Widen Narrow Pavement



Widening narrow pavement improves traffic flow and capacity, and can accommodate adding features like shoulders, turn lanes, or passing lanes.

Implementation Strategy

How and Where to Apply

- Widen pavement widths on rural highways where lanes are narrow and maneuvering space is limited, particularly in areas with a history of run-off-road or head-on crashes.
- Pavement widening improves driver comfort and control, allowing safer passage of vehicles and reducing crash risk associated with constrained roadways.
- Priority locations include horizontal curves and segments with limited shoulder widths, where narrow lanes contribute to increased crash risk.

Use in a Safe System Approach

By expanding maneuvering space, widened pavement reduces driver workload and compensates for errors in steering or attention, thus enhancing overall roadway safety consistent with SSA principles.

Key Stakeholders State DOTs, Local Transportation Agencies

Proactive Implementation

Focus widening efforts on rural roads exhibiting narrow lanes combined with high crash rates. Use crash and roadway inventory data to identify segments where narrow pavement contributes most to run-off-road and head-on crashes. Integrate pavement widening with other roadway improvements for cost efficiency and maximum safety benefit.

Countermeasure Overview

Objective: Keep vehicles from encroaching on the roadside

Strategy: Apply shoulder treatments (Widen and/or pave shoulders)

Targeted Solution



Reduced maneuvering space



- Run-off Road
- Head-on



N/A



Rural

Safety Linkage



Run-off Road Crashes



Improved Safety management

SAFE SYSTEM **APPROACH**

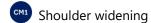
Safe Roads

SAFE SYSTEM **ROADWAY DESIGN** TIER 1

Tier 1

Narrow Road, Source: lazoragency.com.

Selected Related Countermeasures



Centerline and rumble strips

Clear zone improvements

Cost: \$\$ (moderate to high)

Service Life: 20 years

Benefit-Cost Ratio: 2:1

Reduces the risk of head-on crashes in rural areas1



Reduces the risk of run-off-road crashes in rural areas²

¹ CMF ID: 6864

² CMF ID: 6863



- Flexible Pavement Narrow Widening Best Practices and Lessons Learned
- Operational and Safety Characteristics of Lane





afety Benefits