

**CITY OF DUBLIN, OHIO
DIVISION OF ENGINEERING
ADMINISTRATIVE POLICY AND PROCEDURE**

SUBJECT: Bicycle Facilities Signing and Striping	Policy No:	18-041
	Date Initiated:	08/13/2018
	Last Revision Date:	06/01/2026

The following is the policy pertaining to the appropriate traffic control devices to be installed for the City of Dublin's bicycle facilities.

This policy is based on source documents from:

- American Association of State Highway and Transportation Officials (AASHTO)
- Association of Pedestrian and Bicycle Professionals (APBP)
- Central Ohio Greenway (COG) Trail Design Standards
- Federal Highway Administration (FHWA)
- League of American Bicyclists
- National Association of City Transportation Officials (NACTO)
- Ohio Department of Transportation (ODOT)
 - Multimodal Design Guide
 - L&D Volume 1
 - Sign Design & Markings Manual
- Ohio Manual of Uniform Traffic Control Devices (OMUTCD)
- Public Right-of-Way Accessibility Guidelines (PROWAG)

The need for traffic controls is to be assessed by the rules and regulations contained in the OMUTCD and as recommended by the Dublin City Engineer or Director of Transportation and Mobility (T&M). This policy shall be in effect immediately.

Applicability

This policy applies to all

- Shared Use Paths
- COGs and Signature Trails
- Cycle Track Facilities
- Roadways with
 - Designated Bicycle Lanes
 - Designated Shared Lanes and Sharrows
- Standard streets designated as part of the bicycle network
- Bicycle and Mobility Boulevards

Design References and Policies

For design standards, layout, PROWAG policies and regulations and other design considerations, the following reference manuals should be consulted:

- American Association of State Highway and Transportation Officials (AASHTO)
- Association of Pedestrian and Bicycle Professionals (APBP)
- Central Ohio Greenway (COG) Trail Design Standards
- Federal Highway Administration (FHWA)
- League of American Bicyclists
- National Association of City Transportation Officials (NACTO)
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1. General Design Criteria

When designing bikeways within the City of Dublin, refer to Table 1 and Table 2 for general guidelines for target speeds, volumes, and radius design.

Table 1. Guidance for Selecting On-Street Bikeway Facility Type

Bikeway	Posted Motor Vehicle Speed	Recommended Motor Vehicle Volume	
		Per Day	Peak Hour in Peak Direction
Protected Bike Lane	Any	Any	Any
Bicycle/Mobility Blvd	25 mph	≤ 2,000	≤ 150
Bike Lanes w/Buffer	35 mph	≤ 6,000	≤ 600

Table 2. Guidance for Shared Use Path

Speed and Minimum Edge Radius	
Approach Speed	Minimum Edge Radius*
10 mph	18 ft
12 mph	27 ft
14 mph	36 ft
16 mph	47 ft
18 mph	60 ft
20 mph	74 ft

** $R = 0.067V^2/\tan$ (lean angle degree) standard
lean angle of 20° to be used.*

15° lean angle should be considered in areas where pavement friction is a concern

2. Pavement Marking Guidelines

The overuse of markings should be avoided to preserve their effectiveness. Signs and pavement markings should be applied judiciously throughout the City to ensure their impact is not diminished. While these treatments may be appropriate and effective at specific locations, widespread or excessive use can reduce their overall value as users become desensitized to the messaging. When used, pavement markings are generally preferred over signs, consistent with prior practice.

Shared Use Paths

Centerline Markings

- A. Centerline markings are not necessary for most locations. The following criteria should be considered during design:
 - a. Shared use paths with high use volumes (more than 150 users per hour) should consider continuous centerline marking.
 - b. For the design of future shared use paths, horizontal or vertical curves with restricted sight distance or design speeds less than 14 mph should provide a localized and continuous centerline marking based upon stopping sight distance for bicyclists.
 - c. For the design of future shared use paths, dashed centerline marking should be considered where nighttime riding is permitted with no surrounding lighting.
 - d. As the path approaches urban intersections or tunnels, consider the use of localized centerline marking. Distance to start these markings should be based on providing adequate stopping sight distance for bicyclists.
 - e. As the path approaches obstructions, such as bollards, consider the use of localized centerline marking as depicted in "Obstruction Markings" (page 7).
 - f. Shared use paths with a horizontal and/or vertical curve down to a tunnel should provide a localized centerline marking (additional details provided in Section 4. Other Considerations for Tunnels).
- B. Centerline markings can also be provided at the discretion of Dublin's City Engineer or Director of Transportation & Mobility.
 - a. Figure 1 provides standard dimensions and layout for this centerline marking.
 - b. Lines should be 4-inches wide, unless otherwise specified.

