STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
DIVISION THREE
GUIDELINES FOR TRAFFIC CALMING DEVICES

The Purpose of the North Carolina Department of Transportation Third Division's Traffic Calming Guidelines is to give guidance in response to North Carolina General Statue 136-102.8. Under this law, residential neighborhoods, located on state-maintained roads, may apply for the installation of devices specifically referred to as "traffic tables or traffic calming devices." The Department is committed to mitigating the impacts of speeding traffic in residential neighborhoods and utilizes the Guidelines for Traffic Calming Devices to help achieve this goal.

Traffic calming consists of measures put in place on neighborhood streets with the purpose of lowering vehicle speeds and improving safety without restricting access.

Traffic Calming Devices that are allowed on state-maintained roadways include Vertical Deflections, Closures, Horizontal Shifts, and Roadway Narrowings. A list of allowed traffic calming devices is maintained by the Institute of Transportation Engineers (ITE). A brief description of each is included in these guidelines and can be viewed at https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/.

Eligible Roadways include state-maintained roadways whose primary purpose is to provide access to residents. These roadways are typically fully contained within a subdivision or several subdivisions.

Requirements that shall be met prior to NCDOT permitting the installation of traffic calming devices on a state-maintained roadway (as outlined in North Carolina General Statue 136-102.8):

1. An engineering study sealed by a Professional Engineer has been approved by the Department detailing types and locations of traffic calming devices.
2. Installation and utilization of traffic tables or traffic calming devices is within one of the following areas: a subdivision with a homeowners association, or a neighborhood in which the property owners have established a contractual agreement outlining responsibility for traffic calming devices installed in the neighborhood.
3. The traffic calming devices are paid for and maintained by the subdivision homeowners association, or its successor, or pursuant to a neighborhood agreement.
4. The homeowners association or neighborhood has the written support of at least sixty percent (60%) of the property owners, for the installation of each traffic calming device.
5. An Encroachment Agreement, including a performance bond sufficient to fund maintenance or removal of the traffic calming devices in the event the association or neighborhood fails to maintain the devices, or is dissolved, will be required by the homeowners association or neighborhood. The bond shall remain in place for a period of three years from the date of installation.

Typical Responsibilities of the Requestor are listed below. All requests are reviewed on a case-by-case basis and may require additional information depending on the neighborhood's layout and roadway network.

1. Contact shall be made by the Homeowners Association (HOA) or Neighborhood to the NCDOT Division Traffic Engineer (DTE) in writing or by email to request initiation of a review for the placement of traffic calming devices on state-maintained roads. The request should include a map showing the proposed state-maintained roadways for the devices to be installed.
2. Provide a petition showing that an effort was made to survey all property owners so they are aware of the proposal for the installation and maintenance of the traffic calming devices at the HOA or Neighborhood's expense, ~~for~~ and that at least 60% of those affected property owners are in support of the installation of traffic calming devices in the neighborhood. The petition form to be used will be created by NCDOT for each neighborhood and provided to the requestor for signatures. Petition forms are valid for one year from the date they were generated.
3. Provide a copy of all correspondence between the neighborhood and emergency officials (such as local law enforcement, fire department, EMS, etc.) relating to the proposed traffic calming devices, and any concerns and/or support from the emergency officials.
4. Provide a traffic study completed and sealed under the supervision of a licensed Professional Engineer. It is required that the Department (DTE and local District Office) review and approve the scope of each traffic study prior to it being completed to ensure the appropriate information and analysis is included. This is to be done after the signed petition has been verified by the DTE.
5. Contact the District Office to obtain an Encroachment Agreement with NCDOT for the installation and maintenance of the proposed traffic calming devices, if placement of the devices is approved by the DTE.

The requesting party is responsible for completing all the necessary actions in order for the Department to consider allowing traffic calming devices on state-maintained roads. Failure to complete all necessary items will result in the Department denying the request.

Brief Descriptions of Allowable Traffic Calming Devices

(The information below is from the link provided above for the ITE fact sheets on various Traffic Calming Measures.)

Vertical Deflections

- A **Speed Hump** is a rounded raised area of pavement, typically spaced between 300 to 600 feet apart, three to four inches high, and 12-14 feet in length. Speed humps should be placed midblock on residential streets – not recommended for placement at intersections.

Emergency Response Issues:

- *Impacts to ease of emergency-vehicle throughput*
- *Approximate delay between 3 and 5 seconds per hump for fire trucks and up to 10 seconds for ambulances with patients*

- A **Speed Table** is a long raised speed hump with six foot ramps on each end and a ten foot flat section in the middle. Speed tables are recommended for main roads throughout a small community and can also include a crosswalk.

Emergency Response Issues:

- *Typically preferred by fire departments over speed humps, but not appropriate for primary emergency vehicle routes; typically less than 3 seconds of delay per table for fire trucks*

- A **Raised Intersection** is a flat, raised area covering an entire intersection with ramps on all approaches. Raised intersections are typically used in urban areas where traffic calming is being used on both intersecting roads.

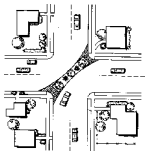
Emergency Response Issues:

- *Slows emergency vehicles*
- *Appropriate for primary emergency vehicle routes and streets with access to a hospital or emergency medical services*

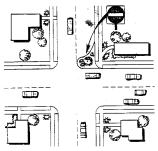
Closures

- A **Closure** is typically only installed if other traffic calming measures have failed or are not applicable. Closures can partially close a road or completely close a road depending on the type of treatment that is needed.

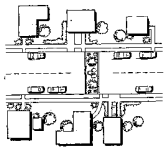
Diagonal Diverter



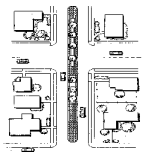
Half Closure



Full-street Closure



Median Barriers



Emergency Response Issues:

- *Full or half closures can increase response times and should not be used on roads/streets that provide access to hospitals or emergency medical services; half closures allow for a higher degree of emergency vehicle access than full closures*
- *Both closure types can be designed to allow emergency vehicle access with removable, or breakaway delineators or bollards, gates, mountable curbs, etc.*

Horizontal Shifts

- A **Neighborhood Traffic Circle** is a raised island placed in an intersection which traffic circulates. Traffic circles are different from roundabouts which are designed with additional delineating islands on each approach. Traffic circles can also be landscaped.

Emergency Response Issues:

- *Emergency vehicles maneuver intersections at slow speeds*
- *Constrained turning radii typically necessitates a left turn in front of the circle for large vehicles*

- A **Chicane** is a series of narrowings or curb extensions that alternate from one side to the other of a street to form S-shaped curves. Chicanes should only be used at midblock locations and in a series of at least three.

Emergency Response Issues:

- *Appropriate along primary emergency vehicle routes*

Roadway Narrowings

- A **Choker** is a curb extension at midblock or intersection corners that narrow a street. Chokers can be used on main roads throughout a small community and work well with other traffic calming devices such as speed humps, speed tables, and raised intersections.

Emergency Response Issues:

- *Retains sufficient width for ease of use for emergency vehicles*

- A **Median Island** is a raised island located along the centerline of a street that narrows the travel lanes.

Emergency Response Issues:

- *Appropriate along primary emergency vehicle roads or street that provides access to hospitals/emergency medical services*

Contact Information

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