

Install Intersection Safety Devices



Intersection safety devices—such as red-light cameras or warning systems—enhance safety by detecting violations and encouraging driver compliance at high-risk intersections.

Implementation Strategy

How and Where to Apply

- These devices are typically applied at signalized intersections or high-crash unsignalized locations with frequent violations.
- They are most effective at urban or suburban intersections with documented red-light running or rear-end crashes.
- According to FHWA, intersection safety technology should target behaviors contributing to high-severity collisions, including failure to yield, speeding, and stop violations.

Use in a Safe System Approach

These devices support Safer Users and Safer Intersections by improving behavior and creating accountability for unsafe actions. Automated enforcement reduces human error by increasing deterrence and encouraging greater compliance with traffic control devices.

Key Stakeholders

State and local DOTs
Transportation safety engineers

Proactive Implementation

Intersection safety devices can be deployed proactively at intersections identified through systemic crash analysis, violation tracking, or risk-based screening. Agencies may use speed and red-light cameras, warning beacons, or automated enforcement in corridors with documented noncompliance. Public education and data-sharing partnerships can enhance program effectiveness.

Countermeasure Overview

Objective: Reduce operating speeds on specific intersection approaches

Strategy: Provide traffic calming on intersection approaches through a combination of geometrics and traffic control devices

Targeted Solution



CONTRIBUTING FACTORS

- Limited sight distance
- Driver inattention



TARGET CRASH TYPE

- Angle
- Rear-end
- Turning



ROAD FACILITY TYPE

- Urban arterial



AREA TYPE

- Urban
- Suburban

Safety Linkage



NCHRP 500 Series

Intersection Crashes

SAFE SYSTEM APPROACH

Safe Roads



AASHTO'S TOWARD ZERO DEATHS

Safer Infrastructure

SAFE SYSTEM ROADWAY DESIGN

TIER 1

TIER 2

TIER 3

TIER 4

Tier 4

Selected Related Countermeasures

- CM1 Red-light running cameras
- CM2 Intersection conflict warning systems
- CM3 Intersection conflict warning systems

Cost: \$ (Moderate)

Service Life: 10 years

Benefit-Cost Ratio: 12.4:1

Intersection Safety Devices. Source: [Device](#)

Safety Benefits

80%

Reduce all crashes at signalized urban and suburban intersections¹

25%

Reduce property-damage-only crashes²

¹ CMF ID: 11097

² CMF ID: 11083

Resources

- [Safety Evaluation At Signalized Intersections](#)
- [INTERSECTION SAFETY STRATEGIES](#)

