



CHARLESTON FIRE DEPARTMENT



Fire Marshal Division

Information Bulletin

Traffic Calming: Speed Humps

Overview

The time required for firefighters to reach an emergency is directly related to the proper installation and maintenance of fire department access roadways. Traffic calming devices, such as speed humps, can create a risk to our community by delaying emergency responders, as well as increasing the potential to damage emergency response vehicles. Most types of traffic calming devices slow the fire department's response to an emergency by approximately 10 seconds per device. Although this delay may seem insignificant, take a moment to consider that irrevocable brain damage occurs within 3 to 5 minutes from the time a person stops breathing, or that a small fire in a trashcan can grow to a fully involved bedroom fire within 2 to 3 minutes. Seconds count.

The Charleston Fire Department is committed to providing quality emergency services to the community as quickly and efficiently as possible. Our goal is to maintain or improve our average response time and we must carefully consider the potential adverse impact of traffic calming devices before approval.

Per the South Carolina Fire Code, Section 503.4.1, traffic calming devices shall be prohibited unless approved by the fire code official. The information contained in this document is intended to provide general guidance and assist in attaining compliance to maintain fire apparatus access roadways. The South Carolina Department of Transportation (SCDOT) [Traffic Calming Guidelines](#) will be utilized as a primary reference guide when evaluating proposals.

General Types and Definitions

Speed Bumps: Raised traffic calming devices constructed of a variety of materials that provide an aggressive rise to slow or stop vehicles. These devices will not be approved as they have a detrimental impact on response and damage vehicles and equipment.

Speed Humps – Parabolic: Raised traffic calming devices that are constructed to a height of 3 inches, plus or minus $\frac{1}{4}$ inch at the midpoint. They are parabolic in shape and are placed across the road to slow traffic. Speed humps are not less than 14 feet in width and provide a gradual lift to the highest point. Refer to construction detail contained within the [SCDOT Traffic Calming Guidelines](#) and City of Charleston Neighborhood Traffic Calming Program.

Speed Humps – Flat-Topped: Raised traffic calming devices that are constructed to a height of 3 inches plus or minus $\frac{1}{4}$ inch at the midpoint. Similar to the parabolic speed hump but provide a gradual lift to a 10' wide flat-top, and are placed across the road to slow traffic. Refer to construction detail contained within the [SCDOT Traffic Calming Guidelines](#) and City of Charleston Neighborhood Traffic Calming Program.

Speed Cushions: These are typically pre-engineered traffic calming devices that are attached to the roadway and each section is approximately 6 feet in width. The first speed cushion is constructed/installed along the center of the street with several speed cushions constructed/installed adjacent from curb to curb, with a minimum of 2 feet between the cushions so that a fire engine can straddle the cushion. By straddling the cushion, the fire engine is minimally impacted by the cushion and can maintain speed while traveling to the emergency. The speed cushions will be evaluated on a case-by-case basis and each model may require field testing.

Considerations During Review

The following provides a general overview of items that will be considered during a review of a proposed speed hump addition:

1. A 10 second delay in response time will be factored in, when reviewing each compliant traffic calming device.
2. Traffic calming device(s) shall not increase response times by more than one minute and the travel time to the furthest protected structure along the response route will not be increased to more than 5 minutes.
3. Utilized along roadways with a posted speed limit of 25 mph or less.
4. Traffic calming devices discussed in this document should not be placed on any street that is a primary/routine response route for emergency vehicles, including departure routes from a fire station. Primary/routine response routes are defined by the Institute of Transportation Engineers (ITE) as any street that emergency vehicles commonly use to allow for faster speeds, cut through access to adjacent areas and lesser physical impediments to achieve the shortest response time to their destination.
5. Traffic calming devices should not be placed on any street that is utilized as a main access route to multiple residential streets and/or access to highly populated areas.
6. Additional consideration will be provided for properly designed and tested speed cushions in situations where traditional speed humps would adversely impact response times. Speed cushions have a minimal effect on response times for fire engines and ladder trucks, but all other vehicles (battalion chiefs, rescue squads, police patrol cars, and ambulances) will still be impacted.
7. Generally, devices shall not be placed closer than 200' to an intersection and there should be at least 350' of separation between devices.
8. The review conducted by the CFD does not replace other approvals or processes that may be required by SCDOT, City of Charleston Traffic and Transportation, or other interested parties.

Submittal Process:

Traffic calming requests that meet the requirements of the City of Charleston Traffic and Transportation Department shall be submitted through their application process for initial review. Request will then be forwarded to the Charleston Fire Department for consideration.