

Convert 2 Lane Roadway to 4 Lane Divided Roadway



Expanding and dividing roadways aims to increase capacity and reduce cross-traffic conflicts, potentially improving safety and flow.

Implementation Strategy

How and Where to Apply

- This treatment is best suited for roadways with high traffic volumes, limited passing opportunities, and history of head-on or ROR crashes.
- A divided roadway separates travel directions, reduces risky overtaking, and provides space for left turns or recovery from driver error.
- Best implemented during major reconstruction or corridor upgrades where traffic growth and crash history show safety needs; not suitable for low-volume rural roads without justification for expansion.

Use in a Safe System Approach

This counter measure supports the Safe System Approach elements of Safe Roads and Safe Road Users by reducing conflict points, limiting opposing traffic exposure, and providing recovery space for driver errors. This design embodies the SSA principle that mistakes should not lead to fatal or serious crashes by lowering both crash frequency and severity.

Key Stakeholders

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

Proactive Implementation

Agencies should identify corridors where traffic volumes, crash histories, and overtaking-related collisions suggest a need for divided roadways. Implementation can be prioritized through safety audits and regional transportation planning. Conversions can be phased or integrated into resurfacing, realignment, or development-driven roadway expansion projects.

Countermeasure Overview

Objective: Reduce cross-median crashes and reduce crash severity.
Strategy: Improve design and application of barrier and attenuation systems.

Selected Related Countermeasures

- CM1 Installation of centerline or median barriers
- CM2 Addition of dedicated turn lanes
- CM3 Add paved shoulders

Cost: \$\$\$\$ (High)
Service Life: 20 years
Benefit-Cost Ratio:

Targeted Solution



CONTRIBUTING FACTORS

- Risky Overtaking Maneuvers



TARGET CRASH TYPE

- Run-off Road
- Head-on



ROAD FACILITY TYPE

- N/A



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 1

63%

Reduces all crash types and severity levels K, A, B, and C on urban undivided roads [\(CMF ID: 7568\)](#)

45%

Reduces all crash types across severity levels K, A, B, C on rural undivided two-lane roads [\(CMF ID: 7571\)](#)

Resources

- [Safety Effects of the Conversion of Rural Two-Lane Roadways to Four-Lane Roadways](#)
- [Comparisons of Crashes on Rural Two-Lane and Four-Lane Highways in Texas](#)

2 Lane Roadway to 4 Lane Divided Roadway. Source: [Google Earth](#).

