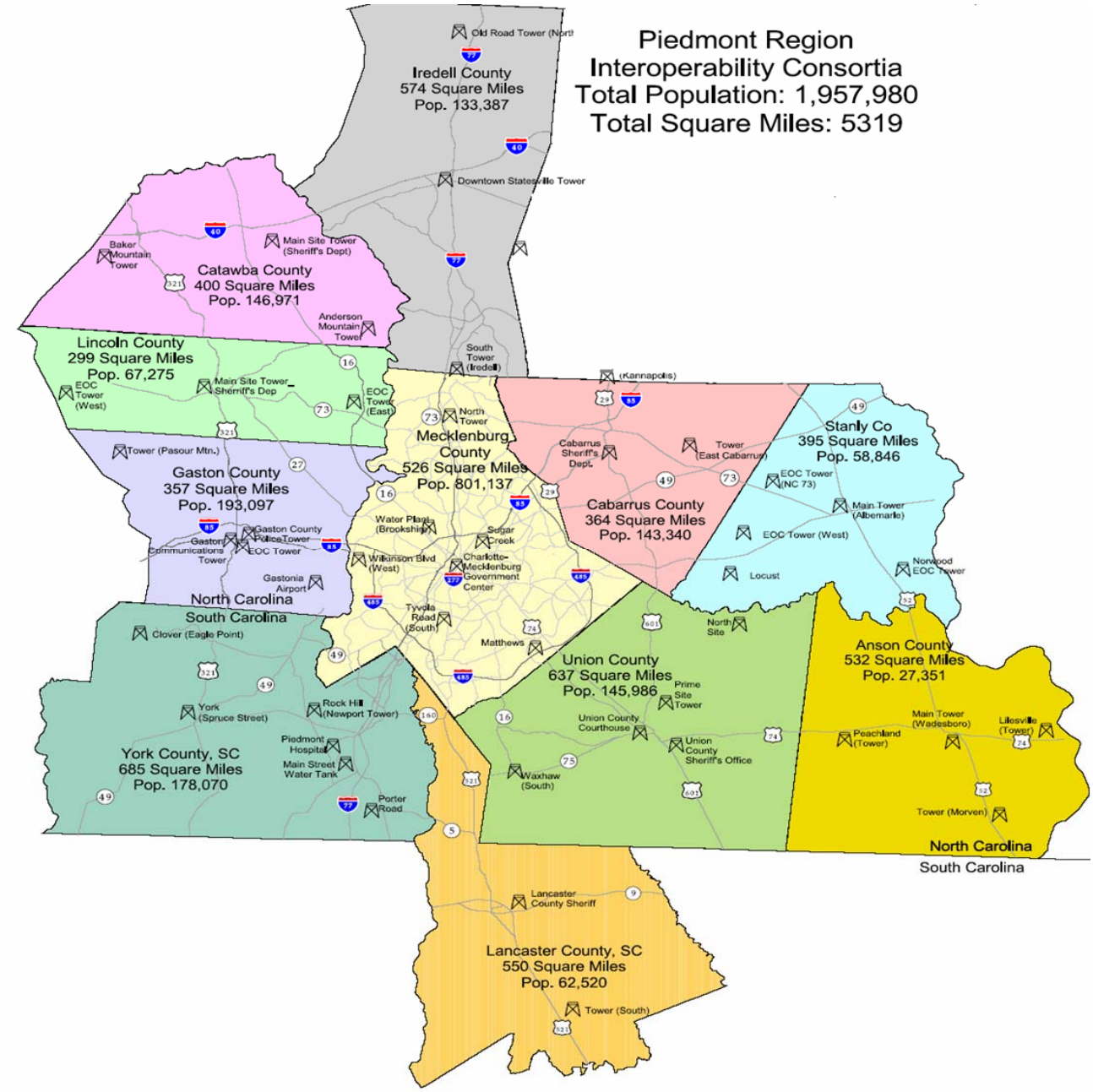
The Disaster Preparedness Response Regional planning organizations, in conjunction with the State Interoperability Executive Committee (SIEC) provide a common voice and vision for interoperable communication solutions for the citizens of North Carolina.

