

Proposed Guidelines for Marking Crosswalks On Community Main Streets

Objective: Define guidelines for marking crosswalks along Main Streets where the level of traffic flow and pedestrian activity creates conflicts.

The desire to improve the pedestrian environment along Main Streets with Neighborhood Commercial land uses suggests pedestrian crossing safety improvements are needed. These streets typically have a single travel lane in each direction and parallel parking. Parking demand may be high and the presence of parked cars may reduce visibility for pedestrians. The potential for physical improvements such as median refuge islands is limited by relatively narrow street width and the need for on-street parking. Curb extensions may be used to improve visibility for pedestrians and improve yielding. However, the cost of curb extensions is a constraint and a limited number of locations within a corridor are typically treated in this manner. Research indicates marked crosswalks may improve the yielding behavior of drivers when used on relatively narrow (two-lane) streets.

The need for crosswalk markings arises when pedestrian/vehicle conflicts reach a level of significance such that pedestrians feel the street is “difficult” to cross during busy traffic times. In objective terms this level may be defined by measures of traffic flow and pedestrian activity. Possible measures include:

Pedestrian Activity Measure

- ◆ Pedestrian Flow Rate along the street. Pedestrian movements on sidewalks at a point along the length of the street are counted. Both sides of the street and both directions are combined to define a single measure of pedestrian flow rate expressed as Pedestrians/Hour. Weekday peak flow times are used for evaluation and comparison purposes. Pedestrian Flow Rates may be higher on weekends in some areas, but traffic flows will typically be lower than during peak weekday commute times.

Traffic Flow Measure

- ◆ Daily Traffic Volume. Two way traffic is counted over a number of days using an automated traffic counter. Average Weekday Volume is the measure typically used for traffic study purposes.
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Suggested Criteria:

Streets may qualify for crosswalks if they meet **Measure 1** or **Measure 2**

| Criteria | Criteria 1 (New) | Criteria 2 (Original) |
|-------------------------------|--|--|
| Street Design Classification: | Community Main Street | Community Main Street |
| Traffic Classification: | Neighborhood or District Collector Street | Neighborhood or District Collector Street |
| Minimum Segment Length: | 4 Blocks. May be less if the Community Main Street is less than 4 blocks. | 4 Blocks. May be less if the Community Main Street is less than 4 blocks. |
| Posted Speed | 35 mph or less | 35 mph or less |
| No. of Travel Lanes: | One through lane in each direction with on-street parking. May have center left turn lane. | One through lane in each direction with on-street parking. May have center left turn lane. |
| Traffic Volume: | Average Weekday Traffic Volume greater than 8,000 vpd., and less than 14,000 vpd. | Average Weekday Traffic Volume greater than 8,000 vpd. An upper threshold is not specified, but typical cases are not expected to exceed 15,000 vpd. |
| Pedestrian Activity: | Weekday "Peak" Pedestrian flow-rate exceeds 40 Pedestrians/Hour. | Weekday "Peak" Pedestrian flow-rate exceeds 200 Pedestrians/Hour. |

Rationale:

Community Main Street, Neighborhood or District Collector Street, and one travel lane in each direction describe the street and land use character that are most appropriate for treatment with marked crosswalks at uncontrolled intersection approaches.

Average Weekday Traffic Volume is a measure that is relatively easy to obtain and considerable data already exists. Peak Hour traffic flow is typically 10 to 12% of the daily flow rate. Therefore, 8,000 veh. per day (vpd) equates to 960 veh. per hour (vph) during the peak. This level of traffic flow feels relatively "busy" on a two-lane street. As the volume increases the number of available gaps for pedestrians to cross the street decrease. At the high end of the range (14,000 + vpd) gaps become infrequent and pedestrians need additional measures (e.g. traffic signals) feel comfortable crossing the street.

Moderate traffic speeds are needed. If the posted speed exceeds 35 mph, then other treatments should be considered for safety. A minimum segment length of 4 blocks is an arbitrary choice needed to define a project area for evaluation.

Pedestrian activity is based observations of a variety of Main Streets and a subjective judgement of the threshold for a visibly busy pedestrian environment. The lower pedestrian threshold for Criteria 1 typifies a street that may not appear busy, but has sufficient activity to justify additional investment in crosswalks due to the relatively high levels of traffic and the presence of Main Street type land uses.