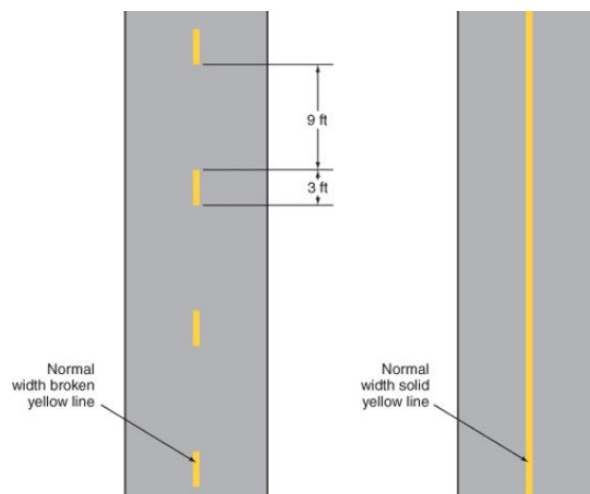


Figure 1. OMUTCD Shared Use Path Centerlines

Stop and Yield Line Markings

- A. Stop or Yield Line markings are only necessary in specific scenarios to alleviate the potential for hazards. Examples of this are:
 - a. Where a path intersects a sidewalk
 - b. Where a path intersects another shared use path or trail
 - c. High foot-traffic area
 - d. Where preventing vehicular traffic from encroaching onto the area
- B. In the event they are needed, Dublin's preference is to use a yield line, consisting of triangular shapes (Figure 2). This is consistent with previous policy and pavement marking applications throughout the City.
- C. When used, Stop or Yield Line markings should be placed a minimum of 4-feet from the anticipated intersecting element, but no more than 30-feet. Engineering judgement should consider sight lines when determining exact locations.
- D. Figure 3 provides a potential layout. Engineering judgement should be used when applying.

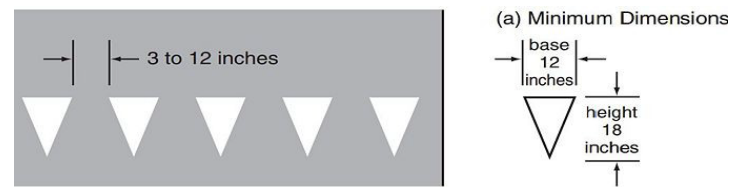


Figure 2. OMUTCD Yield Line Marking

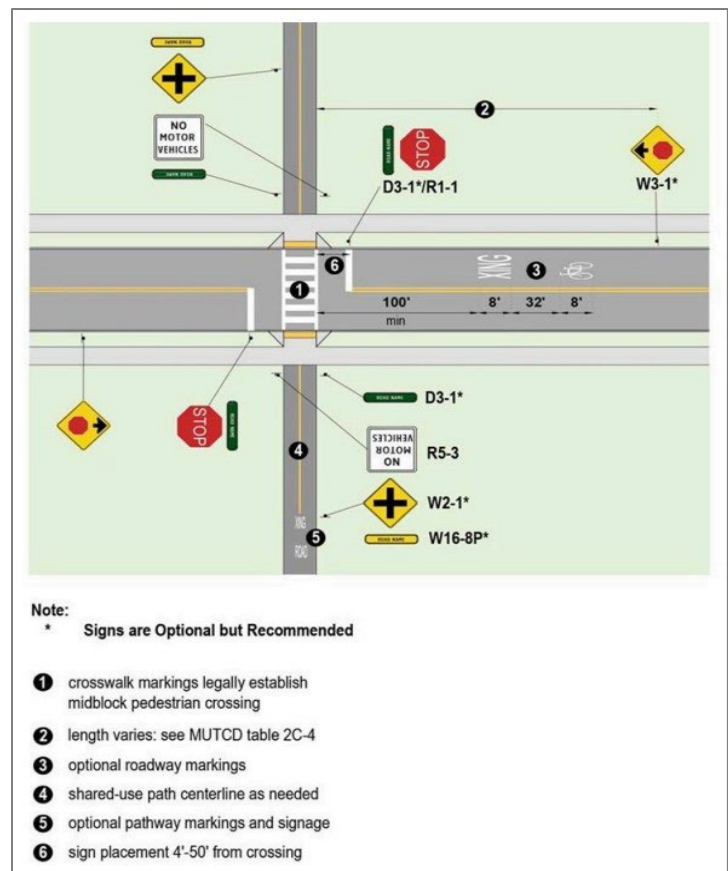


Figure 3. ODOT Multimodal Design Guide Midblock Crossing

Crosswalk Markings

- A. For mid-block crossings outside of Downtown Dublin:
 - a. Use a high-visibility ladder marking (Figure 3), with longitudinal stripes parallel to the direction of traffic.
- B. Commercial Driveway Crossing
 - a. Use a standard crosswalk marking with two parallel, transverse lines, each with a minimum width of 12 inches.
 - b. Only apply crossing markings to driveways with continuous regular flow or sporadic heavy flow of traffic (commercial, school, or park).
- C. Arterials, Commuter and Connector Boulevards
 - a. Use a high-visibility ladder marking, with longitudinal stripes parallel to the direction of traffic with transverse striping.
- D. Roundabout Crossings
 - a. Use a continental marking without the additional transverse lines (Figure 4), with longitudinal stripes parallel to the direction of traffic.
- E. Crosswalk markings are not needed at crossings between shared use paths or a shared use path with a sidewalk.

Heightened Awareness Crosswalks

- A. According to Dublin's [Crosswalk Treatment Guidelines](#), installation of Heightened Awareness crosswalks should be considered at uncontrolled crossings of two or three-lane roadways classified as collectors or higher when:

- a. Near schools, parks, or is part of an important shared use path connection, such as where the path changes sides of the street and:
 - i. ADT is 3,000 vehicles per day or higher at midblock crossings
 - ii. ADT is 6,000 vehicles per day or higher at intersections
 - b. Or when the ADT is 9,000 vehicles per day, and the location meets the other eligibility criteria in the guidelines.
- B. Crosswalk markings at heightened awareness crosswalks should use a high-visibility (longitudinal) ladder marking, with longitudinal stripes parallel to the direction of traffic (Figure 5).

