

# WAYFINDING SIGN CONCEPTS AND IMPLEMENTATION GUIDE

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For West Michigan Trails and Bikeways



SEPTEMBER 2023

# Table of Contents

Acknowledgements .....	4
Introduction .....	6
Background .....	6
Benefits of a Unified Trail Wayfinding System .....	6
Best Practices for Wayfinding Systems .....	6
Process.....	13
Peer Network Review .....	13
Existing Conditions .....	13
Community and Stakeholder Engagement .....	13
Sign Family, Placement, and Planning Guidance .....	18
Sign Family .....	18
Sign Placement and Planning Guidance .....	20
Typical Sign Placement Scenarios .....	27
Destination Selection.....	38
Location Identification for EMS on Trails.....	40
Sign Design Standards .....	43
General Graphic Guidance.....	43
Sign Drawings .....	44
Implementation.....	56
Sign Deployment Plans.....	56
Horizontal and Vertical Clearance .....	57
Maintenance Guidance.....	58
Appendices.....	60
Appendix A: Grand Region Wayfinding Best Practices Memo .....	60
Appendix B: Existing Standards and Guidelines Memo .....	60

Appendix C: Visual Preference Survey Summary ..... 60

Appendix D: Functional Field Testing Survey Summary ..... 60

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# INTRODUCTION



# Introduction

West Michigan has over 850 miles of non-motorized trails that connect rural, suburban, and urban communities as well as hundreds of miles of on-road infrastructure. This extensive trail system is widely used and has many benefits related to health, transportation, conservation, economic revitalization, and community identity. The 2017 MDOT Grand Region *Regional Nonmotorized Plan* recognized that consistent wayfinding throughout the region would help residents and visitors alike navigate the system and direct users to their destinations, and West Michigan Trails & Greenways Coalition (West Michigan Trails) organized regional stakeholders to accomplish this goal.

## Background

In Spring of 2022, West Michigan Trails along with its partners began the process of developing a cohesive and seamless wayfinding system that will promote trail use, integrate local, regional, state, and national trail names and branding, and provide a template for local trail and bikeway managers to follow. The following guide documents the planning process, final sign design, and implementation guidance for regional stakeholders as well as local jurisdictions within West Michigan.

## Benefits of a Unified Trail Wayfinding System

Having a connected, visually consistent, and attractive wayfinding and regulatory signage framework across the West Michigan region will provide many benefits:

- Welcome new trail users by clearly explaining the allowed trail uses and notifying them of trail rules and regulations,
- Encourage people to bicycle and walk by highlighting how easy it is to travel via trail,
- Guide users through complicated or confusing transitions between dedicated trails and on-street bike routes,
- Create awareness of the larger trail network,
- Give trail users the confidence to explore farther than they ordinarily would,
- Promote key destinations that may be slightly off the trail, and
- Give first responders and trail users the tools to identify the location of an emergency.

## Best Practices for Wayfinding Systems

The project team reviewed the principles and best practices for good wayfinding systems and provided examples of wayfinding sign systems in peer networks.

## Core Wayfinding Principles

To create a successful wayfinding system, it is helpful to keep several core guiding principles in mind. These principles can help focus the messaging and provide a framework when difficult decisions need to be made:

### Principle 1: Keep it Simple

Easy to use and intuitive wayfinding helps users navigate and understand where they are in relation to nearby landmarks and destinations. Information should be clear, legible, and simple enough to be understood by a wide audience. Information on each sign should be kept to a minimum to avoid confusion and facilitate understanding without overwhelming the user. Wayfinding should also be placed efficiently to minimize sign clutter.

### Principle 2: Be Consistent

Wayfinding signs should be predictable and consistent. When information is consistent, it can be recognized and quickly understood. Wayfinding signs should have common styles, fonts, colors, materials, and placement throughout the region to promote continuity and help users quickly understand and interpret messages. Sign frequency and placement should be consistent, so users know what to expect.

### Principle 3: Design for the Inexperienced User

Wayfinding should be designed for people who are not experienced bicyclists and who prefer low-stress bicycling conditions, and for people who have not been on the trail or route before, whether walking, biking, or using a mobility device (Figure 1). This may include:

- People new to bicycling or people who only bicycle several times a year
- Those unfamiliar with the trail or area through which they are traveling
- Visitors and tourists

### Principle 4: Be Inclusive

Signs that consider the needs of people with vision disabilities or people with limited English benefit everyone by ensuring large fonts that can be read from far away, strong contrasts between colors that make it easy to read, and the use of icons and graphics that aid in instant recognition. Adding additional languages is recommended for trailhead signs where it is known that languages other than English are commonly spoken in the community or where there are popular destinations.

## Theory

The basic process of wayfinding for all modes of travel typically involves four steps (Figure 2):

1. **Orientation:** determining one's location relative to nearby landmarks and the destination. To improve orientation, wayfinding can rely on landmarks, which provide strong orientation cues. Maps can also help in the orientation step.



*Figure 1: The intended user of wayfinding signs should be the casual bicycle rider.*

2. **Decision Making:** choosing a route to get to the destination. To aid in route decision making, minimize the number of destination choices and provide signs or prompts at decision points. Maps can help improve route decision making.
3. **Confirmation (Route Monitoring):** confirming the chosen route will lead to the destination. “Breadcrumbs”—visual cues highlighting the path taken—can aid route monitoring, particularly to help people avoid backtracking to check if they are on the right path.
4. **Destination Recognition:** recognizing the destination. To aid people in destination recognition, give destinations clear and consistent markers, such as large gateway signs announcing each destination name.<sup>1</sup>



Figure 2: Examples of signs for each of the four wayfinding steps.

### AASHTO Guide for the Development of Bike Facilities: Relevant Guidance

The American Association of State Highway Transportation Officials (AASHTO) publishes the *Guide for the Development of Bicycle Facilities*, which provides guidance on the physical infrastructure needed to support bicycling. AASHTO defers to Part 9 of the *Manual on Uniform Traffic Control Devices* (MUTCD) for basic guidelines related to the design of bicycle wayfinding systems. Additional guidance regarding wayfinding included in AASHTO is below:

Municipalities may use wayfinding to:

- Invite new bicyclists and encourage people biking to explore new destinations.
- Supplement other bicycle infrastructure improvements, as signage alone does not improve safety, but can provide a rider peace of mind by knowing they are still on the correct route.
- Designate continuous routes composed of a variety of facility types and settings.

<sup>1</sup> Lidwell, Holden and Butler, *Universal Principles of Design* (2003)



- Provide connectivity between two or more major bicycle facilities.
- Provide guidance in a gap between existing sections of a bikeway.

AASHTO additionally provides the following placement guidance:

- Place road/path name signs at all crossings to help users track their locations.
- Place reference location signs (mile markers) along routes to assist users in estimating their progress and help to locate emergency incidents and maintenance work.
- Place signs 2 feet to 6 feet from the near edge of the travel way.
- Install signage such that the lowest end of a pole-mounted sign is 4 feet to 5 feet above the ground.

### Manual on Uniform Traffic Control Devices (MUTCD) Guidelines: Relevant Guidance

The [Manual on Uniform Traffic Control Devices](#) (MUTCD) published by the Federal Highway Administration (FHWA) is the national standard for all the design and implementation of all traffic signs, signals, and pavement markings on any roadway or bikeway open to public travel. Having consistent sign and traffic control devices across the United States results in safer, more efficient travel. [Part 9](#) of the MUTCD establishes standards and guidance for traffic control of bicycle facilities, including:

- Regulatory Signs, such as stop signs and bike lane signs.
- Warning Signs, such as stop ahead or narrow bridge signs.
- Bicycle Guide Signs, such as Bicycle Route signs and auxiliary plaques.

While MUTCD is a national standard, the [Part 9 Traffic Control for Bicycle Facilities Michigan Manual on Uniform Traffic Control Device \(MMUTCD\)](#) is similar to MUTCD in regards to wayfinding.

### Standards for Bicycle Guide Signs in Part 9 of the MUTCD:

Signs should list no more than three lines of destinations.

