

# Upgrade Existing Markings to Wet-Reflective Pavement Markings



Wet-reflective pavement markings enhances safety by improving driver visibility, particularly during nighttime or wet weather.

## Implementation Strategy

### How and Where to Apply

- Apply wet-reflective markings on roadways with high nighttime or wet-weather crash rates—particularly on curves, expressways, and multilane arterials.
- These markings contain special glass beads or optics that maintain retroreflectivity during rainfall, unlike standard markings that lose visibility when submerged.
- Installation is typically done during resurfacing or as a retrofit using thermoplastic, paint, or tape-based materials.

### Key Stakeholders

State DOTs, Traffic Safety Engineers

### Proactive Implementation

Prioritize corridors with a history of wet-weather crashes or poor night visibility, particularly in areas with aging or worn markings. Wet-reflective materials should be included in pavement marking specs for resurfacing or restriping projects. Agencies can use mobile retroreflectivity equipment to evaluate where upgrades are most needed.

### Use in a Safe System Approach

By addressing reduced visibility in poor weather and at night, this countermeasure provides an additional safeguard for drivers, allowing more time to recognize road edges and curves, particularly on higher-speed roads. It compensates for momentary driver lapses and supports proactive crash avoidance.

## Countermeasure Overview

**Objective:** Keep vehicles from encroaching on the roadside

**Strategy:** Provide enhanced pavement markings

## Selected Related Countermeasures

- CM1** Centerline and shoulder rumble strips
- CM2** High-friction surface treatments
- CM3** Enhanced signage on curves

**Cost:** \$ (Low)

**Service Life:** 5 years

**Benefit-Cost Ratio:**

## Targeted Solution



### CONTRIBUTING FACTORS

- Reduced visibility
- Driver inattentive



### TARGET CRASH TYPE

- Run-off Road
- Head-on



### ROAD FACILITY TYPE

- Principal Arterial
- Other Freeways
- Expressways



### AREA TYPE

- All

## Safety Linkage



### NCHRP 500 Series

Run-off Road



### 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

Wet-reflective markings, Source: roadsbridges.com.

## Safety Benefits

53%

Upgraded markings decrease wet road crashes at night<sup>1</sup>

25%

Reduces run-off-road crashes<sup>2</sup>

<sup>1</sup> CMF ID: 10078

<sup>2</sup> CMF ID: 8113

## Resources

- [Comparison of Wet Reflective Elements with Tape – A Pavement Marking Study Based on Field Measurements](#)
- [Assessment of the Durability of Wet Night Visible Pavement Markings](#)

