



TRAFFIC TIPS

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COMPREHENSIVE SERVICES

Hubbell, Roth &**Clark, Inc.**, is a professional organization

providing comprehensive engineering services. Our Transportation and Traffic Engineering expertise allow us to address problems of urban traffic congestion, traffic safety, and highway design. We provide assistance in transportation planning, design and operations. Other services of the firm include:

- Municipal Engineering
- Civil and Site Engineering
- Wastewater Treatment
- Underground Storage Tank Replacement Engineering
- Water Treatment and Distribution
- Industrial Waste Treatment
- Industrial Engineering
- Storm Water Control
- Surveying and Mapping
- Electrical Engineering
- Street and Parking Lot Lighting

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Pedestrian Refuge Island

Pedestrian refuge islands are defined as the areas within an intersection or between lanes of traffic where pedestrians may safely wait until vehicular traffic clears, allowing them to cross a street. Refuge islands are commonly found along wide, multi-lane streets where adequate pedestrian crossing time could not be provided without adversely affecting the traffic flow. These islands provide a rest area for pedestrians, particularly those who are wheelchair-bound, elderly or otherwise unable to completely cross an intersection within the provided signal time.

When evaluating whether a refuge island is needed, both crossing time and safety must be considered. For example, in suburban areas with long distances between intersections and traffic signals, a large proportion of pedestrian crossings occur at unsignalized intersections at midblock locations. However, with a median, a pedestrian would only have to look in one direction to cross from the median to the far side of the street. Pedestrians crossing an undivided, multilane street may experience delays 10 times longer than the delay incurred crossing a street with a median.

The effect of refuge islands and medians on pedestrian safety has been studied in the United States and abroad in recent years. A study for the Federal Highway Administration has found that streets with raised medians, in both CBD and suburban areas have lower pedestrian crash rates compared to streets with a painted two-way left turn lane or undivided streets.

Refuge islands can be beneficial under certain conditions and inconsequential or even harmful under others. The typical conditions where refuge islands are most beneficial include:

- Wide, two-way streets (four lanes or more) with high traffic volume, high travel speed, and large pedestrian volume;
- Wide streets where the elderly, people with disabilities, and child pedestrians cross regularly;
- Streets with insufficient signal timing for pedestrians to cross the entire street;
- Wide, two-way intersections with high traffic volume and significant numbers of crossing pedestrians; and
- Low volume side street traffic demands with insufficient green time to cross i.e. low street volumes, in combination with high main street volumes, may warrant short green times for the side street, which in turn does not allow enough time to cross the entire street.

The typical conditions where refuge islands are least beneficial or possibly harmful include:

- Narrow streets and/or streets where substandard-width refuge islands are used;
- Instances in which a high turning volume of large trucks exists;
- Conditions on which the roadway alignment obscures the island thereby making it likely for vehicles to drive into the island; and
- Areas where the presence of a safety island will severely hamper snow plowing.

Where should a “Stop Bar” (Line) and “Stop Sign” be placed at an intersection

In Michigan, as in most states, the standard for signs, signals and pavement markings is the "Manual On Uniform Traffic Control Devices" (MUTCD). This publication by the U.S. Department of Transportation serves as the standard for installation of all traffic control devices.

The MUTCD indicates that a stop bar (line) is a solid white line, normally 12 to 24 inches wide, extending across all approach lanes to a STOP sign or traffic signal. A stop bar should be placed parallel to the centerline of the intersecting street. A stop bar should be used in both rural and urban areas where it is important to indicate the point, behind which vehicles are required to stop, in compliance with STOP sign, traffic signal, officer's direction, or other legal requirement.

A stop bar, when used, should ordinarily be placed 4 feet in advance of and parallel to the nearest crosswalk line. In the absence of a marked crosswalk, the stop bar should be placed at the desired stopping point and no case more than 30 feet or less than 4 feet from the nearest edge of the intersecting roadway.

When a stop bar is used in conjunction with a STOP sign, it should be placed in line with the STOP sign. However, if the STOP sign cannot be located exactly where vehicles are expected to stop, the stop bar should be placed at the desired stopping point.

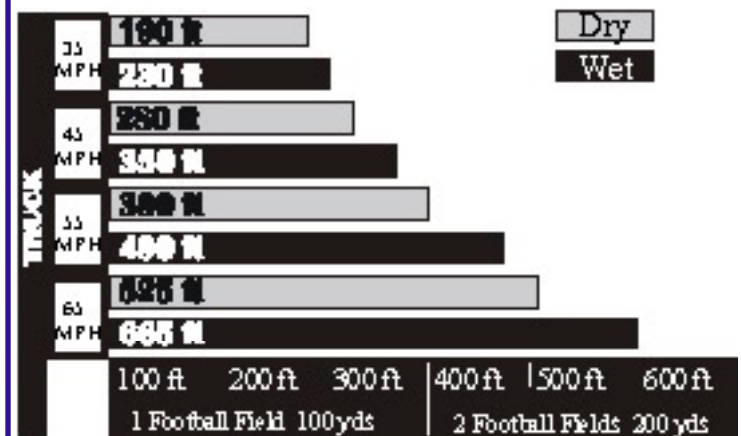
In general, a STOP sign should be located to optimize nighttime visibility and minimize mud splatter. In addition, a STOP sign should be located so that it is not obscured by other signs or hidden from view by roadside objects and vegetation.

In order to provide adequate lateral clearance for the

motorists who may leave the roadway in rural areas and strike the sign support, a STOP sign should be located at least 6 feet from the edge of the traveled way. The height to the bottom of the STOP sign in rural areas should not be less than 5 feet or more than 8 feet above the edge of the roadway.

In urban areas, a lesser lateral clearance may be used where necessary. Although 2 feet is recommended as a working minimum, a clearance of 1 foot from the curb is permissible where sidewalk width is limited or where existing poles are close to the curb. The height to the bottom of a STOP sign in urban areas should not be less than 7 feet or more than 8 feet above the top of the curb.

Speed & Stopping Distances



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