A straight-ahead location should always be placed in the top slot of a sign, followed by left-turn destinations. Right-turn destinations are listed last. If two destinations are in the same direction, list the closer destination first. Position arrows for glance recognition: put straight and left arrows to the left of the destination name and right arrows to the right of the destination name.

### Placement

Place bicycle guide signs so they do not distract from signs providing regulatory information to people driving. If the facility is two-way, provide signs displaying wayfinding guidance for and facing both directions of traffic. On curved alignments, determine the angle of placement by the direction of approaching users rather than by the roadway edge at the point where the sign is located.

### MUTCD Community Wayfinding

The MUTCD also has a section on Community Wayfinding which provides standards and guidance for customized, branded wayfinding signs, which may be used on roads that are not freeways. Section 2D.50 of the MUTCD states:

*Community wayfinding guide signs are part of a coordinated and continuous system of signs that direct tourists and other road users to key civic, cultural, visitor, and recreational attractions and other destinations within a city or a local urbanized or downtown area.*

*Community wayfinding guide signs are a type of destination guide sign for conventional roads with a common color and/or identification enhancement marker for destinations within an overall wayfinding guide sign plan for an area.*

Though the Community Wayfinding section only currently applies to roadways, some communities interpret this section as providing guidance for customizing their bicycle wayfinding signs to include specific branding and flexibility in color and design, either as an element of one or more unique routes, or throughout their entire bicycle wayfinding system. Figure 3 illustrates the features of a community wayfinding sign. The background color of the sign may be customized but cannot use standard MUTCD colors that convey specific meanings to roadway users, such as red indicating stop. Prohibited standard colors include red, orange, yellow, purple, fluorescent yellow-green, and fluorescent pink. Enhancement markers may be any color, but the MUTCD recommends that enhancement markers occupy no more than 20 percent of the sign face on the top or side of the sign. Other features of the sign legend, such as the directional arrows, fonts, and layout are as dictated by the MUTCD.



Figure 3: MUTCD Chapter 2D includes these examples of Community Wayfinding Signs

## Design Flexibility for Shared Use Paths and Trails

Though the MUTCD states that its standards apply to all traffic control devices on bikeways, in practice, wayfinding signage systems on paths usually do not follow strict MUTCD design standards. There are two main reasons for this:

- 1) The funding agencies for wayfinding systems on paths often do not have to legally adhere to MUTCD standards, and therefore may not be aware of these standards. Frequently, funds for path wayfinding come from State Departments of Natural Resources, local or regional parks agencies, or privately-raised funds. If federal funds are used for wayfinding, then MUTCD standards do apply.
- 2) On paths and trails, many users are pedestrians, and some wayfinding systems are therefore designed exclusively for pedestrians. The MUTCD Part 9 does not cover pedestrian traffic control for paths. The MUTCD notes that pedestrian wayfinding signs may differ from bicycle wayfinding, such as by using smaller fonts and not including retroreflectivity.

Figure 4 shows a range of wayfinding signage from following MUTCD rigidly to not following the MUTCD.



Figure 4: Range of sign examples from Rigid MUTCD to Non-MUTCD.

# PROCESS



## Process

The design developed for the West Michigan Wayfinding Sign Concepts and Implementation Guide followed a thorough process that included:

- A review of peer trail networks wayfinding signs,
- Consideration of wayfinding best practices and state and national design guidelines,
- Examining existing signs and branding,
- Determining the sign types needed and designing a sign family,
- Broad stakeholder input from both trail managers and the general public,
- Developing implementation and design guidance, and
- Testing the sign plan with prototype corridor sign plans.

The following sections provide a summary of the analyses and engagement efforts that helped inform the sign concept designs.

### Peer Network Review

The project team reviewed several peer networks including: Ingham County Trail System, Great Lake to Lake Trails, Bridge to Bay, Traverse City Area Recreation Trail, and Northwest Illinois Trail. Summaries of each system can be found in **Appendix A: Grand Region Wayfinding Best Practices Memo**.

### Existing Conditions

The project team reviewed the following wayfinding systems within West Michigan including: Downtown Grand Rapids, City of Muskegon, Grand River Greenway, and Kent County. In addition, the following state and federal guidelines and standards were reviewed: MMUTCD Bike Path Wayfinding Signage Standards, Northeast Michigan Council of Governments Trail Wayfinding Signage, Michigan Motorized Trail Maintenance and Signing Handbook, and US Bicycle Route 20 and 35, which each cross through West Michigan. A summary of these wayfinding systems can be found in **Appendix B: Existing Standards and Guidelines Memo**.

The following common themes were identified in the review of the existing signs and branding standards within West Michigan:

- Aluminum sign panels
- Wooden and steel posts or accents
- Most signs use Blue, green, and/or brown colors
- Square shaped sign panels with rounded edges

### Community and Stakeholder Engagement

West Michigan's bikeway network covers a large region, so extensive community engagement helped build consensus and excitement for trail wayfinding among stakeholders, trail operators, and the general public. Also, by involving trails stakeholders from

across the region, the engagement ensured that the sign system would be simple and implementable by a wide range of agencies. The project team worked with a stakeholder steering committee, held a special session with trail operations staff, and sought input from the general public.

### Stakeholder Steering Committee Meetings

The stakeholder steering committee consisted of West Michigan Trails, Michigan Department of Transportation (MDOT), Michigan Department of Natural Resources, and numerous townships, city, parks, and health departments within the Michigan Grand Region as well as various community partners. All stakeholder steering committee members are listed in the Acknowledgments section. The stakeholder steering committee met in July 2022, October 2022, January 2023, and March 2023.

- **Meeting 1** was held in July 2022 and kicked off the planning project. The first meeting introduced wayfinding, existing standards and guidelines, and provided background on existing wayfinding within the region. This meeting included a breakout session where committee members discussed likes and dislikes regarding existing wayfinding signage throughout Michigan.
- **Meeting 2** was held in October 2022 and covered project goals, a summary of the visual preference survey, functional field testing installation, and the three sign family concepts. This meeting allowed the committee to provide feedback on the first draft of sign family concepts. The committee's feedback allowed the project team to narrow the three sign family concepts down to a final draft sign family concept.
- **Meeting 3** was held in January 2023 and consisted of reviewing the sign preference survey results that took place during the functional field testing, choosing a final sign family concept, and reviewing the draft guidelines, specifically the scenario placement guidelines. The committee provided direction to refine the final sign family concept.
- **Meeting 4** was held in April 2023 and consisted of reviewing the draft Wayfinding Sign Concepts and Implementation Guide. The committee provided comments to be incorporated in the final Guide.

### Operations Staff Meeting

In August 2022, an operations staff meeting was held to better understand the operations side of trail signs and how the public interacts with them.

Key takeaways included using typical sign panel sizes, keeping signs low-maintenance, and providing an easily updatable design. EMS staff stated it was important to have mile numbers brightly colored and large at the top of mile markers, so that users could easily identify where they were on the trail. In addition, having addresses on trailheads would be helpful for EMS staff.

### Visual Preference Survey

During the fall of 2022, the project team created an online survey with the goal of identifying the public's likes and dislikes relating to color, fonts, and themes in relation to signs. The survey results guided the style and design for the wayfinding sign concepts. The



survey had a total of 15 questions and received 167 unique responses. A complete summary of the survey results can be found in **Appendix C: Visual Preference Survey Summary**.

Questions consisted of asking respondents to pick words that describe West Michigan's visual impression for the wayfinding system, choosing their favorite patterns, color schemes, sign materials and fonts. Respondents favored the following visual themes and colors:

- Natural and organic imagery,
- Cool and fresh colors (blues and greens) and natural colors (greens and browns),
- Porcelain (enamel materials) and wood rough/polished materials, and
- Standard sign fonts and slab serif fonts.

There were two questions where respondents were asked their opinions on existing wayfinding systems throughout West Michigan and Michigan. Respondents preferred the Northeast Michigan Council of Government and City of Grand Rapids wayfinding signage families the most for West Michigan wayfinding systems. Regarding Michigan wayfinding signage systems, respondents preferred the Bridge to Bay sign family and the Traverse Area Recreation Trail sign systems. These sign families were simple and included blues, greens, and browns, designs and colors that respondents had identified their preference for earlier.

