NCHRP 17-113 COUNTERMEASURES

ROADWAY DEPARTURE

Resurface Pavement

Pavement resurfacing involves applying a new layer of asphalt or concrete to an existing roadway to restore surface condition, improve ride quality, and enhance skid resistance.

Implementation Strategy

How and Where to Apply

- Resurfacing is applied to roadway segments exhibiting signs of surface degradation, including cracking, rutting, or loss of friction. It is most critical in areas with high traffic volumes, crash history, or where wet-weather skidding or hydroplaning has been reported.
- Project selection is typically guided by pavement condition index (PCI), skid resistance measurements, or as part of scheduled maintenance cycles.

Key Stakeholders

State DOTs, Pavement Engineers

Proactive Implementation

Resurfacing can be implemented proactively through pavement management systems that monitor surface condition and forecast deterioration. High-risk locations may be prioritized using crash data, user complaints, or performance-based asset management approaches.

Use in a Safe System Approach

This treatment aligns with the Safe System principles of forgiving roadways, safe speeds, and crash energy management by reducing hazards that contribute to loss of control, especially during wet or emergency braking conditions. Improved pavement also enhances safety for motorcycles and non-motorized users.

Countermeasure Overview

Objective: Keep vehicles from encroaching on the roadside

Strategy: Provide skid-resistant pavement surfaces

Targeted Solution

CONTRIBUTING FACTORS	▪ Poor pavement condition ▪ Skidding
TARGET CRASH TYPE	▪ Run-off-road
ROAD FACILITY TYPE	▪ All
AREA TYPE	▪ All

Safety Linkage

NCHRP 500 Series	SAFE SYSTEM APPROACH
Run-off-road	Safe Roads
AASHTO'S TOWARD ZERO DEATHS	SAFE SYSTEM ROADWAY DESIGN
Safer Infrastructure	TIER 1 TIER 2 TIER 3 TIER 4 Tier 4

Selected Related Countermeasures

- CM1 Apply High-Friction Surface Treatment (HFST)
- CM2 Install Rumble Strips During Resurfacing
- CM3 Update Pavement Markings Post-Resurfacing

Cost: $ (Moderate to High)

Service Life: 10 years

Safety Benefits

21% Reduce all crash types in all urban and suburban road.

15% Reduce all fatal and serious injury crashes in all urban and suburban road. [1] CMF ID: 10280 [2] CMF ID: 10281

Resources

- FHWA Pavement Management Systems Guide
- FHWA Safety Benefits of Pavement Resurfacing
- AASHTO Pavement Preservation Guidelines

Before and after images of pavement resurfacing source: google