

Install Shoulder Rumble Strips



Shoulder rumble strips on straight sections of undivided highways alert drivers who unintentionally drift due to distraction or drowsiness.

Implementation Strategy

How and Where to Apply

- Install shoulder rumble strips on straight, undivided rural highways where there's a higher risk of head-on, sideswipe, or run-off-road crashes due to driver inattention.
- Shoulder rumble strips are milled into the pavement during resurfacing or as a retrofit to warn drifting drivers through tactile vibration and audible noise signals.
- Shoulder rumble strips should be avoided on narrow or deteriorated pavements, in urban or noise-sensitive areas, and where shoulders are heavily used by cyclists.

Use in a Safe System Approach

Shoulder rumble strips enhance Safe Roads and Safe Road Users by reducing lane-departure crashes, aligning with SSA principles of proactivity, redundancy, shared responsibility, human vulnerability, and zero deaths.

Key Stakeholders

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

Proactive Implementation

Milled shoulder rumble strips (7" wide, 16" long, 0.5" deep) offer effective, low-cost safety benefits and should be installed during resurfacing on high-speed rural roads, where pavement and shoulder conditions allow

Countermeasure Overview

Objective: Keep vehicles from encroaching on the roadside.
Strategy: Install shoulder rumble strips.

Selected Related Countermeasures

- CM1** Centerline Rumble Strips
- CM2** High-Visibility Pavement Markings
- CM3** Enhanced Curve Delineation

Cost: \$ (Low)
Service Life: 10 years
Benefit-Cost Ratio: 58.6:1 to 71.8:1

Targeted Solution



CONTRIBUTING FACTORS

- Reduced visibility
- Driver inattention/distraction



TARGET CRASH TYPE

- Run-off-road



ROAD FACILITY TYPE

- Principal Arterial
- Freeways
- Expressways



AREA TYPE

- Rural

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

Shoulder Rumble Strips. Source: FHWA.

47%

Reduces run off road crashes and K, A, B, and C severities on rural undivided two-lane roads (CMF ID: 3561)

44%

Reduces single vehicle crashes and K, and A severities on rural all types of divided roads (CMF ID: 9425)

Resources

- [FHWA Longitudinal Rumble Strips](#)
- [Centerline rumble strips on secondary highways](#)
- [Traffic safety bulletin 20-07: rumble strip guidelines](#)