### Functional Field Testing

In October 2022, the project team began the functional field test with the goal of showing varying types of branding, mapping, content, color schemes, and designs in order to further understand the public's likes and dislikes. Signs were installed at/along six locations: River Edges Trail, Millennium Park, White Pine Trail, North Bank Trail, Heritage Landing, and Middleville (Figure 6). The project team installed two sign types (directional sign and mile marker sign) from the three sign concepts for a total of six signs at each location.

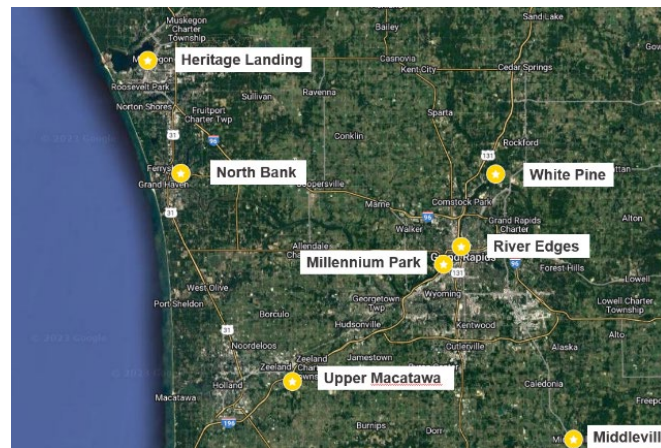


Figure 6: Functional Field Testing Locations



Figure 6: Installed Example Signs at Heritages Landing

The project team developed a second online survey to ensure that the public was able to provide feedback and voice their preference on the various sign concepts. In addition to the six sign types that were installed, each location had at least one sign with the survey QR code that the public could scan to access the survey. The survey was also promoted on social network platforms as well so those who might not have seen the signs in person could also voice their opinions. The survey received 823 unique completed responses. Overall, respondents seemed to favor larger fonts and larger clear icons. When respondents were asked to pick their favorite sign family overall, 46.2 percent of respondents chose option two and 43.5 percent of respondents chose option one. A complete summary of the survey results can be found in **Appendix D: Functional Field Testing Survey Summary**.

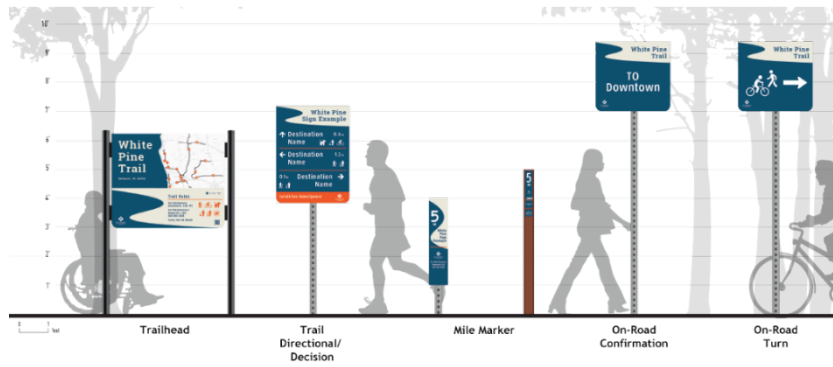


Figure 9: Sign Family Concept (Option 1)



Figure 9: Sign Family Concept (Option 2)

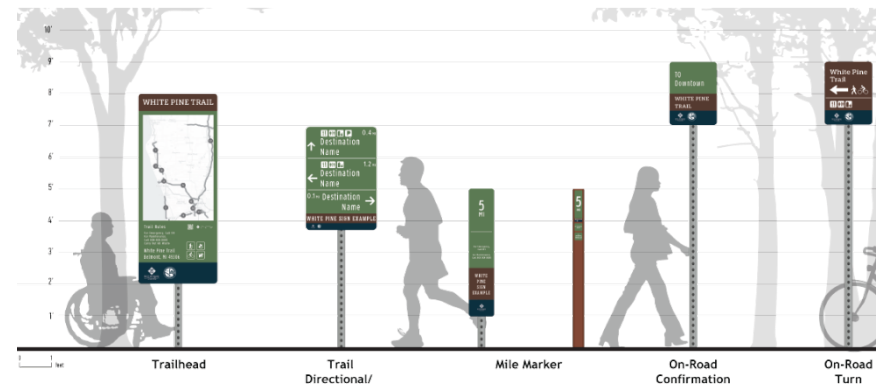


Figure 9: Sign Family Concept (Option 3)



# SIGN FAMILY, PLACEMENT, AND PLANNING GUIDANCE



# Sign Family, Placement, and Planning Guidance

## Sign Family

The sign family (Figure 10) includes both trail signs (trailhead, directional, trail ends, mile markers) and on-road signs (vehicular trailhead, confirmation, turn, directional).

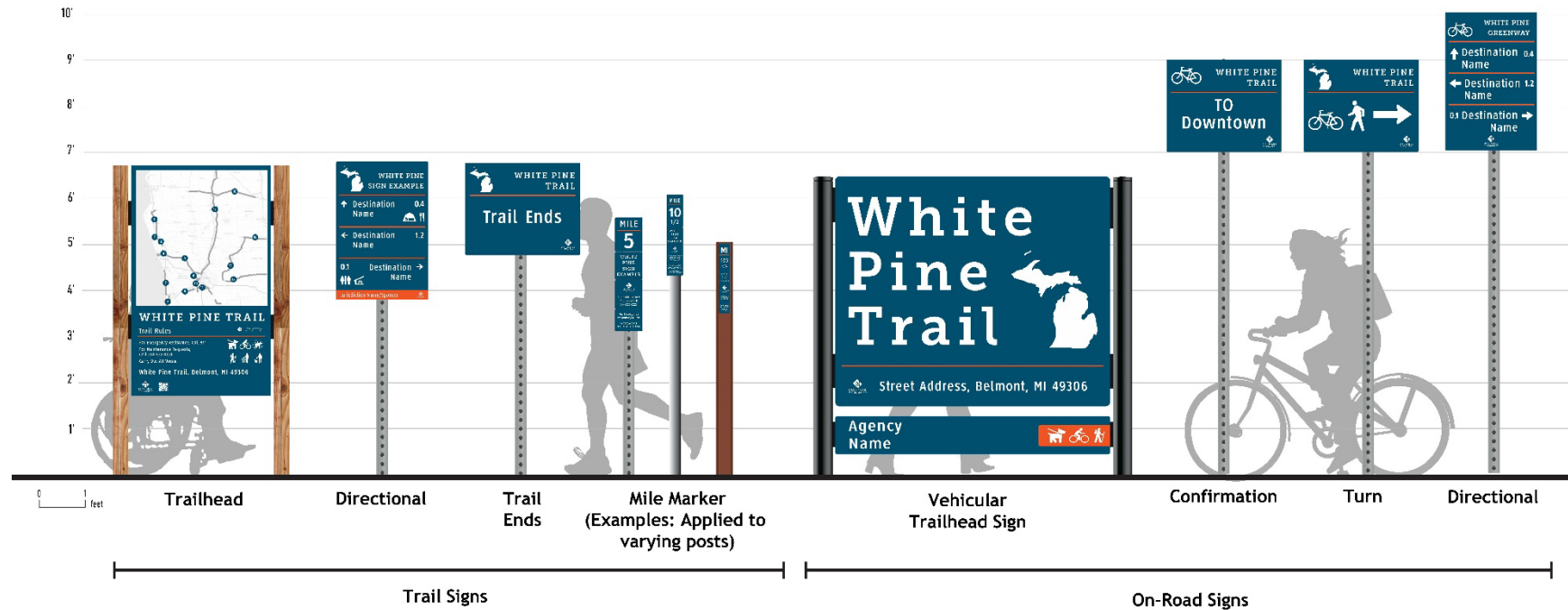


Figure 10: West Michigan Trails Wayfinding Sign Family

In addition, a variety of modular panels that can be added to other trails in the region are available for local jurisdictions to add to their existing signs to notify a trail user they are on a regional trail (Figure 11).

