



Add a Through Lane on Both Directions and a Raised Median

Extra through lanes in each direction with a raised central median to improve traffic flow and safety.

Implementation Strategy

How and Where to Apply

- This treatment is best suited for undivided 2-lane highways experiencing high volumes, frequent head-on or opposite-direction run-off-road crashes, and limited safe passing opportunities.
- A raised median separates opposing flows, channels left-turns to safe crossover points, and offers refuge space.
- Best applied during widening or corridor reconstruction when capacity, safety, and access-management needs align.

Key Stakeholders

State DOTs, Local Government, Traffic Safety Engineers, Urban Planners.

Proactive Implementation

Agencies should target corridors with high volumes and record of head-on or run-off-road crashes for through-lane additions and raised median installation. Prioritize sites through data-driven corridor screening and safety audits. Integrate median and lane widening into planned resurfacing, major reconstruction, or access-management projects.

Use in a Safe System Approach

This design upholds SSA principles by dividing traffic with a raised median and adding through lanes, which removes head-on conflicts and organizes turning movements into protected zones. The clear separation and refuge areas anticipate errors, calm speeds, and offer recovery space, cultivating a forgiving corridor that aligns with a zero-fatalities vision.

Countermeasure Overview

Objective: Reduce Pedestrian Exposure to Vehicular Traffic

Strategy: Construct pedestrian refuge islands, raised medians

Selected Related Countermeasures

- CM1** Convert 2 L roadway to 4 L divided roadway
- CM2** Introduce TWLTL on rural two-lane roads
- CM3** Five to six lanes

Cost: \$ (High)

Service Life: 20 years

Benefit-Cost Ratio: 2.64:1

Targeted Solution



CONTRIBUTING FACTORS

- Failure to yield
- Misjudgment of safe gaps
- Aggressive behavior



TARGET CRASH TYPE

- Angle Crash
- Rear-end Crash
- Turning Crash



ROAD FACILITY TYPE

- N/A



AREA TYPE

- All

Safety Linkage



NCHRP 500 Series

Intersection



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

Raised Median, Source: Road Safety Toolkit

Safety Benefits

68%

Reduces all type of crashes for urban undivided roads¹

49%

Rural area crashes are decreased for KABC crash types²

29%

Rural area crashes are decreased for all crash types³

¹ CMF ID-7732 ³ CMF ID-7735
² CMF ID-7734

Resources

- [Pedestrian Safety Through a Raised Median and Redesigned Intersections](#)
- [Median Handbook, 2014](#)