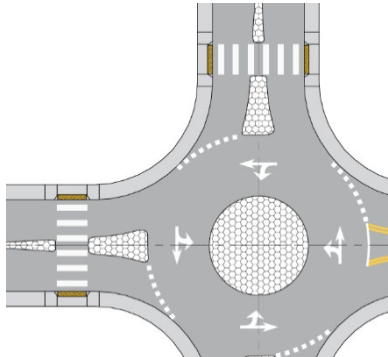


Figure 4. OMUTCD Roundabout Crosswalk Marking

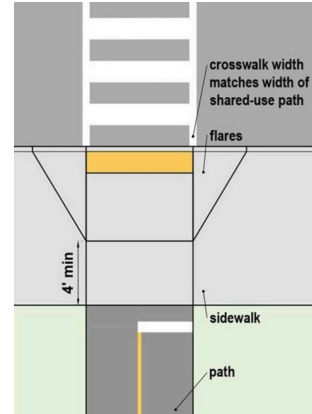


Figure 5. ODOT Multimodal Design Guide Crosswalk Marking

Edge Line Markings

Edge line markings are not necessary for shared use paths in most locations. The following criteria should be considered during design:

- A. As the shared use path approaches an urban intersection, they can be used to alert path users of changing conditions,
- B. For shared use paths where the facility includes a separate area for pedestrian foot travel.
- C. For shared use paths that can be classified as high-volume (more than 150 users per hour).
- D. For future shared use paths, when heavy nighttime use is anticipated.
- E. Edge line markings are recommended in the following circumstances:
 - a. When the path width changes over a relatively short distance.
 - b. When the path is entering a tunnel that is narrower than the path
 - c. For less noticeable obstructions where a shy distance needs to be established, such as short stretch of curbing, or passing bridge abutments.

When used, edge lines should be a 4-inch white edge line pavement marking.

Obstruction Markings

Where obstructions are present in the path, such as bollards or retaining walls, channelizing pavement markings may be provided to guide bicyclists around the obstruction with sufficient advanced warning, as described below.

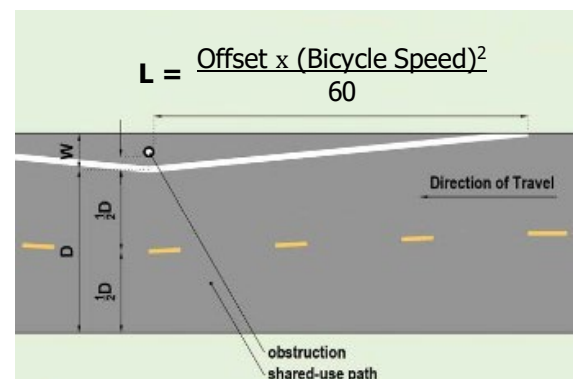


Figure 6. ODOT Multimodal Design Guide Obstruction Markings

- A. For obstructions along the edge of a path, edge line markings may be used to warn or delineate the obstruction (Figure 6).
- B. For obstructions near the middle of the path, centerline markings may be used to warn or delineate the obstruction (Figure 7).
- C. These graphics can be used for bicycle and micromobility design speeds. For locations where speed limits have not been established, typical design speeds are provided below:
 - a. 15 mph on separated shared use paths or high-volume shared use paths (more than 150 users per hour).
 - b. Up to 20 mph on low-volume shared use paths (pedestrians less than 30 percent of total users).

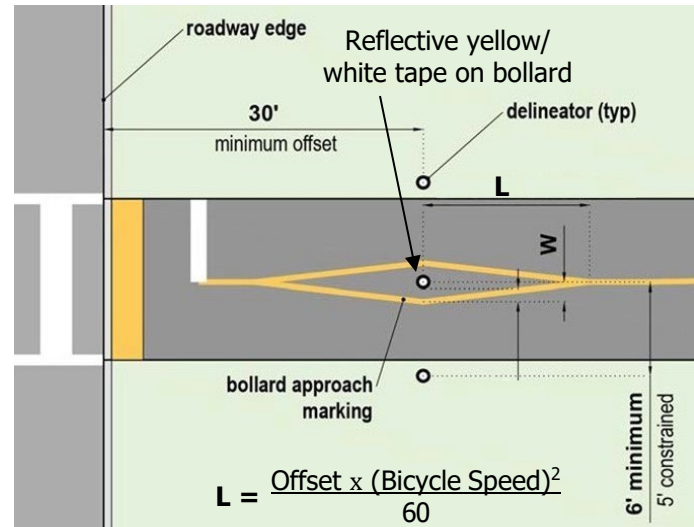


Figure 7. ODOT Multimodal Design Guide Bollard Approach Markings

Words on Pavement

- A. Where speed limits are established for shared use paths:
 - a. Speed limits should be marked at any change in established speed limit, after major street crossings, and where additional emphasis is needed.
 - b. Lettering shall be white and read in the direction of travel with the size to be determined based on the width of the path and other local site considerations (Figure 8).

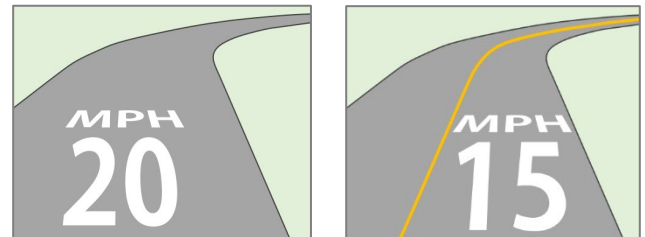


Figure 8. Speed Limit Markings

COG and Signature Trail

Wayfinding Markings

The goal of these wayfinding markings (Figure 9) is to provide supplementary information to pedestrians and bicyclists that intend to reach the COG trails and the Signature Trail.

