

Town of Harwich - Crosswalk Policy  
Approved by Board of Selectmen December 3, 2018

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## I. Purpose

This policy has been developed in order to establish a structured process and consistent criteria through which the Town can respond to and address residents' requests for the installation of crosswalks on Town maintained intersections and streets. All requests shall be evaluated on a case-by-case basis to determine whether the installation of a crosswalk in the requested location is warranted.

## II. Introduction

### A. Statement of Policy

It shall be the policy of the Town of Harwich to provide for safe pedestrian crossings of public streets by installing and maintaining marked crosswalks at locations where there is substantial conflict between vehicle and pedestrian movement, where significant pedestrian concentrations occur, where pedestrians would not otherwise recognize the proper place to cross, and where traffic movements are controlled.

A "marked crosswalk" is any crosswalk that is delineated by painted markings places on the pavement for the purpose of directing pedestrians to use a particular location to cross the street. Crosswalks may be marked at intersections controlled by traffic signals or stop/yield signs ("controlled crossing"), or at locations where traffic is not controlled by signals or stop/yield signs ("uncontrolled crossings"). Appendix A.1 provides for an outline of guidelines for "Marked Crosswalks at Intersections" for various types of intersections and Appendix A.2 provides guidelines for "Marked Crosswalks at Mid-Block Locations".

### B. Purpose of Policy

The purpose of this policy is to describe the criteria for the installation of marked crosswalks and the design specifications for crosswalk marking and signage. Compliance with these policies will ensure that the pavement markings and signs associated with safe pedestrian crossings are treated consistently throughout the Town of Harwich with respect to their placement, design, installation and maintenance.

This guideline incorporates the guidance and standards to comply with the Manual on Uniform Traffic Control Devices (MUTCD)<sup>1</sup>, the Massachusetts Highway Department (MassDOT) Highway Design Manual and Engineering Directive<sup>2</sup> concerning the standardization of crosswalk markings, the American with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities, and applicable Massachusetts state law,<sup>3</sup> as updated and as other regulations may be applicable. Please refer to Appendix B for some of the basic information.

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<sup>1</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)*, U.S. Department of Transportation, Federal Highway Administration, 2009 (revisions 2012). MUTCD requirements for crosswalk markings are summarized in Attachment 1.

<sup>2</sup> MassHighway Engineering Directive E-96-001, "Standardization of Crosswalk Markings," dated 3/26/96. A copy of the Directive is provided as [Attachment 2](#).

<sup>3</sup> MGL c. 89, §11 requires motorists to yield to pedestrians in marked crosswalks; MGL c. 90, §14A protects blind pedestrians when crossing a road; and, MGL c. 90, §18A provides local officials with the authority to adopt pedestrian rules and regulations. Copies of each statute are provided in Attachment 3.

## C Changes to Policy

Changes to this policy will be recommended by Traffic Safety Committee to The Board of Selectmen for further review and possible adoption.

## D Process

**Application:** An application shall be made to the Town of Harwich Department of Public Works (DPW) with a copy to Traffic Safety Committee. Please see Appendix C.

**Local Review Process.** The application shall be reviewed by the DPW, the Harwich Police and the Town Engineer. DPW will formally notify the applicant(s) and Traffic Safety Committee of the decision within 45 (forty-five) days.

**For Local Roads:** For requests for a crosswalk on Town roads, the DPW will make a decision as to whether the application is appropriate after reviewing recommendations and comments from the Police and Town Engineer and after reviewing the criteria outlined under “Traffic Study”, herein.

**For State Roads:** For requests for a crosswalk on State Roads under the jurisdiction of MassDOT, the DPW will make a decision as to whether the application is appropriate after reviewing recommendations and comments from the Police and Town Engineer and after reviewing the criteria outlined under “Traffic Study”, below. The DPW will then make a request to MassDOT on behalf of the applicant.

