



Install Intersection Lighting

Intersection lighting improves visibility at night by illuminating the conflict area where road users cross paths, helping reduce nighttime crashes.

Implementation Strategy

How and Where to Apply

- Intersection lighting should be installed at intersections with high nighttime crash rates, especially rural or suburban locations with limited ambient light.
- It is most effective at stop-controlled intersections, roundabouts, or complex junctions.
- According to **FHWA**, lighting should cover the intersection area and approaches to enhance visual cues and decision-making.

Use in a Safe System Approach

This countermeasure supports Safer Roads and Safer Users by enhancing nighttime visibility and reducing the risk of missed visual cues. Lighting reduces the likelihood of severe collisions by improving the ability of drivers to detect other vehicles, cyclists, and pedestrians earlier.

Key Stakeholders

State and local transportation agencies
Traffic safety engineers and lighting design consultants

Proactive Implementation

Agencies can identify candidate sites by conducting nighttime crash analyses or road safety audits. Installation can be bundled with resurfacing, safety, or intersection improvement projects. Systemic application may target all rural intersections with a history of nighttime crashes or poor visibility.

Countermeasure Overview

Objective: Improve driver awareness of intersections as viewed from the intersection approach

Strategy: Improve visibility of the intersection by providing lighting

Selected Related Countermeasures

- CM1** Enhanced signing and retroreflective markings
- CM2** STOP AHEAD pavement markings
- CM3** Channelization or roundabout conversion

Cost: \$ (Moderate to High)

Service Life: 15 years

Benefit-Cost Ratio: 5.5:1

Targeted Solution



CONTRIBUTING FACTORS

- Reduced visibility



TARGET CRASH TYPE

- Angle
- Rear-end
- Turning



ROAD FACILITY TYPE

- All



AREA TYPE

- Rural

Safety Linkage



NCHRP 500 Series

Intersection Crashes



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 4

21%

Reduce nighttime crashes at rural intersections¹

¹ CMF ID: 10993

Resources

- [FHWA Proven Safety Countermeasures](#)
- [NCHRP Report](#)

Install Intersection Lighting. Source: [Lighting](#)

