

# NCHRP 17-113 COUNTERMEASURES

## Install Two-way Stop Controlled Intersections At Uncontrolled Intersections



A two-way stop-controlled (TWSC) intersection assigns stop control to traffic on the minor road while allowing traffic on the major road to proceed without stopping.

### Implementation Strategy

#### How and Where to Apply

- Two-way stop control is typically applied at intersections where a local or minor road meets a higher-volume road. It is most effective at low- to moderate-volume intersections where assigning right-of-way improves traffic operations and safety.
- This treatment is appropriate where sight distance is adequate for stopped vehicles to identify gaps in the major road traffic and where crash history or near-misses suggest a need for enhanced control.

#### Use in a Safe System Approach

TWSC intersections align with the Safe System principles of crash prevention, responsibility, and forgiving design by assigning clear vehicle priority and minimizing intersection uncertainty. They also help reduce angle crashes, which often occur at uncontrolled intersections.

#### Key Stakeholders

Agency maintenance personnel

#### Proactive Implementation

Agencies can proactively identify uncontrolled intersections for TWSC treatment through systemic safety analysis, community reports, and crash data. Candidate locations often include rural intersections, neighborhood streets, or locations with unclear right-of-way and frequent yielding conflicts.

### Countermeasure Overview

**Objective:** Ensure that roadway design and traffic control elements support appropriate and safe speeds

**Strategy:** Provide appropriate intersection design for speed of roadway

### Selected Related Countermeasures

- CM1** Install STOP AHEAD Pavement Markings
- CM2** Use Dynamic Warning Signs
- CM3** Wider stop bar markings

**Cost:** \$ (Moderate to High)

**Service Life:** 10 years

**Benefit-Cost Ratio:** 2:1

### Targeted Solution

CONTRIBUTING FACTORS	<ul style="list-style-type: none"> <li>High speed</li> <li>Failure to yield</li> <li>Right of way</li> </ul>
TARGET CRASH TYPE	<ul style="list-style-type: none"> <li>Angle</li> <li>Rear-end</li> <li>Turning</li> </ul>
ROAD FACILITY TYPE	<ul style="list-style-type: none"> <li>Local</li> </ul>
AREA TYPE	<ul style="list-style-type: none"> <li>Urban</li> <li>Suburban</li> </ul>

### Safety Linkage

NCHRP 500 Series Unsignalized Intersection  AASHTO'S TOWARD ZERO DEATHS Safer Infrastructure	SAFE SYSTEM APPROACH Safe Roads  SAFE SYSTEM ROADWAY DESIGN TIER 1 TIER 2 TIER 3 TIER 4 Tier 3
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Two-way Stop Controlled Intersections. Source: iitb

51%

Reduce fatal and injury crashes

<sup>1</sup>CMF ID: 2716

#### Resources

- MUTCD Chapter 2B: Regulatory Signs
- FHWA Unsignalized Intersection Improvement Guide
- NCHRP Report 600: Human Factors Guidelines for Road Systems

