

# Full To Partial Interchange Lighting



Full to partial interchange lighting involves converting from full interchange lighting to partial lighting, where illumination is retained only at critical areas such as ramps and intersections.

## Implementation Strategy

### How and Where to Apply

- Partial interchange lighting involves illuminating select areas of an interchange rather than the full layout.
- Focus is typically on ramp terminals, merge/diverge areas, and gore points where visibility is critical.
- Not recommended at high-crash interchanges, complex layouts, or areas with high pedestrian activity where full lighting is essential for safety.

### Use in a Safe System Approach

Partial interchange lighting balances safety and efficiency, supports shared responsibility, addresses human mistakes, and ensures proactive, redundant protection by improving visibility while reducing costs and maintaining safer roadway conditions.

### Key Stakeholders

State DOTs, MPOs, engineering consultants, construction contractors, safety advocacy groups, maintenance agencies, municipal public works departments, utility companies.

### Proactive Implementation

Agencies can proactively identify candidate sites through systemic safety analysis, crash history evaluations, or visual inspection of nighttime driving conditions. Partial lighting is often a cost-efficient alternative where full interchange lighting may not be justifiable but targeted improvements are necessary.

## Countermeasure Overview

**Objective:** Reduce the severity of the crash.

**Strategy:** Improve design of roadside hardware.

## Selected Related Countermeasures

- CM1 Install Intersection Lighting
- CM2 High-Visibility Pavement Markings
- CM3 Advance Warning Flashers

**Cost:** \$\$\$\$ (High)

**Service Life:** 15 years

## Targeted Solution



### CONTRIBUTING FACTORS

- Reduced Visibility.
- Difficulty in judging distances.
- Speeds of Merging or exiting vehicles.



### TARGET CRASH TYPE

- Sideswipe.
- Head-on.
- Rear-end.



### ROAD FACILITY TYPE

- Principal arterial, other freeways and expressways.



### AREA TYPE

- Urban.
- Suburban.

## Safety Linkage



### NCHRP 500 Series

Head-on Crashes



### AASHTO'S TOWARD ZERO DEATHS

Safer Infrastructure

### SAFE SYSTEM APPROACH

Safe Roads

### SAFE SYSTEM ROADWAY DESIGN

TIER 1

TIER 2

TIER 3

TIER 4

Tier 4

Full to Partial Interchange Lighting. Source: codot.

11%

Reduces all crash types and severity levels A, B, and C on suburban principle arterial freeways and expressways (CMF ID: 2363)

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Reduces all crash types and severity levels A, B, and C on suburban principle arterial freeways and expressways (CMF ID: 2361)

### Resources

- FHWA Lighting Handbook – Complete vs. Partial Interchange Lighting
- FHWA Guidelines for Reduced Lighting Implementation

