

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.
- Two-way stops work well at low-volume intersections to manage right-of-way but can cause delays and crashes on high-volume or multilane roads.

Use in a Safe System Approach

TWSC intersections support the Safe System Approach by promoting crash prevention and shared responsibility, reducing uncertainty and angle crashes.

Key Stakeholders

State DOTs, MPOs, engineering consultants, law enforcement, community associations, safety advocacy groups.

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 intersection geometry and traffic control measures appropriate for roadway speed.

Selected Related Countermeasures

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

Cost: \$\$\$ (Low)

Service Life: 10 years

Benefit-Cost Ratio: 2.0:1

Targeted Solution

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

Safety Linkage

NCHRP 500 Series	SAFE SYSTEM APPROACH
Unsignalized Intersection	Safe Roads
AASHTO'S TOWARD ZERO DEATHS	SAFE SYSTEM ROADWAY DESIGN
Safer Infrastructure	TIER 1 TIER 2 TIER 3 TIER 4
	Tier 3

TWSC at Uncontrolled Intersections. Source: Google Earth

51%

Reduces all types of crashes and severities on urban and suburban undivided roads (CMF ID: 2716)

Resources

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

