



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 the Joint Legislative Oversight Committee on Justice and Public Safety

From: Erik A. Hooks, Secretary, Department of Public Safety *EAH*
Glenn M. McNeill, Jr., Commander, State Highway Patrol *GM*

Subject: VIPER Quarterly Report

Date: June 1, 2018

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 221 sites are constructed and on-the-air representing 92% completion. Six (6) sites are currently nearing completion with a target date of 31 July 2018 for all to be on-the-air. 14 sites require funding (\$7M legislative funds began FY14-15). These additional sites represent \$16,278,021 in additional site construction needs. Four (4) additional new sites are being added by counties joining VIPER to increase coverage required by local users. 107,979 users are currently on the VIPER Network consisting of more than 350 Emergency Responding agencies (including federal, state, and local agencies). The quarter's gain represented over 4,200 additional user radios.

PED Report – The April 2018 release of the VIPER/FirstNet report by the Legislative Program Evaluation Division (PED) confirmed the critical need areas identified previously by VIPER staff. The PED report also confirms that no duplication exists between the VIPER and the FirstNet projects. PED acknowledged critical funding needs for a Service Upgrade Assurance (SUA) program, replacement of the end of life Quantar base stations with the latest GTR platform, and replacement of the current MOSCAD monitoring solution. PED also identified the need for future funding to replace the current statewide microwave system used by VIPER to connect the sites together. The funding needs supported by PED are explained in more detail below.

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SUA Status – Currently, the VIPER network is operating at release 7.14 which was completed in 2015. This upgrade allowed us to add additional sites for each zone and also enabled us to migrate from Quantar base stations 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 2018. Since we are now four versions (firmware releases) out of date, we must secure one-time funding of \$5M to bring us up to date prior to the commencement of the SUA. These are critical needs, as we are now several firmware releases out of date and are at an increased risk of being unable to support the Zone Controller hardware in the future.

Tower Upgrade Status – With the proposed new construction of the fourteen (14) towers needed to achieve the originally planned 241 sites, VIPER will potentially require up to \$3,892,000 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.

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. Upon completion of the system build out, a portion of the recurring funding will remain to effectively provide maintenance and support.

New Tower Construction Progress –Seven (7) new sites have already been identified for new construction as funding becomes available. VIPER continues to construct new towers with the current \$7M annual funding. As a result of changes in the performance period for use of federal funding, no additional site construction from federal grant dollars is expected.

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, which is 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. This deficiency also represents a significant critical need for funding.

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 performance. 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 support our current MDR-8000 microwave radios past the end of CY 2021. This will require the state to seek funding to replace the current microwave radios beginning in FY 2021 and extending through FY2024. The anticipated funding requirement for the replacement of the microwave radios is \$18,000,000 and would be split equally across the four fiscal years at \$4,500,000 per year.

P25 Moving Forward – We continue to add new users to the system. We have approved six (6) vendors to be able to supply P25 compliant radios for use on VIPER. 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. Furthermore, additional channels are being added to some sites to balance load. As a result, VIPER has been able to reduce overall system busies to below .1% compared to an acceptable standard of 3%. VIPER continues to evaluate 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.