Wayfinding Sign Program Best Practices

Montgomery County Bikeways

Guide

Created by: Guide Studio, Inc. | guidestudio.com

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On October 11, 2022, Montgomery Planning Staff presented the draft Bikeway Branding Wayfinding Plan to the Montgomery County Department of Transportation. The concepts presented received support from the MCDOT Director, but he requested that the Planning Department develop a document to show that the proposed concepts are permissible by the Manual of Uniform Traffic Control Devices (MUTCD).

- This document first summarizes the provisions found in the MUTCD that relate to bikeway signing and identifies them as required, recommended and optional.
- Next is a brief discussion of how these standards can be interpreted when implementing bicycle-oriented street signage.
- Finally, this document provides examples of the wayfinding sign family proposed for the Montgomery County bikeway system.

SYSTEM PHILOSOPHY

The **Montgomery County Bikeways System** is a collection of all bicycle routes, both existing and proposed, that traverse Montgomery County. Most routes will be labeled simply as **"Bikeways,"** but each route will have a place-specific plan pertaining to specific means of route marking, placemaking, and wayfinding.

Those routes designated by the county as the "highest and best experience" of all Bikeways will be labeled **Breezeways** and will be clearly identified through specialized branding elements and signage.

While many routes may carry names known to the public or in the cycling community, only the Breezeways will be formally named via the system.

WAYFINDING OBJECTIVES

The following are the objectives of a wayfinding system:

- Improve user and visitor experience with clear, easy, and efficient messaging that provides a sense of comfort and safety
- Develop a sign program that is visually appealing, maintainable, and expandable
- Reinforce continuity of the system
- Educate and attract users
- Transform casual users into daily users and turn them into system advocates

→ Overview of Bicycle Provisions in the Manual on Uniform Traffic Control Devices (MUTCD)

The Manual on Uniform Traffic Control Devices, or MUTCD, is the national standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel. The MUTCD was established in order to achieve uniformity and consistency in traffic control devices (wayfinding signage is considered a traffic control device) so that information would be readily recognized and understood by travelers. Both on-street and off-street bicycle facilities are required to follow the standards within the MUTCD.

Provisions that are particularly relevant to the **Montgomery County Bikeway Wayfinding Sign Family** are highlighted in **YELLOW** in this document.

Per Section 2A.06 Design of Signs of the MUTCD, signs **shall** be designed so that:

- Size, shape, color, composition, lighting or retro-reflection, and contrast are combined to draw attention to the devices; simplicity of message combine to produce a clear meaning.
- Legibility and size combine with placement to permit adequate time for response.
- Uniformity, size, legibility, and reasonableness of the message combine to command respect.

It is important to note that the MUTCD provides directives for all sign types used along bike facilities. The function of the majority of sign types outlined in the manual is instructional in nature (what you can or can not do). For referencing wayfinding guidance within the manual, typical sign types discussed are called Bicycle Guide Signs and more specifically "Destination" signs or plaques.

There are two sections of the MUTCD that are important for developing a comprehensive signage and wayfinding system for urban bikeways: **Part 9B Signs** and **Part 2D.50 Community Wayfinding Guide Signs.**

For proper interpretation of this document it is important to note the use of the terms: "shall" and "should".

- Shall The word **"shall"** in a Standard statement has been identified as denoting a "required, mandatory, or specifically prohibitive practice."
- Should The word **"should"** in a Guidance statement has been identified as denoting a "recommended, but not mandatory, practice in typical situations.
- May The word **"may"** indicates an optional action that is neither required nor simply recommended. It is supplemental.

→ Manual on Uniform Traffic Control Devices (MUTCD)

MUTCD Section 9B:

Applicable subsections include 9B.02 Design of Bicycle Signs and 9B.20 Bicycle Guide Signs.

REQUIRED

- An arrow pointing to the right, if used, **shall** be at the extreme right-hand side of the sign. An arrow pointing left or up, if used, **shall** be at the extreme left-hand side of the sign. The distance numerals, if used, **shall** be placed to the right of the destination names. §9B.20(06)
- On Bicycle Destination signs, a bicycle symbol **shall** be placed next to each destination or group of destinations. If an arrow is at the extreme left, the bicycle symbol **shall** be placed to the right of the respective arrow. §9B.20(07)
- TABLE 9B-1 provides minimum size recommendations for Bicycle Guide Signs. §9B.02(02)

GUIDANCE

- Adequate separation **should** be made between any destination or group of destinations in one direction and those in other directions by suitable design of the arrow, spacing of lines of legend, heavy lines entirely across the sign, or separate signs. §9B.20(05)
- If several individual name signs are assembled into a group, all signs in the assembly **should** have the same horizontal width. §9B.20(10)
- Because of their smaller size, Bicycle Destination signs **should not** be used as a substitute for vehicular destination signs when the message is also intended to be seen by motorists. §9B.20(11)

OPTION

- Bike Route Guide signs **may** be provided along designated bicycle routes to inform bicyclists of bicycle route direction changes and to confirm route direction, distance, and destination.§9B.20(01)
- If used, Bike Route Guide signs **may** be repeated at regular intervals so that bicyclists entering from side streets will have an opportunity to know that they are on a bicycle route. §9B.20(02)
- Similar guide signing **may** be used for shared roadways with intermediate signs placed for bicyclist guidance. §9B.20(02)
- Alternative Bike Route Guide signs may be used to provide information on route direction, destination, and/or route name in place of the "BIKE ROUTE" wording on the standard Bike Route sign. §9B.20(03)
- Destination signs, Street Name signs, or Bicycle Destination signs may be installed to provide direction, destination, and distance information as needed for bicycle travel. If several destinations are to be shown at a single location, they may be placed on a single sign with an arrow (and the distance, if desired) for each name. If more than one destination lies in the same direction, a single arrow may be used for the destinations.§9B.20(04)

Standard Bicycle Guide Signs & Plaques examples from the MUTCD

→ Manual on Uniform Traffic Control Devices (MUTCD)

MUTCD Section 2D: Guide Signs – Conventional Roads

Applicable subsection include 2D.50 Community Wayfinding Signs

GUIDANCE

- Community wayfinding guide signs, exclusive of any identification enhancement marker used, **should** be rectangular in shape. Simplicity and uniformity in design, position, and application are important and **should** be incorporated into the community wayfinding guide sign design and location plans for the area. § 2D.50(21)
- Abbreviations **should** be kept to a minimum, and should include only those that are commonly recognized and understood. § 2D.50(23)
- Horizontal lines of a color that contrasts with the sign background color **should** be used to separate groups of destinations by direction from each other. § 2D.50(25)

The basic requirements of a sign are that it be legible to those for whom it is intended and that it be understandable in time to permit a proper response. § 2D.50(24)

Desirable attributes include:

- High visibility by day and night and high legibility (adequately sized letters, symbols, or arrows, and a short legend for quick comprehension by a road user approaching a sign). § 2A.06(04))

SUPPORT

- The specific provisions of this Section regarding the design of community wayfinding sign legends apply to vehicular community wayfinding signs and do not apply to those signs that are intended only to provide information or direction to pedestrians or other users of a sidewalk or roadside area. § 2D.50(09)
- Color coding is sometimes used on community wayfinding guide signs to help road users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area. § 2D.50(12)

OPTION

- Community wayfinding guide signs **may** use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system. Color-coded community wayfinding guide signs may be used with or without the boundary informational guide sign displaying corresponding color-coding panels. In addition to the colors that are approved in this Manual for use on official traffic control signs other background colors **may** also be used for the color coding of community wayfinding guide signs. § 2D.50(17)
- Other graphics that specifically identify the wayfinding system, including identification enhancement markers, **may** be used on the overall sign assembly and sign supports. § 2D.50(38)
- Pictographs **may** be used on community wayfinding guide signs. § 2D.50(34)
- A lettering style other than the Standard Alphabets provided in the "Standard Highway Signs and Markings" book **may** be used on community wayfinding guide signs if an engineering study determines that the legibility and recognition values for the chosen lettering style meet or exceed the values for the Standard Alphabets for the same legend height and stroke width. § 2D.50(39)

An enhancement marker consists of a shape, color, and/or pictograph that is used as a visual identifier for the community wayfinding guide signing system for an area. § 2D.50(40)

- An identification enhancement marker may be used in a community wayfinding guide sign assembly, or **may** be incorporated into the overall design of a community wayfinding guide sign, as a means of visually identifying the sign as part of an overall system of community wayfinding signs and destinations. § 2D.50(40)

REQUIRED

- The standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink **shall not** be used as background colors for community wayfinding guide signs, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users. §2D.50(18)