Appendix A List of all NC Counties and the Eastern Band of Cherokee Indians

County	County Seat	Population (2000)	Area
Alamance County	Graham	130,800	435 mi²
Alexander County	Taylorsville	33,603	263 mi²
Alleghany County	Sparta	10,667	236 mi²
Anson County	Wadesboro	25,275	537 mi²
Ashe County	Jefferson	24,384	427 mi²
Avery County	Newland	17,167	247 mi²
Beaufort County	North Carolina	44,958	959 mi²
Bertie County	Windsor	19,773	741 mi²
Bladen County	Elizabethtown	32,278	887 mi²
Brunswick County	Bolivia	73,143	1,050 mi²
Buncombe County	Asheville	206,330	660 mi²
Burke County	Morganton	89,148	515 mi²
Cabarrus County	Concord	131,063	365 mi²
Caldwell County	Lenoir	77,415	474 mi²
Camden County	Camden	6,885	306 mi²
Carteret County	Beaufort	59,383	1,341 mi²
Caswell County	Yanceyville	23,501	428 mi²
Catawba County	Newton	141,685	414 mi²
Chatham County	Pittsboro	49,329	709 mi²
*Cherokee County	Murphy	24,298	497 mi²
Chowan County	Edenton	14,526	233 mi²
Clay County	Hayesville	8,775	221 mi²
Cleveland County	Shelby	96,287	469 mi²
Columbus County	Whiteville	54,749	954 mi²
Craven County	New Bern	91,436	774 mi²
Cumberland County	Fayetteville	302,963	658 mi²
Currituck County	Currituck	18,190	526 mi²
Dare County	Manteo	29,967	1,562 mi²
Davidson County	Lexington	147,246	567 mi²
Davie County	Mocksville	34,835	267 mi²
Duplin County	Kenansville	49,063	819 mi²
Durham County	Durham	223,314	298 mi²
EBCI	Cherokee	20,000	88 mi²
Edgecombe County	Tarboro	55,606	507 mi²
Forsyth County	Winston-Salem	306,067	413 mi²
Franklin County	Louisburg	47,260	495 mi²
Gaston County	Gastonia	190,365	364 mi²
Gates County	Gatesville	10,516	346 mi²
*Graham County	Robbinsville	7,993	302 mi²
Granville County	Oxford	48,498	537 mi²
Greene County	Snow Hill	18,794	266 mi²
Guilford County	Greensboro	421,048	658 mi²
Halifax County	Halifax	57,370	731 mi²
Harnett County	Lillington	91,025	601 mi²
Haywood County	Waynesville	54,033	555 mi²
Henderson County	Hendersonville	89,173	375 mi²
Hertford County	Winton	22,601	360 mi²
Hoke County	Raeford	33,646	392 mi²
Hyde County	Swan Quarter	5,826	1,424 mi²
Iredell County	Statesville	122,660	597 mi²
*Jackson County	Sylva	33,121	494 mi²
Johnston County	Smithfield	121,965	796 mi²
Jones County	Trenton	10,381	473 mi²
Lee County	Sanford	49,040	259 mi²
Lenoir County	Kinston	59,648	402 mi²
Lincoln County	Lincolnton	63,780	307 mi²
McDowell County	Marion	42,151	446 mi²
Macon County	Franklin	29,811	519 mi²
Madison County	Marshall	19,635	452 mi²
Martin County	Williamston	25,593	461 mi²
Mecklenburg County	Charlotte	695,454	546 mi²
Mitchell County	Bakersville	15,687	222 mi²
Montgomery County	Troy	26,822	502 mi²
Moore County	Carthage	74,769	706 mi²
Nash County	Nashville	87,420	543 mi²
New Hanover County	Wilmington	160,307	328 mi²
Northampton County	Jackson	22,086	551 mi²
Onslow County	Jacksonville	150,355	909 mi²
Orange County	Hillsborough	118,227	401 mi²
Pamlico County	Bayboro	12,934	566 mi²
Pasquotank County	Elizabeth City	34,897	289 mi²
Pender County	Burgaw	41,082	933 mi²
Perquimans County	Hertford	11,368	329 mi²
Person County	Roxboro	35,623	404 mi²
Pitt County	Greenville	133,798	655 mi²
Polk County	Columbus	18,324	239 mi²
Randolph County	Asheboro	130,454	790 mi²
Richmond County	Rockingham	46,564	480 mi²
Robeson County	Lumberton	123,339	951 mi²
Rockingham County	Wentworth	91,928	572 mi²
Rowan County	Salisbury	130,340	524 mi²
Rutherford County	Rutherfordton	62,889	566 mi²
Sampson County	Clinton	60,161	947 mi²
Scotland County	Laurinburg	35,998	321 mi²
Stanly County	Albemarle	58,100	404 mi²
Stokes County	Danbury	44,711	456 mi²
Surry County	Dobson	71,219	538 mi²
*Swain County	Bryson City	12,968	541 mi²
Transylvania County	Brevard	29,334	381 mi²
Tyrrell County	Columbia	4,149	600 mi²
Union County	Monroe	123,677	640 mi²
Vance County	Henderson	42,954	270 mi²
Wake County	Raleigh	627,846	857 mi²
Warren County	Warrenton	19,972	444 mi²
Washington County	Plymouth	13,723	424 mi²
Watauga County	Boone	42,695	313 mi²
Wayne County	Goldsboro	113,329	557 mi²
Wilkes County	Wilkesboro	65,632	760 mi²
Wilson County	Wilson	73,814	374 mi²
Yadkin County	Yadkinville	36,348	337 mi²
Yancey County	Burnsville	17,774	313 mi²

* The Eastern Band of Cherokee Indian Reservation lies within these 4 counties

Appendix B UASI Map



Appendix C SIEC Charter (Adopted 10/9/07)

-CHARTER-

State Interoperable Executive Committee
- Sub-committee of the State Emergency Response Commission

I. Name: The organization shall be known as the State Interoperable Executive Committee, hereinafter known as "SIEC"

II. Statement of Purpose: The purpose of this organization shall be to serve as the State's interoperability committee, charged with overseeing interoperability projects and administering MHz interoperability channels.

III. Affiliation: The SIEC shall be directly affiliated with the State Emergency Response Commission (SERC)

A. Through this affiliation the SIEC is entitled to all the privileges and authorities conferred upon them by the SERC including:

1. Recognition by the SERC as interoperability expertise.
2. The right to promote SIEC activities at SERC meetings.
3. Responsibility for the development of the State Communications Interoperability Plan (SCIP).
4. Responsibility for organizing and administering interoperability projects, as they relate to Federal and State funding opportunities made available to the State Administrative Agent (SAA)

B. The acting Chairman of the SIEC shall present the SERC with a report each quarter, detailing the activities of the SIEC during the previous quarter and explaining how those activities do or do not uphold the mission and purpose of the SCIP.

C. The SIEC shall undergo an annual assessment at the end of each year to determine the extent to which the activities of the SIEC during the past year have or have not upheld the mission and purpose of the SCIP.

IV. Membership:

A. SIEC membership shall include multi-jurisdictional and multi-discipline representation from across the State to ensure that interoperability projects and the statewide communications plan are managed with the entire State's input.

SIEC representation shall include the following:

Chairperson to SERC for Interop Sub Comm
Governor's Office
State/Local Elected Official
State/Local EMS
State/Local Health Official
State/Local Fire Response Service
State/Local Law Enforcement
State/Local Emergency Management
State/Local Homeland Security
Tribal Government - E. Band Cherokee Indians
State/Local DOT
Military within the state (NCNG)
Federal Agency
UASI
Regional planning committee for 700/800MHz

V. Meetings and Voting:

A. The SIEC shall meet no less than once per quarter during the year. Meeting shall be held at a time and location determined by the Chairman. Meetings canceled due to unforeseen circumstances shall be rescheduled by the Chairman as soon as possible.

B. The Chairman may call special meetings as may be deemed necessary to carry out the duties of the SIEC. Upon written request, the Chairman shall call a meeting within ten days.

C. The SIEC may conduct public comment meetings as it may be deemed necessary to obtain information from subject matter experts.

D. Any member of the SIEC has the right to present issues or concerns at a meeting. Any member wishing to place an item on the agenda must submit a written request to the Chairman within ninety-six hours of the meeting.

