

## RESEARCH FOCUS

# WORK ZONE SAFETY

## Mobile Automated Flagger Assistance Device (AFAD) Moves Work Zone Safety Ahead



To better aid moving work zone operations, MnDOT sought to improve the AFAD (a stationary flagging device that requires towing), adopted in 2014 as a key technology for directing traffic through work zones without putting a human flagger in harm's way.

Working with a Minnesota manufacturer, researchers developed a prototype vehicle on which the AFAD could be mounted. The vehicle is operated with a wired or wireless controller, or a mounted handlebar.

The result is a mobile AFAD, able to direct traffic effectively around moving operations like crack sealing.

The prototype is undergoing further testing and enhancement to increase its battery life. For more information on the research that produced MnDOT's self-contained, self-propelled mobile AFAD, see [Technical Summary 2017-09](#).

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## How Well Do Work Zone Signs and Other Indicators Capture Driver Attention?

Distracted drivers may not see flaggers and may approach work zones too quickly. In this study, investigators used a driving simulator and field tests to measure driver reaction to several layouts of attention-getting devices placed ahead of a flagger, such as a warning horn, flashing lights, rumble strips and various signs.

They discovered that several of the alternatives worked better than the standard layout — a series of signs like those shown here. The Minnesota Local Road Research Board will be discussing these new options with the state work zone planning group, which includes maintenance and law enforcement personnel as well as safety device manufacturers.

[Technical Summary 2017-07](#)



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## Research Collects Best Practices for Positive Protection in Work Zones

The MnDOT Office of Traffic, Safety and Technology is developing a manual on the use of temporary barriers, truck-mounted crash cushions and other measures to enhance safety in work zones. To support this effort, Transportation Research Synthesis (TRS) 1703 conducted a survey of state departments of transportation and a literature review to identify effective techniques and best practices. A TRS is a short-term research project that summarizes research activity and current state of the practice. For more information about TRS 1703 or to request a TRS, visit [mndot.gov/research/transportation-research-syntheses.html](http://mndot.gov/research/transportation-research-syntheses.html).

## RESEARCH FOCUS

# BIKE & PEDESTRIAN

## New Manual Helps Agencies Count Bicycle and Pedestrian Traffic

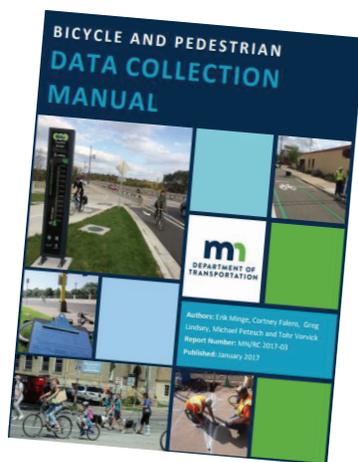


As part of an ongoing effort to institutionalize bicycle and pedestrian counting in Minnesota, MnDOT has published a new manual to help city, county, state and other transportation practitioners in their counting efforts.

The Bicycle and Pedestrian Data Collection Manual provides guidance and methods for collecting bicycle and pedestrian traffic data. This introductory guide to nonmotorized traffic monitoring is designed to help local jurisdictions, nonprofit organizations and consultants design their own programs

Several case studies are included to illustrate how bicycle and pedestrian traffic data can be used to support transportation planning and engineering.

The manual is the third in a series of MnDOT-funded projects related to the Minnesota Bicycle and Pedestrian Counting Initiative, a collaborative effort launched in 2011 to encourage nonmotorized traffic monitoring. University of Minnesota researchers, led by Greg Lindsey, professor at the Humphrey School of Public Affairs, have been key partners.



### Accomplishments of the Counting Initiative

- A new statewide bicycle and pedestrian traffic-monitoring network with 25 permanent monitoring locations
- A district-based portable counting equipment loan program to support MnDOT districts and local jurisdictions interested in nonmotorized traffic monitoring
- Minnesota's first bicycle and pedestrian traffic monitoring report, which will be issued annually
- A MnDOT website for reporting annual and short-duration counts that allows local planners and engineers to download data for analysis
- Provisions added to MnDOT equipment vendor agreements that enable local governments to purchase bicycle and pedestrian monitoring equipment
- Annual training programs for bicycle and pedestrian monitoring
- Provisions in the Statewide Bicycle System Plan and Minnesota Walks that call for bicycle and pedestrian traffic monitoring and the creation of performance measures based on counts

### Resources

Bicycle and Pedestrian Data Collection Manual  
[bit.ly/2t9cbi6](http://bit.ly/2t9cbi6)

The Minnesota Bicycle and Pedestrian Counting Initiative:  
Institutionalizing Bicycling and Pedestrian Monitoring  
[bit.ly/2typ4W3](http://bit.ly/2typ4W3)