Community Wayfinding examples from the MUTCD

Rules of the Road: Interpreting the MUTCD

MUTCD: STANDARDS

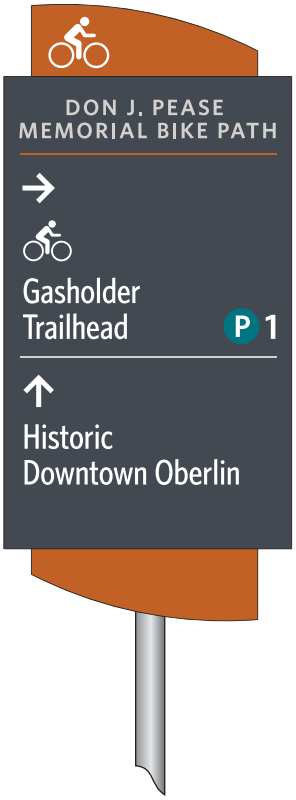
Confirmation Panel

- Standard color
- Standard symbol
- Used on or off-street
- Can be used alone to identify Bike Routes
- Combined with a Decision Panel creates a complete directional

Decision Panel

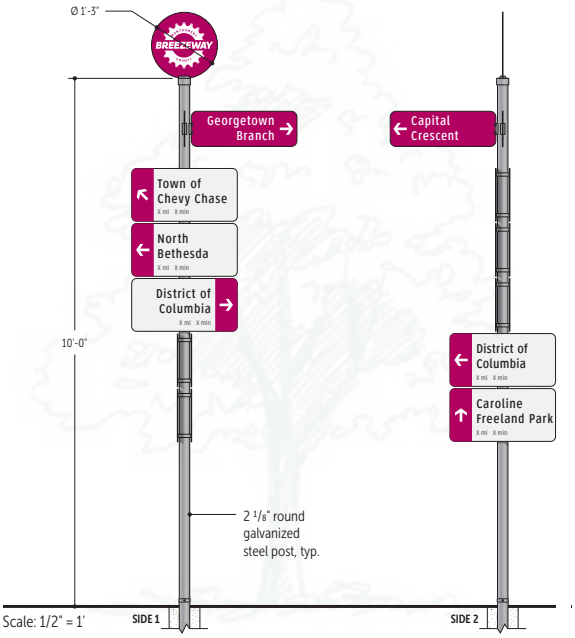
- Standard color
- Standard symbol
- (3) directives
- Standard arrow
- Arrow location

MUTCD: ALLOWABLE CUSTOMIZATION



Custom Panel

- Custom color options, but keep them consistent and not in conflict with regulatory traffic sign colors
- Color coding allowed
- Custom symbols and logos allowed
- Add information such as parking, or distance in minutes

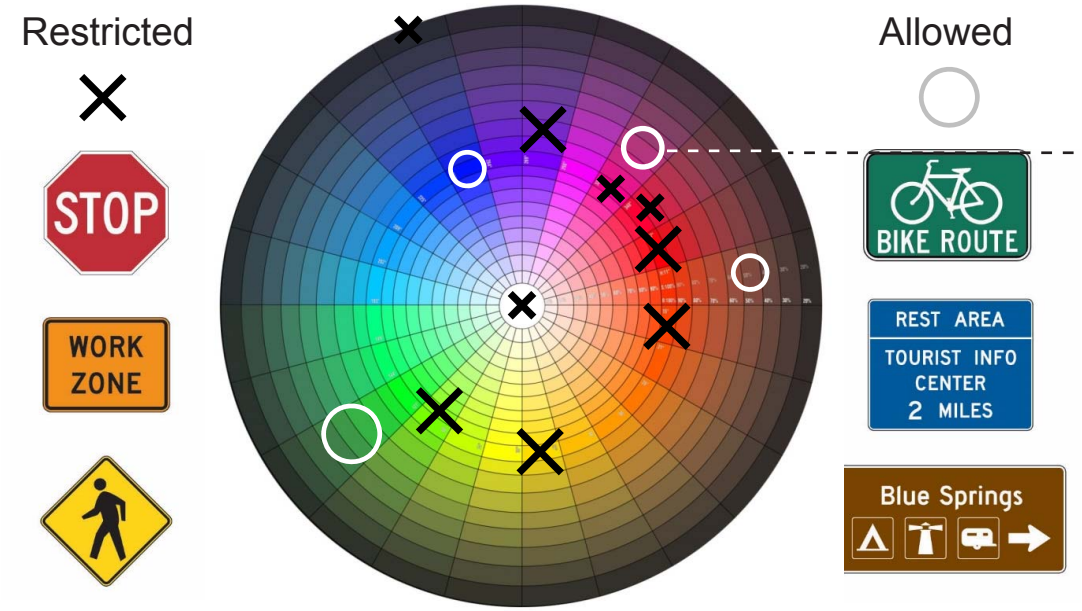


Montgomery County Bikeway - Breezeway
Bike facility sign program example

Colors

Per the community wayfinding standards, color coding may be used on wayfinding guide signs to help users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area. § 2D.50(12) Community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system. § 2D.50(17)

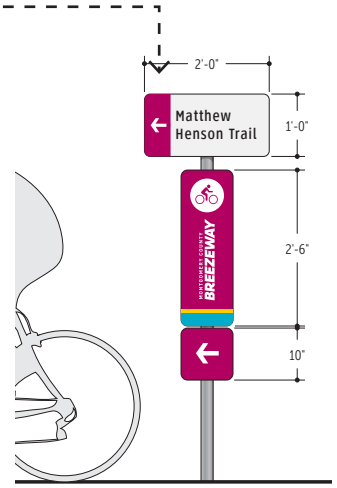
The color wheel diagram below depicts colors which are already assigned specific meanings and thus shall not be used on community wayfinding signs. Green is the standard color for guide signs. Blue and brown are also used for traveler information including destination and street name signs. The remaining colors are eligible for use on community wayfinding signs as long as they are sufficiently different from the assigned colors. § 1A(12)



MUTCD, Part 2, Section 2D.50 :

Standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, shall not be used as background colors for community wayfinding guide signs, to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users.

Each of the colors depicted with an × are not allowed for use on community wayfinding signs. Green, blue, and brown are acceptable on wayfinding signs, as are other non-restricted colors.



Montgomery County Bikeway - Breezeway

Distance & Time

The addition of measuring distance in terms of miles and minutes has been employed by a number of cities in the United States. Adding distance in familiar units has been found to be an effective encouragement tool to bicycling. While asking someone to ride their bike two miles may sound daunting, the thought of riding for twelve minutes is typically approachable.

A no sweat pace of 10 miles per hour or 6 minutes per mile is the typical pace used on wayfinding signs. This is lower than typical bicycle design speed in order to best reflect and encourage the riding speed of the casual rider.

National Committee on Uniform Traffic Control Devices (NCUTCD)

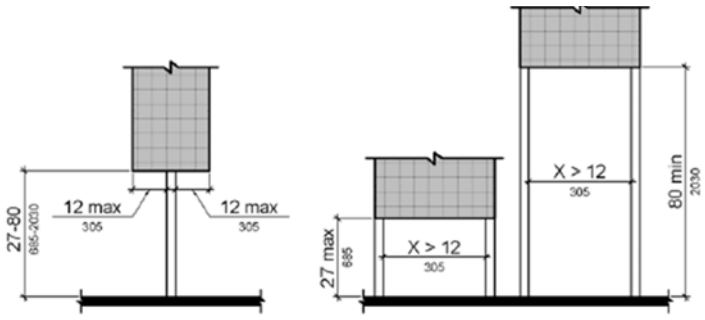
The NCUTCD is an organization whose purpose is to assist in the development of standards, guides and warrants for traffic control devices and practices used to regulate, warn and guide traffic on streets and highways. The NCUTCD has recently recommended changes to the MUTCD that would formalize the customization of wayfinding signs for shared use paths. Standards would closely follow guidance provided for community guide signs which allow custom colors and identifying brand marks.

§

2010 ADA Standards for Accessible Design

When wayfinding systems have maps and kiosks in addition to directional wayfinding elements, it is important to consider technical guidance from the Americans with Disabilities Act ADA so that signs and other elements do not impede pedestrian travel or create unsafe situations for pedestrians and/or those with disabilities. The 2010 Standards for Accessible Design should be considered when designing and placing wayfinding signs includes the following:

Vertical Clearance: Vertical clearance shall be 80 inches high minimum, or 27 inches maximum when signs protrude more than 12 inches from the sign post or support structure. § 307.4

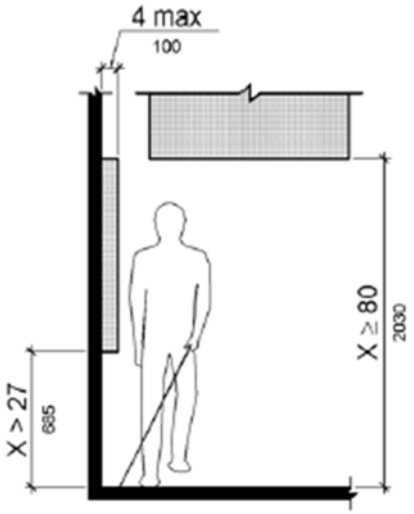


§ Figure 307.3

Post-Mounted Objects: Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches, the lowest edge of such sign or obstruction shall be 27 inches maximum or 80 inches minimum above the finish floor or ground. § 307.3

Protruding Objects: Objects with leading edges more than 27 inches and not more than 80 inches above the finish floor or ground shall protrude 4 inches maximum horizontally into the circulation path. § 307.3

Required Clear Width: Protruding objects shall not reduce the clear width required for accessible routes. § 307.5



§ Figure 307.2/307.4

Map Kiosks

Kiosks with area and/or citywide orientation maps, can provide helpful navigational information, especially where bicyclists may be stopping long enough to digest more information (i.e. transit stations or stops, busy intersections, trail heads). The use of icons and high contrasting colors is a good practice which makes maps comprehendible to a wide audience. Universal symbols

Adding circles that indicate walk and bike times provides encouragement to explore. Additionally, orienting signs with respect to the audience's view (or, a heads up orientation) is considered by wayfinding practitioners to be more intuitive than maps where north is at the top.