- A. Dublin shared use paths and trails that act as a secondary route to eventually access a COG trail should use wayfinding markings to promote continued connectivity throughout the network.
- B. Markings should at a minimum consist of directional arrows and trail names, and can be used in conjunction with wayfinding signs, as detailed in Section 3. Sign Guidelines for COG, Secondary Wayfinding and Signature Trail.
- C. Provisions of Section 2. Pavement Marking Guidelines for Shared Use Paths should be evaluated for application for COG and Signature Trail Facilities using engineering judgement.

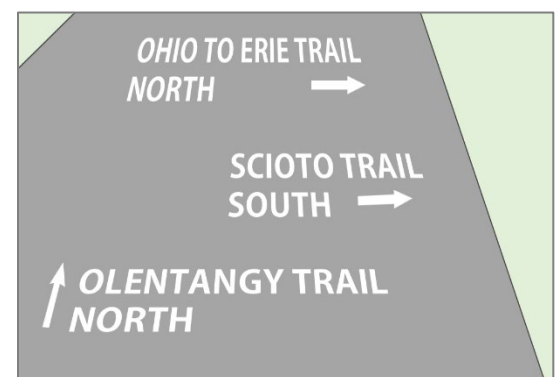


Figure 9. Central Ohio Greenway Wayfinding Strategy Guide Wayfinding Markings

Cycle Track Facilities

Centerline Markings

- Centerline markings are not necessary for most cycle track locations. Similar criteria to those stipulated in Section 2. Pavement Marking Guidelines for Shared Use Paths should be used to determine if a centerline is appropriate.
- If used, provide a single yellow dashed line with the characteristics as shown in Figure 1.
- Cycle tracks with a horizontal and/or vertical curve down to a tunnel should provide a localized centerline marking, as shown in Figure 1.

Edge Line Markings

- Edge line markings are not necessary in most cycle track locations. Similar criteria to those stipulated in Section 2. Pavement Marking Guidelines for Shared Use Paths should be used to determine if an edgeline is appropriate.
- Edge lines adjacent to brick or paver sidewalk facilities shall use a 4-inch granite band flush with the adjacent sidewalk, instead of a pavement marking.

Bicycle Symbol Markings

A bicycle symbol (Figure 10) with a corresponding lane arrow in both directions is required at the following cycle track locations:

- Directly following each intersecting roadway, path, or significant driveway access.
- At all locations where an entry or exit point is established from the cycle track facility.

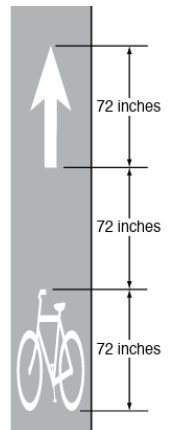


Figure 10. OMUTCD Bicycle Marking

Bicycle Lane Facilities

Bicycle Lane Marking

Bicycle lane markings (Figure 10 or OMUTCD Figure 9E-1) should be used on roadways intended to provide a designated bicycle lane, as described below:

- A 6-inch solid white line to the left of the bicycle lane, or an 8-inch solid white line can be considered in areas where additional emphasis may be needed.
- A 4-inch solid white line to the right of the bicycle lane, if separation is needed from a parking lane.
- A bicycle symbol and lane arrows are placed as a pair, typically within 100 feet of entry points from cross streets or significant driveways. Additional bicycle symbols and lane arrow pairs can be placed using engineering judgment.

Bicycle Lane Buffer Markings

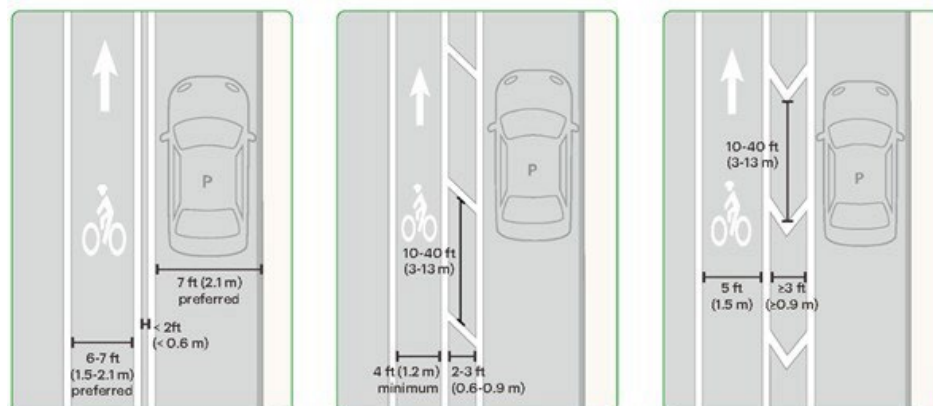


Figure 11. NACTO Urban Bicycleway Design Guide Buffer Markings

- A. Bicycle lane buffer markings may be used to provide a shy distance between drivers and bicyclists, or when the bicycle lane is adjacent to on-street parking, as described below and shown in Figure 11:
- Two solid 6-inch white lines for buffers less than 3-feet wide.
 - Interior transverse or chevrons can be placed for buffers 3-feet wide or greater.

Bicycle Lane Crossings Markings

Bicycle lane crossing markings (Figure 12) indicate that a bicycle lane crossing is present and help guide bicyclists through areas of potential conflict.

- A. These markings may be used where conflicts could exist, especially for intersections and driveways.

