



# Improve Angle of Channelized Right Turn Lane

Sharpening the angle of a channelized right-turn lane bringing it closer to 90 degrees slows turning vehicles, improves visibility of pedestrians and cyclists, and reduces crash severity at intersections

## Implementation Strategy

### How and Where to Apply

- Apply at intersections with high pedestrian volumes to reduce turning speed and improve crosswalk visibility.
- Use during roadway reconstruction or resurfacing to cost-effectively modify geometry for enhanced pedestrian safety.
- The **FHWA** states "Channelized right-turn lanes designed with sharper angles and tighter curb radii can reduce vehicle turning speeds and improve pedestrian safety."

### Use in a Safe System Approach

This treatment supports the Safe System Approach by contributing to Safer Roads and Safer Speeds. By reducing vehicle speeds and increasing visibility at a key point of conflict, it accounts for human limitations in perception and decision-making and provides a more forgiving roadway environment.

### Key Stakeholders

State and Local Departments of Transportation (DOTs), City Traffic Engineers and Planners.

### Proactive Implementation

Identify intersections with frequent pedestrian or turning-related crashes using crash data and field reviews. Implement sharper right-turn angles during resurfacing or capital projects. Use temporary curb extensions or striping as interim solutions. Prioritize locations near schools, transit stops, and dense pedestrian zones to enhance safety before severe incidents occur.

## Countermeasure Overview

**Objective:** Reduce frequency and severity of intersection conflicts through geometric improvements

**Strategy:** Provide/improve right-turn channelization

## Selected Related Countermeasures

- CM1** Curb Radius Reduction
- CM2** High-Visibility Crosswalks
- CM3** Raised Crosswalks or Intersections

**Cost:** \$ (Moderate)

**Service Life:** 20 years

**Benefit-Cost Ratio:**

## Targeted Solution



**CONTRIBUTING FACTORS**

- Sharp turning angles
- Excessive vehicle speeds



**TARGET CRASH TYPE**

- Right-turn



**ROAD FACILITY TYPE**

- Not specified



**AREA TYPE**

- All

## Safety Linkage



**NCHRP 500**

Intersection



**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 2

Street Lighting . Source: [eco ledmart](#)

## Safety Benefits

**60%**

Reduce crashes for all types roads <sup>1</sup>

**59%**

Reduce crashes for Run off roads <sup>2</sup>

<sup>1</sup> CMF ID: 8431

<sup>2</sup> CMF ID: 8430

## Resources

- [Channelized Right-Turn Lanes, FHWA Proven Safety Countermeasures, FHWA](#)
- [Roadway Intersection Design Guide, FHWA \(2021\)](#)
- [Toolbox for Operational Improvements at Signalized Intersections, NCHRP Report 780, TRB \(2014\)](#)