Montgomery County Bikeway - Breezeway
Bike facility sign program example

Universal Symbols

Symbols are useful on maps and help bridge language gaps. In the 1970's, Universal Symbols were developed through a collaboration between the Professional Association for Design (AIGA) and the U.S. Department of Transportation (DOT). This system of 50 symbol signs was designed for use in airports and other transportation hubs, as well as at large international events.

The complete set of 50 passenger/pedestrian symbols developed by AIGA is available for all to use, free of charge in EPS and GIF format. Additional symbol signs are available free of charge at The Noun Project.

Pavement Markings

Directional pavement markings indicate confirmation of bicyclist presence on a designated route and where bicyclists should turn. Especially in urban settings, pavement markings can often be more visible and can help supplement or reinforce signage.

Pavement markings may be useful where signs are difficult to see (due to vegetation or parked cars) and can help bicyclists navigate difficult turns and provide route reinforcement.

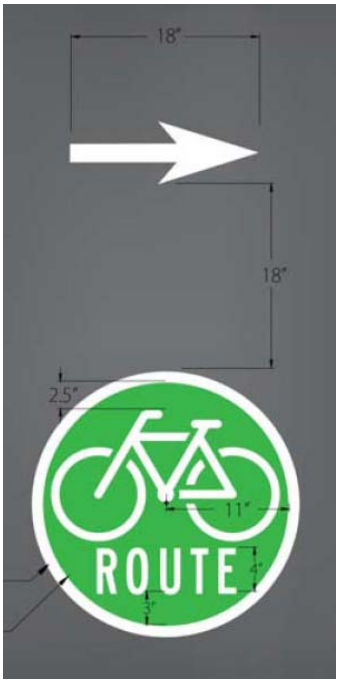
On-Street Markings

In Berkeley, CA and Minneapolis, MN, some bicycle boulevards have large "Bicycle Boulevard" stencils that take up nearly the entire width of one travel lane.

The images below shows different types of pavement markings that have been used for wayfinding purposes. While the shared lane marking is currently the only FHWA (section 9C.07.) approved pavement marking shown, cities have experimented with the other options.

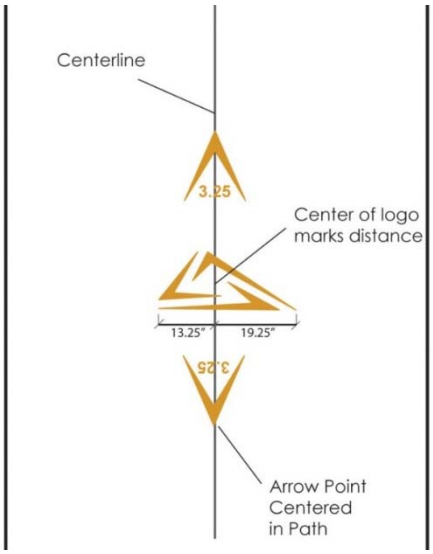
Per the NACTO Urban Bikeway Design Guide - Shared Lane Markings) allows the option of adjusting the orientation of the chevron for wayfinding purposes to direct bicyclists along discontinuous routes.

Color may also be used to enhance the visibility of the shared lane marking and to further encourage desired lane positioning.



Off-Street Markings

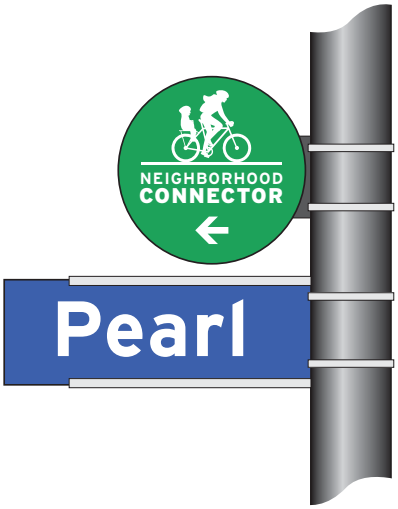
Some pavement markings, including off-street shared use path markings can give an identity to the route and include directional and trip information, including distances or times. While such markings are not included as traffic control devices within the MUTCD, numerous agencies around the nation follow such practices.



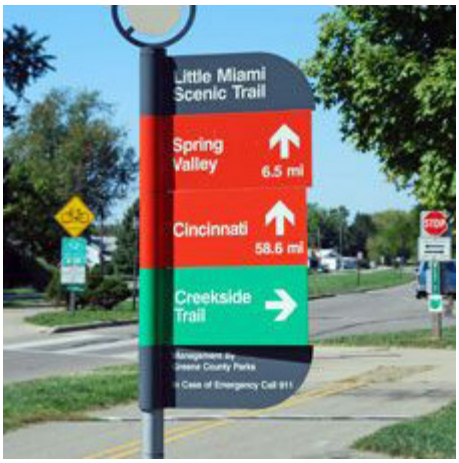
Sign Enhancements

MUTCD standard street name sign blades have been enhanced by a wide number of municipalities around the nation to provide additional recognition of bikeways.

Enhancements have been achieved either in the form of supplemental signs and sign toppers added to existing signs or via graphic embellishments integrated into new sign blades. Green, blue, and brown are all accepted colors for street name sign blades according to the MUTCD, as long as colors are used consistently across the jurisdiction.

