



Center for Transportation  
Research and Education

# Low-Cost Traffic Calming in Slater, Iowa

tech transfer summary

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## RESEARCH PROJECT TITLE

Evaluation of Gateway and Low-Cost Traffic-Calming Treatments for Major Routes in Small Rural Communities

## SPONSORS

Iowa Highway Research Board (TR-523)  
Federal Highway Administration

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## CTRE

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The mission of the Center for Transportation Research and Education (CTRE) at Iowa State University is to develop and implement innovative methods, materials, and technologies for improving transportation efficiency, safety, and reliability while improving the learning environment of students, faculty, and staff in transportation-related fields.

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Several low-cost traffic-calming treatments were implemented and evaluated in Slater, Iowa.

## Objective

The purpose of the project was to evaluate traffic-calming treatments on major roads through small Iowa communities using either single-measure, low-cost treatments or gateway treatments. For this portion of the project, low-cost traffic-calming treatments were evaluated in Slater, Iowa.

## Problem Statement

The main street through many small rural Iowa communities is a state or county highway with high speeds outside the city limits and a reduced speed section through the rural community. Consequently, drivers passing through the community often enter at high speeds and then maintain those speeds throughout. When speeds in rural communities are problematic, traffic calming provides a potential solution. However, traffic-calming measures are generally used in larger urban areas; their effectiveness in small communities is unknown. The Center for Transportation Research and Education (CTRE) at Iowa State University teamed up with the Iowa DOT to evaluate traffic-calming treatments in Slater, Iowa.

## Community Description

Slater is located approximately 20 miles north of Des Moines and has a population of 1,306. Two major routes pass through Slater: State Highway 210, a two-lane road oriented east/west, and County Highway R-38, a two-lane road oriented north/south. Both serve as major commuter routes. A four-way stop exists at the intersection of the two roadways. Sensitive areas near the highways include an elementary school and a park.



Layout of traffic-calming treatments for Slater, Iowa

Four crashes occurred along the northern section of R-38 from 2001-2005. Seven crashes occurred along the western section of SH 210, and one crash was noted along the southern section of R-38. In addition, eight crashes were reported in the five-year period at the intersection of R-38 and SH 210, which is a four-way-stop intersection.

## Research Description

Three different low-cost traffic-calming measures were evaluated in Slater. First, two center islands were created along R-38 using 36-inch longitudinal channelizers. A 25 mph speed limit sign was placed on a mountable sign support at the beginning of the center islands. The islands were located at the southern entrance to Slater, just after the first 25 mph speed limit sign, to slow down north-bound traffic entering town from the south.

In an effort to slow speeds along the western section of SH 210, on-pavement “SLOW” markings were painted in two locations along this section of road. Finally, a driver speed feedback sign was installed along the northern section of R-38, across from the elementary school. This sign differed from other types of speed feedback signs in that it could be programmed to display two lines of text containing any five alphanumeric characters.

To evaluate the effectiveness of the treatments, data were collected using pneumatic road tubes placed at locations surrounding the treatment. Speed data were collected before the treatments were installed and at one, three, six, nine, and twelve months after the treatments were installed.

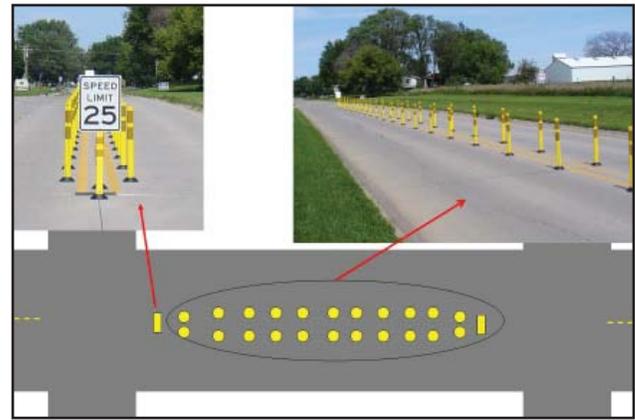
## Key Findings

Results indicate that the longitudinal channelizers used to form a center island for the southern section of R-38 reduced speeds significantly. The driver speed feedback sign was also found to be effective in reducing speeds. Use of the on-pavement “SLOW” markings did not appear to be effective.

## Implementation Benefits

Lower vehicle speeds produce several safety benefits. For drivers, the area of focus is significantly increased at lower speeds, giving them a greater awareness of their surroundings and more time to react to potential problems.

Lower speeds also reduce the likelihood and severity of vehicle crashes. The Oregon DOT, in a handbook created for rural communities, reported speed statistics indicating that there is an 85% likelihood of death for a pedestrian struck at 40 mph. One struck at 30 mph has a 45% chance of being killed and the risk drops to 15% if the pedestrian is struck at 20 mph.



*Center island widening using longitudinal channelizers in Slater, Iowa*



*On-pavement “SLOW” marking in Slater, Iowa*



*Speed feedback sign in Slater, Iowa*

## Implementation Readiness

Many rural communities do not have the resources to implement high-cost, elaborate traffic-calming measures. The measures used in Slater were low cost and easy to install. These measures were also designed to accommodate large farm vehicles, which are prevalent in rural communities. In short, the traffic-calming treatments used in Slater, Iowa could easily be implemented in other rural communities.