Traffic Calming and Emergency Response

Traffic calming and what it can do

Traffic calming is a general term for redesigning or retro-fitting existing streets to slow vehicle speeds. Traffic calming measures improve safety and convenience for pedestrians and bicyclists, and often motorists as well.

It is worth noting that most of these techniques provide other things that improve the "feel" and livability of a street, such as wider sidewalks, bike lanes, curbside parking, and landscaping. In numerous cases nationwide, the street that was created by a traffic calming project so improved the feel of the area that it triggered a social and economic revitalization. The worse the existing situation, the greater the potential for this positive impact.

Traffic calming on the rise

Two factors have led to a surge in traffic calming projects. Residents often turn to traffic calming to respond to increased traffic and high vehicle speeds in their neighborhoods. Also, each successful project becomes a visible signal of the potential for improvement, leading to additional requests.

Possible conflicts between traffic calming and emergency response

There is no denying that poorly thought-out traffic calming projects have created headaches for emergency responders. This is because the two tools most commonly provided when neighborhoods complain about traffic speeds – speed humps and stop signs – have the potential to increase response times, and can be hard on equipment.

Resources for finding solutions

This fact sheet and other LGC materials suggest a more careful approach in which emergency responders participate with residents and local jurisdictions to develop programs that minimize impacts on response times.

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Traffic Calming Techniques

Goals

The overriding goal of traffic calming should be to improve pedestrian and bicycle safety ***without*** severely limiting vehicle travel or significantly affecting emergency response. The objective is not to block vehicle traffic, but to slow it down and keep it flowing more smoothly, especially through intersections.

Although stop signs and signals are often requested to address speeding, it is important to understand that they are not traffic calming techniques.

Observations reveal that stop controls cause a phenomenon called "speed spiking" as drivers accelerate to higher speeds between stop signs to make up for perceived lost time. This exacerbates the problem.

Many drivers will also roll through unjustified stop signs, introducing a new hazard to pedestrians and other vehicles.

Traffic calming can also improve the streetscape, provide landscaping and add parking.

It is also critical to develop traffic calming measures that don't impede emergency response times. However, concern for this public safety issue must be tempered with a recognition that busy, chaotic streets create safety hazards for pedestrians, drivers, and bicyclists on a daily basis.

A few common traffic calming tools are summarized here. More detailed information about these and other techniques can be found in the Local Government Commission's *Streets and Sidewalks, People and Cars: A Citizen's Guide to Traffic Calming* by Dan Burden. This guidebook, available at www.lgc.org, discusses the proper use, benefits, costs and considerations of each technique.

Speed Humps

This device, which forces drivers to slow down by adding a bump or vertical deflection to the road, is often the most used tool since it is widely known and is relatively inexpensive.

However, it is often used inappropriately where other measures might work better. Speed humps and tables may slow most vehicles, but not trucks or SUVs, and they can also produce speed spikes. They are best used when narrow streets don't provide room for better and more aesthetic measures. Because speed humps can slow down emergency responders by 6 to 11 seconds, they should not be deployed on primary response routes.

Roadway Narrowing

This technique slows vehicle speeds by visually or physically narrowing the driver's "turf" on the street. This can be as simple as striping for bicycle lanes, or as comprehensive as a complete makeover of the streetscape with landscaping, wider sidewalks, bike lanes, and reduced numbers of vehicle lanes.

Improperly designed narrowing projects can create problems if they leave insufficient room for drivers to pull out of the way of emergency vehicles, or introduce long medians which prevent emergency vehicles from crossing into oncoming traffic lanes to get through signalized intersections.

Bulbouts or Curb Extensions

This measure targets pedestrian crossings at corners or mid-block. It reduces the width of the crossing and also reduces vehicle speeds, which both improve safety for people on foot. It also directs pedestrians to marked crossings, which can be visually enhanced with landscaping.

Pedestrian Refuge Islands

This device can be used at intersections or mid-block pedestrian crossings. It provides a place for a pedestrian to stand safely in the middle of a two-way street until a gap in traffic appears.

Refuge islands are most useful where high vehicle volumes and speeds exist. Like bulbouts, pedestrian refuges improve safety at crosswalks, and slow vehicle traffic.

