

Widen Paved Shoulder from 4 ft to 6 ft



Wider paved shoulders on roadways can help reduce run-off road crashes, increase stability for vehicles, and improve maneuvering space for drivers.

Implementation Strategy

How and Where to Apply

- Widen paved shoulders from 4 ft to 6 ft on high-speed, limited-access highways, especially along segments with high run-off-road crash frequencies or restricted recovery zones.
- This provides additional recovery space for errant vehicles, improves lateral clearance for disabled vehicles or emergency stops, and offers increased space for maintenance activities.
- Wider shoulders reduce crash rates and enhance operational safety by giving drivers more maneuvering room to recover from drift or distraction.

Key Stakeholders

State DOTs, Traffic Safety Analysts

Proactive Implementation

Widening shoulders should be integrated during planned resurfacing, reconstruction, or capacity improvement projects on interstates and high-speed arterials. Agencies should prioritize segments with narrow shoulders, high-speed limits, or elevated single-vehicle crash rates. Research emphasized that modest increases in shoulder width provided measurable safety benefits and extended pavement life by reducing edge deterioration.

Use in a Safe System Approach

Wider shoulders support SSA by improving road design (Safe Roads) to provide recovery space for drivers who unintentionally leave the travel lane. This helps accommodate human mistakes (Safe Road Users) and reduces the severity of ROR crashes.

Countermeasure Overview

Objective: Keep vehicles from encroaching on the roadside

Strategy: Apply shoulder treatments

Targeted Solution



CONTRIBUTING FACTORS

- Reduced visibility
- Driver inattention



TARGET CRASH TYPE

- Run-off Road



ROAD FACILITY TYPE

- Principal Arterial
- Interstate



AREA TYPE

- All

Safety Linkage



NCHRP 500 Series

Run-off Road

SAFE SYSTEM APPROACH

Safe Roads

SAFE SYSTEM ROADWAY DESIGN

TIER 1

TIER 2

TIER 3

TIER 4

Tier 1



AASHTO'S TOWARD ZERO DEATHS

Safer Infrastructure

Selected Related Countermeasures

- CM1** Rumble strips on widened shoulders
- CM2** Guardrail upgrades
- CM3** High-friction surface treatments

Cost: \$\$ (moderate)

Service Life: 20 years

Benefit-Cost Ratio: 1.2:1

Safety Benefits

23%

Reduces risk of fixed object, head-on, run-off-road, and sideswipe crashes in rural area¹

9%

Reduces risk of fixed object, head-on, run-off-road, and sideswipe crashes in urban area²

¹ CMF ID: 6287

² CMF ID: 6290

Resources

- Analysis of the Shoulder Widening Need on the State Highway System
- Potential Safety Effects of Lane Width and Shoulder Width on Two-Lane Rural State Highways in Idaho

Wide Shoulder on Road, Source: Wikipedia.