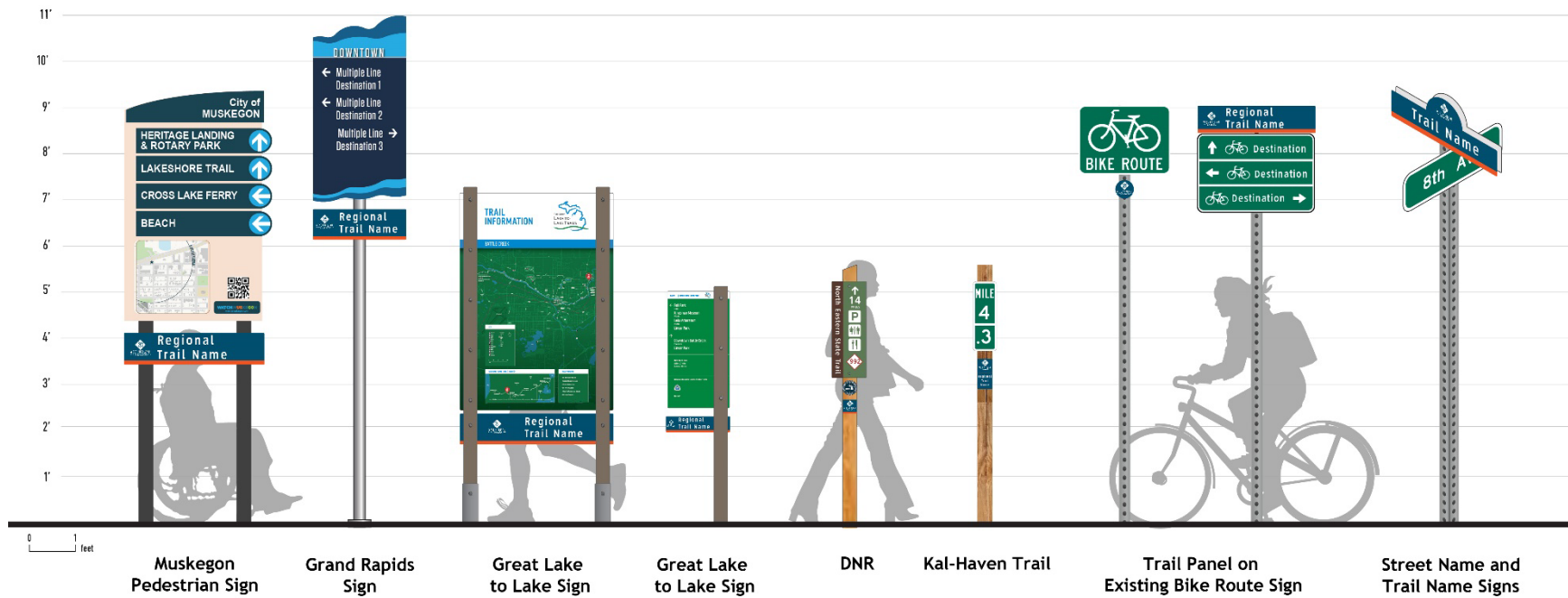


Figure 11: West Michigan Modular Regional Trail Sign Panels on Local Wayfinding Signs

## Sign Placement and Planning Guidance

Sign placement plays a key role in the effectiveness of a wayfinding system. Users depend on consistent placement of wayfinding signs to be able to learn how to use the wayfinding system.

### General Placement and Planning Guidance for All Signs

#### *Right-Side Placement*

All signs should be placed on the right side of the direction of travel. Signs on trails may be placed on the left side due to space, signage co-locating, or other constraints if necessary.

#### *Space Signs Regularly*

Signage frequency should not allow for gaps in wayfinding elements longer than a half-mile in urban environments, or quarter-mile in rural environments. This spacing can be achieved primarily through the placement of Directional, Street Name/Trail Name, and Mile Marker signs on a route.

#### *Use Existing Posts Where Appropriate*

Wayfinding signs can be mounted on existing posts for parking restriction signs, bike lane signs, or utility poles (in some jurisdictions), but should consider number of signs and sign clutter when determining if using an existing sign post is appropriate. Do not mount wayfinding signs on the same post as STOP signs, SPEED LIMIT signs, or traffic signals.

To limit the number of new poles, multiple signs can be attached to a single pole. Most commonly signs are posted in opposite directions (Figure 12), but 45-degree angles on co-posted signs are also permitted. Do not post multiple signs on one pole in the same direction that serve the same purpose.

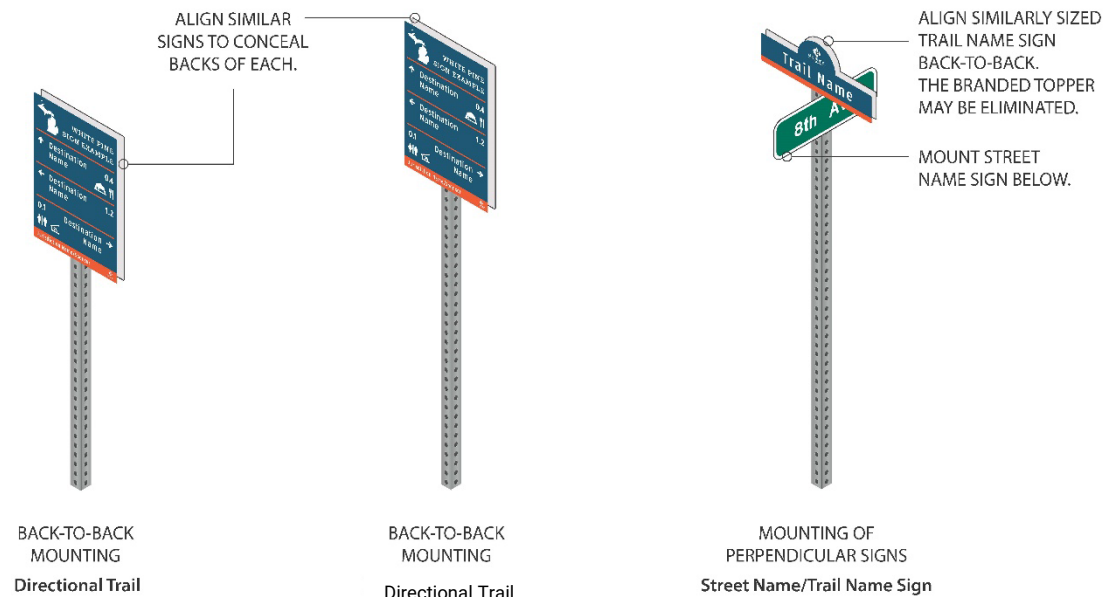


Figure 12: Mounting Options

## Trailhead

Trailhead signs will vary by jurisdiction, but should include the following content at a minimum: maps, routes, icons indicating amenities, rules and regulations, trail etiquette, general safety tips, contact information and address for emergencies and maintenance, and sponsorship acknowledgements. Supplemental content could include additional maps, area history, interpretive information, or welcome messaging in another language other than English.

### Placement

- Use a trailhead sign at trailheads and major trail access points.
- The trailhead sign should be placed far enough off the trail so that people stopping to read the map will not block the trail. In addition, trailheads should be ADA accessible, such as including installation of a concrete pad.
- Use a “heads up” orientation for any maps on trailhead signs so the map is oriented in the direction that the trail user is facing, with a large north arrow.

### Other Guidelines

- Trailheads by jurisdiction and can include multiple panels (Figure 13).
- Adding additional languages is recommended for trailhead signs where it is known that languages other than English are commonly spoken in the community. If additional languages are provided on a trailhead sign, the same additional languages should be provided on the corresponding trail end signs.