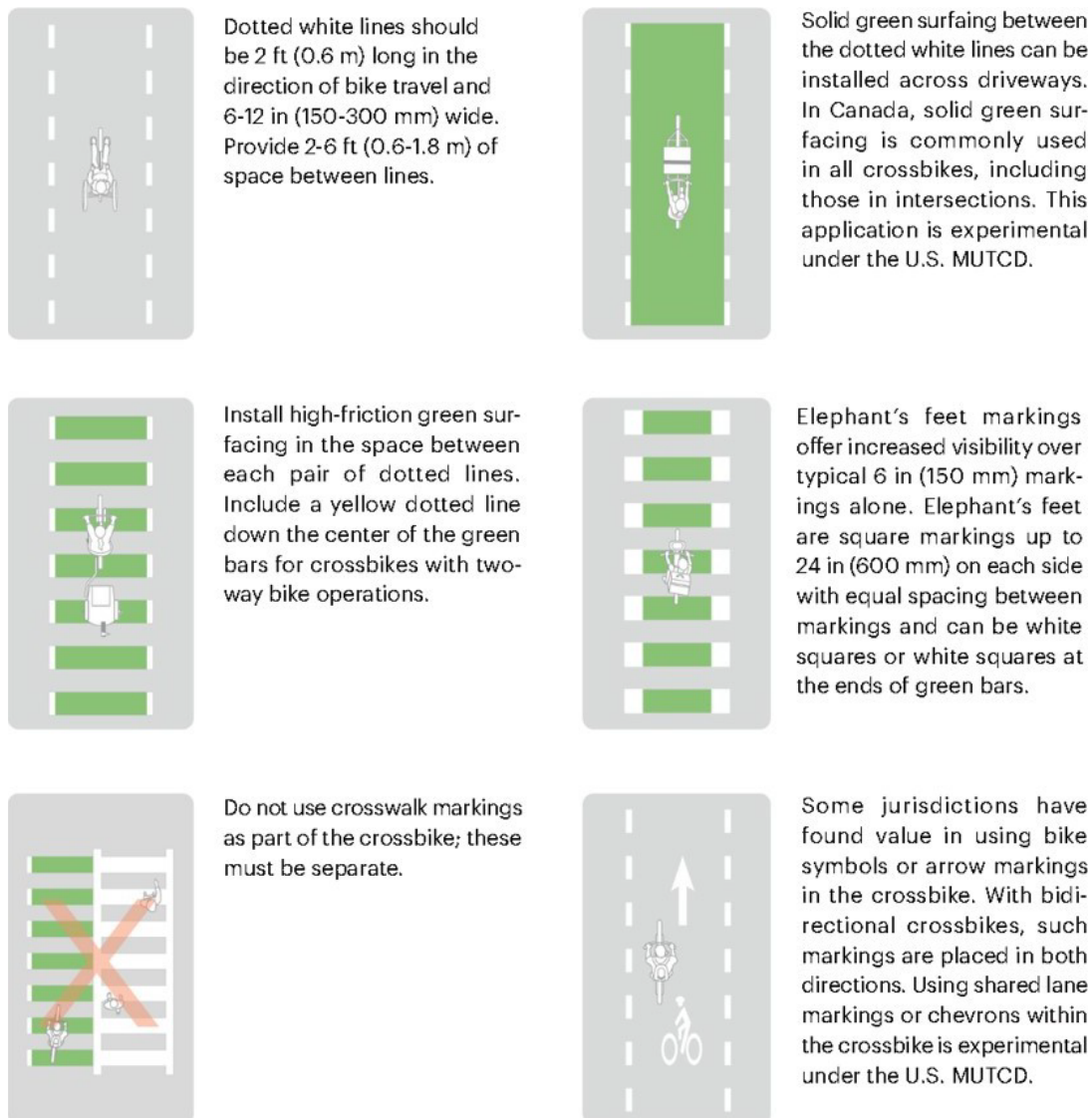


Figure 12. NACTO Urban Bicycleway Design Guide Bicycle Crossing Markings

Shared Lane Markings

Where a roadway does not have a designated bicycle lane but is considered to be part of the overall bicycle network, shared lane markings (Figure 13) can be used to emphasize bicycles may be present on roadways with posted speeds of 40 mph or less. When used, the following should be considered when determining the placement of the markings:

- A. For most situations, this placement should be in the center of a shared travel lane. See OMUTCD Section 9E.09, and ODOT's Multimodal Design Guide Section 6.3.1 for additional details.
- B. Where a shared use lane marking is not placed in the center of a lane, they should be placed 4-feet from the face of curb, gutter seam, or edge of pavement where practicable.
- C. Shared lane markings should typically be placed 50 feet downstream of an intersection, and use engineering judgment to determine the appropriate interval throughout.

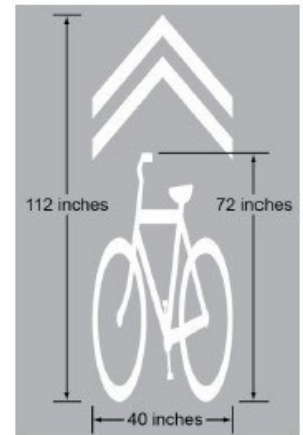


Figure 13. OMUTCD Shared Lane Marking

Bicycle and Mobility Boulevard Markings

- A. When a roadway is designated as a bicycle or mobility boulevard, bicycle or mobility boulevard symbol markings (Figure 14) can be used to emphasize that bicycles may be present. When used, the criteria outlined in Section 2. Pavement Marking Guidelines for Bicycle Lane Facilities, Shared Lane Markings should be used.
- B. Where a bicycle and mobility boulevard turns or jogs onto another street to continue its pathway, markings should be orientated to indicate how bicycle traffic can remain on the route.
- C. Centerlines are not generally needed for bicycle or mobility boulevards, but can be placed using engineering judgment.



