



# North Carolina Department of Public Safety

## State Highway Patrol

Roy Cooper, Governor  
Erik A. Hooks, Secretary

Glenn M. McNeill, Jr.  
Commander

### MEMORANDUM

**To:** Chairs of Joint Legislative Oversight Committee on Justice and Public Safety

**From:** Erik A. Hooks, Secretary, DPS *EAH*  
Glenn M. McNeill, Jr., Commander, State Highway Patrol *GMM*

**Subject:** VIPER Quarterly Report

**Date:** September 1, 2017

*Pursuant to Session Law 2016-94, Section 17B.1, The Department of Public Safety shall report annually no later than March 1 and quarterly thereafter to the chairs of the Joint Legislative Oversight Committee on Justice and Public Safety on the progress of the State's VIPER system.*

Network Status - 241 total sites planned for statewide coverage of which 220 sites are constructed and on-the-air representing 91% completion. 21 sites require funding (\$7M legislative funds began FY14-15). These additional sites represent \$23,367,032 in additional site construction funding. 5 additional new sites are being added by counties joining VIPER to increase coverage required by local users. 99,388 users are currently on the VIPER Network consisting of more than 350 Emergency Responding agencies (including federal, state and local agencies).

P25 Upgrade Status - Upgrade to firmware release 7.14 was completed during 2015. This upgrade allowed us to add additional sites for each zone and also enabled us to migrate from Quantar to GTR base stations without any loss of functionality. We are now in need of recurring funding to put in place a Service Upgrade Assurance (SUA) program to provide future upgrades to include an upgrade in 2017. Without the SUA in place this year, VIPER will need to secure an additional \$1.5M per year just to maintain the current 7.14 release and no portion of that funding will count towards future firmware upgrades. This is a Critical Need since we are now currently three releases out of date and risk being unable to support the Zone Controller hardware in the future.

Tower Upgrade Status - With the proposed new construction of twenty-five (25) new towers, VIPER will potentially require up to \$6,950,000 to upgrade existing towers to be able to support the microwave connectivity for the proposed new sites. This is in addition to any costs associated with the actual construction of new towers and their associated equipment.

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Procurement and Funding Progress - An additional \$7M recurring commenced on 1 July, 2015 and will continue until construction of the remaining unfunded tower sites is completed at which time a portion of the recurring funding will remain to effectively provide maintenance and support once the system buildout is complete.

New Tower Construction Progress –Fifteen (15) new sites have been identified for new construction as funding becomes available and VIPER continues to construct new towers with the current \$7M per year funding. No additional site construction from Federal grant dollars is expected due to changes in the performance period for use of federal funding.

Other Significant Projects – The end of life (EOL) has been reached for the current Quantar Base Stations and additional funds are needed to purchase replacement GTR Base Stations prior to the cancellation of product support scheduled for 31 December 2018. The anticipated cost for replacement of the Quantar Base Stations at the 187 affected sites is \$28,500,530. This, like the SUA upgrade represents the most critical of VIPER's current needs. If we are unable to secure the funding to replace the current Quantar stations this budget cycle, we are at a high risk to have to shut down channels and potentially sites, since we will be unable to source replacement parts after the EOL date in 2018.

With the implementation of GTR Base Stations, VIPER will need to upgrade its current MOSCAD monitoring system. This system allows us to see real time status changes for all of the base stations across the VIPER network and to be able to enable/disable operation as needed to ensure continued system operation. The anticipated cost for the MOSCAD upgrade is \$1,300,000.

Finally, VIPER operates a statewide microwave network in conjunction with the University of North Carolina. This network utilizes T1 technology (circuit based) which has been the national standard for connectivity for over 50 years. With the transition over the Ethernet and the ability to manage bandwidth needs more efficiently, the Manufacturer (Alcatel) will no longer supply new radios capable of meeting the T1 needs that VIPER has. In order to continue to move forward with the use of microwave equipment, we must convert our current network to Ethernet. The anticipated funding requirement for the conversion to Ethernet is \$2,165,656.

P25 Moving Forward – We continue to add additional users to the system, now that ID's are available. We have approved six (6) vendors to be able to supply P25 compliant radios for use on VIPER, bringing the total approved vendors to six (6). Additional sites are coming on-line resulting from several new counties joining VIPER and purchasing supplemental sites to improve coverage or to replace coverage lost through changes in some of our current partnership agreements. Additional channels are being added to some sites to balance load and VIPER has been able to reduce overall system busies to below .1% compared to an industry acceptable standard of 3%. We are hampered with our ability to add channels at the moment at the majority of the sites since we are no longer able to source Quantar Base Stations. VIPER continues to look hard at locations where counties need to add channels to reduce system busies however until the Quantar EOL issue is resolved, only GTR based sites can be expanded.