NCHRP 17-113 COUNTERMEASURES

Raised Intersection

PEDESTRIANS AND BICYCLISTS

A raised intersection elevates the entire intersection surface to the level of the adjacent sidewalks, creating a continuous, level crossing for pedestrians and a traffic-calming effect for vehicles.

Implementation Strategy

How and Where to Apply

- Apply at low-speed urban intersections with frequent pedestrian crossings to improve safety, visibility, and encourage yielding behavior.
- Use near schools, parks, or downtowns where walkability and pedestrian priority are essential for public space quality and safety.
- Implement at locations with histories of pedestrian-related crashes to reduce conflict severity and support traffic calming through visual elevation changes.

Use in a Safe System Approach

Raised intersections align with the Safe System Approach by prioritizing human vulnerability and proactively reducing crash risk. Elevating the intersection creates physical separation and lowers vehicle speeds at conflict points, reducing the likelihood and severity of crashes. This treatment supports safer streets for all users, especially pedestrians and wheelchair users.

Key Stakeholders

State DOTs, local law enforcement agencies

Proactive Implementation

Proactive implementation of raised intersections involves identifying high-risk pedestrian areas before severe crashes occur. Planners use crash data, speed studies, and community feedback to target intersections near schools, parks, and commercial zones. Integrating this treatment early in design projects ensures safer environments and supports long-term goals for walkable, livable communities.

Countermeasure Overview

Objective: Reduce Pedestrian exposure to vehicular traffic.
Strategy: Construct pedestrian refuge islands and raised medians.

Targeted Solution

CONTRIBUTING FACTORS	▪ Approach Speed ▪ Failure to yield ▪ Reduced visibility
TARGET CRASH TYPE	▪ Crossing-related
ROAD FACILITY TYPE (ARTERIAL, COLLECTOR, LOCAL)	▪ N/A
AREA TYPE	▪ Urban

Safety Linkage

NCHRP 500 Series

Pedestrians and Bicyclists

AASHTO'S TOWARD ZERO DEATHS

Safer Vulnerable Users

SAFE SYSTEM APPROACH

Safer Road Users

SAFE SYSTEM ROADWAY DESIGN

TIER 1
TIER 2
TIER 3
TIER 4

Tier 2

Selected Related Countermeasures

- CM1 Raised Crosswalks
- CM2 Mini-Roundabouts
- CM3 Textured or Colored Pavement

Cost: $$$ (Moderate to High)

Service Life: 20 years

Benefit-Cost Ratio: 0.207

Raised Intersection. Source: FHWA

Safety Benefits

Slows vehicles and increases awareness of crossing pedestrians at intersections.

Resources

- Pedestrian Safety Guide and Countermeasure Selection System
- CBA: Installation of Speed Humps