E. Each member of the SIEC, including the Chairman, shall be entitled to one vote.

F. Voting procedures will be based upon majority rule. Votes are taken by a raise of hands.

G. For a vote to be taken, the majority of the members normally attending regularly scheduled meeting, must be present.

Appendix D Glossary

Item/Acronym	Definition
APCO	Association of Public Safety Communications Officials
ASPR	Assistant Secretary for Prepardness & Response
CAPRAD	Computer Assisted Pre-Coordination Resource And Database
CASM	Communications Assets Survey & Mapping
CDC	Centers for Disease Control & Prevention
DPRR	Domestic Preparedness & Readiness Region
EOC	Emergency Operations Centers
EOP	Emergency Operations Plans
HRSA	Health Resources & Services Administration
ICS	Incident Command System
IMAP	Incident Management Assistance Patrols
MACS	Multi-Agency Coordination Systems
NASCAR	National Association for Stock Car Auto Racing
NCDOT	North Carolina Department of Transportation
NCSUN	North Carolina Smartnet Users Network
NGO	Non-Governmental Organizations
NIJ	National Institute of Justice
NIMS	National Incident Management System
OIC	Office of Interoperable Communications
PACC	Piedmont Area Communications Consortium
PSIC	Public Safety Interoperable Communications
SAA	State Administrative Agent
SCIP	Statewide Communications Interoperability Plan
SERC	State Emergency Response Commission
SIEC	State Interoperability Executive Committee
SOP	Standard Operating Procedures
TCL	Target Capabilities List
TICP	Tactical Interoperable Communications Plan
TMC	Transportation Management Centers
UASI	Urban Area Security Initiative
UAWG	Urban Area Working Group
VIPER	Voice Interoperable Plan for Emergency Responders

Appendix E NIMS Compliance Matrix

FY2007 NIMS Compliance Metrics: North Carolina

Last Update Date: 2007-09-20

Last Rollup Date: 2007-10-01

Summary

Sections	**Complete**	**Tier 1**	**Tier 2**
Section 1 Metrics: State Adoption and Infrastructure	10 / 10 (100%)	5 / 8 (62%)	2 / 7 (28%)
Section 2 Metrics: Command and Management	11 / 11 (100%)	1 / 1 (100%)	7 / 10 (70%)
Section 3 Metrics: Preparedness Planning	8 / 8 (100%)	5 / 5 (100%)	2 / 3 (66%)
Section 4 Metrics: Preparedness Training	5 / 5 (100%)	2 / 2 (100%)	3 / 4 (75%)
Section 5 Metrics: Preparedness Exercises	9 / 9 (100%)	6 / 6 (100%)	2 / 3 (66%)
Section 6 Metrics: Resource Management	8 / 8 (100%)	2 / 2 (100%)	4 / 6 (66%)
Section 7 Metrics: Communication and Information Management	2 / 2 (100%)	1 / 1 (100%)	1 / 1 (100%)
Overall	**53 / 53 (100%)**	**22 / 25 (88%)**	**21 / 34 (61%)**

Section	Status		Expected Compliance Date
	Tier 1	**Tier 2**	
Section 1 Metrics: State Adoption and Infrastructure	!	!	
1.1 Formal Adoption	✓		
1.2 Promotion and Encouragement	✓		
1.3 Monitoring Tribal/Local Adoption	✓	✓	
1.4 Quantify Tribal/Local Adoption	✓	✓	
1.5 Establish Process to Communicate, Monitor and Implement NIMS	!	!	01/28/2008
1.6 State/Territory NIMS Coordinator	✓		
1.7 Funding Linked to FY06 NIMS Implementation Requirements	!	!	01/28/2008
1.8 NIMS Compliance Review as a Part of Grant Related Audits	!	!	01/28/2008
1.9 Monitor and Assess Outreach and Implementation of NIMS		!	
1.10 Departments/Agencies NIMS Coordinator		!	

Section 2 Metrics: Command and Management	✓	!
2.1 Implementation of NIMS-Prescribed ICS for All-Hazards Incident Response	✓	
2.2 Implementation of NIMS-Prescribed ICS for Preplanned Events		✓
2.3 Consistent Application of Incident Action Planning		!
2.4 Consistent Application of Common Communications Plans		!
2.5 Incident Action Plan Concepts		✓
2.6 Communication Plan Components		!
2.7 Encouraging Multi-Agency Coordination Systems (MACS)		✓
2.8 Designation or Utilization of Multi-Agency Coordination Systems		✓
2.9 MACS Functions Coordinated by State/Territory		✓
2.10 Public Information System (PIS) Included in Emergency Operations Plan (EOP)		✓
2.11 Types of Information That PIS Can Gather, Verify, Coordinate and Disseminate		✓
Section 3 Metrics: Preparedness Planning	✓	!
3.1 NIMS Baseline Established	✓	
3.2 Utilization of Federal Preparedness Funding to Improve NIMS Preparedness and Response Activities	✓	
3.3 Quantify State/Territory Department/Agencies that have Incorporated NIMS with Emergency Management or Response Functions	✓	
3.4 Extent of NIMS Concepts/Principles Incorporation	✓	
3.5 Integration of Plans with Federal Response as Described in NRP		✓
3.6 Promotion of Intrastate and interagency Mutual Aid Agreements	✓	
3.7 Promotion of Mutual Aid Agreements with Private Sector and NGOs		✓
3.8 Types of Mutual Aid Agreements Trained and/or Exercised		!
Section 4 Metrics: Preparedness Training	✓	!
4.1 Training conformation to NIMS National Standard Curriculum	✓	
4.2 Quantity of Facilities Used to Deliver NIMS Training		✓
4.3 Communicate, Coordinate and Track NIMS Training		✓
4.4 Document Training Status of Personnel		!
4.5 Quantify Trained Personnel	✓	✓