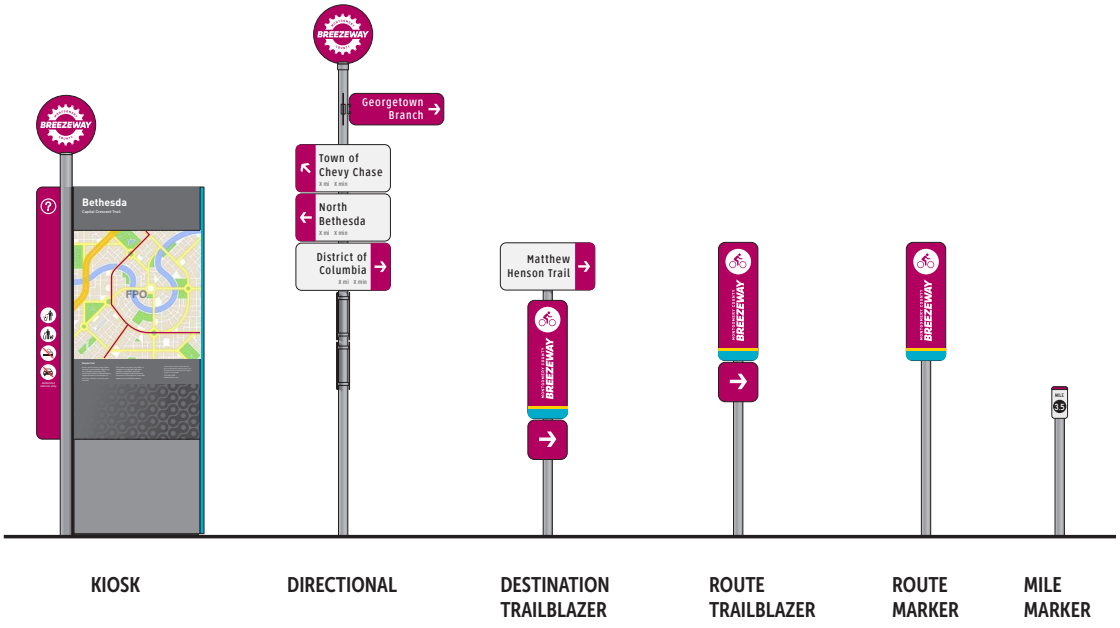


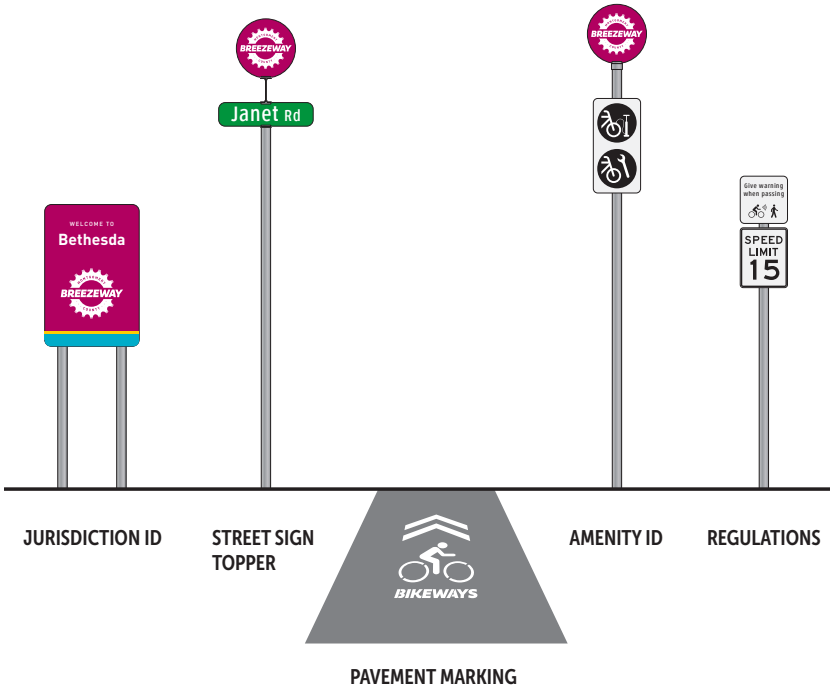
→ Precedent Examples



→ Montgomery County Bikeways Wayfinding Sign Family

The Bikeway Branding Project proposes 12 types of wayfinding for Montgomery County's bicycle network. These are detailed in subsequent pages.





Montgomery County Bikeways Wayfinding Sign Family

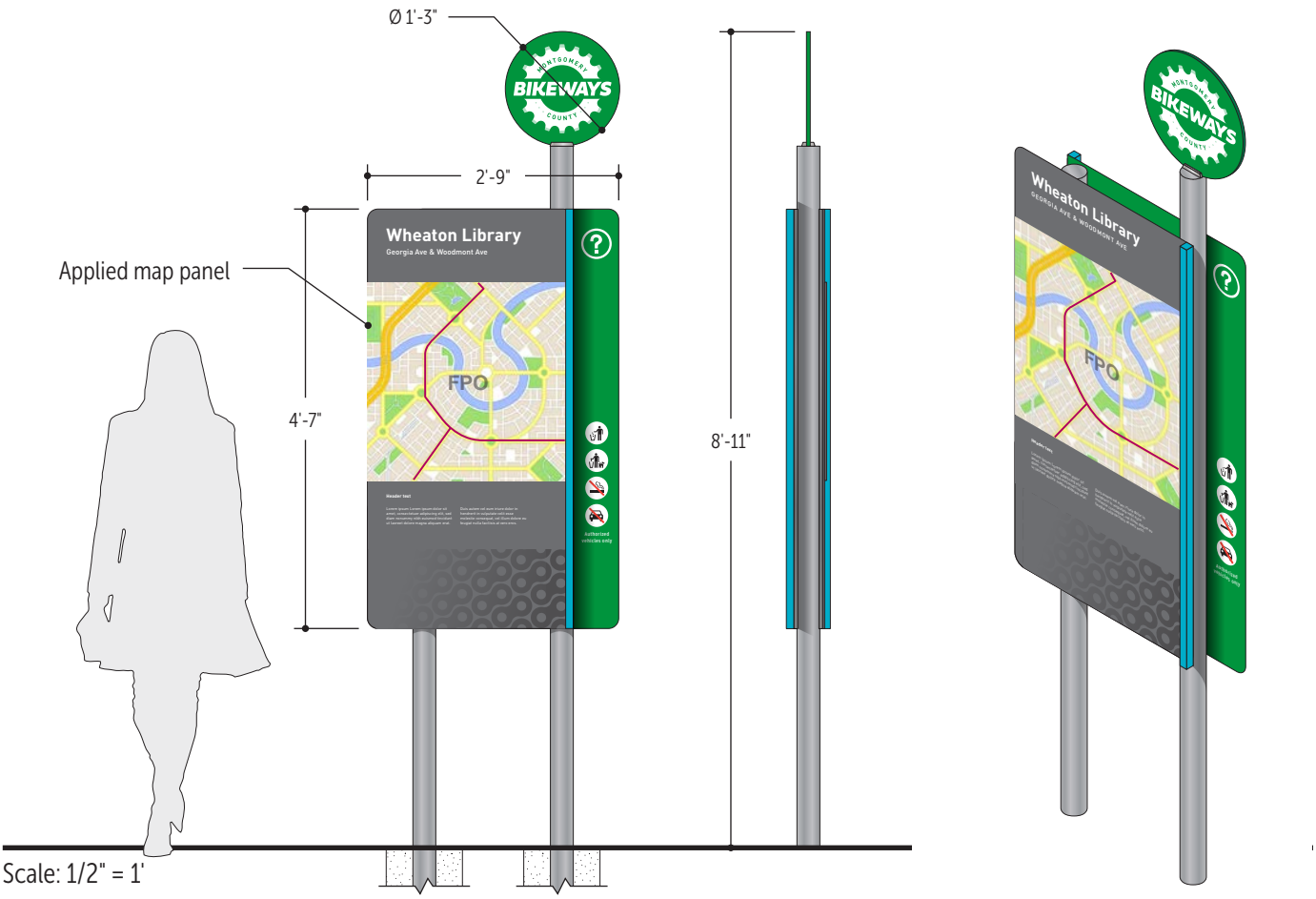
Kiosk - Option 1

Kiosks with simplified graphic maps placed at key destination and decision points where there is space to stop and read more detailed Bikeways information.

- Side 1: System-wide (county) map showing all routes (breezeways), major neighborhoods, and cities.
- Side 2: Blowup map (.75 mile radius) showing system routes, neighborhoods, parks, civic and cultural institutions (gov't buildings, schools, museums), hospitals, transit, amenities (bike repair, bike parking, public restrooms), and bike sharing locations.

Optional Content

- • Space for advertising (proceeds to help fund signage program)
- • Directory of local businesses, in coordination with map (would require frequent updating)



For use in more rural areas. Panels do not go to the ground to avoid damage. Non-illuminated.