Roundabouts

This device is a raised, preferably landscaped center island in an intersection, with triangular deflector islands on each approaching street. Mini circles are installed without the deflector islands on each approaching street. The deflection path for vehicles entering and exiting the roundabout insures that speeds are kept below 20 mph. Pedestrian crossings are moved slightly away from the roundabout, using the deflector islands. Mini circles are installed without the deflector islands at smaller intersections, and best used on quieter residential streets.

These tools that rely on vehicles yielding can greatly improve safety for all parties, and efficiently handle large traffic volumes at formerly signalized intersections.

WHERE TO USE TRAFFIC CALMING TOOLS

Some traffic calming tools work best for different problems and situations, including intersections, other spots along the streetscape, roadways, and sets of streets within a defined area or district.

Tools ▼	Spot	Intersection	Roadway	District
Bulbout	X	X	X	X
Chicane	-	-	X	X
Choker	X	X	X	X
Diverter	-	X	-	X
Driveway Link	-	-	X	X
Full Street Closure	-	-	X	X
Gateway	X	X	X	X
Intermediate Median Barrier	-	X	X	X
Landscaping Treatments	X	X	X	X
Median	-	-	X	X
Modified T-intersection	-	X	-	X
Partial Street Closure	-	X	X	X
Pedestrian Refugee Islands	X	X	X	X
Speed Humps and Tables	X	X	-	X
Raised Intersection	-	X	-	X
Reducing Number of Lanes	-	-	X	X
Roadway Narrowing	-	-	X	X
Mini Circles	-	X	-	X
Roundabout	-	X	-	X

■ For more information: "Streets and Sidewalks, People and Cars," LGC.

Focus on solutions with minimal impacts on emergency response

1 Never view traffic calming as a piecemeal response to each successive complaint. It should always be comprehensive, considering the safety issues and solutions throughout a neighborhood or corridor.

2 Engineers and decision-makers must avoid the often automatic response of throwing a stop sign or speed bump at a safety problem. These measures can be counterproductive, and impede emergency response.

3 Traffic calming programs must always include all affected parties, including residents, emergency responders and non-motorized users of the street.

4 Emergency responders must understand that wide and open streets that facilitate emergency response can also be counterproductive – wide streets are themselves a source of danger to pedestrians and bicyclists. Traffic calming should never develop into a "residents against the firefighters" situation. The two safety perspectives are not irreconcilable. Focus on techniques that meet the needs of all users to improve safety and livability.

5 Traffic calming requires an understanding of the dynamics of driver behavior, pedestrian and bicycle activity, and emergency response needs. This requires thinking that goes beyond traffic and emergency response manuals. Any traffic calming program that does not fully embrace this broader perspective is doomed to failure.

Traffic Calming Players

Traffic calming projects require all affected parties participate in the process of determining key problems and solutions. *The Citizens' Guide to Traffic Calming* details the process that communities typically go through. Some of the key players:

- **Residents** – People living along or near a busy street are often the first and loudest proponents of traffic calming. Their demands may often focus on speed bumps and stop signs that can be counterproductive.
- **Decision-Makers** – These are the people that residents usually go to first. Unfortunately, in the absence of a good traffic calming process or program, they may approve poorly conceived and unwarranted stop signs and speed humps, in spite of emergency response impacts.
- **Public Works Engineers** – The individuals are instructed by the decision-makers to design traffic calming projects, hopefully working with residents. Their knowledge of and attitude towards traffic calming techniques may vary greatly.
- **Planners** – Planners also respond to instructions from decision-makers, often with an approach that looks at community needs, economic impacts and other broad issues. They are usually more sensitive to bicyclist and pedestrian needs.
- **Emergency Response Agencies** – These agencies must live with the traffic calming results, good or bad, on response times. Some agencies understand the broader issue that some modest delay in response times may be justified if it improves safety along the street in question.
- **Drivers** – Like emergency responders, drivers must often accept whatever the program produces. Their response will be varied.
- **Large Vehicle Trip Generators** – These are large private or institutional uses like schools, hospitals, business parks, military bases or universities. Traffic calming projects should always consider these destinations and the potential to eliminate vehicle trips with carpools, shuttles or other travel reduction measures.

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