NCHRP 17-113 COUNTERMEASURES

Resurface Pavement

ROADWAY DEPARTURE

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.

Use in a Safe System Approach

Resurfacing pavement supports the Safe Roads elements of Safe System Approach by creating forgiving roadways and supporting safe speeds. By reducing hazards that increase the risk of loss of control, it accommodates human mistakes and vulnerabilities while enhancing safety for all road users, including motorcyclists and non-motorized users.

Key Stakeholders

State DOTs, MPOs, engineering consultants, construction contractors, freight/trucking associations.

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.

Countermeasure Overview

Objective: Keep vehicles from encroaching on the roadside
Strategy: Provide skid-resistant pavement surfaces

Targeted Solution

CONTRIBUTING FACTORS	▪ Poor pavement condition ▪ Skidding, increased stopping distance
TARGET CRASH TYPE	▪ Run-off-road
ROAD FACILITY TYPE (ARTERIAL, COLLECTOR, LOCAL)	▪ All
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

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

Resurface Pavement. Source: VHB.

Safety Benefits

26% Reduces all types of crashes and K, A, B, C severities on rural undivided two-lane roads (CMF ID: 5627)

15% Reduces all types of crashes and K, A severities on all types of urban and suburban roads (CMF ID: 10281)

Resources

- Chapter 3, FHWA Resurface Pavements
- FHWA Safety Benefits of Pavement Resurfacing
- Using Performance Engineered Mixtures to Impr… Pavement Performance and Sustainability