

The VIPER Semi-Annual Newsletter

(Jan. 2019 - Jun. 2019)

As part of our communications effort to keep everyone informed of our progress, we will be distributing a semi-annual newsletter via email and posting a copy of it on the VIPER website at <http://www.ncdps.gov/Our-Organization/Law-Enforcement/VIPER>. If you would like to contact us, you can email us at VIPER@NCSHP.ORG or call 1-888-92-VIPER.

What is the VIPER staff doing?

- Please help us welcome the newest member of the VIPER team, Jesse Smith. Jesse has joined the team as a Maintenance/Construction Technician III. Additionally, while we congratulate 2 of our team members on their recent retirement, but sad to see them leave, Steve Kastelberg and Tim Frye.

Critical Upcoming VIPER Upgrades

- **7.17 System Upgrade:** The VIPER System Upgrade to 7.17 has been successfully completed in partnership with Motorola.
- **GTR Upgrade:** Fifty-two (52) tower sites have been upgraded from Quantars to GTR base stations in state fiscal year 2018-2019. We are waiting for a new budget to start the next set of upgrades. The number of sites upgraded is directly dependent upon the funding provided by the Legislature. Notification for the outages/upgrades will come from the Network Operations Center (NOC) via email **prior** to the upgrade and any assistance during the upgrade should be directed to the NOC at 1(888) 927-4737.

Quick Facts

- 241 total sites planned for statewide coverage; 226 sites constructed and on-the-air
- 10 sites are fully funded and under construction
- \$209.5M funded to date for construction (includes \$7M R for tower construction in FY19-20)
- \$7.5M O&M needed at completion of build-out; Current funding = \$7.0M recurring
- Challenges
 1. In moving forward with construction of new tower sites, the challenge will be to get fully executed leases prior to site construction.
 2. Lack of an exemption for State owned property has now become a significant challenge since local governments are now able to veto the state's use of its own land.

Tower Construction Updates

- Hayesville (Clay Ct): Lease is out for County signature
- Pittsboro (Chatham Ct): Foundation installed and civil work has started
- Triad Park (Guilford Ct): County and City still working on signing the lease
- Richlands (Onslow Ct): Lease is complete; waiting on microwave radios to be delivered
- Rocky Top (Georgia): Lease is complete and site construction is under way
- Scotland Neck (Halifax Ct): Tower construction starting mid-July
- Benson (Johnston Ct): Lease is at State Property for execution
- Newton Grove (Sampson Ct): Lease has been completed
- Anson 911 (Anson Ct): Lease is out for County signatures
- Ford Rd (Watauga Ct): County is in negotiations for land lease

Radio reprogramming

- Please ensure that you make every effort to update your current radio code plug to include the latest control channel list so that your equipment performs at the optimum level. When updating the control channel list, you must ensure that the Full Spectrum Scan option is also activated in your radio code plug. As of January 2019, we are still seeing radio code plugs where the number of control channels in the list is set to ONE! If you have any questions about the control channel update, please send an email to VIPER-activate@ncshp.org.
- We are currently working on revising all of the VIPER Statewide talk groups and anticipate that a new Mandatory VIPER Basic Statewide Template will be forthcoming in early 2020.

VIPER ID status

- VIPER POCs should maintain their inventory and are required to submit an annual “true-up” document to VIPER in January of each year; however due to the 7.17 upgrade this February, the “true-up” document for 2019 was due Friday, June 28th and should be sent to VIPER-activate@ncshp.org.

VIPER approved radios

- For 2019 we continue to approve multiple radio vendors and products for use on the VIPER system. Currently Motorola, EF Johnson, Kenwood, Harris, Tait and BK Relm all have approved products for use on the VIPER system. **New radios from vendors for consideration are due no later than 30 September of each year** so that testing and evaluations can be completed prior to the start of the new calendar year.
- **Please read the following notice carefully regarding radio additions to the VIPER System effective 1 January, 2020 and beyond.**

Voice Interoperability Plan for Emergency Responders

As the North Carolina Voice Interoperability Project for Emergency Responders (VIPER) continues to grow in size, it is important that the system remains at the forefront of the technological improvements afforded to our end users. In order to maintain our technological timelines and to be able to make the most efficient use of the resources that we have available, VIPER must begin to address our ability to implement new capabilities to ensure that we are ready for not only the continued growth of the system but also for future system enhancements.

