

## Traffic calming: an option in Iowa?

Tom McDonald, Safety Circuit Rider

SOME OF the most common traffic problems and complaints in communities involve high traffic speeds and congested or otherwise problematic intersection operations.

Too often, the only perceived solutions are lowering speed limits and installing more stop signs. In the short term, these efforts may have a positive effect. Often, however, initial improvements in safety (e.g., slower traffic speeds and fewer crashes at intersections) do not last.

In fact, in the long term, lower speed limits and more stop signs may be counterproductive. Without focused, increased enforcement, unreasonable speed limits (i.e., lower than the 85<sup>th</sup> percentile) and unnecessary stop control will be regularly violated.

Signs alone don't always result in changed driver behavior. But physical measures can change driver behavior, which is why traffic calming measures can be effective.

### Traffic calming defined

The Institute of Traffic Engineers defines traffic calming as "the combination of mainly physical measures to reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users."

Properly designed physical alterations to a road or street can cause or invite motorists to decrease their driving speed and pay more attention to their driving. The result can be safer travel for both motorists and pedestrians.

Section G9.1 of the *Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties* briefly describes traffic calming alternatives, from diverters to speed humps, as well as design options. Traffic circles and roundabouts are also discussed. (Generally, roundabouts are considered traffic control devices, not traffic calming devices.)

### Traffic calming options

If residents in a neighborhood are concerned about excess traffic, a diverter or semi-diverter might be the answer.

For speeding complaints, several options could be considered, includ-

ing bulb-outs, chokers, chicanes, or even speed humps.

These features can be designed to offer additional protection for pedestrians and aesthetic enhancements to the neighborhood. And, most of these improvements can be added for low cost.

None of these options is a panacea; no such thing has yet been discovered in traffic engineering. But they do offer attractive and often more effective alternatives to the standard, familiar approaches of the past. And they work without increased enforcement!

### Intersection traffic control

Traffic control at some urban intersections can be particularly challenging. When crashes occur and congestion increases, traffic signals are not guaranteed to significantly reduce either problem. Signalization is costly and requires ongoing maintenance.

In Iowa and other states, roundabouts are becoming useful alternatives to signals at urban intersections. Roundabouts require minimal maintenance and are operationally sound. Although installing a roundabout will require changing an intersection's physical characteristics, it can be less costly than installing sophisticated traffic signals. Perhaps most important, many studies have shown that roundabouts are influential in reducing crashes.

Whenever urban intersection improvements are anticipated or new intersections designed, roundabouts should be considered along with traffic signals.

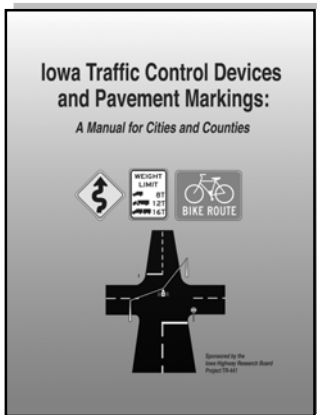
When considering traffic calming devices or roundabouts

Several precautions are noteworthy:

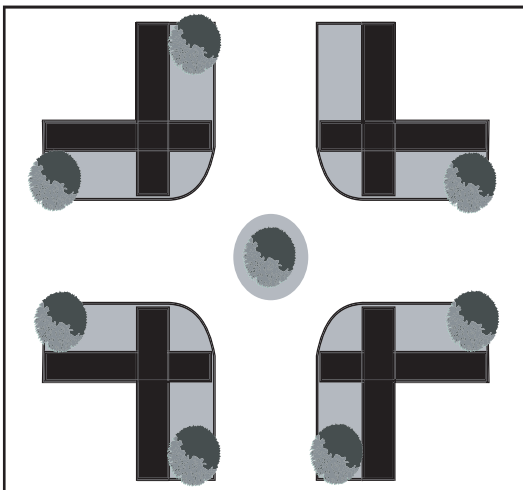
- Study the options carefully.
- Use only modern designs, especially for roundabouts (some early roundabout designs in this country had problems, but in recent years designs have been significantly improved).
- Keep the public involved from the beginning and throughout the planning and installation process (driver education efforts may be useful as well to help drivers navigate new, unfamiliar street features).

**CALMING...continued on top of next page**

*Editor's note: This article is part of a series about Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties. The manual was funded by the Iowa Highway Research Board (TR-441) and supplements the MUTCD. It is available online, [www.ctre.iastate.edu/pubs/itcd/index.htm](http://www.ctre.iastate.edu/pubs/itcd/index.htm). Or contact Tom McDonald, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu).*



In certain situations, properly installed traffic circles can improve safety at intersections by slowing traffic.