Montgomery County Bikeways Wayfinding Sign Family

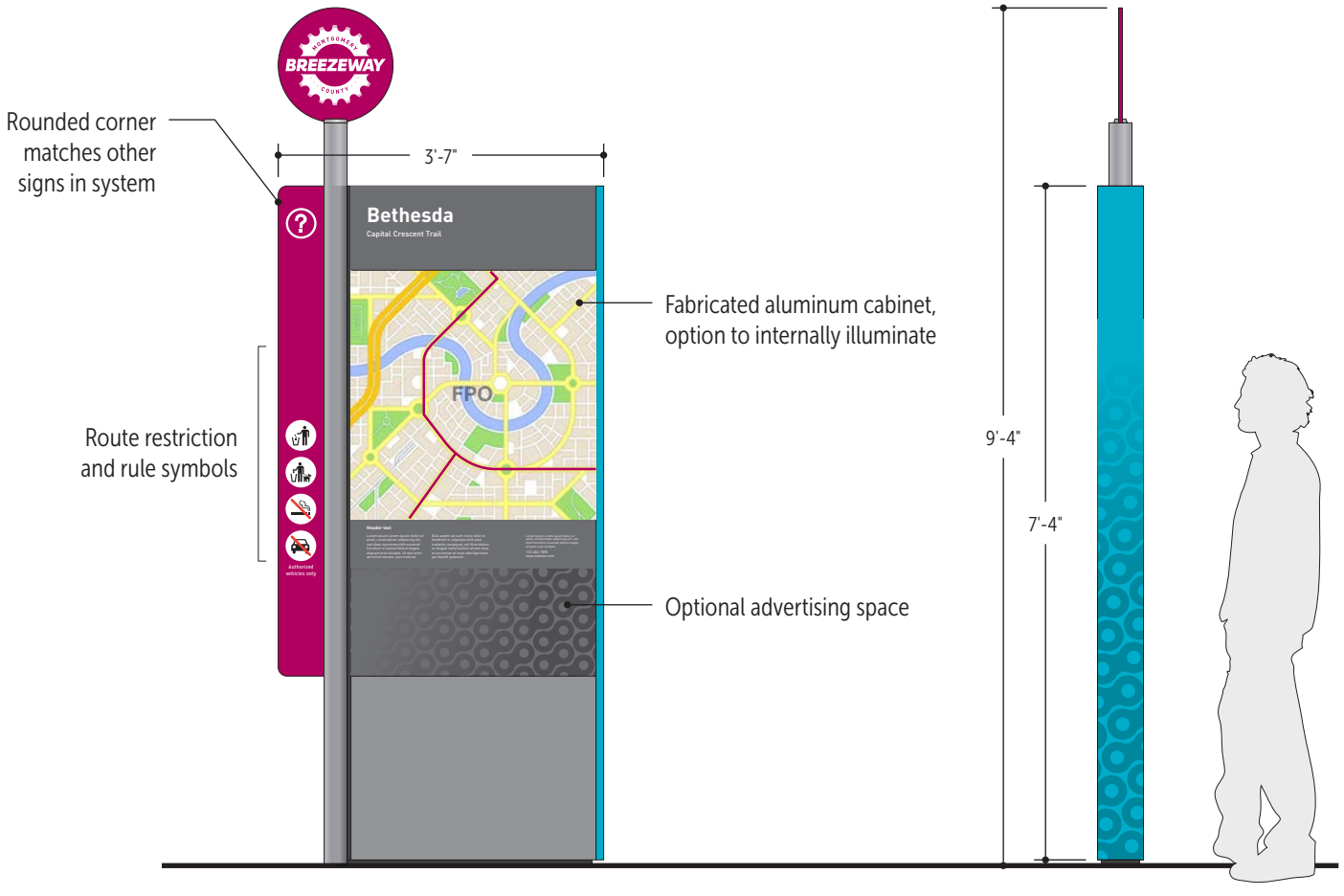
Kiosk - Option 2

Kiosks with simplified graphic maps placed at key destination and decision points where there is space to stop and read more detailed Bikeways information.

- Side 1: System-wide (county) map showing all routes (breezeways), major neighborhoods, and cities.
- Side 2: Blowup map (.75 mile radius) showing system routes, neighborhoods, parks, civic and cultural institutions (gov't buildings, schools, museums), hospitals, transit, amenities (bike repair, bike parking, public restrooms), and bike sharing locations.

Optional Content

- Space for advertising (proceeds to help fund signage program)
- Directory of local businesses, in coordination with map (would require frequent updating)



KIOSK – OPTION 2

For use in urban areas where power is more accessible. Optional advertising space. Can be internally illuminated.

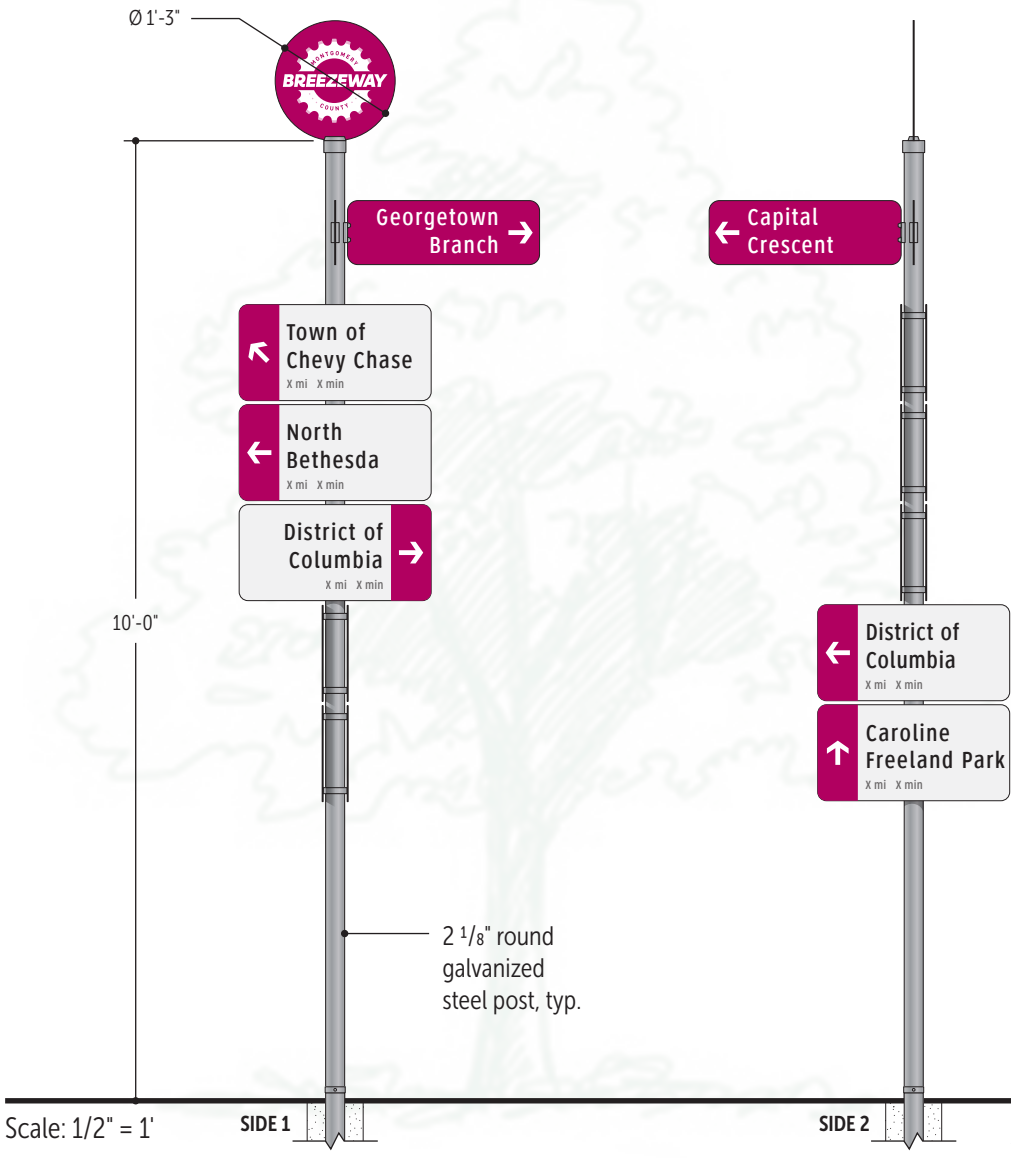
SIDE VIEW

Montgomery County Bikeways Wayfinding Sign Family

Directional

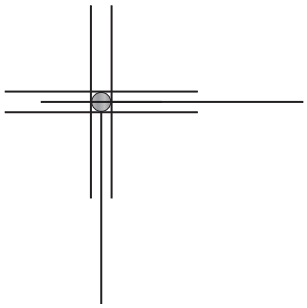
Sign program utilizes standard street sign components for simpler maintenance & management of the sign program.

- Standard panel size blanks with full face graphics on reflective film
- All signs use standard 2 ¿/"" round galvanized steel post, standard brackets, mounting hardware, and accessories.
- Directional signs list maximum 3 destinations, within 4 mi from sign. Priority given to turn-off directions (left & right) and Breezeway destinations.



Supporting Provision in the MUTCD

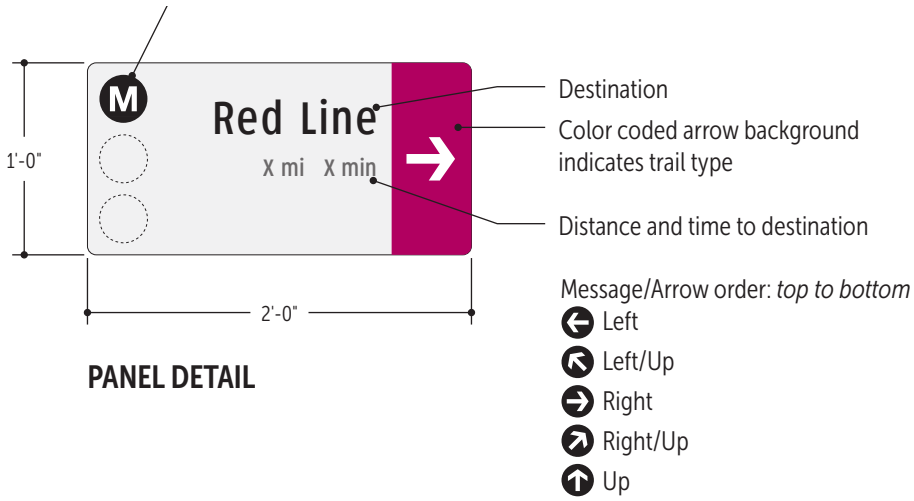
- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)
- **Sign toppers:** It is possible to provide a sign topper as an identification enhancement with a shape, color, and/or pictograph to create a visual identifier for the bicycling system. §2D.50(34), §2D.50(39), §2D.50(40)



