

UNSIGNALIZED INTERSECTION SAFETY STRATEGIES



Provide Traffic Calming on Intersection Approaches through a Combination of Geometric and Traffic Control Devices

WHERE TO USE

Specific approaches to unsignalized intersections that are experiencing crash types potentially related to speed violations, specifically right-angle, rear-end, and turning collisions.



Photos by: FHWA

DETAILS

The goals of traffic calming are typically to reduce vehicle speeds, traffic volume, or both. Volume control measures limit traffic by restricting vehicle access. They include full street closures, half closures, diagonal diverters, median barriers, and forced-turn islands. Speed control measures can be divided into three types: vertical, horizontal, and narrowing. Vertical speed controls include speed humps, which are parabolic, circular, or sinusoidal mounds placed across a roadway. Speed tables are basically flat-topped speed humps. Horizontal speed controls slow traffic by requiring vehicles to shift direction in order to maneuver around them. The most common is the traffic circle. Narrowing roadways controls speed by reducing the amount of lateral space in which vehicles can maneuver.

Design is one factor in the ultimate success or failure of a traffic calming measure. Equally important are (1) careful planning to determine whether the measure is a viable means of improving overall safety and mobility, (2) determining what impact the measure may have on street maintenance and emergency vehicles, (3) determining whether the measure will be self-enforcing (that is, not require additional policing), and (4) estimating how the measure will affect surrounding streets and neighborhoods. All of these issues need to be addressed before implementation. The early and continuous involvement of adjacent property owners, neighborhood groups, and relevant city agencies is crucial.

KEY TO SUCCESS

Carefully plan and determine the type of traffic calming measure viable for the specific intersection approach. Such intersections should have a combination of high-speed violation rates and related crash patterns.



It is also critical to involve residents of the neighborhood when implementing traffic calming measures in such areas.

ISSUES

Traffic calming measures can oftentimes be controversial, especially when used to divert traffic from one road or street to another.

TIME FRAME ●●○

The implementation time for traffic calming measures will depend upon the type of measure used. Some types of traffic calming improvements may take 3 months or less (e.g., introducing speed humps) while others, especially when geometric improvements are required (e.g., traffic circles), may take 1 year or more.

COSTS ●●○○

The capital costs and maintenance costs involved in traffic calming measures vary depending on the type of traffic calming measure used. Some may be low cost (e.g., speed humps) while others that require geometric design improvements and/or acquisition of right-of-way may be moderate cost.

To the extent required by law, individual property owners may be required to share in the cost of providing traffic calming measures in their area.

EFFECTIVENESS

PROVEN: Most traffic calming is implemented on local residential roadways where relatively few crashes occur compared to arterials and highways. Thus, the safety effectiveness data is very limited. Safety issues are oftentimes more of a perception problem on the part of the public. Lacking robust crash data, speed is oftentimes used as a surrogate measure of safety. Results from one study showed that the impacts on mean speed at single sites varied from a 3 mph increase to a 12 mph decrease.

COMPATIBILITY

This strategy can be used in conjunction with most other strategies for improving safety at intersections.

SUPPLEMENTAL INFORMATION

Appropriate public information and education is fundamental for the effectiveness of this strategy, particularly when traffic calming techniques are used in an area for the first time. For additional sources of information on traffic calming, see <http://www.fhwa.dot.gov/environment/tcalm> and <http://www.ite.org/traffic/>.

For more details on this and other countermeasures: <http://safety.transportation.org>

For more information contact:

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