

North Carolina Department of Transportation  
**Division of Highways**  
**Traffic Engineering and Safety Systems Branch**

**STANDARD PRACTICE**  
**for**  
**THE APPLICATION OF**  
**VEHICLE-INITIATED TRAFFIC SIGNAL PREEMPTION**

It is the standard practice of the NCDOT to review all requests for vehicle-initiated preemption of traffic signals on the State Highway System. Therefore, the following guidelines have been developed to insure the safe and efficient application of vehicle-initiated traffic signal preemption on this System. These preemptive devices effect a change in the normal sequence of a traffic signal by an automatic or manual transmission from an approaching vehicle. Existing technologies for these transmissions from vehicle to the traffic signal are radio, light and sound. These guidelines identify eligible vehicles, preemption request procedures, preemption equipment requirements, and interagency agreement requirements.

Criteria

**ELIGIBLE VEHICLES:**

- Official first response emergency vehicles that utilize sirens and red flashing lights to provide services to the public, which prevent loss of life and property are eligible vehicles. “Official” vehicles are fire fighting and emergency medical service vehicles owned, operated and maintained by the emergency response agency or authority.
- Authorized law enforcement vehicles that utilize sirens and blue flashing lights are eligible vehicles.
- Authorized transit vehicles owned by a government entity or authority

**PREEMPTION REQUEST PROCEDURES:**

- The requesting agency or authority submits all preemption requests to the Division Engineer with a list of all signalized intersections proposed to be preempted.
- The requesting agency or authority submits all preemption requests to the Division Engineer with a list of all vehicles they are proposing be authorized to preempt these traffic signals.
- The request should include the vehicle make, model and state license tag number for each vehicle and any crash data and travel time delays associated with each vehicles.

- The Division Engineer initiates an engineering investigation to insure overall safety and efficient traffic operation is not jeopardized by the addition of preemption at the requested signalized intersection(s). Volumes, occupancy, phasing, timing, coordination, frequency and time of day vehicle runs, agencies' policies, and related issues should be addressed in the investigation. Traffic signal plans documenting the addition of preemption must be approved and on file with the Traffic Engineering and Safety Systems Branch prior to notice to proceed with construction and/or implementation.

#### PREEMPTION EQUIPMENT REQUIREMENTS:

All preemption equipment must be on the Traffic Signal Equipment Qualified Products List or approved by the Traffic Engineering and Safety Systems Branch for the specific application. The Traffic Engineering and Safety Systems Branch manages this QPL and is responsible for assuring the equipment is reliable, cost effective, and compatible with NCDOT and agency requirements.

#### INTERAGENCY AGREEMENT REQUIREMENTS:

The requesting agency or authority must enter into a binding Vehicle-Initiated Preemption Agreement with NCDOT. Each agreement must stipulate NCDOT compliance criteria and cost responsibilities for analysis, signal design, preemption design, equipment, installation and maintenance.