Illinois Department of Transportation
Departmental Policy

TRA-23: GUIDELINES FOR ESTABLISHING PEDESTRIAN CROSSINGS

Effective Date: October 15, 2021
Scheduled Review: October 15, 2023
Approved By: Travia, Eller
Version: 2.0

1. POLICY

It is the policy of the Illinois Department of Transportation to evaluate requests to establish pedestrian crossings. This policy provides guidance for the evaluation and design of pedestrian crossings.

2. PERSONS AFFECTED

This Policy affects the Office of Highways Project Implementation's Bureau of Operations, Bureau of Design and Environment, Bureau of Safety Programs and Engineering and Districts.

3. PURPOSE

The purpose of this directive is to provide guidance for the evaluation and design of the request to establish pedestrian crossings. This policy may also be used to evaluate the appropriateness of selected existing crossings as a part of a roadway improvement project or in conjunction with evaluation of the safety performance of a location. This policy does not apply to all way stop or signal control intersections.

This policy uses the term "crossing" in discussing locations where pedestrians are encouraged by markings and other measures to cross a roadway. Crossing locations may be on legs of intersections without stop, yield, or signal control, or located midblock. Unique guidance applies to each of the two location types.

4. GUIDELINES FOR IMPLEMENTATION

The districts are responsible for evaluating requests to establish pedestrian crossings.

A. Initial Evaluation

Examine the location for the following factors:

1) ADT of the highway
2) Posted and 85th percentile speed
3) Crossing distance, including turn lanes, bike lanes, and parking lanes / area
4) Estimated pedestrian volume, and examination of pedestrian generator / destinations
5) Pedestrian, bicycle, and other relevant crash history
6) Proximity of alternative crossing locations
7) Street lighting
8) Existing traffic control devices, including pavement markings

9) Local pedestrian bike plans. Consult the district pedestrian and bike coordinator to determine if the proposed location agrees with future ped and bike development plans.
10) Presence of on-street parking and parking use levels
11) Sight distance (See Table A1)

Table A1 (from FHWA-ICT 17-016, Qi et al, 2017)

	Posted or 85% Speed (mph)				
	20	25	30	35	40
Stopping Sight Distance, ft	112	152	197	246	300
Pedestrian Sight Distance, ft	4.52*L	5.65*L	6.78*L	7.91*L	9.046*L

L = crossing distance, ft

Requests will be evaluated based on their location. Case 1 is for legs of intersections without stop, yield, or signal control. Case 2 is for midblock locations.

Case 1: Legs of Intersections Without Stop, Yield, or Signal Control:

Use the ADT, selected speed, and lane configuration to select the baseline recommendation from Figure 1, Base Recommendations for Legs of Intersections Without Stop, Yield, or Signal Control. Turn lanes and parking lanes are included in the lane configuration. Use the remaining data from the initial evaluation to determine the safety and viability of the proposed crossing.

Case 2: Midblock Locations:

Use the ADT, selected speed, and lane configuration to select the baseline recommendation from Figure 2, Base Recommendations for Midblock Locations, Two Way Streets Only. Turn lanes and parking lanes are included in the lane configuration. Use the remaining data from the initial evaluation to determine the safety and viability of the proposed crossing.

B. Additional Criteria:

1) Site Specific Design:

For locations where Figure 1 or 2 show a crossing should have a “site-specific design”, special design features such as pedestrian refuge islands, bump-outs, road diets, parking restrictions, lighting, and pedestrian structures may be considered. In some instances, a pedestrian accommodation may not be feasible.

Consideration should be given to the following during site specific design:

- All crossings must be fully compliant with the accessibility standards presented in the department’s Bureau of Design and Environment Manual, Chapter 58.
- Pedestrian refuge islands and bump-outs should be evaluated by the District Geometrics Unit for turning movements.
- Lighting should be considered in evaluating potential crossing safety. Evaluate existing lighting for applicability to the proposed treatment.

- Consider if portions of existing on-street parking could be removed to improve sight lines and pedestrian visibility. However, plans to remove parking must be coordinated with the municipality as parking is typically under local agency jurisdiction.
  - In accordance with Illinois Statute 625 ILCS 5/11-1303, parking is prohibited within 20 feet of a crosswalk at an intersection.
  - Parking may be in high demand and have an economic function in the community.
- Consider pedestrian generators and destinations, including unique factors such as bus stops and developmental centers.
- For one-way streets, consider them as one side of a multi-lane road with refuge. For example, a two-lane one-way street with one parking lane should be treated as a six-lane road with refuge.