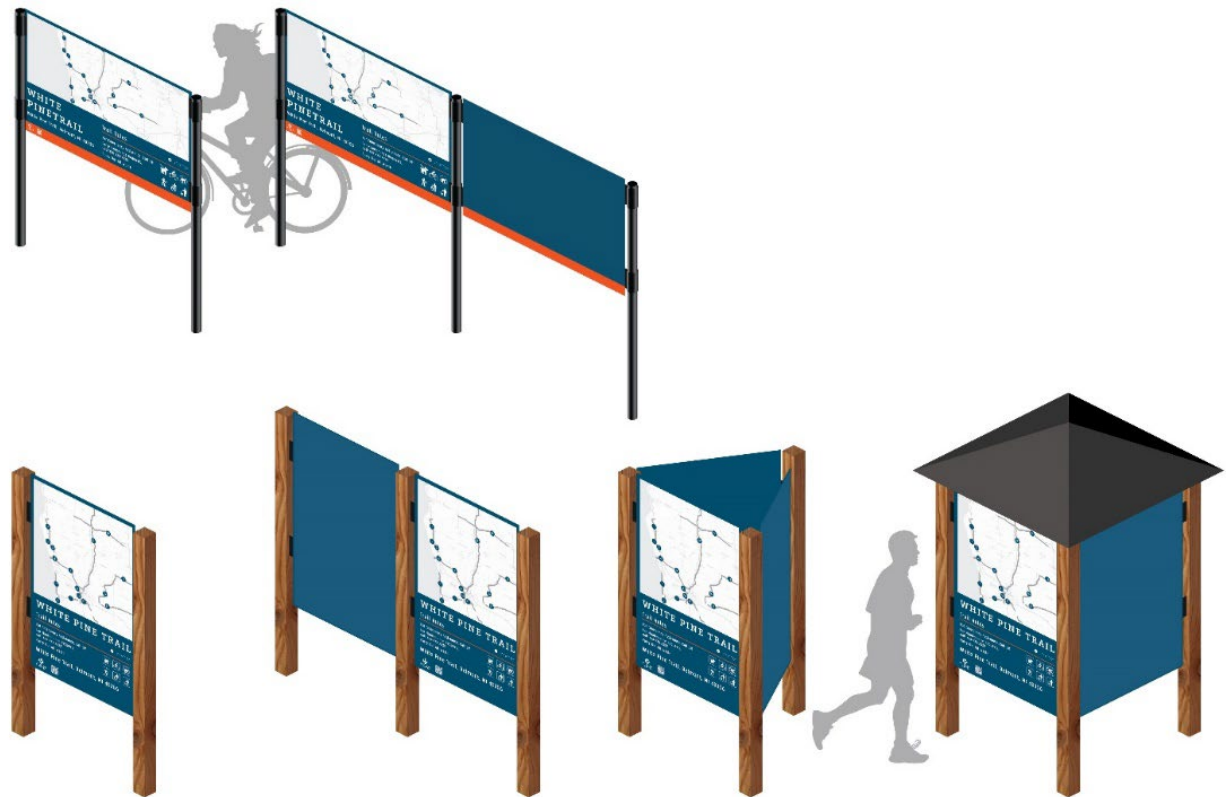


Figure 13: Trailhead

## Directional

Directional signs assist at route decision points as they provide key destinations, allowing users to make the decision on which route to take.

### *Placement (On Trails)*

- Use a directional sign at trail spurs where destinations are accessible from the trail spur.
- Placed 5' to 25' prior to an intersection with a road.
- Placed at the start of a route.
- Placed at the intersection of two or more trails.
- Placed at the edge of cities and villages.
- Should include the name of the trail, along with mileage to the next upcoming destinations, trails, or services.

### *Placement (On Road)*

- Placed 25' to 75' in advance of an intersection
  - » The distance may be greater (or less) depending on sight lines, slope, and the number of lanes a bicyclist is expected to cross to make a turn.

### *Other Guidelines (On Trail & On Road)*

- Directional/decision signs should include the name of the trail and a maximum of three destinations.
- Each destination line should include an arrow (left, right, straight), the mileage.
- Icons indicating what kinds of amenities are present at the destination should be included only on trail signs.
- The order of destinations on directional/decision signs should be listed from top to bottom as follows:
  - » Straight destinations
  - » Left-turn destinations
  - » Right-turn destinations
- The bicyclist icon should be included on on-road signs, to indicate to people driving motor vehicles that the sign is for bicycle wayfinding.



Figure 14: Trail Directional and On-Road Directional



## Turn

Turn signs inform trail users that the trail or route is turning where it may not be obvious.

### *Placement (On Road)*

- Placed 25' to 75' in advance of a turn in an on-road route
  - » The distance may be greater (or less) depending on sight lines, slope, and the number of lanes a bicyclist is expected to cross to make a turn

### *Other Guidelines (On Trail & On Road)*

- Signs should include the name of the trail or destination with a large arrow pointing in the correct direction. The arrow is an MUTCD-style arrow and should be on the left side of the sign for left turns, and the right side of the sign for right turns.

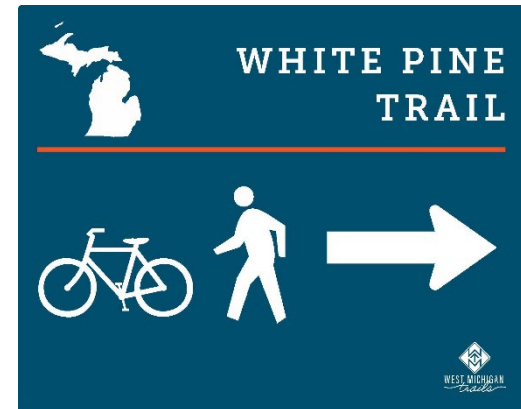


Figure 15: Turn

## Confirmation

Confirmation signs assure users they are still on a certain route/trail/path. Confirmation signs provide both the name of the trail and the destination that the trail user is heading towards. Directional signs can also be used for confirmation signage, and on trails, mile markers can also serve the same purpose.

### *Placement (On Road)*

- Placed after a turn in an on-road route, or after a trail transitions from a trail to a street.
- Confirmation signs can also confirm a route if there is not an upcoming turn or directional sign and should be evaluated if necessary based on context.

### *Other Guidelines (On Road)*

- Confirmation Signs should, at minimum, include the name of the trail and a bicycle sign to indicate the guidance is for bicyclists.
- The "TO Destination" should be a Level 1 destination in the destination hierarchy (see Destination Selection), and the trail should provide a convenient and direct route to the destination.
- If there is not a clear destination to include on the signs, the words "BIKE ROUTE" may be used instead of the "TO Destination"



Figure 16: Confirmation

## Street Name/Trail Name Signs

Street Name/Trail signs raise awareness of the trail name; provide confirmation that the user is on the correct route; and the name of the trail or street so they can better understand where they are in relation to the street network. They should be located at all at-grade intersections along a trail. For road users to distinguish that they are on a trail or route, trail name signs should differ from street sign design, such as using the trail color scheme, or adding a bicycle or pedestrian to the sign.

### *Placement (On Trail & On Road)*

- Placed at intersections, such as where a trail crosses a road or an on-road route intersection
  - » For wide and/or busy streets, signs should be placed on both sides of the street
  - » Residential and rural areas, at least one sign should be placed at an intersection
- Street Name/Trail Name signs should be placed within 10' to 12' of the intersection with the street or as close as practical
- Trail Name signs cannot be used on roads under MDOT jurisdiction.

### *Other Guidelines (On Trail & On Road)*

- Street Name/Trail Name signs may be placed above regulatory YIELD or STOP signs or above a Bicycle/Pedestrian Crossing warning sign.
- Street Name/Trail Name sign panels should be posted facing parallel to the trail or street name that they name.
- To avoid signs blocking one another, group together all sign panels that are facing the same direction.

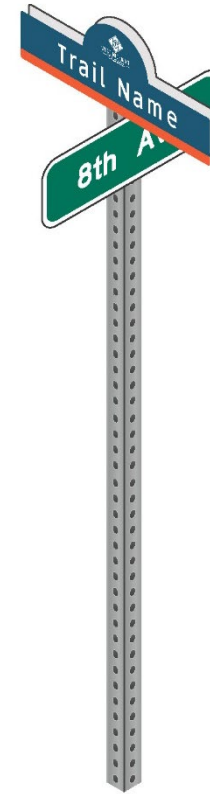


Figure 17: Street Name/Trail Name



## Trail Ends

Trail Ends signs provide information to a user that the trail has ended.

### *Placement (On Trails)*

- Placed at the end of a route.

## Vehicular Trailhead

Vehicular trailheads define the entry and mark important access points to a trail and are usually oriented towards people driving cars.

