

Install Dual Red Signal Lenses



Install two red signal lenses for each approach lane.

Implementation Strategy

How and Where to Apply

- Dual red signal lenses enhance the visibility of red lights at signalized intersections, especially on high-speed or multilane approaches where a single indication may be obscured by glare or obstructions.
- They are suitable for any signalized approach and are particularly effective at locations with a history of red-light running.
- Not recommended at low-volume intersections or where existing signal visibility is already sufficient, offering minimal additional safety benefit.

Use in a Safe System Approach

Dual red signal lenses enhance safe roads and users by improving visibility, addressing human mistakes, supporting shared responsibility, and providing proactive, redundant protection to reduce red-light violations and crashes

Key Stakeholders

State DOTs, MPOs, engineering consultants, safety advocacy groups, utility companies.

Proactive Implementation

Dual red lenses can be proactively installed at locations with signal visibility challenges, high-risk traffic patterns, or documented red-light violations. Agencies can identify potential sites through crash history analysis, public input, or proactive systemic reviews of intersection approaches with high volumes or poor signal visibility conditions.

Countermeasure Overview

Objective: Improve driver awareness of intersections and signal control.

Strategy: Improve visibility of signals and signs at intersections

Selected Related Countermeasures

- CM1 Install Intersection Lighting
- CM2 Use LED Signal Modules
- CM3 Optimize Signal Timing

Cost: \$ (Low)

Service Life: 10 years

Targeted Solution



CONTRIBUTING FACTORS

- Reduced signal ambiguity.
- Delayed driver reaction.
- Abrupt stopping.



TARGET CRASH TYPE

- Angle
- Rear-end
- Turning



ROAD FACILITY TYPE

- N/A



AREA TYPE

- All

Safety Linkage



NCHRP 500 Series

Unsignalized Intersection

SAFE SYSTEM APPROACH

Safe Roads

SAFE SYSTEM ROADWAY DESIGN

TIER 1

TIER 2

TIER 3

TIER 4

Tier 4



AASHTO'S TOWARD ZERO DEATHS

Safer Infrastructure

Dual Red Signal Lenses. Source: FHWA.

Safety Benefits

- Installing dual red signal lenses at intersections is associated with an increase in crashes (CMF ID: 2335)
- To improve safety, combine this treatment with enhanced signal visibility measures, public education on signal changes, and complementary intersection safety strategies such as better signage and enforcement (CMF ID: 2336)



Resources

- [Manual on Uniform Traffic Control Devices \(MUTCD\), Chapter 4D: Traffic Control Signal Features](#)
- [FHWA Signalized Intersections: Informational Guide](#)