2) Consolidation of Crossings:

Avoid proliferation of crossings. Crossings should be spaced 750 ft apart. In urban central business districts with high pedestrian volumes, tighter spacing may be considered. Unique applications may be considered with a site-specific design.

3) Crossing Pavement Markings:

Parallel line markings are used exclusively at signal-controlled intersections and stop controlled legs of intersections. Continental markings are specified at locations without stop, yield, or signal control. The additional applied area of marking materials builds visibility, as motorists may not expect a pedestrian crosswalk at these locations. Ladder markings may be used to further enhance conspicuity at locations with safety and visibility concerns.

4) Signs:

School pedestrian crossing locations should utilize S1-1 School signs rather than W11-2 Pedestrian signs and may include reflective signpost panels as an enhanced conspicuity treatment. For multilane locations with median refuge, consider supplemental left side signs.

5) Beacons:

Beacons should be evaluated based on site conditions. Sign clutter and the presence of outdoor advertising may render beacons ineffective in urban and suburban environments.

6) Rectangular Rapid Flashing Beacon (RRFB) installations:

RRFB installations must be used under the terms of the MUTCD Interim Approval IA-21. Contact the Central Bureau of Operations where installations are considered to coordinate compliance with the interim approval. Note that RRFB installations shall be pedestrian-actuated only and require supplemental signs and pavement markings as a part of their design.

7) Pedestrian Hybrid Beacons (PHB) installations:

PHBs must be used within the requirements of the ILMUTCD. PHBs shall be pedestrian-actuated only and shall be installed at least 100 ft from side streets and driveways and 300 ft from traffic signals or railroad grade crossings with active warning devices.

8) Additional Considerations:

These guidelines are intended to be used as a baseline for evaluation and design of new pedestrian crossings. The guidelines are not intended to require the use of specific treatments or restrict the use of additional treatments such as lighting, overhead signing, refuge islands, or bump-outs if engineering judgment deems them appropriate during evaluation. Adjustments specific to the site may be made provided the engineering judgment used to justify the adjustments is documented.

Unique sites require additional study. Contact Operations for additional references and assistance.

9) Scoping:

Table A2 provides cost estimates to be used for scoping. The values are in 2019 dollars.

Table A2

Treatment Number	Scoping Estimate
1	$1700
2a	$6800 (pedestrian actuated beacon)
2b	$8400 (2a + $1600 for signs and markings)
3	$15,000
4	$150K -$200K for PHB. Standard traffic signals – contact district traffic personnel for scoping estimate.

10) Final Design:

In conjunction with selection of a treatment, a site visit should be conducted to assess:

- Need for the crossing, with appropriate origin and destination
- Sight distance for motorists and pedestrians
- Design speed used for crossing type selection
- Lighting
- Proposed locations for warning signs and devices
  - Consider overhead signs for wide crossing locations

The final design should be implemented during Phase II plan preparation for contract plans, safety project submittal for HSIP projects, or permit evaluation for local agency or access permit requests.

5. RESPONSIBILITIES

The following outlines the individual and office responsibilities to ensure compliance with the provisions of this directive and its appendixes (if applicable):

A. The Central Office **Bureau of Operations** is responsible for maintaining this directive and any associated procedures.

B. All **Offices/Bureaus named in Section 2** of this Policy and **the Districts** are responsible for utilizing the guidance and recommendations included herein.

6. **REVISION HISTORY**

This directive includes the following changes:

- Changed name from “Guidelines for Establishing Pedestrian Crossings at Uncontrolled Locations” to “Guidelines for Establishing Pedestrian Crossings” to clarify use and intent of policy. Provided distinct guidance for midblock versus intersection locations.
- Removed Preamble and Executive Summary Sections
- Added clarification that the recommendations included are a starting point for design, and engineering judgment is required for all locations.
- Added recommended distance between pedestrian crossings.
- Added guidance for separation of crossing installations.
- Removed Bureau of Local Roads and Streets from and added the Districts to Persons Affected.
- Minor clarifications.
- Added a Supersedes line within the Closing Notice.

Archive versions of this and all directives are available by contacting the Document Services Unit in the Bureau of Business Services at DOT.Policy@illinois.gov.

7. **CLOSING NOTICE**

Supersedes: TRA-23: Guidelines for Pedestrian Crossings at Uncontrolled Locations, Effective 03/11/2019.