TOP VIEW

→ Montgomery County Bikeways Wayfinding Sign Family

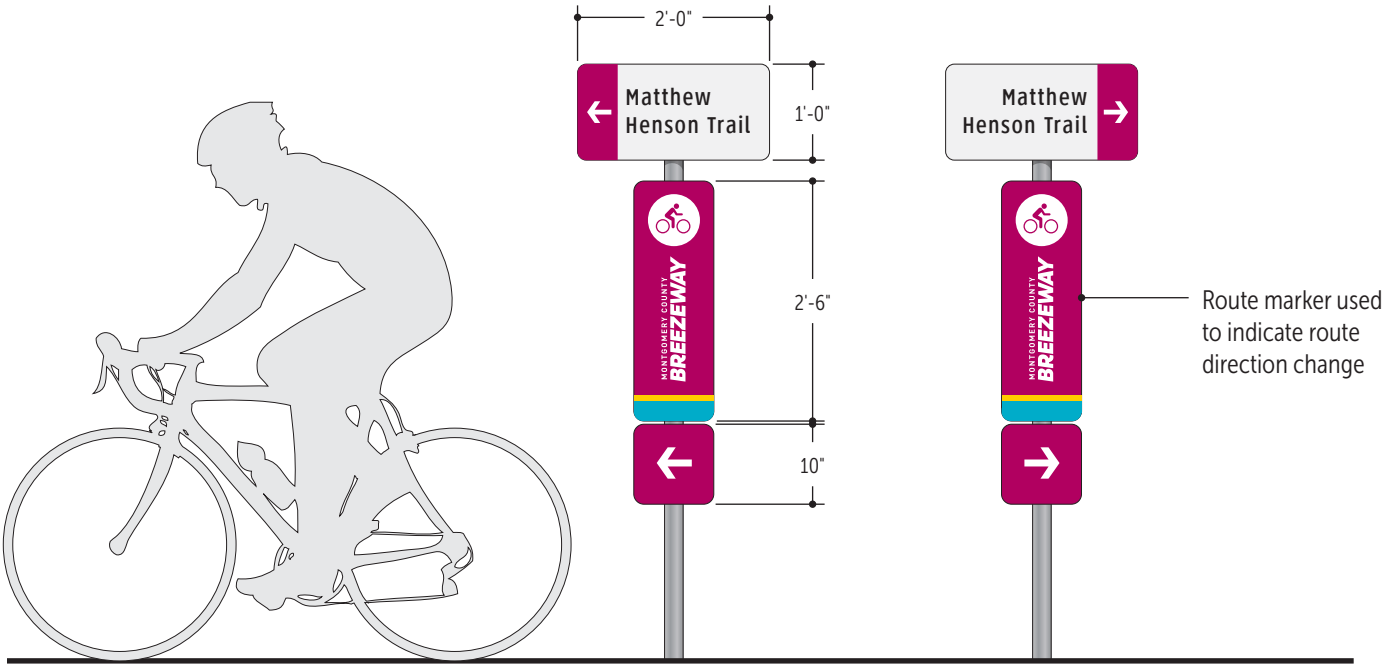
Destination Trailblazer



PANEL DETAIL

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)
- **Sign toppers:** It is possible to provide a sign topper as an identification enhancement with a shape, color, and/or pictograph to create a visual identifier for the bicycling system. §2D.50(34), §2D.50(39), §2D.50(40)



DESTINATION TRAILBLAZER

NOTE: Trailblazer signs show destinations less than 1 mi away

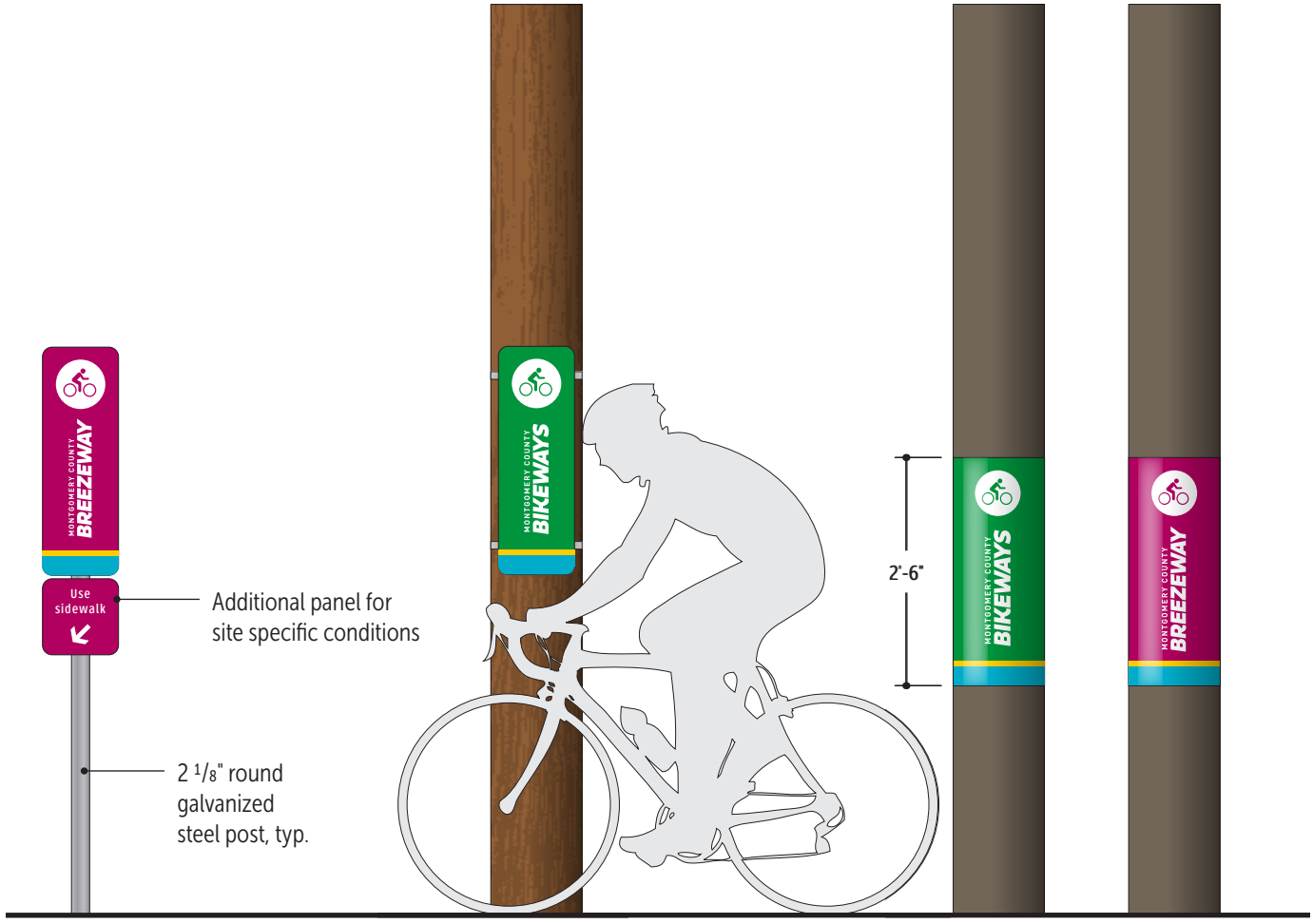
→ Montgomery County Bikeways Wayfinding Sign Family

Route Markers/Route Marker Pole Wrap

- **Pole Wrap:** Utility companies may not allow any signage elements on poles though metal street poles may not have as many restrictions

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)



Scale: 1/2" = 1'

ROUTE MARKER

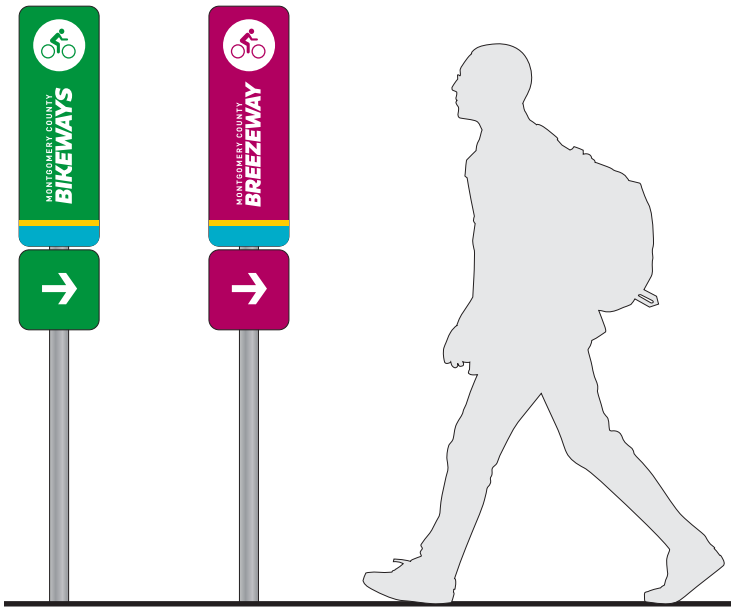
ROUTE MARKER POLE WRAP

→ Montgomery County Bikeways Wayfinding Sign Family

Route Trailblazers

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)