Section 5 Metrics: Preparedness Exercises	✓	!
5.1 NIMS/ICS Incorporated into Exercises	✓	
5.2 Quantity of Exercises that Evaluate NIMS Implementation	✓	
5.3 Existence of an All-Hazard Exercise Program	✓	
5.4 Quantity of Exercises with Multi-Disciplinary and/or Multi-Jurisdictional Component	✓	
5.5 Quantity of Exercises Requiring Activation of NRP in FY06		✓
5.6 FY07 Exercises Incorporating Activation of NRP		✓
5.7 After Action Reports and/or Lessons Learned	✓	
5.8 Incorporation of Corrective Action Plans, After Action Reports, and/or Lessons Learned	✓	
5.9 Maintenance of Correction Action Program		!
Section 6 Metrics: Resource Management	✓	!
6.1 Inventory of Response Assets	✓	
6.2 Response Asset Inventory Developed		✓
6.3 Resource Typing for Response Assets		✓
6.4 Number of Local/Tribal Jurisdictions that have Provided Inventory of Resources		✓
6.5 Acquisition Adoption of Interoperability Standards	✓	
6.6 Incorporation of Standard Equipment List and Other Federal Standards Data		!
6.7 State Validation of Inventory		✓
6.8 Utilization of Response Asset Inventory		!
Section 7 Metrics: Communication and Information Management	✓	✓
7.1 Implementation of Communication Standards During Multi-Agency and/or Multi-Jurisdictional Events	✓	
7.2 Methods to Ensure Consistent and Accurate Information During Incident		✓

Symbol Legend

Complete		**Status**
✓ Completed	✓	Strength

X Not Completed ! Weakness

NA Not Applicable (blank) Not Completed, or No Criteria Established

Appendix F COML Course

Core competencies of the COML Course include:

General

1. Obtain and assemble information and materials needed for response kit prior to receiving assignment
2. Establish and maintain positive interpersonal and interagency working relationships
3. Provide for the safety and welfare of assigned personnel during the entire period of supervision

Mobilization

1. Obtain complete information from dispatch upon initial activation
2. Gather information to assess the Incident Activities

Incident Activities

1. Arrive at incident and check in
2. Obtain briefing
3. Receive IAP
4. Determine requirements for communications
5. Evaluate needs and order supplies
6. Organize and supervise unit
7. Participate in incident planning meetings
8. Design communications systems to meet incident and operational needs
9. Install communications equipment
10. Assign communications equipment
11. Establish ICC
12. Manage operations of the ICC
13. Coordinate frequencies, activities and resources with the Communications Coordinator (COMC)
14. Notify appropriate local, county, regional, state and federal agencies
15. Initiate and maintain accurate records of all communications equipment
16. Perform operational tests of communications systems throughout the duration of the incident
17. Interact and coordinate with appropriate unit leaders and operations personnel
18. Identify for release, excess unit resources
19. Maintain ICS Unit Log
20. Evaluate performance of subordinates as required by agency policy

Appendix G Inventory of Tactical Communications Patches for VHF, UHF and 800 MHz

Interoperability Switch Locations/Counties per site/Other Radio per site											
Microwave Site Number 69 (Cowee Bald)			(Macon)								
	(35-19-38)	**(083-20-07)**	**Antenna Bearing**		**FAS NUMBERS**						
	Counties Included		**deg / mi**	**RADIO TYPE**	**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT					**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Cherokee		247 / 43.1								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762449						
2	*(Law)*	VHF-HI		CDM1250	762450						
	Graham		274 / 28.8								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762451						
4	*(Law)*	VHF-HI		CDM1250	762452						
	Macon		196 / 12.6								
5	*(Fire/EMS)*	UHF-HI		CDM1250		762614					
6	*(Law)*	VHF-HI		CDM1250	762453						
	Swain		349 / 16.1								
7	*(Fire/EMS)*	UHF-HI		CDM1250		762615					
8	*(Law)*	UHF-HI		CDM1250		762616					
	Jackson		110 / 14.2								
9	*(Fire/EMS)*	UHF-HI		CDM1250		762617					
10	*(Law)*	UHF-HI		CDM1250		762618					
	Haywood		53 / 27.2								

11	*(Fire/EMS)*	UHF-HI		CDM1250		762619					
12	*(Law)*	VHF-HI		CDM1250	762454						
	Transylvania		101 / 34.8								
13	*(Fire/EMS)*	VHF-HI		CDM1250	762455						
14	*(Law)*	VHF-HI		CDM1250	762456						
	Clay		234 / 33								
15	*(Fire/EMS)*	VHF-HI		CDM1250	762457						
16	*(Law)*	VHF-HI		CDM1250	762458						
17	**State Fire**	VHF-HI		CDM1250	762459						
	State Rescue	VHF-HI		See Above							
	SHP VHF HI	VHF-HI		See Above							
	NLECC VHF	VHF-HI		See Above							
18	**FEDCOM VHF**	VHF-HI		CDM1250	762460						
18	**FEDCOM UHF**	UHF-LO		CDM1250		762620					
20	**800 MHZ**	**Event Delta 1**		XTL 5000 W5					762169		
21	**SATCOM**	SAT DOME									
22	**HPTN**	4WIRE TERM									
Microwave Site Number 63 (Clingman's Peak)			(Yancey)								
	(35-44-05)	**(082-17-12)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**

ACU SLOT			deg / mi	RADIO TYPE	150-174	450-470	36-42	42-50	800MHz	800MHz	???
	Madison		295 / 26.7								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762461						
2	*(Law)*	VHF-HI		CDM1250	762462						
	Buncombe		235 / 18.2								
3	*(Fire/EMS)*	VHF-HI	MDC 7999	CDM1250							1
4	*(Law)*	VHF-HI	End ID	CDM1250							1
	McDowell		115 / 19								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762463						
6	*(Law)*	VHF-HI		CDM1250	762464						
	Yancey		358 / 12.3								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762465						
8	*(Law)*	VHF-HI		CDM1250	762466						
	Mitchell		17 / 23.0								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762467						
10	*(Law)*	VHF-HI		CDM1250	762468						
11	**State Fire**	VHF-HI		CDM1250	762469						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
12	**SHP VHF LO**	VHF-LO		CDM1250				762442			
	NLECC VHF	VHF-HI		See State Fire							
13	**FEDCOM VHF**	VHF-HI		CDM1250	762470						
14	**FEDCOM UHF**	UHF-LO		CDM1250		762621					

