



**Expectations and Procedures for  
Tower and Building Co-Location  
*On*  
North Carolina State Highway Patrol  
VIPER  
Telecommunications Facilities**



## Introduction

The purpose of this document is to set forth the requirements for placing equipment at any of the North Carolina State Highway Patrol Voice Interoperability Plan for Emergency Responders (NCSHP-VIPER) telecommunications facilities. This document is to protect the interests and maintain maximum reliability for all systems of the Requestor, Current Tenant(s) and NCSHP-VIPER.

### 1. Approval requirements for tower space

- a. Towers in pre-construction phase
  - i. NCSHP-VIPER will have the tower and electrical engineered to accommodate equipment of most entities requesting tower space.  
**NOTE:** Requestor will pay for their equipment and/or installation of the equipment.
  - ii. A post inspection: paid by the Requestor is required to be completed by the engineering firm on contract with the NCSHP-VIPER.
- b. Pre-existing towers
  - i. **Tower study:** paid by the Requestor to be completed by the engineering firm on contract with the NCSHP-VIPER with a copy provided to the NCSHP-VIPER. All studies will be done to the Public Safety grade standards.
    - a. Existing tower built or was upgraded to current tower standards: tower study must assess the tower at the current tower standards, while bringing the tower to its original capacity **prior** to the Requestor's equipment being installed.
    - b. Existing tower built or was upgraded to an old tower standard: tower study must be assessed at the current tower standard with a minimum of  $\leq 95\%$  capacity **AFTER** their equipment is added.
    - c. Tower was originally engineered with space allocated for the Requestor AND the tower is at current tower standards: no upgrade will be required unless the tower study shows that they will exceed 105%.
    - d. Tower was originally engineered with space allocated for the Requestor AND the tower is NOT at current tower standards. Please refer to "b" above for existing tower at an old tower standard.
  - ii. **Tower upgrades:** required tower upgrade costs will be the responsibility of the Requestor.
    - a. All tower work shall be bonded and insured at \$1M for General Liability.
    - b. A Certificate of Liability Insurance must be provided to the VIPER Construction Manger before work begins.
    - c. All tower work shall be performed by only personnel certified as an advanced climber/ tower rescue with a minimum of 2 certified personnel on site at all times.

- d. Whenever any tower work is performed, the Requestor shall notify NCSHP-VIPER NOC at 1-888-92-VIPER prior to climbing and at the completion of work.
- iii. **Electrical study:** must be completed by the engineering firm on contract with the NCSHP-VIPER. The cost associated will be the responsibility of the Requestor.
- iv. **Intermodulation study:** an intermodulation study will be conducted and provided to NCSHP-VIPER to ensure there are no foreseeable frequency issues.
- v. **Post inspections:** required to be completed by the engineering firm on contract with the NCSHP-VIPER. The cost associated will be the responsibility of the Requestor

## 2. Approval requirements for building space

- a. All space will be assigned by NCSHP-VIPER personnel.
- b. Buildings in pre-construction phase
  - i. NCSHP-VIPER will have buildings constructed to accommodate the equipment of most entities requesting space.  
**NOTE:** Requestor will pay for their equipment and/or installation of the equipment.
- c. Pre-existing buildings
  - i. Space will be granted at the sole discretion of NCSHP-VIPER on a first-come, first-served basis and will at no time encroach on existing used or planned expansion space.  
**NOTE:** If equipment will not fit in existing building or building access is not granted, the Requestor will be required to add their own building, run their own electrical, place their own generator, and be responsible for all expenses associated with that effort.
  - ii. If equipment being added will cause site thermal loading to exceed the capacity of the current HVAC system, the Requestor will be responsible for installing sufficient additional HVAC capacity at their expense.
  - iii. If equipment causes significant load to be placed on the UPS that will exceed the rated load bearing capacity, the Requestor will be responsible for upgrading/replacing the UPS to new specifications as required by NCSHP-VIPER at their expense.
  - iv. If equipment causes overall site energy usage to exceed the generator capacity, the Requestor will be responsible for replacing the existing generator with a larger one, concrete pad to support the larger generator, all wiring and conduit upgrades, and transfer switch at their expense.

## 3. Utilization of NCSHP Microwave Backhaul

- a. In the event that the tenant desires NCSHP-VIPER microwave backhaul, the Requestor will have to provide any and all mux related type interface to NCSHP microwave.

- b. Any T1 circuit provided by NCSHP will be B8ZS/ESF framed. No exceptions to framing type will be allowed.
- c. Any routing of T1 traffic will have the following guidelines:
  - i. Routing of any T1 will be limited by availability.
  - ii. Requestor will be restricted to routing within their county, unless agreed upon in writing by the NCSHP-VIPER Construction Manager.
  - iii. Other State and Federal agencies will be considered on a case by case basis.
- d. Interconnection to NCSHP-VIPER equipment will be subject to the following:
  - i. If equipment is in the same building and copper conductors are utilized, an appropriate inline surge protection device shall be used.
  - ii. If equipment is located within a different structure at the NCSHP-VIPER site, fiber optic cabling will be the only permitted interconnection into the NCSHP-VIPER facility.
  - iii. Requestors of NCSHP-VIPER microwave backhaul will be assigned the number of T1's by the NCSHP-VIPER Construction Manager. Any upgrade requests will be considered on a case by case basis. No connection to NCSHP-VIPER microwave will be allowed unless approval has been granted.
  - iv. All CPE equipment shall be provided by the Requestor for interface to their equipment.

**NOTE:** When the NCSHP-VIPER microwave network moves to Ethernet, tenants using NCSHP-VIPER supplied circuits will be required to provide equipment at their expense allowing them to use Ethernet connectivity. A 45-day notice will be given to tenants before any changes are made. Transitions to new technology will not be delayed for tenants.

**NOTE:** In the event that allocated T1 circuits are needed for re-use by NCSHP-VIPER due to bandwidth constraints or any situations NCSHP-VIPER deems necessary, tenants will be notified 45 days in advance to allow for facilitation of alternate transport arrangements. In the event of an emergency, tenants will be given notice without time constraints placed on NCSHP-VIPER.

#### **4. Colocation leases at VIPER facilities**

- a. Leasing of VIPER facilities for other than Public Safety will be limited to the FirstNet Public Safety Network authorized by the U.S. Congress in 2012 and the States Broadband Plan enacted in 2016.
- b. The documents referenced in Sections 1 & 2 are requirements for obtaining a lease with NCSHP for tower and/or building space. Please reference those sections for specific applicable documents.
- c. For a land lease with NCSHP, a site drawing at the Requestor's expense will be required.

**NOTE:** Subletting equipment or authorizing an agency or company outside of Public Safety the use of equipment is strictly prohibited and will constitute grounds for lease termination