

Proven Safety Countermeasures

Medians and Pedestrian Crossing Islands in Urban and Suburban Areas

A *median* is an area between opposing lanes of traffic, excluding turn lanes. Medians in urban and suburban areas can either be open (pavement markings only) or they can be channelized (raised medians or islands) to separate various road users.

Pedestrian crossing islands (or refuge areas)—also known as center islands, refuge islands, pedestrian islands, or median slow points—are raised islands placed on a street at intersections or midblock locations to separate crossing pedestrians from motor vehicles.



There are several types of medians and pedestrian crossing islands, and if designed and applied appropriately, they improve the safety benefits to both pedestrians and vehicles in the following ways:

- ♦ They may reduce pedestrian crashes by 46 percent and motor vehicle crashes by up to 39 percent.
- ♦ They may decrease delays (by greater than 30 percent) for motorists.
- ♦ They allow pedestrians a safe place to stop at the mid-point of the roadway before crossing the remaining distance.
- ♦ They enhance the visibility of pedestrian crossings, particularly at unsignalized crossing points.
- ♦ They can reduce the speed of vehicles approaching pedestrian crossings.
- ♦ They can be used for access management for vehicles (allowing only right-in/right-out turning movements).
- ♦ They provide space for supplemental signage on multi-lane roadways.

Background

Midblock locations account for more than 70 percent of pedestrian fatalities. This is where vehicle travel speeds are higher, contributing to the larger injury and fatality rate seen at these locations. More than 80 percent of pedestrians die when hit by vehicles traveling at 40 mph or faster while less than 10 percent die when hit at 20 mph or less. Installing such raised channelization on approaches to multi-lane intersections has been shown to be especially effective. Medians are a particularly important pedestrian safety countermeasure in areas where pedestrians access a transit stop or other clear origins/destinations across from each other. Providing raised medians or pedestrian refuge areas at marked crosswalks has demonstrated a 46 percent reduction in pedestrian crashes. At unmarked crosswalk locations, medians have demonstrated a 39 percent reduction in pedestrian crashes.



Guidance

Raised medians (or refuge areas) should be considered in curbed sections of multi-lane roadways in urban and suburban areas, particularly in areas where there are mixtures of significant pedestrian and vehicle traffic (more than 12,000 Average Daily Traffic (ADT)) and intermediate or high travel speeds. Medians/refuge islands should be at least 4 feet wide (preferably 8 feet wide to accommodate pedestrian comfort and safety) and of adequate length to allow the anticipated number of pedestrians to stand and wait for gaps in traffic before crossing the second half of the street.

Key Resources

A Review of Pedestrian Safety Research in the United States and Abroad, p. 85-86

<http://www.walkinginfo.org/library/details.cfm?id=13>

Pedestrian Facility User's Guide: Providing Safety and Mobility, p. 56

http://drusilla.hsnc.edu/cms/downloads/PedFacility_UserGuide2002.pdf

Guide for the Planning, Design, and Operation of Pedestrian Facilities, American Association of State Highway and Transportation Officials, 2004 [Available for purchase from AASHTO]

https://bookstore.transportation.org/item_details.aspx?id=119

Pedestrian Road Safety Audits and Prompt Lists

<http://www.walkinginfo.org/library/details.cfm?id=3955>

FHWA Office of Safety Bicycle and Pedestrian Safety

http://safety.fhwa.dot.gov/ped_bike/

Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations, p. 55

<http://www.walkinginfo.org/library/details.cfm?id=54>

Handbook of Road Safety Measures

http://www.cmclearinghouse.org/study_detail.cfm?stid=14

Analyzing Raised Median Safety Impacts Using Bayesian Methods

http://www.cmclearinghouse.org/study_detail.cfm?stid=213

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FHWA Web site: http://safety.fhwa.dot.gov/policy/memo071008/#ped_refuge