Figure 14. NACTO Urban Bicycleway Design Guide and OMUTCD Bicycle and Mobility Boulevard Markings - Black Background is Optional

3. Sign Guidelines

The overuse of signs should be avoided to preserve their effectiveness. Signs and pavement markings should be applied judiciously throughout the City to ensure their impact is not diminished. While these treatments may be appropriate and effective at specific locations, widespread or excessive use can reduce their overall value as users become desensitized to the messaging.

When used, pavement markings are generally preferred over signs, consistent with prior practice. This approach minimizes visual clutter and helps avoid introducing fixed objects that could increase the risk or severity of injury in the event of a fall.

Shared Use Paths

Intersection Control Sign Guidelines

- A. Stop or Yield Signs
 - a. Engineering judgement should be used to consider sign installation locations based on user volumes and field conditions.
 - b. Stop or yield signs along shared use paths may be used when approaching an unsignalized crossing with a roadway (Figure 15).
 - c. Yield-Ahead signs can be used when sight distance for users have limited sight distance to a connecting shared use path or sidewalk.
- B. Intersection and Advance Traffic Control Warning Signs (Figure 15)
 - a. Advance traffic control warning signs (W3-1, W3-2, and W3-3) can be used in areas where the presence of a traffic control device (yield, stop, or signal) is not easily visible.
 - b. Placement of the advanced warning signs should be a minimum distance that is equal to the stopping sight distance of the facility's speed limit or the fastest expected path user.

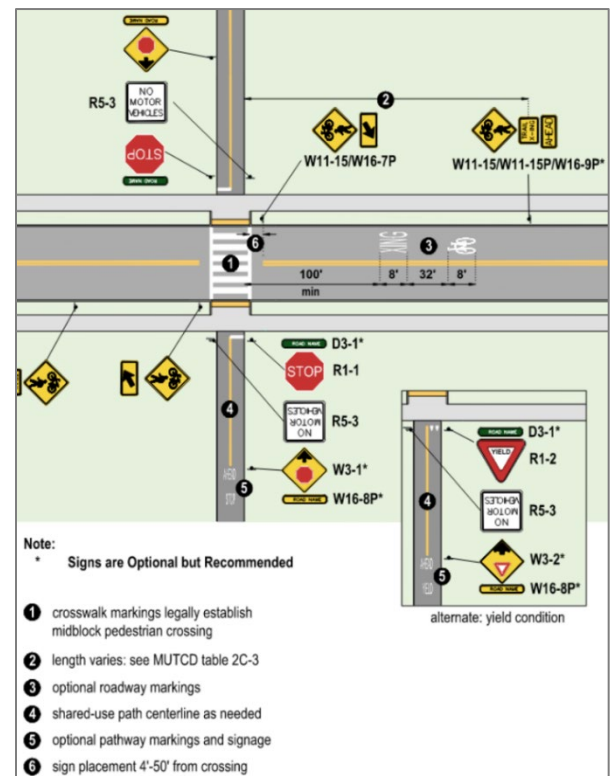


Figure 15. ODOT Multimodal Design Guide Stop and Yield Signs

Other Warning Signs

- A. Where obstructions exist or sight distance concerns have been documented, the use of additional warning signs is recommended.
 - a. Where excessive horizontal curvature exists, the use of "Curve Ahead" (W1-1) warning signs is recommended in conjunction with centerline striping. Refer to Table 2 for horizontal curvature.
- B. Crossing Warning Signs
 - a. A crossing warning sign assembly can be installed at locations where pedestrian crossings are not controlled by intersection control devices (example shown in Figure 16).
 - b. The use of warning signs should not be considered an alternative to pavement markings, but should supplement pavement markings, when used.



Figure 16. OMUTCD Crossing Warning Signs W11-15 and W16-7p

C. Heightened Awareness Crosswalk Signs

- When present, Heightened Awareness Crossings shall use activated crossing warning signs (W11-1, W11-2, W11-15, and/or S1-1) with LEDs or flashing lights.
- Signs shall be mounted on pedestals and will be activated by a push button and/or motion sensor. (Figure 17).
- Timing of "flashing" interval of any Heightened Awareness Crossing device should adhere to the Dublin's [Crosswalk Treatment Guidelines](#) and OMUTCD guidelines.

COG, Secondary Wayfinding and Signature Trail

Wayfinding Signs

Wayfinding signs on shared use paths are used to direct path users to and from important destinations.

- Road Names Signs (D3-1) and Shared Use Path Name Signs (W16-8P) can be used at roadway crossings and path access points. They should also be used at locations where two separate shared use path networks intersect. Use of wayfinding signs shall align with current Dublin wayfinding standards, as established by the Dublin [Secondary Wayfinding Signage Package](#).
- When pedestrians or bicyclists need to stay on their current path or trails, wayfinding signs similar to Figure 18 should be used at intervals of at least every mile.
- When pedestrians and/or bicyclists need to leave their current path or trail or transition to on-road path to reach a COG trail, wayfinding signs similar to Figure 19 should be used.
- Where multiple guidance signs may be necessary because of a path or trail providing access to multiple COG trails, color coordinated wayfinding signs should be used and adhere to the color scheme below in Figure 20.
- Refer to the OMUTCD Section 9B.20 for further discussion of Bicycle Guide Signs and the Dublin [Secondary Wayfinding Signage Package](#).