**Traffic Study:** A traffic study may be required to assist in determining if the criteria are satisfied for the installation of a marked crosswalk at a particular location, and to determine the level of marking justified. The components of a traffic engineering study will vary by location, but may include consideration of:

- Speed and volume on the street(s) involved
- Pedestrian volume, age, and level of mobility
- Location of pedestrian origins and destinations and crossing patterns
- Existing sidewalk network and sidewalk ramps (required on both sides of the road)
- Adequacy of sight distances (absence of sight obstructions)
- Street characteristics including grade, curvature, pavement widths, number of vehicle and bicycle lanes
- Location of adjacent driveways
- On-street parking
- Street lighting
- Location of drainage structures
- Distance to nearest marked crossing
- Traffic signal progression
- Potential for rear-end accidents

## Appendix A.1 - MARKED CROSSWALKS AT INTERSECTIONS

	Signalized Intersections	Unsignalized Intersections		
		Stop or Yield Controlled	Roundabout	Approaches
<b>CRITERIA FOR INSTALLATION</b>				
Traffic signal timed for concurrent pedestrian movements shall have crosswalks applied on the roadway approaches that have sidewalks on both sides of the approaching street. Crosswalks should not be installed where no sidewalks exist unless adequate shoulders exist for use by pedestrians. The determination of adequate shoulder should be based on an assessment of traffic volumes, adjacent land uses, and other site-specific considerations.	X			
Traffic signal which is not timed to accommodate concurrent or exclusive pedestrian movements, or have traffic signal heads that cannot be seen by the pedestrian, shall have crosswalks applied only on those approaches which might be used by the pedestrian.	X			
A crosswalk may be placed across an approach if a sidewalk exists on both sides of the roadway approach. Crosswalks should not be installed at locations where sidewalks do not exist unless adequate shoulders exist for use by pedestrians. The determination for adequate shoulder should be based upon an assessment of traffic volumes, adjacent land use patterns, and other site specific conditions.		X	X	
In general, the installation of crosswalks across the throat of driveways or minor side roads is not recommended unless there is a high potential for vehicle/pedestrian conflicts that will be mitigated by a marked crosswalk.		X		
In accordance with the MUTCD, crosswalks that are marked on the approaches shall be placed a minimum of 25 feet in advance of the yield line, or if none, from the edge of the circulating lane.			X	

		Unsignalized Intersections		
	Signalized Intersections	Stop or Yield Controlled	Roundabout	Approaches
<p>A crosswalk should not be installed at an intersection on a roadway approach that is not regulated by a traffic signal, a stop sign, or a yield sign unless the following criteria are met:</p> <ol style="list-style-type: none"> <li>a. The speed limit is 40 mph or less; and,</li> <li>b. 20+ pedestrians use the crossing/hour during the peak AM and PM periods of vehicular traffic (lesser volumes may be considered if a large percentage of the pedestrian population consists of young, elderly, or disabled pedestrians); and,</li> <li>c. The ADT (average daily traffic) for the roadway (both directions combined) exceeds 3,000 vehicles per day; and</li> <li>d. A sidewalk or adequate shoulder for use by pedestrians (as determined by traffic volumes, adjacent land uses and other site specific considerations) exists on both side of approach; and,</li> <li>e. There is not another crosswalk across the same roadway within 200 feet of the intersection; and,</li> <li>f. Adequate stopping sight distance (equal to or exceeding that for the posted speed) is available in both directions. Because a driver should be measured from the driver’s perspective to the out edges of the travel lane so that an approaching driver can see a pedestrian to the outer edges of the travel lane so that an approaching driver can see a pedestrian at any point on the crosswalk.<sup>1</sup></li> </ol> <p>For a new development, change in land use, or new pedestrian facilities, an engineering study may be used to predict whether or not the above criteria will be met once the development or facility has been constructed and is fully occupied.</p>				X

		Unsignalized Intersections		
	Signalized Intersections	Stop or Yield Controlled	Roundabout	Approaches
<b>INSTALLATION OF STOP LINE</b>				
Stop (Yield) line should be white in color, have a width of 12 inches, and be marked a minimum of 4 ft in advance of the nearest crosswalk line, as measured by the gap between the stop bar and the closest crosswalk marking.	X	X		
<b>NO PARKING ZONE</b>				
In accordance with the MUTCD (Section 3B.18), parking spaces shall not be marked within 20 feet of a marked crosswalk at an intersection, as measured by the gap between the parking space and the closest crosswalk.	X	X	X	X
<b>PEDESTRIAN WARNING SIGNS</b>				
In accordance with the MUTCD (Section 3B.18), parking spaces shall not be marked within 20 feet of a marked crosswalk at an intersection, as measured by the gap between the parking space and the closest crosswalk.	X	X		
Pedestrian in crosswalk signs shall be installed at each end of the crosswalk location. The signs shall be placed in advance of the crosswalk adjacent to the travel lane and facing the driver.				
Advance pedestrian warning signs shall be installed at a distance of at least 150 feet but not exceeding 700 feet in advance of the crosswalk on the approach to the roundabout. No advance warning sign is required within the roundabout. Advance pedestrian warning signs may be accompanied by supplemental plaques with the legend "Ahead" or "XXX FEET".			X	X
<b>PAVEMENT/CROSSWALK PATTERNS</b>				
Standard (preferred) or Ladder design. In all cases, the DPW Director should be contacted to make the final decision on the design pattern to be used.	X	X	X	X