### For more information

To become familiar with traffic calming techniques, review Section G9.1 of the *Iowa Traffic Control Devices and Pavement Markings Manual for Cities and Counties*. Iowa City, Clive, Des Moines, and Bettendorf have constructed traffic circles, roundabouts, and other nontraditional traffic calming/traffic control devices.

The Institute of Transportation Engineers has published several detailed publications on traffic calming. These publications are available through CTRE's library, as is the FHWA's 2000 publication, *Roundabouts: An Informational Guide*, (P1482). Contact Jim Hogan, librarian, 515-294-8103, hoganj@iastate.edu.

In addition, training workshops can be arranged through the Iowa LTAP center. Contact Safety Circuit Rider Tom McDonald, 515-294-6384, tmcdonal@iastate.edu. •

## MUTCD compliance dates: January 2003

Note approaching deadlines for complying with revisions to the millennium edition of the MUTCD:

Section 3B.01—Yellow Centerline and Left Edge Line Pavement Markings and Warrants, compliance date January 3, 2003

Section 3B.07—Warrants for Use of Edge Lines, compliance date January 3, 2003

These provisions will not be affected by Proposed Amendments for MUTCD, Revision 2 (posted May 2002). If you do not have a copy of the most recent MUTCD, you can find the provisions on the Federal Highway Administration's MUTCD website, <http://mutcd.fhwa.dot.gov/>. •

## Websites that work for you

### NCHRP approved traffic control devices

This Texas DOT web site lists all of the acceptable traffic control devices for use in work zones that comply with the standards set by the NCHRP. [www.dot.state.tx.us/insdtdot/orgchart/trf/ctrlldvcs/trftrfeps1.htm](http://www.dot.state.tx.us/insdtdot/orgchart/trf/ctrlldvcs/trftrfeps1.htm)

### Guides to better work safety

The FHWA provides a great resource for agency safety coordinators. It has links to various work safety guides including the *Best Practices Guidebook* and *Meeting the Customer's Needs for Mobility and Safety During Construction and Maintenance Operations*. [www.ops.fhwa.dot.gov/wz/techshar.htm](http://www.ops.fhwa.dot.gov/wz/techshar.htm)

### Planning and development basics for community leaders

This site helps community leaders, especially in rural communities, with planning and development. It teaches users planning and development basics such as government policies, planning, benchmarking (including an introduction to GIS), development concepts, growth concepts, and economic development. The tools on the site are free. <http://www.cdtoolbox.org>

### Innovations that work

See last year's winners from North Dakota's "You Show Us" contest (similar to Iowa's "Build a Better Mousetrap" contest). Some inventions include the "Cutting Edge Installation Jack," "Culvert Transport Trailer," and "Air Operated Hydraulic Jack." [http://hardhat.cme.ndsu.nodak.edu/ndltap/quarterly\\_newsletters/fall2001.pdf](http://hardhat.cme.ndsu.nodak.edu/ndltap/quarterly_newsletters/fall2001.pdf)

### Protecting public transportation from terrorism

This site has informative articles about researching anti-terrorism measures in public surface transportation. They include *Protecting Public Transportation Against Terrorism and Serious Crime: An Executive Overview* and *Protecting Public Transportation Against Terrorism and Serious Crime: Continuing Research on Best Security Practices*. [www.transweb.sjsu.edu/pubs.htm](http://www.transweb.sjsu.edu/pubs.htm)

### The high performance concrete forum

This is the FHWA's forum for high-performance concrete (HPC). Discussions include HPC projects in other areas, definitions and research, mix design and proportioning, structural design and specifications, costs, and applicable case studies. <http://knowledge.fhwa.dot.gov/cops/hpcx.nsf/home>

### The most dangerous two-lane highways in the country

"Dateline NBC" aired a story regarding the most dangerous undivided, two-lane highways in the country. This site contains the article, video, and an interactive road fatality map. Although parts of this news story are somewhat exaggerated, it has some good insights. <http://stacks.msnbc.com/news/748422.asp?cp1=1>

### One-stop site for transportation curricula

Use this FHWA site to find information on Transportation Curriculum Coordination Council (TCCC) training courses, state programs, and contacts. It also links to regional training and certification programs and the latest TCCC news. [www.nhi.fhwa.dot.gov/tccc/tccc.html](http://www.nhi.fhwa.dot.gov/tccc/tccc.html)