Figure 17. Heightened Awareness Crossing Assembly



Figure 18. Dublin Secondary Wayfinding Bike Route Sign

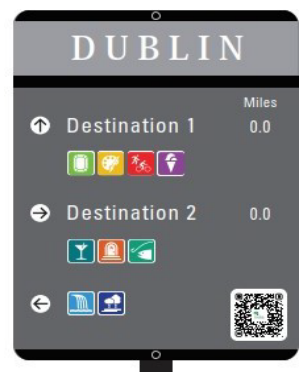


Figure 19. Dublin Secondary Wayfinding Destination Routing Sign

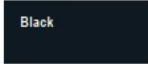
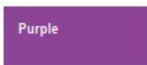
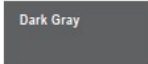
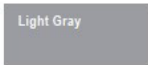
COLOR NAME/SWATCH	PANTONE	COLOR NAME/SWATCH	PANTONE	COLOR NAME/SWATCH	PANTONE
	PMS Black		PMS 3501 C		PMS 3514 C
	White		PMS 361 C		PMS 2587C
	PMS 425 C		PMS 2238 C		PMS 285 C
	PMS 423 C		PMS 3517 C		PMS Pantone Reflex Blue C
	PMS 355 C		PMS 716 C		

Figure 20. Dublin Secondary Wayfinding Color Scheme

- F. Secondary Wayfinding signs should be placed to the outside of the path, and not in the tree lawn area, where possible. See Figure 21 as an example.

Cycle Track Facilities

- A. Path signs can be placed for cycle track facilities, and should be considered in the following areas:
- Where new pedestrian or cycle traffic is accessing the cycle track facilities.
 - At set intervals throughout the cycle track facility, where added guidance may be needed.
- B. Figure 22 provides an example of a cycle track sign to be used within the Bridge Street District (BSD) and Historic Dublin (HD).

Bicycle Lane Signs

- A. Bicycle lane signs (Figure 23) should be placed using engineering judgment based upon the speed of bicycle and motorists, block lengths, and distances from adjacent intersections.
- B. If used, place signs at the start of each bicycle lane for longer block sections to supplement bicycle lane pavement markings.
- C. Bicycle lane signs can be mounted to existing posts when present.
- D. Where a bicycle lane is starting or ending, use a combination of the "Bicycle Lane" sign (OMUTCD R3-17) with the appropriate plaque: AHEAD (R3-17aP) or ENDS (R3-17bP). This combination should only be used at locations where a bicycle lane may be unexpected, sight distance restrictions exist, or where a bicycle lane changes to an unmarked paved shoulder.

Shared Lane Signs

- A. On roadways with shared use lanes, shared lane signs can be used in the following scenarios:
- Where motorists must change lanes or operate at reduced speeds until a safe passing maneuver can occur, the Bicycles Allowed Use of Full Lane signs (Figure 24) can be used.
 - In Road (OMUTCD W16-1P) or In Street (OMUTCD W16-1aP) supplementary signs should be used with the Bicycle Warning Sign (OMUTCD W11-1) only where bicyclists may appear to motorists unexpectedly.

Bicycle and Mobility Boulevard Signs

Wayfinding Signs

- A. Use of wayfinding signs should align with current Dublin wayfinding standards, as established by the Dublin [Secondary Wayfinding Signage Package](#).
- B. Bicycle Boulevard signs (Figure 25) may be placed in tandem with the bicycle boulevard lane marking along designated bicycle or mobility boulevards.

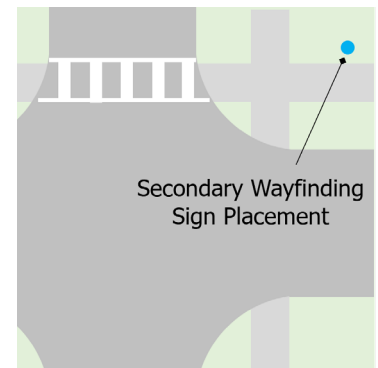


Figure 21. Secondary Wayfinding Sign Placement



Figure 22. Cycle Track Sign for BSD and HD



Figure 23. OMUTCD Bicycle Lane Sign R3-17



Figure 24. OMUTCD R9-20



Figure 25. Bicycle Boulevard Sign

4. Other Considerations

Tunnels

Figure 26 depicts the signing and striping treatment to be used at tunnels across Dublin, and includes the following:

- A. A yellow dashed centerline on the approaches to the tunnel, and carried through the tunnel, using a 4-inch wide, 3-foot long dash and a 9-foot gap as shown in Figure 1.
- B. A Yield line at any intersection approaching the tunnel, using triangular shapes, 12-inch by 18-inch, as shown in Figure 2.
- C. The word SLOW on pavement on each sloped approach to the tunnel, with the size to be determined based on the width of the path and other local site considerations.
- D. Mirrors to be installed on any approach where sight distance is reduced or obstructed that can be remedied by a mirror.
- E. Vegetation should be regularly trimmed and maintained to ensure clear sight lines.

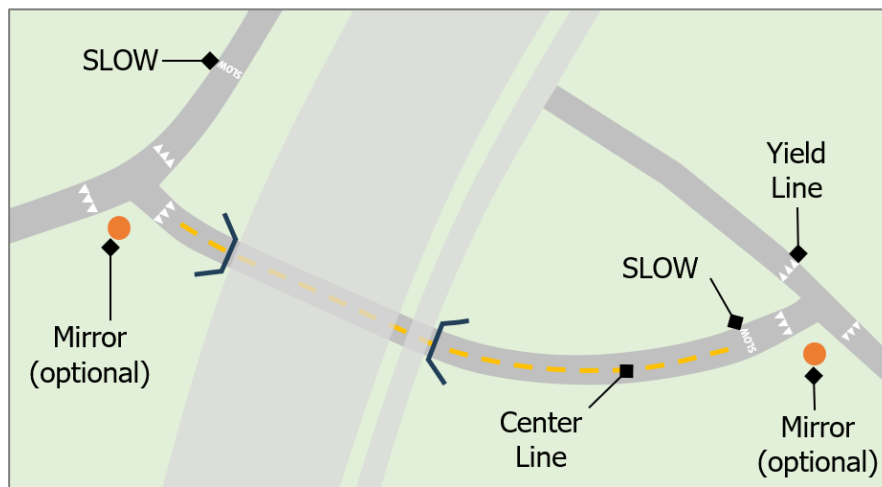


Figure 26. Tunnel Treatment

Use of Safety Mirrors

In addition to the specific use of mirrors for tunnels, as described above, locations where a horizontal or vertical curve limits sight distance for paths or trails, the use of a convex safety mirror can be considered as a supplement to other signs and pavement markings.