### *Placement*

- At trailhead parking lots, for people arriving by motor vehicles.
- At important access points to trails, parks, and other destinations.

### *Other Guidelines*

- Signs should be quite large, retroreflective or illuminated with sufficient lighting, and placed in a highly-visible spot where they can be seen by passing motorists, as well as bicyclists.



Figure 18: Trail Ends



Figure 19: Vehicular Trailhead

## Mile Marker

Mile Marker signs raise awareness of the trail name; give trail users a tool to track their distance and location and help with maintenance crews and emergency responders. Mile Marker signs should only be placed on trails, particularly along trails that extend into rural areas with few crossings. Mile Marker signs should include the trail name, mile, emergency response phone number, and maintenance phone number. Mile Marker signs should count up in one direction. The most important criteria in determining where to set the zero point is that it is a logical system that is easily understood by both maintenance crews and emergency-response crews. See the **Location Identification for EMS on Trails** section for more information on mile marker numbering.

### Placement (On Trail Only)

- Within villages and cities, Mile Marker signs should be placed every ½ mile
- Within rural areas, Mile Marker signs should be placed every 1/4 mile

### Other Guidelines (On Trail Only)

- Sign and post should be a minimum height of 5 feet (measured from bottom of the sign to the height of the trail) (Michigan Motorized Trail Maintenance and Signing Handbook).
- Mile markers may not be placed along roadways.

## Modular Regional Trail Sign Panels

Regional trail sign panels provide confirmation that users are on a certain route/trail/path. For long, regional trails, individual jurisdictions along the trail may have different styles of wayfinding signage. Adding a modular regional trail sign panel to an existing wayfinding sign is a way to communicate to users that despite the differences in sign appearance, the user is still on their desired route. These panels are also useful in cases where the section of a regional trail that goes through a city or other jurisdiction is known by other names.

### Placement

- Placed on existing wayfinding signs on the trail or on-road route.

### Other Guidelines

- Regional trail sign panels should include the regional trail name.
- On trails, regional trail sign panels may be placed under existing directional signs, trail heads, or mile markers.

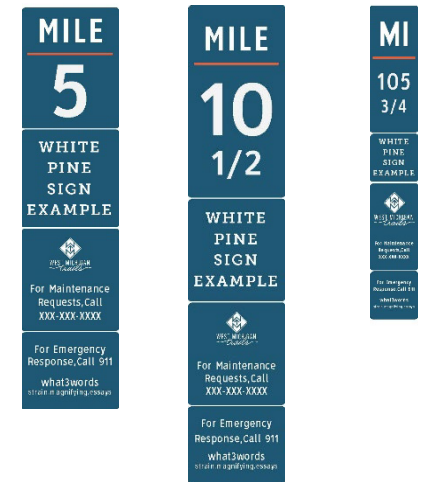


Figure 20: Mile Marker (various sign posts)



Figure 21: Modular Regional Trail Sign Panels

- On roads, regional trail sign panels may be placed under existing bike route signs or above existing directional signs.
- To avoid signs blocking one another, group together all sign panels that are facing the same direction.

### Regulatory Signs

Regulatory signs do not serve a wayfinding purpose, but they instruct users on how to navigate the existing roadway conditions.

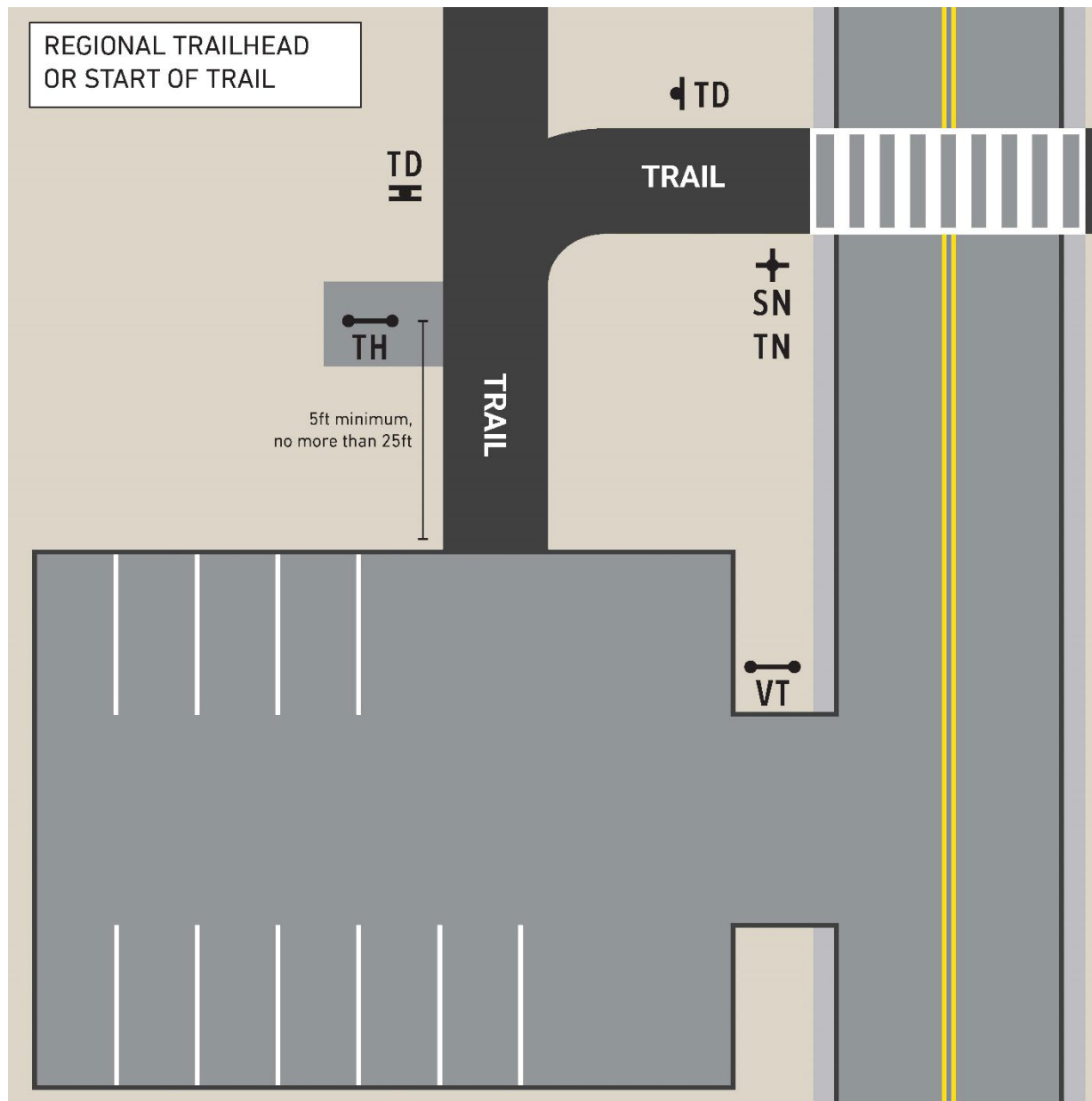
Regulatory signs include STOP signs, YIELD signs, SPEED LIMIT signs, ONE WAY signs, and many more. Some regulatory signs may also prohibit or regulate parking, stopping, or certain turning movements. Refer to the *Manual on Uniform Traffic Control Devices* (2009) for guidance and standards concerning the placement and assembly of regulatory signs, as well as warning signs and guide signs.

### Placement

- While signs should generally be located on the right side of the roadway, signs may be located on both the right and left sides of the roadway if additional emphasis is necessary.

### Typical Sign Placement Scenarios

The street sign placement scenarios on the following pages are meant to display “typical” scenarios in the West Michigan region that will assist municipalities when installing signage. Each scenario includes the location of where signs should be placed. Distances are provided in some cases. The accompanying image of the sign and the abbreviation are included to the right of the scenario.



