



North Carolina Department of Public Safety

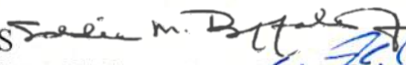

State Highway Patrol

Roy Cooper, Governor
Eddie M. Buffaloe, Jr., Secretary

Freddy L. Johnson, Jr.
Commander

MEMORANDUM

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

From: Eddie M. Buffaloe, Jr., Secretary, DPS 
Freddy L. Johnson, Jr., Commander, State Highway Patrol 

Subject: VIPER Quarterly Report

Date: December 31, 2024

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 240 sites are constructed and on-the-air representing 99% completion. VIPER is nearing the completion of the 241st tower site and will then have reached the total number of sites identified in the 2004 Legislative Report. The system currently supports **198,379** emergency users. This quarter's gain represented slightly more than 10,000 additional user radios. This increase represents further adoption of the VIPER system in the wake of Hurricane Helene and further demonstrates the growing use of the VIPER network and should serve to solidify the need for the system growth and to be supported both financially and through the additional support positions requested, both of which have been included in the last several DPS/SHP budget requests without further action. VIPER internally projected that we would reach 192,000 users by the end of C24 and the evidence of the escalated growth shows how we exceeded that number this year. Other than a very limited number of outages very early during Hurricane Helene, the VIPER system was the most utilized voice communications resource available to our emergency responders. Over 2000 VIPER radios were deployed in the first five days, to include programming well over 500 radios from out of state agencies that responded to North Carolina in support of the Hurricane Helene response. Having a radio system that is similar to more than half the other states and many of the larger municipalities, we are able to quickly add the VIPER system to their radio devices and get them up and running in short order.

New Tower Construction Progress – One site is currently under construction. Hawshaw Mountain (Avery County), has the tower erected and the building and generator placed on 19 December. We hope to complete the site by the end of February 2025, weather permitting.

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Other Significant Projects/Funding Needs:

- **VIPER Site Coverage Analysis:** With the upcoming completion of all the 241 Legislatively funded sites submitted as part of the 2004 VIPER study delivered to the Legislature, VIPER staff have begun to identify areas of the state where the minimum 95% portable radio in the street coverage has not been met. The 2004 plan provided a “best estimate” of the needed number of sites and now with the 241 sites fully located and under construction, it is now possible, aided by more modern and comprehensive coverage mapping programs, for VIPER to be able to identify these areas lacking sufficient coverage and to prepare a remediation strategy to bring back to the Legislature for consideration. VIPER has determined that an **additional thirty-one (31) sites** are needed in Western North Carolina. The cost of new tower related construction costs continues to skyrocket, and VIPER believes that the sooner that the state was able to lock in a funding source and a commitment from the Legislature to support the additional infrastructure, that this will lessen the financial blow resulting from any delays to the potential project.
- **Personnel:** VIPER has requested additional support personnel in the past two budget cycles. As we reached the number of legislatively funded sites, we are in desperate need of the additional support positions that were identified in the Legislative plan. VIPER needs an additional thirty-one (31) positions across multiple job classifications, to support the growing number of users. This is a slight increase over the previous request for 28 new positions and reflects changes in the requirements for annual testing of coverage enhancement systems installed in commercial structures to support emergency responses inside those buildings. VIPER also requires salary adjustment funds to remain competitive in both retention and recruitment. VIPER currently has **over a 10% vacancy rate for our field staff** and recently lost several key employees to local government agencies and to the private sector where the compensation for similar positions was almost double what the state pays its employees. We are now posting open positions over and over and still not finding qualified personnel willing to work for the state for the money that we have budgeted. VIPER, like all the North Carolina State Highway Patrol’s civilian employees, is prohibited by Legislative action from receiving any portion of Labor Market Adjustment funds as defined within SL2022-74; HB103 Section 39.2.(a); 39.2.(b) which directs that the Labor Market Adjustment Reserve section does not apply to the State Highway Patrol or the State Bureau of Investigation. VIPER certainly understands the reasoning behind the exemption of sworn members of the Patrol that are covered in a step payment plan, but VIPER respectfully requests that the Legislature inserts language in the Labor Market Adjustment terms to allow for Civilian Members (Employees) of the Patrol to be eligible to receive a portion of the funds, when applicable. VIPER has also submitted a salary adjustment fund request specific to its FTE’s and remains hopeful that this will be funded by the Legislature during any upcoming budget negotiations.
- **Microwave Upgrade Project:** VIPER continues to move forward with the most significant portion of the previously legislatively funded Microwave Upgrade project, which involves the replacement of the legacy microwave radios that have reached their end of manufacturer support life and do not support the transition to Ethernet network topology. VIPER awarded a contract to Aviat Networks for the replacement microwave equipment and has already begun to receive the new equipment to support the upgrade. VIPER currently expects to complete the upgrade in Q2 2026.