- A. Additionally, safety mirrors can be considered for conflict areas where sight distance or sight lines cannot be improved otherwise. These types of locations could include:
 - Horizontal curves, driveway crossings and other areas with limited sight distance.
- B. Engineering judgement should be used when considering the use of safety mirrors and shall be provided with the direction of the Dublin City Engineer or Director of T&M.

Bollards

Bollards are usually not necessary on shared use paths or trails. They can be considered to deter vehicles from entering the path.

- A. Bollards should be considered where a path leads directly to a roadway, and it appears that the path is an extension of that roadway (Figure 27).

- B. When used, bollards should be installed to allow access for maintenance vehicles and be easily removable. Two options are available:
- Option 1: Place two bollards approximately 25 percent of the width of the path from each edge of the path (Figure 27).
 - Option 2: Place one bollard in the center of the path and additional bollards on each side of the path.
- C. For new bollard installations, the use of reflective yellow or white markings can be considered based on the bollard style and surrounding context (Figure 28). If used, yellow should be applied for center locations and white for bollards near the edge of the bikeway.
- D. The use of bollards requires approval by Dublin's City Engineer or Director of T&M before implementation.
- E. Refer to Figure 7 for obstruction marking requirements.

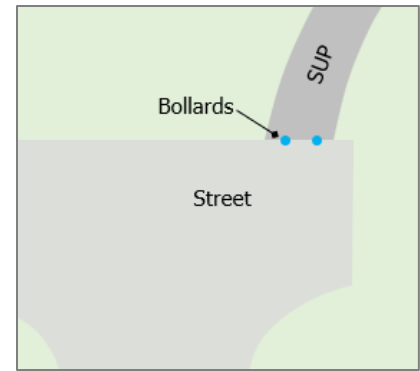


Figure 27. Bollard Placement Option where Shared Use Path Connects to the Street (eg. End of Tonti Drive)

E-Bicycle Parking Facility and Charging Stations

Figure 29 depicts the marking treatment to be used at e-bicycle parking facilities across Dublin, and includes the following:

- Colored pavement should be used to identify the space and symbols, such as an e-bicycle charging pavement marking should be installed to denote the intended use.
- Bicycle racks should be provided to maximize space, security and ease of use.

In addition to approval by the City Engineer or Director of T&M, review and approval may also be required by City boards or committees, such as the Architectural Review Board.

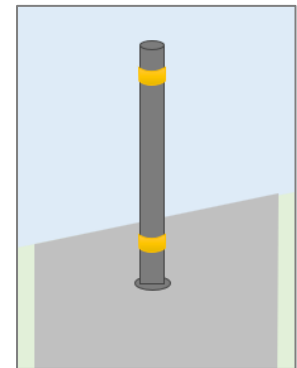


Figure 28. Bollard with Reflective Tape (eg. Riverside Crossing Park)

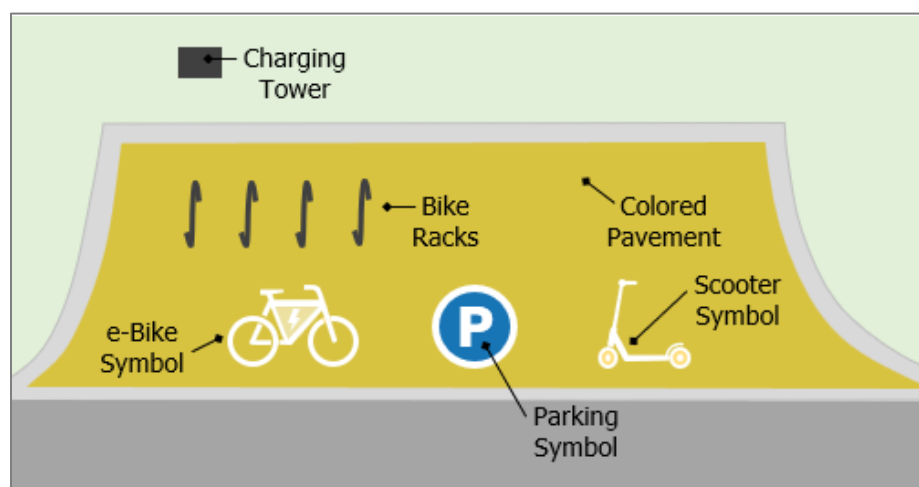
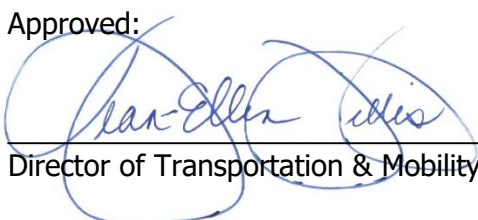


Figure 29. E-Bicycle Parking Facility (eg. Mill Lane)

Approved:


 Director of Transportation & Mobility

June 1, 2026

Date