15	**800 MHZ**	**Event Delta 2**		XTL 5000 W5					763170		
16	**800 MHZ**	**Event Delta 3**		XTL 5000 W5					763171		
17	**SATCOM**	SAT DOME									
18	**HPTN**	4WIRE TERM									
Microwave Site Number 62 (Linville)			(Avery)								
	(36-03-47)	**(081-50-33)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Avery		302 / 7.0								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762471						
2	*(Law)*	VHF-HI		CDM1250	762472						
	Burke		158 / 23.8								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762473						
4	*(Law)*	VHF-HI		CDM1250	762474						
	Caldwell		122 / 20								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762475						
6	*(Law)*	VHF-HI		CDM1250	762476						
	Watauga		41 / 16								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762477						
8	*(Law)*	VHF-HI		CDM1250	762478						
9	**State Fire**	VHF-HI		CDM1250	762479						
	State Rescue	VHF-HI		See State Fire							

	SHP VHF HI	VHF-HI		See State Fire							
10	**SHP VHF LO**	VHF-LO		CDM1250				762443			
	NLECC VHF	VHF-HI		See State Fire							
11	**FEDCOM VHF**	VHF-HI		CDM1250	762480						
12	**FEDCOM UHF**	UHF-LO		CDM1250		762622					
13	**800 MHZ**	**Event Delta 1**		XTL 5000 W5					763172		
	-										
14	**800 MHZ**	**Event Delta 2**		XTL 5000 W5					763173		
	-										
15	**SATCOM**	SAT DOME									
	-										
16	**HPTN**	4WIRE TERM									
	-										
Microwave Site Number 60 (Pores Knob)			(Wilkes)								
	(36-02-48)	**(081-09-25)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg . mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Ashe		326 / 32.8								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762481						
2	*(Law)*	VHF-HI		CDM1250	762482						
	Wilkes		360 / 16.4								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762483						
4	*(Law)*	VHF-HI		CDM1250	762484						
	Alexander		186 / 9.0								

5	*(Fire/EMS)*	VHF-HI		CDM1250	762485						
6	*(Law)*	VHF-HI		CDM1250	762486						
	Alleghany		360 / 32.9								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762487						
8	*(Law)*	VHF-HI		CDM1250	762488						
9	**State Fire**	VHF-HI		CDM1250	762489						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
10	**SHP VHF LO**	VHF-LO		CDM1250				762444			
	NLECC VHF	VHF-HI		See State Fire							
11	**FEDCOM VHF**	VHF-HI		CDM1250	762490						
12	**FEDCOM UHF**	UHF-LO		CDM1250		762623					
13	**800 MHZ**	**Event Charley 1**		XTL 5000 W5					763174		
	-										
14	**800 MHZ**	**Event Charley 2**		XTL 5000 W5					763175		
	-										
15	**SATCOM**	SAT DOME									
	-										
16	**HPTN**	4WIRE TERM									
Microwave Site Number 58 (Baker Mtn)			(Catawba)								
	(35-39-30)	**(081-24-20)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**

ACU SLOT			deg / mi	RADIO TYPE	150-174	450-470	36-42	42-50	800MHz	800MHz	???
	Catawba		84 / 9.9								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762491						
2	*(Law)*	VHF-HI		CDM1250	762492						
	Iredell		62 / 33.7								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762493						
4	*(Law)*	UHF-HI		CDM1250		762624					
	Lincoln		146 / 15.0								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762494						
6	*(Law)*	UHF-HI		CDM1250		762625					
	Gaston		156 / 29.9								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762495						
8	*(Law)*	UHF-HI		CDM1250		762626					
	Cleveland		197 / 26.4								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762496						
10	*(Law)*	VHF-HI		CDM1250	762497						
	Rutherford		239 / 36.8								
11	*(Fire/EMS)*	VHF-HI		CDM1250	762498						
12	*(Law)*	VHF-HI		CDM1250	762499						
13	**State Fire**	VHF-HI		CDM1250	762500						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
14	**FEDCOM VHF**	VHF-HI		CDM1250	762501						

15	**FEDCOM UHF**	UHF-LO		CDM1250		762627					
16	**800 MHZ**	**Event Charley 3**		XTL 5000 W5					763176		
17	**800 MHZ**	**Event Charley 4**		XTL 5000 W5					763177		
18	**800 MHZ**	**Troop F M AID**		XTL 5000 W5					763178		
19	**SATCOM**	SAT DOME									
20	**HPTN**	4WIRE TERM									
Microwave Site Number 51 (Sauratown Mtn)			(Stokes)								
	(36-22-34.5)	**(080-22-13.2)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Surry		302 / 15.4								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762502						
2	*(Law)*	VHF-HI		CDM1250	762503						
	Stokes		67 / 13.5								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762504						
4	*(Law)*	UHF-HI		CDM1250		762628					
	Yadkin		224 / 23.5								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762505						
6	*(Law)*	VHF-HI		CDM1250	762506						
	Forsyth		160 / 20.5								

7	*(Fire/EMS)*	VHF-HI		CDM1250	762507						
8	*(Law)*	UHF-HI		CDM1250		762629					
	Rockingham		84 / 36.6								
9	*(Fire/EMS)*	VHF-LO		CDM1250				762448			
10	*(Law)*	UHF-HI		CDM1250		762630					
11	**State Fire**	VHF-HI		CDM1250	762509						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
12	**FEDCOM VHF**	VHF-HI		CDM1250	762510						
13	**FEDCOM UHF**	UHF-LO		CDM1250		762631					
14	**800 MHZ -**	**Event Delta 1**		XTL 5000 W5					763179		
15	**800 MHZ -**	**Troop E M AID**		XTL 5000 W5					763180		
16	**SATCOM -**	SAT DOME									
17	**HPTN**	4WIRE TERM									
Microwave Site Number 47 (Cane Mtn)			(Alamance)								
	(35-56-44)	**(079-26-03)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Guilford		280 / 26.4								