Attachment(s): Figure 1, Base Recommendations for Legs of Intersections Without Stop, Yield, or Signal Control, Two Way Streets

Figure 2, Base Recommendations for Midblock Locations, Two Way Streets.

Figure 1 – Base Recommendations for Legs of Intersections Without Stop, Yield, or Signal Control[1], Two-Way Streets [2]

Configuration, including turn and parking lanes [3]	ADT ≤ 9000				9000 < ADT < 15,000				15,000 < ADT < 25,000				25,000 < ADT < 35,000				ADT > 35,000
	Posted Speed or 85th Percentile Speed, mph																
	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	All
2 lanes or 3 with refuge	1	2	3	Site-Specific Design	1	2	3	Site-Specific Design	2	2	3	Site-Specific Design	2	3	3	Site-Specific Design	Site-Specific Design
3 lanes no refuge	1	2	3		1	3	3		2	3	3		3	3	4		
4 lanes with refuge	2	2	3		2	3	3		3	3	3		3	4	4		
6 lanes with refuge	2	3	3		2	3	4		3	3	4		4	4	4		
> 4 lanes no refuge	Site-Specific Design								Site-Specific Design								
4 lanes, refuge not feasible	2	2	4		2	3	4		3	4	4		4	4	4		

Treatment Number	Treatment Detail
1	Two W11-2 Ped Signs, each with W16-7P Slanted Down Arrow plaques.[4]
2	Treatment 1 + Pedestrian-actuated warning beacons in suburban and less dense urban areas. In dense urban areas Treatment 1 alone may be considered. Continuously operated beacons are not recommended.
3	Treatment 1 + Rectangular Rapid Flashing Beacon
4	Request Traffic Signal Warrant Study

Crosswalk Pavement Marking	Application – Refer to Part 4, Guidelines for Implementation, Crosswalk Pavement Markings
Continental	Standard application
Ladder	Enhanced conspicuity application

Footnotes:	1. Base recommendations are a starting point for design. Engineering judgment must be applied to all locations.
	2. One-way streets are evaluated as one side of a multi-lane road with refuge. See Part 4 discussion of Site Specific Design for more information.
	3. Refuge is defined as a raised median or other pedestrian safety island.
	4. W16-9P (Ahead) plaques should also be considered in accordance with the MUTCD. Ahead plaques may be omitted in dense urban areas to avoid proliferation of signs.

Figure 2 – Base Recommendations for Midblock Locations[1], Two Way Streets [2]

Configuration, including turn and parking lanes [3]	ADT ≤ 9000				9000 < ADT < 15,000				15,000 < ADT < 25,000				25,000 < ADT < 35,000				ADT > 35,000
	Posted Speed or 85th Percentile Speed, mph																
	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	≤30	35	40	≥ 45	All
2 lanes or 3 with refuge	1	2a	3	Site-Specific Design	1	2b	3	Site-Specific Design	2a	2b	3	Site-Specific Design	2a	3	3	Site-Specific Design	Site-Specific Design
3 lanes no refuge	1	2a	3		1	3	3		2b	3	3		3	3	4		
4 lanes with refuge	2a	2b	3		2b	3	3		3	3	3		3	4	4		
6 lanes with refuge	2b	3	3		2b	3	4		3	3	4		4	4	4		
> 4 lanes no refuge	Site-Specific Design								Site-Specific Design								
4 lanes, refuge not feasible	2b	2b	4		2b	3	4		3	4	4		4	4	4		

Treatment Number	Treatment Detail
1	Two W11-2 Ped Signs, each with W16-7P Slanted Down Arrow plaques.[4]
2a	Treatment 1 + Pedestrian-actuated warning beacons. Continuously operated beacons are not recommended.
2b	Treatment 2a + R1-5b Stop Here for Pedestrians signs at stop bar pavement marking (omit R1-5b for single lane approach)
3	Treatment 1 + Rectangular Rapid Flashing Beacon
4	Evaluate Standard Traffic Signal or Pedestrian Hybrid Beacon; review IL MUTCD for placement restrictions

Crosswalk Pavement Marking	Application – Refer to Part 4, Guidelines for Implementation, Crosswalk Pavement Markings
Continental	Standard Application.
Ladder	Enhanced conspicuity application.

Footnotes:	1. Base recommendations are a starting point for design. Engineering judgment must be applied to all locations.
	2. One-way streets are evaluated as one side of a multi-lane road with refuge. See Part 4 discussion of Site Specific Design for more information.
	3. Refuge is defined as a raised median or other pedestrian safety island.
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