- **Operations and Maintenance:** VIPER continues to request additional operations and maintenance recurring funds as part of its annual budget request. These funds support multiple areas (non-personnel) to include equipment repair, lease costs, electricity, insurance, fuel costs, vehicle maintenance and replacement cycles, structural related costs, cyclic replacement costs, and many more. The Legislative plan delivered in 2004 defined an increasing recurring cost that was tied to the continual increase in costs as additional sites became operational along with shifting recurring capital (construction) costs into O&M once sites were built. With the goal of 241 sites virtually achieved, VIPER needs a significant increase in these O&M line items. Without an increase, VIPER will be unable to maintain system readiness or make timely repairs when outages occur which leaves all levels of public safety agencies (State, Local and Federal) that rely on VIPER without adequate communications and places their personnel at an increased risk as they serve the public. VIPER predicts that in the current FY24 budget cycle that it will be over \$4M in the negative in its Operations and Maintenance budget. Based upon already identified needs for the FY25 budget and beyond, this number will exceed \$9M. Costs for many materials continue to rise and due to the insufficient funding to support the overall VIPER project, VIPER has had to defer many replacement items to future year budgets which results in the realization of higher costs when the actual work is performed, or replacement items are purchased. VIPER ended FY24 with an O&M budget deficit of over \$1.6M and had VIPER not transferred funding from its construction budget into O&M, that deficit would have exceeded \$3M. Having to use construction funding to backfill our O&M budget, only results in the deferral of other critical projects to future budget years and places VIPER at a severe risk of losing critical infrastructure and harming the day-to-day operations of its end user emergency responders.
- **One-time non-recurring funds:** Due to the overall lack of additional operating funds for VIPER, the Patrol has a serious need for one-time funds to support the replacement of towers in the state that have already had their annual inspections performed and the determination made that they are structurally unsound. This includes a site in Ellerbe (Montgomery County) where the tower anchor point suffered physical damage and the tower is deemed to be in imminent danger of collapse and is unsafe. We also have a site in eastern Hyde County where the tower dates to 1966 and requires replacement due to age. The tower is currently over 400% overloaded when measured against modern certification levels. VIPER has attempted to replace the tower over the past three budget years; however, it has been forced to use funds slated for tower construction to supplement its limited operations and maintenance funds which has forced VIPER to continue to push the replacement of the tower out year after year. Both scenarios along with the addition of three more towers identified in the past two budget years that require replacement as well, leaves VIPER in a position where it needs a one-time infusion of \$11.1M just to catch up on sites already identified for tower replacements. This one-time infusion dollar figure will continue to rise annually so long as VIPER has to move construction funds to support an operations and maintenance funding shortfall.
- **Site Security Issues:** VIPER over the past several years has experienced an increase in site damage at the hands of criminals, intent on committing theft or willful damage to our tower sites. Typically, this is not an organized effort targeting multiple VIPER site locations over a short period, nor does the criminal element rise to the level of domestic terrorism, however the costs associated with the repair and remediation exist regardless of the perpetrators or the damage causes. On average, VIPER spends at least \$15K per instance to rectify the damages. Typically, we experience damage every few months. At the time of this report, we have had two occurrences in recent months, one of which will cost more than \$20K. Recent Legislation addressed an increase in the level of criminal charge related to damages to critical infrastructure and VIPER did submit a request to the Legislature to be added to the types of occurrences that would rise to the level of a more significant penalty, however we were not included in the bill language (SESSION LAW 2023-47, SECTION 3, G.S. § 14-154). VIPER respectfully requests that the Legislature reconsider

the inclusion of critical state and locally owned communications infrastructure as part of the overall critical infrastructure criminal penalties bill.

- **Redundant Zone Controllers:** In line with concerns over site security above, in the event that VIPER were to suffer damage to any one of the four (4) Zone Controllers that serve as the “brains” of the VIPER radio system, VIPER believes that given the number of users of the system (over 183K), that we needed to develop a long-term strategy for how to add redundancy to the system at the Zone Controller level. VIPER submitted a request to OSBM for consideration from the NCPRO funds in the amount of \$6.8M to purchase four (4) redundant Zone Controllers that would be in geographically diverse locations from their primary counterparts. This would allow for a separate controller for each of the current locations (Raleigh, Farmville, Salisbury, and Newton) and would significantly reduce any impact of the potential loss of a primary controller.
- **TDMA Upgrade:** With VIPER’s continued growth in users and to be able to support future growth, VIPER has been preparing the end users for a future upgrade to the system to convert to Project 25 (P25) Phase 2 operation. In June 2014 with funding support from the Legislature, VIPER converted the system to P25 Phase 1 operation and now it is time to move to Phase 2. P25 Phase 2 involves migrating the system from FDMA operation to TDMA. This upgrade essentially adds 85% capacity to the system. VIPER requested \$20M from OSBM for consideration from the NCPRO funds. One highlight of this upgrade is that it can be completed in as little as 30 days from the date of award to the vendor.
- **Other Noteworthy Items:** Over 2000 VIPER radios were deployed in Western, North Carolina in the first five days, to include programming well over 500 radios from out of state agencies that responded to North Carolina in support of the Hurricane Helene response. Having a radio system that is similar to more than half the other states and many of the larger municipalities, we are able to quickly add the VIPER system to their radio devices and get them up and running in short order. This task could not have been accomplished without the assistance from NC Emergency Management, SHP – TSU’s internal radio programming section, and representatives from other counties from the across the state that went to the aid of those in the west.

VIPER’s internal staff worked countless hours, outside their normal work schedule, to ensure that the VIPER system remained operational, to include delivering fuel to inaccessible areas, repairing damage, and maintaining over 66 generators that ran for over two weeks during and after the event.

- **Parting Thoughts:** As previously mentioned in the VIPER quarterly reports, VIPER is in desperate need of additional funding. It needs more people to maintain the network and it needs to construct additional tower sites to provide additional radio system coverage. Ironically, those areas hit hardest in Hurricane Helene are areas that VIPER had previously requested funding to add sites. Now is the time to continue to build on the legacy that the Legislative body has helped to create, such that more counties in the western portion of the state can adopt the VIPER system and share in the premier interoperable communications system in the country. Countless responders that came to North Carolina’s assistance during Helene provided feedback on how effective VIPER was and how fortunate that we as a state are to have a unified statewide radio system to support our emergency response community. North Carolina should be proud of its accomplishment.