1	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763181		
2	*(Law)*	800 MHz		XTL 5000 W5					763182		
	Randolph		232 / 26								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762511						
4	*(Law)*	UHF-HI		CDM1250		762632					
	Caswell		9 / 32.5								
5	***MOVED TO***	**CASWELL CO**		CDM1250				762445			
6	***MOVED TO***	**CASWELL CO**		CDM1250		762633					
	Person		39 / 40.2								
7	***MOVED TO***	**CASWELL CO**		CDM1250	762512						
8	***MOVED TO***	**CASWELL CO**		CDM1250	762513						
	Alamance		4 / 11.0								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762514						
10	*(Law)*	VHF-HI		CDM1250	762515						
	Orange		83 / 30								
11	*(Fire/EMS)*	VHF-HI		CDM1250	762516						
12	*(Law)*	UHF-HI		CDM1250		762634					
	Chatham		135 / 23.2								
13	*(Fire/EMS)*	VHF-HI		CDM1250	762517						
14	*(Law)*	UHF-HI		CDM1250		762635					
15	**State Fire**	VHF-HI		CDM1250	762518						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							

	NLECC VHF	VHF-HI		See State Fire							
16	**FEDCOM VHF**	VHF-HI		CDM1250	762519						
17	**FEDCOM UHF**	UHF-LO		CDM1250		762636					
18	**800 MHZ**	**Event Bravo 1**		XTL 5000 W5					763183		
19	**800 MHZ**	**Event Bravo 2**		XTL 5000 W5					763184		
20	**800 MHZ**	~~**Event Bravo 3**~~		XTL 5000 W5					763185		
	MOVED TO	**CASWELL CO**									
21	**800 MHZ**	**Troop D M AID**		XTL 5000 W5					763186		
22	**SATCOM**	SAT DOME									
23	**HPTN**	4WIRE TERM									
Microwave Site Number 72 (Ellerbe)			(Richmond)								
	(35-07-12)	**(079-42-42)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Stanly		300 / 32								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762520						
2	*(Law)*	UHF-HI		CDM1250		762637					
	Montgomery		328 / 20.3								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762521						

4	*(Law)*	UHF-HI		CDM1250		762638					
	Anson		243 / 23								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762522						
6	*(Law)*	UHF-HI		CDM1250		762639					
	Richmond		177 / 16.5								
7	*(Fire/EMS)*	VHF-LO		CDM1250				762446			
8	*(Law)*	UHF-HI		CDM1250		762640					
	Hoke		109 / 30								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762523						
10	*(Law)*	UHF-HI		CDM1250		762641					
	Lee		50 / 39.4								
11	*(Fire/EMS)*	VHF-HI		CDM1250	762524						
12	*(Law)*	UHF-HI		CDM1250		762642					
	Scotland		149 / 27.7								
13	*(Fire/EMS)*	VHF-HI		CDM1250	762525						
14	*(Law)*	UHF-HI		CDM1250		762643					
	Moore		47 / 23.2								
15	*(Fire/EMS)*	UHF-HI		CDM1250		762644					
16	*(Law)*	UHF-HI		CDM1250		762645					
17	**State Fire**	VHF-HI		CDM1250	762526						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
18	**SHP VHF LO**	VHF-LO		CDM1250				NOTE			

	NLECC VHF	VHF-HI		See State Fire							
19	**FEDCOM VHF**	VHF-HI		CDM1250	762527						
20	**FEDCOM UHF**	UHF-LO		CDM1250		762646					
21	**800 MHZ**	**Event Bravo 3**		XTL 5000 W5					763187		
22	**800 MHZ**	**Troop H M AID**		XTL 5000 W5					763188		
23	**SATCOM**	SAT DOME									
24	**HPTN**	4WIRE TERM									
Microwave Site Number 52 (Faith)			(Rowan)								
	(35-35-31)	**(080-27-13)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Mecklenburg		221 / 34.3								
1	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763189		
2	*(Law)*	800 MHz		XTL 5000 W5					763190		
	Cabarrus		208 / 15								
3	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763191		
4	*(Law)*	800 MHz		XTL 5000 W5					763192		
	Rowan		309 / 15.5								
5	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763193		
6	*(Law)*	800 MHz		XTL 5000 W5					763194		
	Davie		345 / 22								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762528						

8	*(Law)*	UHF-HI		CDM1250		762647					
	Davidson		47 / 29.5								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762529						
10	*(Law)*	UHF-HI		CDM1250		762648					
	Union		260 / 48.3								
11	*(Fire/EMS)*	VHF-HI		CDM1250	762530						
12	*(Law)*	UHF-HI		CDM1250		762649					
13	**State Fire**	VHF-HI		CDM1250	762531						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
14	**SHP VHF LO**			CDM1250							
	NLECC VHF	VHF-HI		See State Fire							
15	**FEDCOM VHF**	VHF-HI		CDM1250	762532						
16	**FEDCOM UHF**	UHF-LO		CDM1250		762650					
17	**800 MHZ**	**Event Charley 4**		XTL 5000 W5					763195		
	-										
18	**800 MHZ**	**Troop E M AID**		XTL 5000 W5					763196		
	-										
19	**SATCOM**	SAT DOME									
	-										
20	**HPTN**	4WIRE TERM									
Microwave Site Number 1			(Wake)								

(Blue Ridge Rd)											
	(35-47-56)	**(078-42-20)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Wake		101 / 4								
1	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763197		
2	*(Law)*	800 MHz		XTL 5000 W5					763198		
	Durham		322 / 18								
3	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763199		
4	*(Law)*	UHF-HI		CDM1250		762651					
	Johnston		134 / 29.5								
5	*(Fire/EMS)*	800 MHz		JAGUAR EDACS						1	
6	*(Law)*	800 MHz		JAGUAR EDACS						1	
	Franklin		48 / 32								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762533						
8	*(Law)*	VHF-HI		CDM1250	762534						
	Granville		11 / 37.3								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762535						
10	*(Law)*	VHF-HI		CDM1250	762536						
	Harnett		192 / 27.9								
11	*(Fire/EMS)*	800 MHz		JAGUAR EDACS						1	
12	*(Law)*	800 MHz		JAGUAR EDACS						1	
13	**State Fire**	VHF-HI		CDM1250	762537						
	State Rescue	VHF-HI		See State Fire							