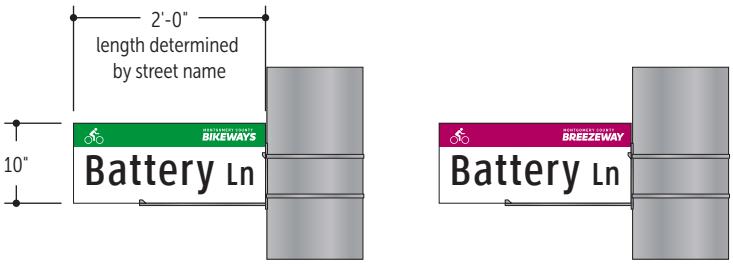


Scale: 1/2" = 1'

ROUTE TRAILBLAZER

→ Montgomery County Bikeways Wayfinding Sign Family

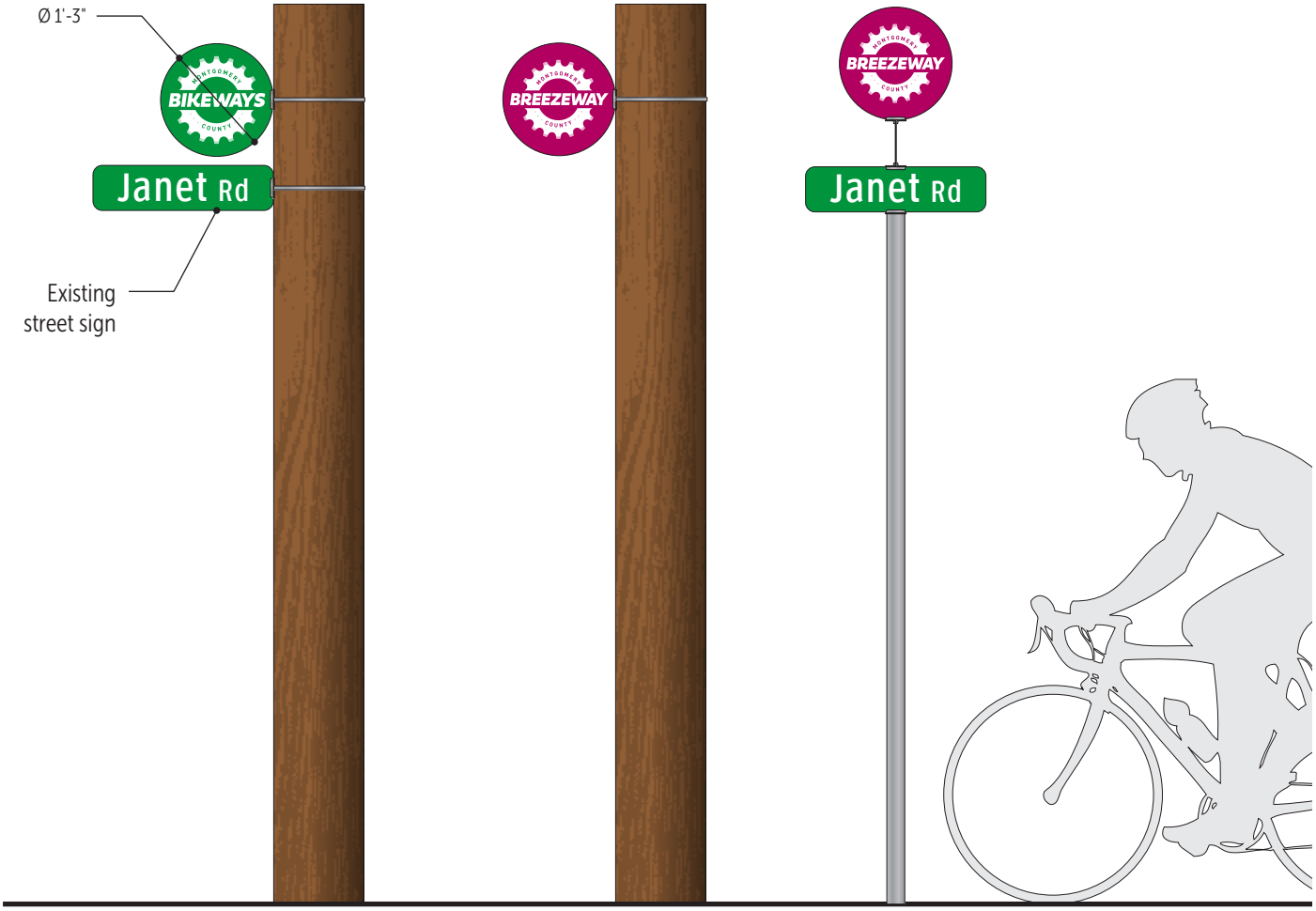
Street Sign Topper



ROUTE MARKER INTEGRATED STREET SIGN

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)
- **Sign toppers:** It is possible to provide a sign topper as an identification enhancement with a shape, color, and/or pictograph to create a visual identifier for the bicycling system. §2D.50(34), §2D.50(39), §2D.50(40)



Scale: 1/2" = 1'

STREET SIGN TOPPER

Montgomery County Bikeways Wayfinding Sign Family

Route Marker - Pavement Markings

- Text and graphic details reduced to maximize legibility.
- Removing “Bikeways” from right example would be more DOT acceptable.

ROUTE MARKER PAVEMENT MARKING

Supporting Provision in the MUTCD

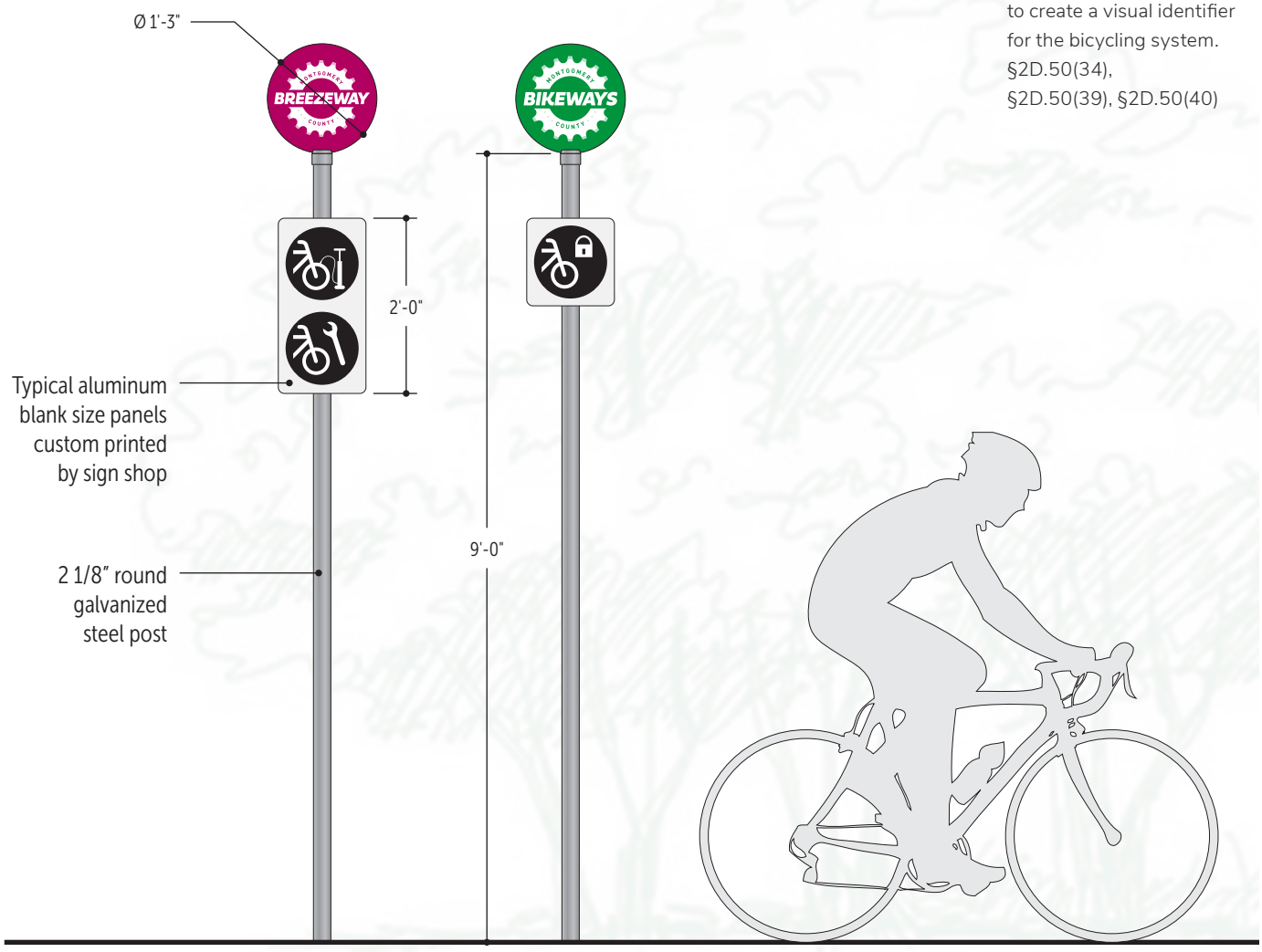
- **Pavement Markings:** While the shared lane marking is currently the only FHWA (section 9C.07) approved pavement marking shown, cities have experimented with the other options.
- MCDOT has previously used temporary pavement markings to support the county’s Shared Streets Initiative.