#### VT | VEHICULAR TRAILHEAD



#### TH | TRAILHEAD

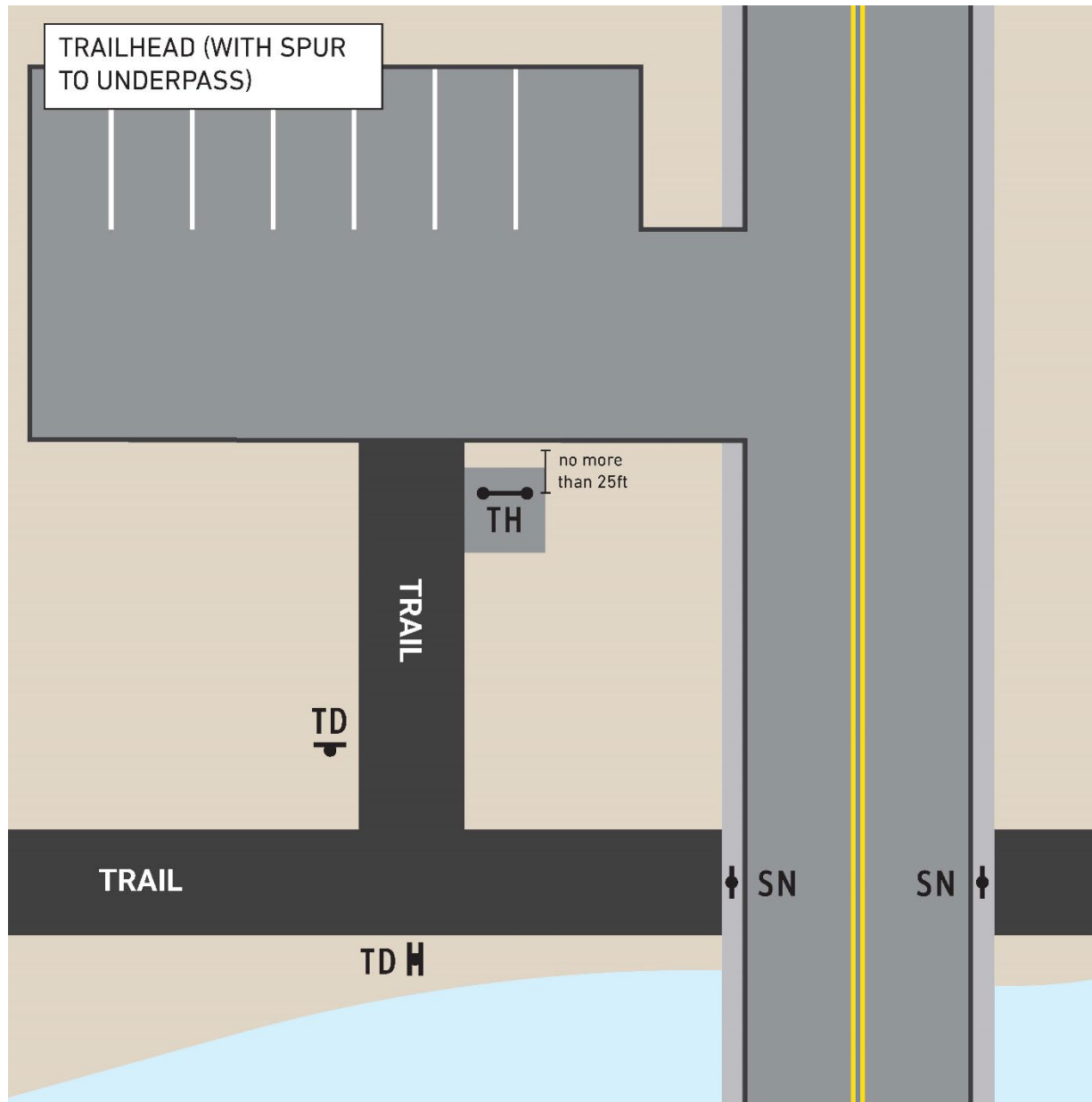


#### TD | TRAIL DIRECTIONAL

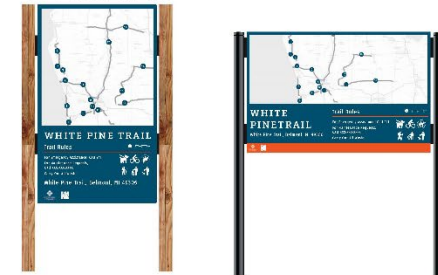


#### SN | STREET NAME TN | TRAIL NAME





#### TH | TRAILHEAD

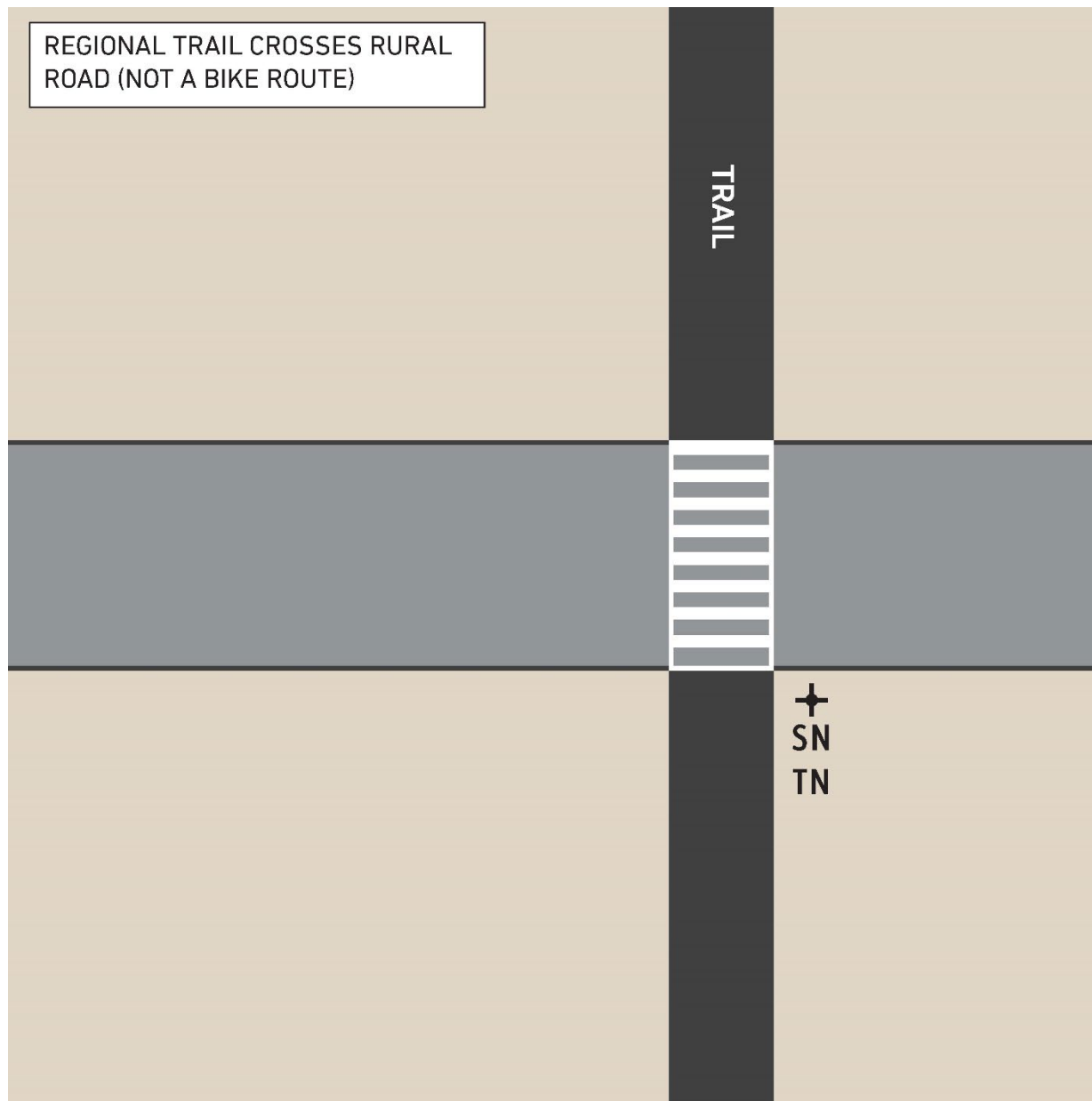


#### TD | TRAIL DIRECTIONAL



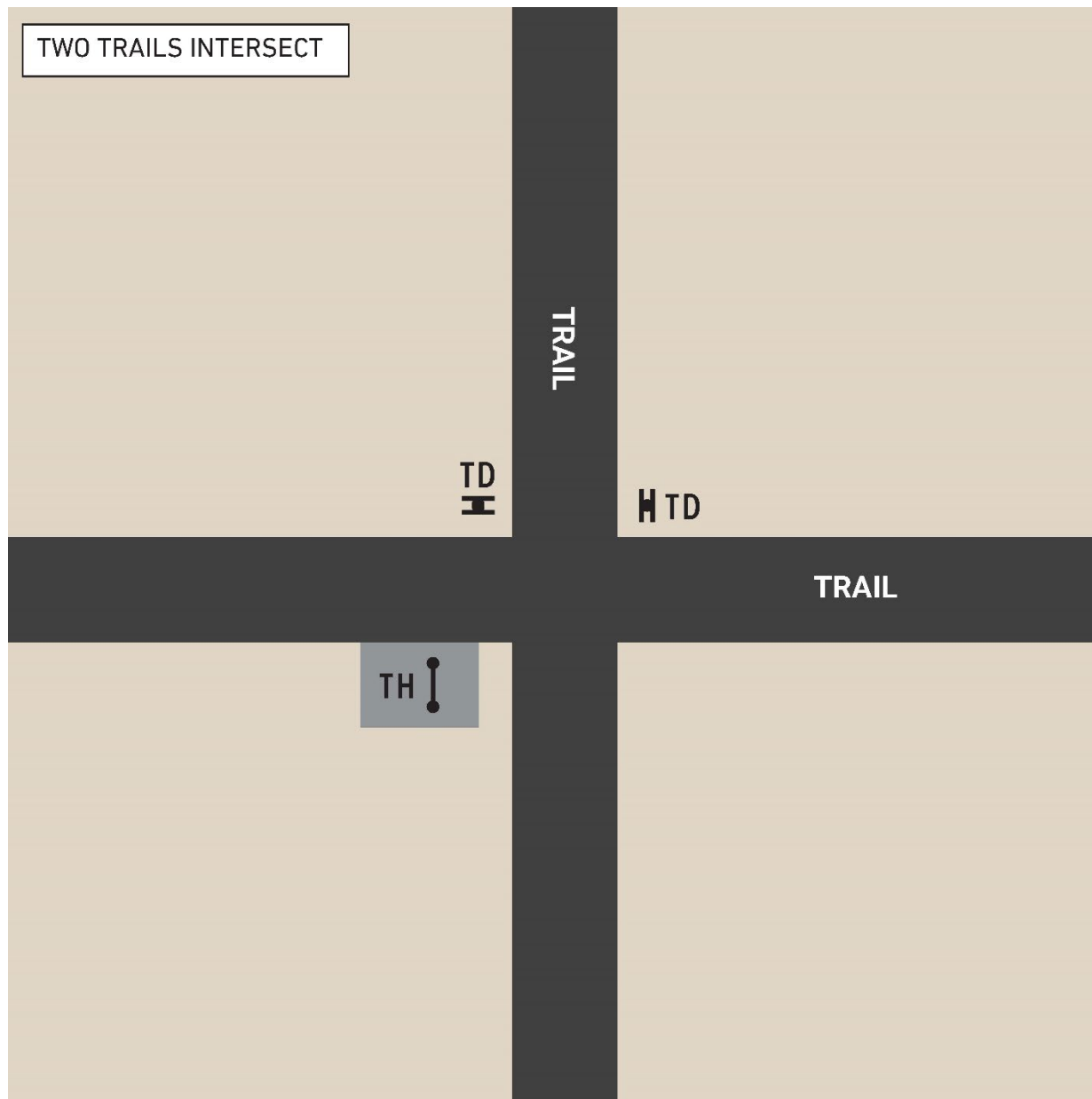