	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
14	**FEDCOM VHF**	VHF-HI		CDM1250	762538						
15	**FEDCOM UHF**	UHF-LO		CDM1250		762652					
16	**800 MHZ**	**Troop C M AID**		XTL 5000 W5					763200		
	-										
17	**800 MHZ**	**Troop C Dist 3**		XTL 5000 W5					763201		
	-										
18	**800 MHZ**	**Troop C Dist 7**		XTL 5000 W5					763202		
	-										
19	**800 MHZ**	**Event Alpha 1**		XTL 5000 W5					763203		
	-										
20	**800 MHZ**	**Event Alpha 2**		XTL 5000 W5					763204		
	-										
21	**SATCOM**	SAT DOME									
	-										
22	**HPTN**	4WIRE TERM									
Microwave Site Number 41 (Elizabethtown)			(Bladen)								
	(34-34-49)	**(078-37-37)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Robeson		276 / 23								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762539						
2	*(Law)*	UHF-HI		CDM1250		762653					

	Cumberland		336 / 38								
3	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763205		
4	*(Law)*	800 MHz		XTL 5000 W5					763206		
	Bladen		115 / 8.6								
5	*(Fire/EMS)*	UHF-HI		CDM1250		762654					
6	*(Law)*	UHF-HI		CDM1250		762655					
	Sampson		27 / 36.3								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762540						
8	*(Law)*	UHF-HI		CDM1250		762656					
	Duplin		93 / 44.7								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762541						
10	*(Law)*	UHF-HI		CDM1250		762657					
11	**State Fire**	VHF-HI		CDM1250	762542						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
12	**FEDCOM VHF**	VHF-HI		CDM1250	762543						
13	**FEDCOM UHF**	UHF-LO		CDM1250		762658					
14	**800 MHZ**	**Troop B M AID**		XTL 5000 W5					763207		
15	**800 MHZ**	**Event Alpha 1**		XTL 5000 W5					763208		
16	**800 MHZ**	**Event Alpha 2**		XTL 5000 W5					763209		

17	**800 MHZ**	**Event Alpha 3**		XTL 5000 W5					763210		
18	**SATCOM**	SAT DOME									
19	**HPTN**	4WIRE TERM									
Microwave Site Number 40 (Delco)			(Columbus)								
	(34-19-16)	**(078-13-43)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Columbus		264 / 30.5								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762544						
2	*(Law)*	UHF-HI		CDM1250		762659					
	Brunswick		157 / 30								
3	*(Fire/EMS)*	VHF-HI		Tait/Kenwood ??							1
4	*(Law)*	UHF-HI		Tait/Kenwood ??							1
	New Hanover		105 / 23.6								
5	*(Fire/EMS)*	800 MHz		XTL 5000 W5					763211		
6	*(Law)*	800 MHz		XTL 5000 W5					763212		
	Pender		50 / 27.3								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762545						
8	*(Law)*	UHF-HI		CDM1250		762660					
9	**State Fire**	VHF-HI		CDM1250	762546						
	State Rescue	VHF-HI		See State Fire							

	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
10	**FEDCOM VHF**	VHF-HI		CDM1250	762547						
11	**FEDCOM UHF**	UHF-LO		CDM1250		762661					
12	**800 MHZ**	**Troop B M AID**		XTL 5000 W5					763213		
13	**800 MHZ**	**Troop B Dist 6**		XTL 5000 W5					763214		
14	**800 MHZ**	**Troop B Dist 4**		XTL 5000 W5					763215		
15	**800 MHZ**	**Event Alpha 3**		XTL 5000 W5					763216		
16	**800 MHZ**	**Event Alpha 4**		XTL 5000 W5					763217		
17	**SATCOM**	SAT DOME									
18	**HPTN**	4WIRE TERM									
Microwave Site Number 22 (Farmville)			(Pitt)								
	(35-33-31)	**(077-36-02)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Pitt		84 / 17.4								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762548						
2	*(Law)*	VHF-HI		CDM1250	762549						

	Wayne		240 / 25.9								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762550						
4	*(Law)*	VHF-HI		CDM1250	762551						
	Greene		210 / 9.2								
5	*(Fire/EMS)*	VHF-LO		CDM1250			762441				***
6	*(Law)*	VHF-HI		CDM1250	762552						
	Wilson		305 / 23.8								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762553						
8	*(Law)*	VHF-HI		CDM1250	762554						
	Edgecombe		359 / 29.4								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762555						
10	*(Law)*	VHF-HI		CDM1250	762556						
11	**State Fire**	VHF-HI		CDM1250	762557						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
12	**FEDCOM VHF**	VHF-HI		CDM1250	762558						
13	**FEDCOM UHF**	UHF-LO		CDM1250		762662					
14	**800 MHZ**	**Troop A M AID**		XTL 5000 W5					763218		
15	**800 MHZ**	**Event Delta 1**		XTL 5000 W5					763219		
16	**800 MHZ**	**Event Delta 2**		XTL 5000 W5					763220		

17	**SATCOM**	SAT DOME									
18	**HPTN**	4WIRE TERM									
Microwave Site Number 24 (Brinkleyville)			(Halifax)								
	(36-17-28)	**(077-50-10)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Vance		277 / 32.1								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762559						
2	*(Law)*	VHF-HI		CDM1250	762560						
	Warren		301 / 18.1								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762561						
4	*(Law)*	VHF-HI		CDM1250	762562						
	Halifax		115 / 23.5								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762563						
6	*(Law)*	VHF-HI		CDM1250	762564						
	Northampton		69 / 33.5								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762565						
8	*(Law)*	VHF-HI		CDM1250	762566						
	Nash		203 / 25.9								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762567						
10	*(Law)*	VHF-HI		CDM1250	762568						
11	**State Fire**	VHF-HI		CDM1250	762569						
	State Rescue	VHF-HI		See State Fire							

	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
12	**FEDCOM VHF**	VHF-HI		CDM1250	762570						
13	**FEDCOM UHF**	UHF-LO		CDM1250		762663					
14	**800 MHZ**	**Troop C M AID**		XTL 5000 W5					763221		
15	**800 MHZ**	**Event Alpha 4**		XTL 5000 W5					763222		
16	**SATCOM**	SAT DOME									
17	**HPTN**	4WIRE TERM									
Microwave Site Number 27 (Williamston)			(Martin)								
	(35-50-16)	**(077-05-39)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Hertford		4 / 43.8								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762571						
2	*(Law)*	VHF-HI		CDM1250	762572						
	Bertie		35 / 22.9								
3	*(Fire/EMS)*	VHF-LO		CDM1250				762447			
4	*(Law)*	VHF-HI		CDM1250	762573						
	Martin		134.9 / 10.0								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762574						
6	*(Law)*	VHF-HI		CDM1250	762575						
	(Mutual Aid)	VHF-HI									

