Crosswalk Visibility Enhancements

SAFE TRANSPORTATION FOR EVERY PEDESTRIAN

COUNTERMEASURE TECH SHEET

This example combines curb extensions, high-visibility markings, overhead lighting, and in-street signs on a two-lane roadway.

This group of countermeasures includes improved lighting, advance or in-street warning signage, pavement markings, and geometric design elements. Such features may be used in combination to indicate optimal or preferred locations for people to cross and to help reinforce the driver requirement to yield the right-of-way to pedestrians at crossing locations.

For multi-lane roadway crossings where vehicle AADTs are in excess of 10,000, a marked crosswalk alone is typically not sufficient (Zegeer, 2005). Under such conditions, more substantial crossing improvements are also needed to prevent an increase in pedestrian crash potential. Examples of more substantial treatments include the refuge island, PHB, and RRFB.

Poor lighting conditions, obstructions such as parked cars, and horizontal or vertical roadway curvature can reduce visibility at crosswalks, contributing to higher crash rates.

Crosswalk visibility enhancements help make crosswalks and/or pedestrians more visible and can help pedestrians decide where to cross.

Crosswalk visibility enhancements can reduce crashes by

23–48%

FEATURES:

- High visibility marking improves visibility of the crosswalk compared to the standard parallel lines.
- Parking restriction on the crosswalk approach improves the sightlines for motorists and pedestrians.
- Advance STOP or YIELD markings & signs reduce the risk of a multiple threat crash.
- Curb extension improves sight distance between drivers and pedestrians and narrows crossing distance.
- In street STOP or YIELD signs may improve driver yielding rates.

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Safe Roads for a Safer Future
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EDC

Crosswalk Visibility Enhancements

EDC-4 STEP: https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm

High-visibility crosswalk marking. High-visibility crosswalks are preferred over parallel line crosswalks and should be provided at all established midblock pedestrian crossings. They should also be considered at uncontrolled intersections.

Parking restriction on the crosswalk approach. Parking restriction can include the removal of parking space markings, installation of new "parking prohibition" pavement markings or curb paint, and signs. The minimum setback is 20 feet in advance of the crosswalk where speeds are 25 mph or less, and 30 feet where speeds are between 26 and 35 mph.

Advance YIELD or STOP markings and signs.[1] The stop bar or "sharks teeth" yield markings are placed 20 to 50 feet in advance of a marked crosswalk to indicate where vehicles are required to stop or yield in compliance with the accompanying "STOP Here for Pedestrians" or "YIELD Here to Pedestrians" sign.

Curb extension. This treatment, also referred to as bulb-outs, extends the sidewalk or curb line out into the parking lane, which reduces the effective street width. Curb extensions must not extend into travel lanes and should not extend across bicycle lanes.

Improved nighttime lighting. Consideration should be given to placing lights in advance of midblock and intersection crosswalks on both approaches to illuminate the front of the pedestrian and avoid creating a silhouette.

In-street STOP or YIELD to pedestrian sign.[2] These signs serve to remind road users of laws regarding right-of-way, and they may be appropriate on 2-lane or 3-lane roads where speeds limits are 30 mph or less. The sign can be placed in between travel lanes or in a median.

COST

Countermeasure	Range	Average
High visibility crosswalk marking	$600-5,700 each	$2,540 each
Lighting	*Varies based on fixture type and utility service agreement*	
Parking restriction	*Varies based on the required signs and pavement markings*	
Curb extension	$2,000-20,000	$13,000 each
Advance STOP/YIELD sign	N/A	$300 each
Advance STOP/YIELD line	N/A	$320 each
In-street STOP/YIELD sign	N/A	$240 each

[1]MUTCD section 2B.12 In-Street and Overhead Pedestrian Crossing Signs (R1-6, R1-6a, R1-9, and R1-9a)

[2]MUTCD reference:Section 2B.11 Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)

References

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Federal Highway Administration. (2013). Multiple webpages in PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System:

- Marked Crosswalks and Enhancements: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=4
- Lighting and Illumination: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=8
- Parking Restrictions: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=9
- Curb Extensions: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=5
- Advance Stop/Yield Lines: http://www.pedbikesafe.org/PEDSAFE/countermeasures_detail.cfm?CM_NUM=13