

# Install a Traffic Signal

Traffic signal installation controls vehicle movements to reduce crashes by minimizing conflict points and improving traffic coordination.

## Implementation Strategy

### How and Where to Apply

- Traffic signals should be installed at intersections with high traffic volumes, crash frequency, or where gaps in traffic need to be created for safe crossing.
- Proper installation involves meeting MUTCD signal warrants, optimizing signal timing, and ensuring visibility with correctly placed signal heads and support infrastructure.
- The MUTCD states that traffic signals must meet one or more signal warrants based on traffic volume, crashes, or pedestrian needs, and be properly placed with clear visibility and coordinated timing."

### Use in a Safe System Approach

Aligns with the Safe System Approach by reducing conflict points, managing vehicle speeds, and clearly assigning right-of-way, thereby minimizing crashes for all road users.

### Key Stakeholders

State DOT, Local enforcement, active road users

### Proactive Implementation

Proactive implementation involves using traffic engineering studies to identify intersections approaching MUTCD signal warrants, such as increasing volumes or crash frequency, and installing signals to mitigate emerging safety and operational issues.

## Countermeasure Overview

**Objective:** Reduce frequency and severity of intersection conflicts through traffic control and operational improvements

**Strategy:** Employ multiphase signal operation

## Selected Related Countermeasures

- CM1 Dedicated left turn lane
- CM2 Chanelized right turn lane
- CM3 Roundabout conversion

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

**Service Life: 10** years

**Benefit-Cost Ratio:** 53.8:1

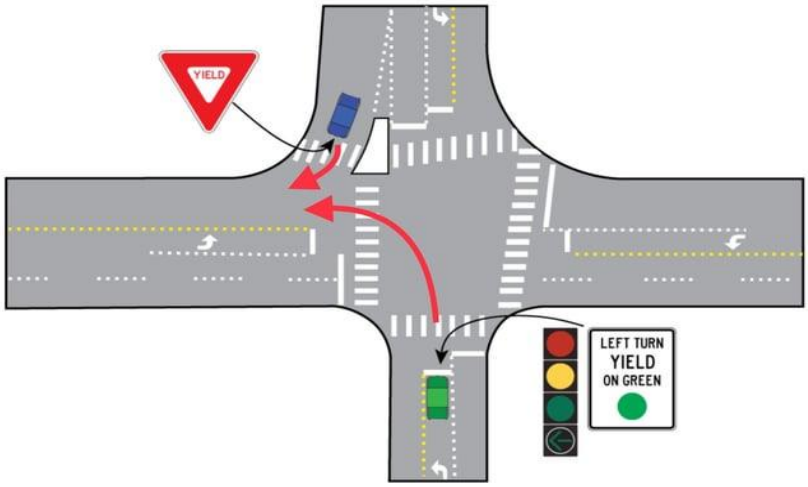
## Targeted Solution

| | |
|---|---|
| CONTRIBUTING FACTORS | ▪ Inadequate gaps for safe crossing or turning movements |
| TARGET CRASH TYPE | ▪ Angle<br>▪ Rear-end<br>▪ Turning |
| ROAD FACILITY TYPE | ▪ Not Specified |
| AREA TYPE | ▪ All |

## Safety Linkage

| | |
|---|---|
| NCHRP 500 Series | SAFE SYSTEM APPROACH |
| Signalized Intersection | Safe Roads |
| AASHTO'S TOWARD ZERO DEATHS | SAFE SYSTEM ROADWAY DESIGN |
| Safer Infrastructure | Tier 3 |

TIER 1
TIER 2
TIER 3
TIER 4




Dedicated Right turn lanes. Source: The Wise Drive

## Safety Benefits

77% Reduce crashes of all types and severities[1]

[1] CMF 326

## Resources

- FHWA proven-safety-countermeasures/dedicated-left-and-right-turn-lanes-intersections
- Chanellization_tech_brief.pdf?