



Engineering Guide

Traffic Calming

Traffic Calming

Benefits, Limitations and Design Guidelines

Physical obstructions meant to slow down and possibly divert vehicles in residential areas are called traffic calming devices in our industry. More generally, this term refers to changing a road in an attempt to lower vehicle speeds, reduce traffic volumes, divert cut-through traffic, or some combination of these goals. This guide provides background, limitations, and further resources for designing traffic calming installations.

Traffic Calming Background

City engineering staff typically review the speeds and volumes on a local street after receiving a request from a concerned citizen (or from an elected official who fielded the citizen's request). Traffic engineers then determine if traffic calming treatments are appropriate.

City engineering staff should also analyze traffic calming treatments as part of their street reconstruction projects. Traffic calming devices are often very cheap to build into a reconstruction project.

Not all traffic calming devices are equally effective. Speed humps placed every few hundred feet are better at slowing vehicles compared to narrowing roads or raising intersections. Closing off a road to through traffic so vehicles can't "cut-through" a neighborhood can be very effective at reducing traffic on the road while a traffic circle may not change driver patterns.

Traffic calming treatments can be broken into the following four categories, each with their own strengths and weaknesses.

Vertical impediments; designed to make fast driving uncomfortable. These treatments are the most effective for reducing vehicle speeds, but they also get the most complaints from residents who have to drive over them multiple times per day.

Horizontal impediments; designed to make a driver turn the wheel and reduce the sight lines of unending pavement, which usually results in slower speeds.

Road narrowing; via striping, parking, or curb to reduce the drive lane widths, which slightly lowers speeds. These treatments have the additional benefit of shortening pedestrian crossings, which lead to a safer multi-modal environment.

Closing the through road partially or fully to disrupt travel patterns. These treatments may not change vehicle speeds but are effective at lowering volumes along certain roads. The drawback is that the vehicles are then rerouted, sometimes onto other residential streets instead of out to an appropriate collector street.

Traffic Calming Measures

Angled Slow Points	Raised Crosswalks
Center Islands	Raised Intersections
Chicanes	Realigned Intersections
Chokers	Reduced Intersection Turning Radius
Diverter/Diagonal Barriers	Roundabouts
Full Closures	Speed Humps
Half Closures	Speed Tables
Intersection Neckdowns	Striped Bicycle Lanes to Narrow the Drive Lanes
Mid-Block Bulb-Outs	Textured Pavement
Median Barriers	Traffic Circles
Neckdowns	

A traffic engineer should analyze the road to determine if traffic calming is needed. From there, the traffic engineer should design a proposed plan with some of the above traffic calming measures that will correct the speed and volume problem.

Ideally, the process to install should include public input and meetings to discuss the proposed design as well as a temporary installation (using traffic cones, barrels, etc.) to test before permanent installation. The process of analysis, design, communication and temporary testing will ensure a successful traffic calming project.

Limitations of Traffic Calming

- Can be costly to install, and remove if necessary
- Potential local community opposition from other streets (where traffic may shift) or residents who don't want the impacts on their travel route
- Reduced accessibility for residents/commuters
- Greater drive time/accessibility for semi-trucks and emergency vehicles (typically not appropriate in industrial areas or areas with high commercial access)
- Limited to local streets or minor collectors
- Not appropriate for busy roads (typically 4,000 vehicles per day is the cutoff)
- Posted speed limit should be 30 mph or less
- Typically for two-lane, two-way roadways