		Unsignalized Intersections		
	Signalized Intersections	Stop or Yield Controlled	Roundabout	Approaches
<b>CROSSWALK MARKING WIDTH AND COLOR</b>				
The width of the standard crosswalk shall be 10 feet on center, with the all transverse line in solid white and 12" in width.	X			
The width of the standard crosswalk shall be 8 feet on center, with the all transverse line in solid white and 12" in width.		X	X	X
Crosswalk marking shall therefore be installed using either: (a) a chlorinated paint suitable for application on asphalt surfaces, (b) a thermoplastic paving marking material, or (c) an inlay polymer marking tape. Crosswalk markings shall also consist of high reflectivity materials.	X	X	X	X
<b>SIGNAGE</b>				
Signage must comply with MUTCD, including but not limited to pedestrian, bicycle and school signs, and in-street pedestrian crossing signs.	X	X	X	X
<b>ADA COMPLIANCE</b>				
Where a crosswalk provides access to sidewalks, curb ramps that meet ADA Accessibility Guidelines (ADAAG), MassDOT Construction Standards, and all required of the Massachusetts Architectural Board (521 CMR) must be provided at both ends of the crosswalk. If a crosswalk leads to a paved shoulder, it should meet ADAAG regarding width and cross-slope (maximum 2%) to the extent feasible.	X	X	X	X

## Appendix A.2 - MARKED CROSSWALKS AT MID-BLOCK LOCATIONS

	SCHOOL CROSSINGS	NON-SCHOOL CROSSINGS <sup>2</sup>
<b>CRITERIA FOR INSTALLATION</b>		
<p>All of the following criteria should be met before installing a crosswalk at a mid-block location on an established school route:</p> <ul style="list-style-type: none"> <li>a. The speed limit is 40 mph or less; and,</li> <li>b. A sidewalk or adequate shoulder for use by pedestrians (as determined by traffic volumes, adjacent land uses and other site specific considerations) exists on both sides of the roadway approach; and,</li> <li>c. No another crosswalk across the same roadway within 200 feet of the proposed location; and,</li> <li>d. Adequate stopping sight distance (equal to or exceeding that for the posted speed) is available in both directions. Because a driver must be able to see either the crosswalk or the school crossing sign, the sight distance should be measured from the driver's perspective to the outer edges of the travel lane so that an approaching driver can see a pedestrian at any point of the sidewalk.<sup>1</sup></li> </ul>	X	
<p>All criteria should be met before installing a crosswalk at an uncontrolled, mid-block location:</p> <ul style="list-style-type: none"> <li>a. The 85<sup>th</sup> percentile speed of traffic at the marked crosswalk must be less than 40 mph; and,</li> <li>b. Pedestrian volume crosswalk location must be &gt;30 pedestrians per hour (pph) during peak pedestrian hour (lesser volume may be considered if a large percentage of the pedestrian population consists of young, elderly, or disabled pedestrians); <b>or</b> 15 pph for each 4 hours; and,</li> <li>c. The ADT for the roadway (both directions combined) must &gt;3,000 vehicles per day; or the number of unimpeded vehicle time gaps that equal or exceed the pedestrian crossing times in an average 5 minute period during the peak vehicle hour must be greater than 4;<sup>3</sup></li> <li>d. A sidewalk or adequate shoulder for use by pedestrians, or a distinct pedestrian destination such as a recreation field, must exist on both sides of the roadway approach; and,</li> <li>e. Another crosswalk across the same roadway cannot exist within 300 feet of the proposed location; <sup>4</sup></li> <li>f. The proposed crosswalk location must have adequate street lighting near the crosswalk already in existence or scheduled for installation; and,</li> <li>g. Adequate stopping sight distances (equal to or exceeding that for the posted speed) must be available in both directions.<sup>1</sup></li> </ul>		X
<p>New development, change in use, or new pedestrian facilities, engineering study may be used to predict whether the above criteria will be met once the completed development or facility is fully occupied.</p>	X	X

