

## Traffic Safety Toolbox—Addressing Speeds

### PROJECT TITLE

Traffic Safety Toolbox—Addressing Speeds

### STUDY TIMELINE

April 2022 – March 2023

### INVESTIGATORS

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\$85,000

More information about the VTrans Research Program, including additional Fact Sheets, can be found at: <http://vtrans.vermont.gov/planning/research>

## Introduction or Problem Statement

Speeding on lower speed and local roadways is a major contributor to speeding-related fatalities in Vermont. In 2018, over half of all fatal crashes occurring on local and collector roadways were classified as speeding-related. Vermont does not currently have a “toolbox” for engineers and local officials to help determine the most effective



speeding countermeasures to improve safety on roads. While our engineers have experience using various tactics to improve road safety and reduce speeds, compiling all our resources into a single location will help identify the correct measures to take and how to implement them. This project will help the Districts and Towns where the responsibility of addressing speeds and improving safety often falls to local engineers or DPW superintendents, many of whom have limited experience in transportation safety.

## Methodology or Action Taken

This project identified a collection of 15 countermeasures that can be implemented by towns in Vermont to lower roadway speeds. Their application in the Vermont context was supported by 4 speeding field tests and 4 interview-based case studies. For each countermeasure, the research team created a profile sheet that includes illustrations, description, context discussion, design considerations, implementation pros & cons, and links to local case studies, field tests, and sources of further information. These profile sheets were compiled into a dynamic pdf document for use by towns in identifying countermeasures suited to their specific context.

**PROFILES OF SPEEDING COUNTERMEASURES**

**HORIZONTAL DEFLECTIONS**

**NEIGHBORHOOD TRAFFIC CIRCLE**

Effective speed reduction within a village or town center



Neighborhood Traffic Circle in Burlington, Vermont



Diagram showing vehicle paths to an island in a neighborhood

**FACTS AT A GLANCE**

**PROS**

- Can be designed to fit within sight of any conceivable approach
- Moderate speed reductions are possible within the intersection

**CONS**

- Can not provide explicit priority for transit or emergency vehicles; the way a traffic signal can
- Not suited for approaching speeds over 35 mph
- Can be obstructive for left turning motor-vehicle or emergency vehicles without a traversable center island
- Provides little or no speed reduction effect if not done a non-manualized because it does not have splitter islands

**CONTEXT**

The circle can simply be a painted area, but a raised curb and landscaping are most effective. A traversable center island by the presence of large vehicles that limits the speed-reducing effect. Neighborhood traffic circles can be as small as 20 feet in diameter but face the issue of channelization to guide approaching traffic into the intersection pattern, making it possible for left-turning traffic to violate the circulation of action. Some local jurisdictions have used large wheel cuts to make a left turn through the intersection. Limit to travel with less than 1,000 sq ft of total volume.

**USE IN VERMONT**

- Moderate success

**DESIGN CONSIDERATIONS**

A typical neighborhood traffic circle is designed to fit within the road lanes of an existing intersection with a road that is too small for a left-turning motor-vehicle or too narrow with a motor-vehicle center island. Lack of a splitter island if not larger vehicle to make a lane or left turn. Drainage typically occurs here. If the circle is not a crossway from the traffic circle, further reducing vehicle speeds. When conditions are not right, consider roundabouts to further reduce vehicle speeds and highlight the presence of a center island. Stop or Yield signs can be used on the approaches.

For Further Information: FHWA, 2018; FHWA, 2015; MUTCD, 2009 (2017); King and Brown, 2009; Kingston, undated

## Potential Impacts and VTrans Benefits

This resource will improve VTrans’ workflow, providing access to a much-needed resource for our districts and towns to identify the most effective ways to reduce speeding and prevent future speeding-related fatalities on our roadways.