NCHRP 17-113 COUNTERMEASURES

# Convert Flush Buffered Bike Lane to SBL with Flexi-posts

PEDESTRIANS AND BICYCLISTS

A separated bike lane with flexible posts converts a standard buffered bike lane into a protected facility by adding vertical elements that physically separate bicycles from motor vehicle traffic.

## Implementation Strategy

### How and Where to Apply

- This treatment is most effective on urban arterials and collectors with high vehicle volumes or speeds where cyclist comfort and safety are concerns.
- It can be implemented during resurfacing, repaving, or bike lane retrofits.
- According to FHWA guidance, SBLs with flexible posts should be installed on streets with sufficient width to maintain vehicle flow while providing dedicated space for bicycles.

### Use in a Safe System Approach

This countermeasure supports Safer Road Users and Safer Roads by physically separating vulnerable users from motor vehicles, reducing conflict severity and improving predictability. Flexible posts increase driver awareness and help moderate speeds near bike facilities.

### Key Stakeholders

City transportation and planning agencies
Bicycle safety advocates and community groups

### Proactive Implementation

Agencies can identify retrofit opportunities by analyzing bicycle crash patterns, stress-level maps, and public input. Converting flush buffered lanes to separated facilities can be prioritized on corridors with documented safety concerns or high bicycle demand. Pairing these projects with other low-cost safety enhancements supports systemic safety improvements.

## Countermeasure Overview

**Objective:** Reduce bicycle crashes along roadways

**Strategy:** Provide safe roadway facilities for parallel travel

## Targeted Solution

| | |
|---|---|
| CONTRIBUTING FACTORS | ▪ Lack of dedicated space for bicyclists |
| TARGET CRASH TYPE | ▪ Bicyclist<br>▪ Crossing-related |
| ROAD FACILITY TYPE | ▪ Urban arterial<br>▪ Urban collector |
| AREA TYPE | ▪ Urban |

## Safety Linkage

| NCHRP 500 Series | SAFE SYSTEM APPROACH |
|---|---|
| Pedestrian and Bicyclist | Safe Road Users |
| AASHTO'S TOWARD ZERO DEATHS | SAFE SYSTEM ROADWAY DESIGN<br>TIER 1<br>TIER 2<br>TIER 3<br>TIER 4 |
| Safer Vulnerable Users | Tier 1 |

## Selected Related Countermeasures

- CM1 Install dedicated bike signals
- CM2 Convert shared lanes to dedicated bike lanes
- CM3 Improve intersection bike treatments

**Cost:** $ (Moderate)

**Service Life:** 20 years

Buffered Bike Lane. Source: Bike Lane

## Safety Benefits

56% Reduce vehicle/bicycle crashes in urban areas[1]

[1] CMF ID: 11295

### Resources

- FHWA Proven Safety Countermeasures
- FHWA CMF for Bike Lanes