	SCHOOL CROSSINGS	NON-SCHOOL CROSSINGS <sup>2</sup>
<b>PAVEMENT/CROSSWALK PATTERNS</b>		
Standard (preferred) or Ladder design. In all cases, the DPW Director should be contacted to make the final decision on the design pattern to be used.	X	X
In accordance with the MUTCD, crosswalks that are marked on the approaches shall be placed a minimum of 25 feet in advance of the yield line, or if none, from the edge of the circulating lane.		X
<b>CROSSWALK MARKING WIDTH AND COLOR</b>		
The standard crosswalk width shall be 8 feet on center, all transverse lines in solid white 12" Wide	X	X
<b>NO PARKING ZONE</b>		
Per MUTCD (Section 3B.18), parking spaces shall not be marked within 20 feet of a marked crosswalk at an intersection, as measured by the gap between the parking space and the closest crosswalk. If a bulb-out is present, the gag may be reduced to 10 feet.	X	X
<b>WARNING CROSSING SIGN</b>		
A School Crossing Warning Assembly (SCWA) or a Pedestrian in Crosswalk sign consisting of a School Crossing Sign (or a Pedestrian in crosswalk sign) with a diagonal downward arrow plaque shall be installed at each end of the crosswalk location. Signs shall be placed in advance of the crosswalk adjacent to the travel lane and facing the driver.	X	X
<b>ADA COMPLIANCE</b>		
Where a crosswalk provides access to sidewalks, curb ramps that meet ADA Accessibility Guidelines (ADAAG), MassDOT Construction Standards, and all required of the Massachusetts Architectural Board (521 CMR) must be provided at both ends of the crosswalk. If a crosswalk leads to a paved shoulder, it should meet ADAAG regarding width and cross-slope (maximum 2%) to the extent feasible.	X	X

<sup>1</sup>The adequacy of stopping sight distances shall be determined in accordance with the guidance contained in the ASSHTO "Green Book" – A Policy on the Geometric Design of Highways and Street (2011, 6th edition).

<sup>2</sup>Crosswalk lines should not be used indiscriminately at locations away from traffic signals or stop signs. Crosswalks may be marked at mid-block locations only if an engineering study determines it is safe to do so, and their presence is necessary to concentrate pedestrian crossing activity at a specific location and position pedestrians to be more visible by motorists

<sup>3</sup>The pedestrian crossing time is calculated by dividing the curb-to-curb street width by 4 feet per second, and the average number of gaps per 5 minute period is equal to the total usable gap time in seconds divided by pedestrian crossing time multiplied by 12.

<sup>4</sup>Mid-block crosswalks should be located, as much as possible, mid-way between stop or signal-controlled intersections except where there are special trip generation/destinations directly across from each other and all other criteria are met. Special pedestrian trip generators include schools, senior citizen facilities, and community facilities such as parks and libraries.



## Appendix B – DESIGN FEATURES OF MARKED CROSSWALKS

### A. ADA Compliance

Where a crosswalk provides access to sidewalks, curb ramps that meet ADA Accessibility Guidelines (ADAAG), MassDOT Construction Standards, and all required of the Massachusetts Architectural Board (521 CMR) must be provided at both ends of the crosswalk. If a crosswalk leads to a paved shoulder, it should meet ADAAG regarding width and cross-slope (maximum 2%) to the extent feasible.

### B. Pavement Marking Patterns

There are several patterns in which to mark or paint a crosswalk: Standard, Block, Ladder, and Diagonal. All new crosswalks marked in the town shall be Standard or Ladder design only, and installed in conformance with the following guidelines. Existing crosswalks of the any design may be repainted in their existing pattern until such time a (re)construction of the street on which they lie requires removal of the existing crosswalk and it can be replaced with the preferred Standard or Ladder design. In all cases, the DPW Director should be contacted to make the final decision on the design pattern to be used.

### C. Crosswalk Marking Width and Color

When a crosswalk is located on a residential or local street, the width of the crosswalk (distance between transverse lines) shall be 8 feet on center. When the crosswalk is located on a collector or arterial street, the width of the crosswalk shall be 10 feet on center. In accordance with the MUTCD, all transverse lines, regardless of their marking material, shall be solid white in color with a width of 12 inches.

### D. Crosswalk Marking Materials

It is important that crosswalks markings be visible to motorists (especially at night), not be slippery or create tripping hazards, and not be difficult to traverse by those with diminished mobility or visual capabilities. All crosswalk marking shall therefore be installed using either: (a) a chlorinated paint suitable for application on asphalt surfaces, (b) a thermoplastic paving marking material, or (c) an inlay polymer marking tape. All crosswalk markings shall also consist of high reflectivity materials.