Under our current Project 25 (P25) system architecture, the VIPER system supports digital operation using the Frequency Division Multiple Access or FDMA technology. As VIPER completes the migration of the current Motorola Quantar base stations to the replacement GTR base stations, VIPER will be in a position to support P25 Phase 2 operation utilizing Time Division Multiple Access or TDMA operation. TDMA would allow us to divide each channel on the system that supports voice radio traffic into two separate talk paths, each supporting a unique voice radio conversation. This capability would allow VIPER to potentially support more concurrent voice conversations without adding additional base stations to address the need for growth.

Many radios from both Motorola and EF Johnson that operated on the VIPER Motorola SmartZone-OmniLink 4.1 system prior to the conversion to P25 in June, 2014, are not capable of operating in a TDMA system environment. The TDMA upgrade is still some years away however VIPER needs to begin to plan for the future and address the fact that end user agencies are continuing to purchase non TDMA radios on the used market and submit activation requests to add them to the VIPER system.

Effective 1 January, 2020, VIPER will no longer allow current or new VIPER end user agencies to activate non TDMA radios on the system. This would include all models from the below list of manufacturer radios;

1. Motorola – XTS1500, 2500 and 5000 portable radios
2. Motorola – XTL1500, 2500 and 5000 mobile radios
3. EF Johnson – 51SL/51ES portable radios
4. EF Johnson – 53SL/53ES mobile radios

Note 1: If a current end user can demonstrate that they already had a radio of the type listed above in their inventory prior to 1 January, 2020, exceptions may be considered to activate single radios, but only as a short term swap in the case of a stolen, damaged or missing radio that was already active on the system.

Note 2: This step in our continued effort to provide the best statewide, public safety radio system possible does **not** affect any radios currently in operation on the VIPER system. Whereas a defined timeline for a system wide transition to TDMA has yet to be finalized, VIPER feels that it would be in the best interest of all end user agencies to afford them with as much advance notice and to provide some target timelines as it relates to current and future end user subscriber devices and their capabilities for TDMA operation.

Beyond the 1 January, 2020 date and the termination of the ability to add non TDMA radios to the VIPER system, there are two other future dates along with certain technical requirements associated with those dates that must be considered;

- Effective 1 July, 2022 all radios being added to the VIPER system must be ready to receive TDMA programming. It is extremely important that our end users understand exactly what this means. Many manufacturers radios may be capable of TDMA operation but were not ordered with the “feature” enabled from the factory. These radios will need to be modified in the field to add the TDMA feature, so as to be **ready** for a transition to TDMA in the future.
- Effective 1 July, 2025 all radios currently **active** on the VIPER system, along with all future additions to the system shall be ready to receive TDMA programming. VIPER respects that these dates may represent challenges to our end users, especially in the area of funding since replacement radios or upgrades to existing radios will be necessary. However, it is also important to consider that the system continues to grow and in order to maintain VIPER’s current level of system availability, that a move to TDMA operation would be the most cost effective manner to address future growth and system health. VIPER would strongly recommend that as soon as feasibly possible, that end user agencies consider purchasing new radios **with the TDMA operation already included** in the radios features, so that it is not necessary to have to revisit radios to add the TDMA feature in advance of the above listed dates. VIPER has created a new email address specifically for TDMA related questions regarding this memorandum and any other VIPER TDMA related items. Please utilize viper-tdma@ncshp.org for any TDMA related inquiries.

System Health

- The System Health is a section that we plan to provide with each newsletter to update our stakeholders, users and partners as to how the VIPER system is doing. These statistics are taken directly from the system.
 1. System count

Users (actual radio IDs, consoles not incl.)	123,177
Trunked channels	1,647
Conventional channels	669
Talk groups	4,117
Comm centers tied directly to VIPER	41

2. **Busies:** The percent of busies compares the number of busies vs. the number of PTTs on the system. Acceptable industry standard is 3% busies for a system. Below is VIPER's system health as it relates to the percentage of busies that we get on the system.

	PTT average	% Busy
Daily average	297,000	0.02%
Monthly average	8,800,000	0.01%

