Safe Transportation for Every Pedestrian

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Recent Headlines

Alabama Ranks 8th Highest in the US in Pedestrian Deaths

Alabama among most dangerous places for pedestrians

6 Students Hit, One Killed in Auto-pedestrian Accident

New Numbers Show Sharp Increase in Pedestrian Deaths

What is “Every Day Counts” (EDC)?

State-based model to identify and rapidly deploy proven but underutilized innovations to:
- shorten the project delivery process
- enhance roadway safety
- reduce congestion
- improve environmental sustainability

- EDC Rounds: two year cycles
- Initiating 5th Round (2019-2020)

U.S. Pedestrian Fatalities: 1990 - 2018

Alabama Pedestrian Crash Trends

Source: UA CAPS
Why is it important to accommodate for pedestrians?
- Healthy or able - we are all pedestrians
- Many do not drive
- Other modes depend on pedestrians
- Commerce depends on it
- It’s good exercise

SO if,
- Pedestrians are legitimate users
- Agencies address pedestrian safety and convenience
  - Delay
  - Travel distance
  - Crossing locations

For transportation professionals, the question then becomes, "How can this task best be accomplished?"

Why STEP2?
Over 72% of pedestrian fatalities occur at non-intersection locations
Roughly 27% of pedestrian fatalities occur at intersections

Benefits of crosswalk markings
- Crosswalk markings provide guidance for pedestrians by defining and delineating paths on approaches to and within signalized intersections, and on approaches to other intersections where traffic stops.
- In conjunction with signs and other measures, crosswalk markings help to alert road users of a designated pedestrian crossing point across roadways at locations that are not controlled by traffic control signals or STOP or YIELD signs.
- At non-intersection locations, crosswalk markings legally establish the crosswalk.

FHWA Guide
- Provides guidance and suggested process for selecting countermeasures
- Assists agencies in developing a policy to support the installation of countermeasures at uncontrolled crossing locations

Countermeeasure Selection Process
Following the process suggested in the guide offers countermeasure options based on road conditions, crash causes, and pedestrian safety issues.
Pedestrian Safety Countermeasures for Uncontrolled Crossing Locations

Spectacular Seven

Crosswalk Visibility Enhancements
- Raised Crosswalks
- Pedestrian Refuge Island
- RRFB
- PHB
- Road Diets
- LPI

Crosswalk Visibility Enhancements
- Crosswalk Marking Style
- Pedestrian Warning Signs on Approach and at Crosswalk
  - Size and Placement
  - Enhanced Conspicuity (flashing beacons, embedded LEDs)
  - Advance Stop or Yield Lines with Signs (e.g., “Stop Here for Crosswalk”)
- In-Street Pedestrian Crossing Signs
- Curb Extensions
- Parking Restrictions on Crosswalk Approach
- Lighting

Crosswalk Visibility Enhancements
- CRF 42% to 59%
- Lighting at intersections
- 4 star rating
- Vehicle/ped crashes
Spectacular Seven

Crosswalk Visibility Enhancements
Raised Crosswalks
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Raised Crosswalks
May be appropriate for roads with:
- Two or three lanes
- Speed limits of 30 mph or less
- AADT below 9,000

Raised Crosswalks NCHRP Synthesis 498 (December 2016)
Key Measured Effects
- Lower speeds
- Improved motorist yielding at some locations
- 30% CRF for all crashes
- 36% CRF for all fatal injury crashes

Pedestrian Refuge Islands

Spectacular Seven

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Photo Source: SRTS Guide

http://www.trb.org/Publications/Blurbs/175419.aspx

Safe Transportation for Every Pedestrian
For any approach two RRFB required. One on right-hand and one on left-hand of roadway. If divided highway left-hand should be installed on median if practical rather than far left-hand.

St. Petersburg FL

**Spectacular Seven**

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**Pedestrian Hybrid Beacon**

- High-visibility crosswalk markings
- Overhead lighting
- Advance stop line
- Warning sign

**Pedestrian Hybrid Beacons (PHB)**

- CRF: Vehicle/Pedestrian 69%

**Road Diet / Roadway Reconfiguration**

- Reduce top end travel speeds
- Buffer sidewalk from travel lanes (parking or bike lane)
- Reclaim street space for “higher and better use” than moving peak hour traffic

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Safe Transportation for Every Pedestrian
Some four-lane roads operate essentially like a three-lane road (defacto one lane in each direction) and do not experience a reduction in capacity. When a corridor contains a large number of access points (driveways) the majority of through traffic will tend to utilize the outside lanes to avoid being delayed by left-turning vehicles slowing and stopping in the inside lanes.

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**Implementation Considerations**

- Hardware Requirements
- Vision impairment
- Left Turn Phasing
- Mode of Operation

**Controller Requirements**

- NEMA T52 Type 1 or 2
- 2070 or 270

**Resources**

- Links in PEDSAFE to specific countermeasures
  - Marked Crosswalks and Enhancements
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Lighting and Illumination
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Crossing Islands
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Raised Pedestrian Crossing/ Raised Crosswalks
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Raised Medians
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - RRFB
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Pedestrian Hybrid Beacon
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Road Diets (Lane Reduction)
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)
  - Leading Pedestrian Interval (LPI)
  - [http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456](http://www.pedbikesafe.org/PEDSAFE/countermeasures/detals/1/CM_456)


LPI Additional Resources

- FHWA
  - Proven Safety Countermeasures
  - Safety Evaluation of Protected Left-Turn Phasing and Leading Pedestrian Intervals on Pedestrian Safety
    - Publication No. FHWA-HRT-18-044
    - October 2018
- NACTO Urban Street Design Guide
  - https://nacto.org/publication/urban-street-design/intersection-design-elements/traffic-signals/leading-pedestrian-interval/

Additional Resources

- STEP
  - https://safety.fhwa.dot.gov/ped_bike/Step/resources
  - Establishing Procedures and Guidelines for Pedestrian Treatments at Uncontrolled Locations - Illinois Center for Transportation

Thank You

Walk Safely & Cross Safer

Questions – email jimmeads@sain.com or call 205.940.6420