

Install Centerline and Shoulder Rumble Strips



Centerline 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 centerline 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.
- Centerline rumble strips are milled into the pavement during resurfacing or as a retrofit to warn drifting drivers through tactile vibration and audible noise signals.
- Not recommended on narrow lanes, low-speed urban roads, or areas where noise concerns outweigh potential safety benefits.

Use in a Safe System Approach

Rumble strips enhance safe roads by alerting drivers drifting from lanes, addressing human mistakes, supporting shared responsibility, and ensuring proactive, redundant safety to reduce roadway departure crashes.

Key Stakeholders

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

Proactive Implementation

Centerline rumble strips should be proactively installed on undivided rural highways with a history or potential for lane departure crashes. Integrating them during resurfacing projects maximizes efficiency and cost-effectiveness. Agencies should prioritize corridors based on crash data and roadway characteristics, ensuring early intervention before severe crashes occur.

Countermeasure Overview

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

Targeted Solution



CONTRIBUTING FACTORS

- Reduced visibility
- Driver inattention/distraction



TARGET CRASH TYPE

- Run-off road
- Head-on



ROAD FACILITY TYPE

- Principle Arterial



AREA TYPE

- Rural

Safety Linkage



NCHRP 500 Series

Head-On Collisions

SAFE SYSTEM APPROACH

Safe Roads

SAFE SYSTEM ROADWAY DESIGN

TIER 1

TIER 2

TIER 3

TIER 4

Tier 4



AASHTO'S TOWARD ZERO DEATHS

Safer Infrastructure

Selected Related Countermeasures

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

Cost : \$ (Low)

Service Life: 10 years

Benefit-Cost Ratio: 28.2:1

Centerline and Shoulder Rumble Strips. Source: FHWA.

51%

Reduces crashes of angle, head on, rear end, sideswipe and single vehicle types, as well as K type severity, on rural undivided roads (CMF ID: 7260)

13%

Reduces crashes of head on, run off road and sideswipe types and severities K A, B, and C on rural undivided two-lane roads (CMF ID: 8995)

Resources

- FHWA Longitudinal Rumble Strips
- Centerline rumble strips on secondary highways
- Traffic safety bulletin 20-07: rumble strip guidelines