→ Montgomery County Bikeways Wayfinding Sign Family

Amenity/Service Destination

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)
- **Sign toppers:** It is possible to provide a sign topper as an identification enhancement with a shape, color, and/or pictograph to create a visual identifier for the bicycling system. §2D.50(34), §2D.50(39), §2D.50(40)



Scale: 1/2" = 1'

AMENITY/SERVICE IDENTIFICATION

→ Montgomery County Bikeways Wayfinding Sign Family

Regulatory

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)
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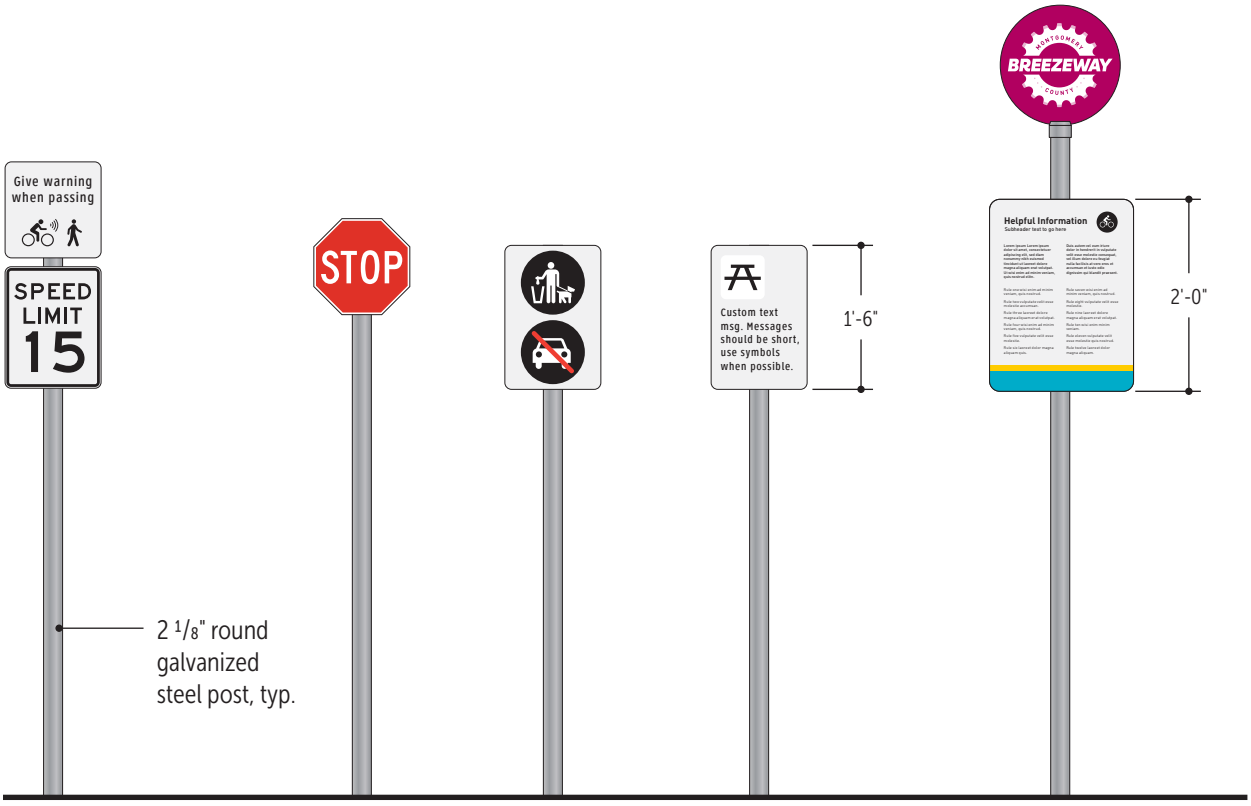


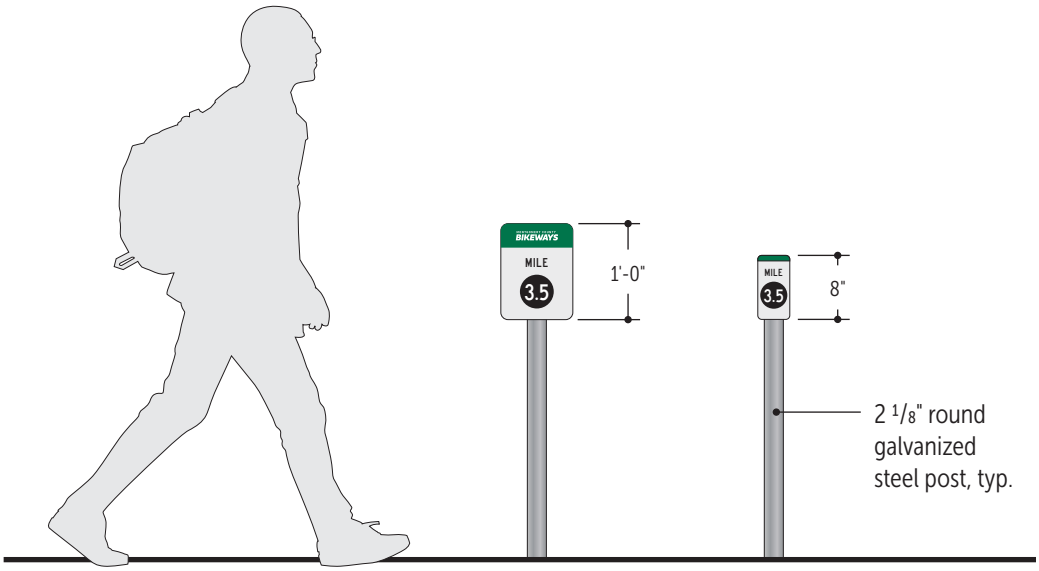
REGULATORY

→ Montgomery County Bikeways Wayfinding Sign Family

Mile Marker

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)



Scale: 1/2" = 1'

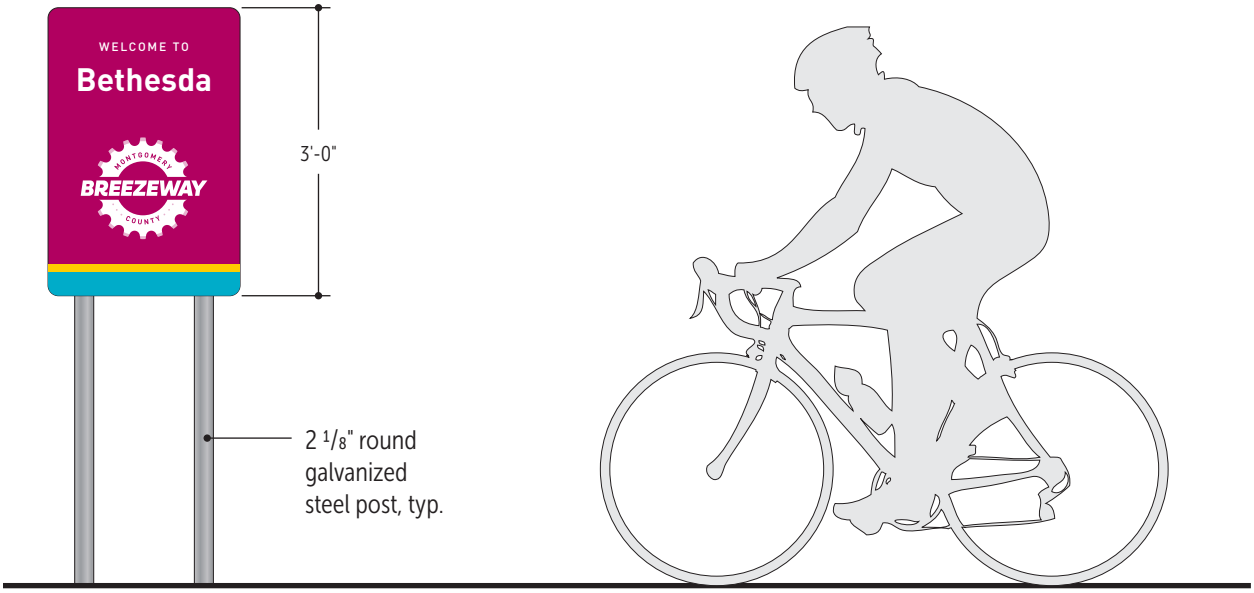
MILE MARKER

→ Montgomery County Bikeways Wayfinding Sign Family

Jurisdiction Identification

Supporting Provision in the MUTCD

- **Cranberry Color:** This color is acceptable per §2D.50(17), §2D.50(18)



JURISDICTION IDENTIFICATION