	Washington		88 / 37.8								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762576						
8	*(Law)*	UHF-HI		CDM1250		762664					
	Beaufort		149 / 31.9								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762577						
10	*(Law)*	VHF-HI		CDM1250	762578						
11	**State Fire**	VHF-HI		CDM1250	762579						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
12	**FEDCOM VHF**	VHF-HI		CDM1250	762580						
13	**FEDCOM UHF**	UHF-LO		CDM1250		762665					
14	**800 MHZ**	**Troop A M AID**		XTL 5000 W5					763223		
	-										
15	**800 MHZ**	**Event Delta 3**		XTL 5000 W5					763224		
	-										
16	**SATCOM**	SAT DOME									
	-										
17	**HPTN**	4WIRE TERM									
	-										
Microwave Site Number 29 (Columbia)			(Tyrrell)								
	(35-53-59)	**(076-20-46)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**

ACU SLOT			deg / mi	RADIO TYPE	150-174	450-470	36-42	42-50	800MHz	800MHz	???
	Tyrell		117 / 12.1								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762581						
2	*(Law)*	UHF-HI		CDM1250		762666					
	Hyde		176 / 35.2								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762582						
4	*(Law)*	UHF-HI		CDM1250		762667					
	Dare		94 / 40.2								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762583						
6	*(Law)*	UHF-HI		CDM1250		762668					
	Chowan		310 / 19.3								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762584						
8	*(Law)*	VHF-HI		CDM1250	762585						
	Perquimans		342 / 22.3								
9	*(Fire/EMS)*	VHF-HI		CDM1250	762586						
10	*(Law)*	UHF-HI		CDM1250		762669					
	Pasquotank		13 / 28.7								
11	*(Fire/EMS)*	VHF-HI		CDM1250	762587						
12	*(Law)*	UHF-HI		CDM1250		762670					
	Camden		3 / 40.7								
13	*(Fire/EMS)*	VHF-HI		CDM1250	762588						
14	*(Law)*	UHF-HI		CDM1250		762671					
	Currituck		23 / 43.2								
15	*(Fire/EMS)*	VHF-HI		CDM1250	762589						
16	*(Law)*	UHF-HI		CDM1250		762672					
	Gates		333 / 43.8								

17	*(Fire/EMS)*	VHF-HI		CDM1250	762590						
18	*(Law)*	VHF-HI		CDM1250	762591						
19	**State Fire**	VHF-HI		CDM1250	762592						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
20	**FEDCOM VHF**	VHF-HI		CDM1250	762593						
21	**FEDCOM UHF**	UHF-LO		CDM1250		762673					
22	**800 MHZ**	**Event Delta 4**		XTL 5000 W5					763225		
23	**SATCOM**	SAT DOME									
24	**HPTN**	4WIRE TERM									
Microwave Site Number 33 (Newport)			(Carteret)								
	(34-45-31)	**(076-51-19)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Carteret		80 / 13.9								
1	*(Fire/EMS)*	VHF-HI		CDM1250	762594						
2	*(Law)*	VHF-HI		CDM1250	762595						
	Pamlico		9 / 26.9								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762596						
4	*(Law)*	VHF-HI		CDM1250	762597						

	Onslow		269 / 33.4								
5	*(Fire/EMS)*	VHF-HI		CDM1250	762598						
6	*(Law)*	VHF-HI		CDM1250	762599						
	Jones		306 / 37.6								
7	*(Fire/EMS)*	VHF-HI		CDM1250	762600						
8	*(Law)*	VHF-HI		CDM1250	762601						
	Lenoir		307 / 58.2								
9	*(Fire/EMS)*	UHF-HI		CDM1250	762602						
10	*(Law)*	800 MHz		XTL 5000 W5					763226		
	Craven		337 / 40.2								
11	*(Fire/EMS)*	VHF-HI		CDM1250	762603						
12	*(Law)*	VHF-HI		CDM1250	762604						
13	**State Fire**	VHF-HI		CDM1250	762605						
	State Rescue	VHF-HI		See State Fire							
	SHP VHF HI	VHF-HI		See State Fire							
	NLECC VHF	VHF-HI		See State Fire							
14	**FEDCOM VHF**	VHF-HI		CDM1250	762606						
15	**FEDCOM UHF**	UHF-LO		CDM1250		762674					
16	**800 MHZ**	**Troop B M AID**		XTL 5000 W5					763227		
17	**800 MHZ**	**Event Delta 1**		XTL 5000 W5					763228		

18	**800 MHZ**	**Event Delta 2**		XTL 5000 W5					763229		
19	**SATCOM**	SAT DOME									
20	**HPTN**	4WIRE TERM									
Microwave Site Number XX (Yanceyville)			(Caswell)								
	(36-26-17)	**(079-20-30)**			**FAS NUMBERS**						
	Counties Included		**Antenna Bearing**		**CDM**	**CDM**	**CDM**	**CDM**	**XTL**	**EDACS**	**TAIT**
ACU SLOT			**deg / mi**	**RADIO TYPE**	**150-174**	**450-470**	**36-42**	**42-50**	**800MHz**	**800MHz**	**???**
	Caswell		171/10								
1	*(Fire/EMS)*	VHF-LO		CDM1250				762445			
2	*(Law)*	UHF-HI		CDM1250		762633					
	Person		90/20								
3	*(Fire/EMS)*	VHF-HI		CDM1250	762512						
4	*(Law)*	VHF-HI		CDM1250	762513						
5	**800 MHZ**	Event Bravo 3		XTL 5000 W5							
6	**800 MHZ**	**Troop D Dist 4**		XTL 5000 W5					763185		
7	**SHP VHF LO**	VHF-LO		MAXTRAC							
8	**State Fire**	VHF-HI		CDM1250	762608						

Appendix H VIPER Inter-Agency Interoperability Sites