### E. Use of Colored and Textured Pavement

In commercial and school zones, colored and textured pavement may be used to enhance the aesthetics of the crosswalk. The most common treatment is a terra cotta colored, brick pattern that is stamped into newly laid asphalt. In accordance with the MUTCD, the colors white, yellow, blue or red shall not be used for this purpose. Transverse white crosswalk marking (standard crosswalk pattern) must be used in addition to the colored texture pavement in order to legally establish a crosswalk location when textured pavement is used.

Other types of materials, such as granite and cobblestone, although aesthetically attractive, are not recommended as these may become slippery when wet and be difficult for the visually or mobility impaired or use of a wheelchair.

Solid painting of the crosswalk between the transvers lines is not preferable within the Town of Harwich. The painted surface can become extremely slippery, particularly for motorcycles, bicycles and pedestrians.

F. Signage

All signage must comply with MUTCD, including but not limited to pedestrian, bicycle and school signs, and in-street pedestrian crossing signs.

G. Crosswalk Maintenance

Town Crosswalk markings and signs should be maintained in a high state of visibility and meet reflectivity standards. All crosswalk markings and signs should be inspected at least once a year and replaced as needed, by DPW. Markings and signs for crosswalks located in school zones must be inspected prior to the beginning of the school year and replaced as needed, by DPW.

Crosswalk markings and signs located on Massachusetts state roads are not maintained by the Town of Harwich but by the State.

H. Crosswalks on Private Road

Crosswalks on private road shall comply with all ADA requirement and will be maintained by residents of that private road.

I. Pre-existing Nonconforming Crosswalks

These crosswalks will be evaluated as part of a specific road reconstruction/maintenance project. They may be eliminated if the existing conditions do not permit a crosswalk within this policy.

## Appendix C – CROSSWALK APPLICATION FORM (page 1 of 3)

These forms are used to request the installation of a crosswalk on a Town Maintained street or to request the Town make a request to MassDOT jurisdiction streets/roads. When these completed forms are submitted. Town staff will evaluate the request to determine if the application is acceptable for the type of crosswalk, and make sure that the location is a Town maintained street. **Application to be submitted to the Harwich DPW, Highway & Maintenance, 273 Queen Anne Road, PO Box 1543, Harwich, MA 02645 with a copy to Traffic Safety Committee, Town Hall, 732 Main Street, Harwich MA 02745.**

### Contact Information

Name (please print) \_\_\_\_\_

Mailing Address \_\_\_\_\_

Phone Number \_\_\_\_\_ Email \_\_\_\_\_

### Description of Request:

Please describe the requested crosswalk location. Attach a map or picture if necessary: \_\_\_\_\_

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Please describe the nature of the neighborhood traffic and why it may be beneficial to install a crosswalk (attach additional sheet if necessary): \_\_\_\_\_

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Please list locations of existing sidewalks and crosswalks in the immediate area: \_\_\_\_\_

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## Appendix C – NEIGHBORHOOD PETITION FORM (page 2 of 3)

Please fill out these forms and return with completed application.

THE UNDERSIGNED AGREE TO THE FOLLOWING:

1. All persons signing this petition do hereby certify that they own property or reside within the following area: \_\_\_\_\_

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2. All persons signing this petition do hereby agree to the following problem in the defined area:

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3. All persons signing this petition do hereby agree that the following contact person(s) represents the neighborhood in matters pertaining to items 1 and 2 above:

Name of key contact person (please print) \_\_\_\_\_

Legal/Mailing Address - \_\_\_\_\_

Phone: \_\_\_\_\_ email: \_\_\_\_\_

Name of additional contact (optional) (please print) \_\_\_\_\_

Legal/Mailing Address \_\_\_\_\_

Phone: \_\_\_\_\_ email: \_\_\_\_\_

*Please attach additional pages if necessary to discuss the request.*

Date Submitted: \_\_\_\_\_

## Appendix C – NEIGHBORHOOD PETITION FORM (page 3 of 3)

This petition is provided so that residents may work together to promote the installation of a crosswalk in their neighborhood.

The staff will identify an “area of influence” (AOI) in the neighborhood. The AOI includes properties abutting the street and properties on intersecting streets within a reasonable distance of the proposed crosswalk locations. Contact Engineering Department for a map and addresses for the AOI.

The petition must be signed by at least 75 percent of the owners or residents of properties within the AOI. **Each property is entitled to one signature.** Valid signatures include those from (1) a property owner or spouse, (2) an adult head of household, or (3) an adult renting the property.

<u>SIGNATURE AND PRINT NAME</u>	<u>ADDRESS OF PROPERTY</u>	<u>DATE</u>