#### SN | STREET NAME





SN | STREET NAME  
TN | TRAIL NAME



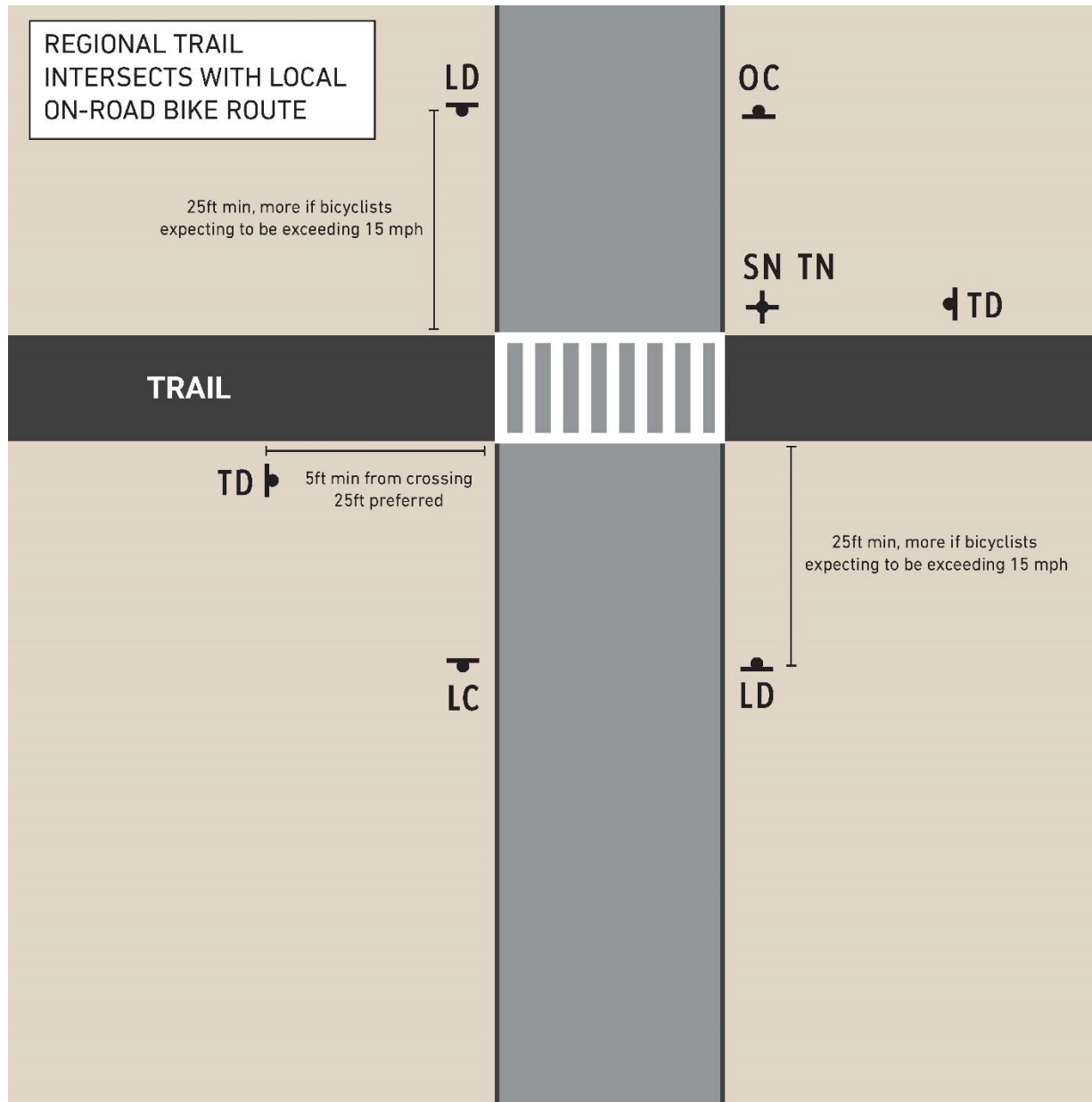


TH | TRAILHEAD



TD | TRAIL DIRECTIONAL

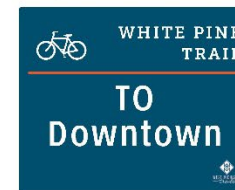




#### TD | TRAIL DIRECTIONAL



#### OC | ON-ROAD CONFIRMATION



#### SN | STREET NAME TN | TRAIL NAME

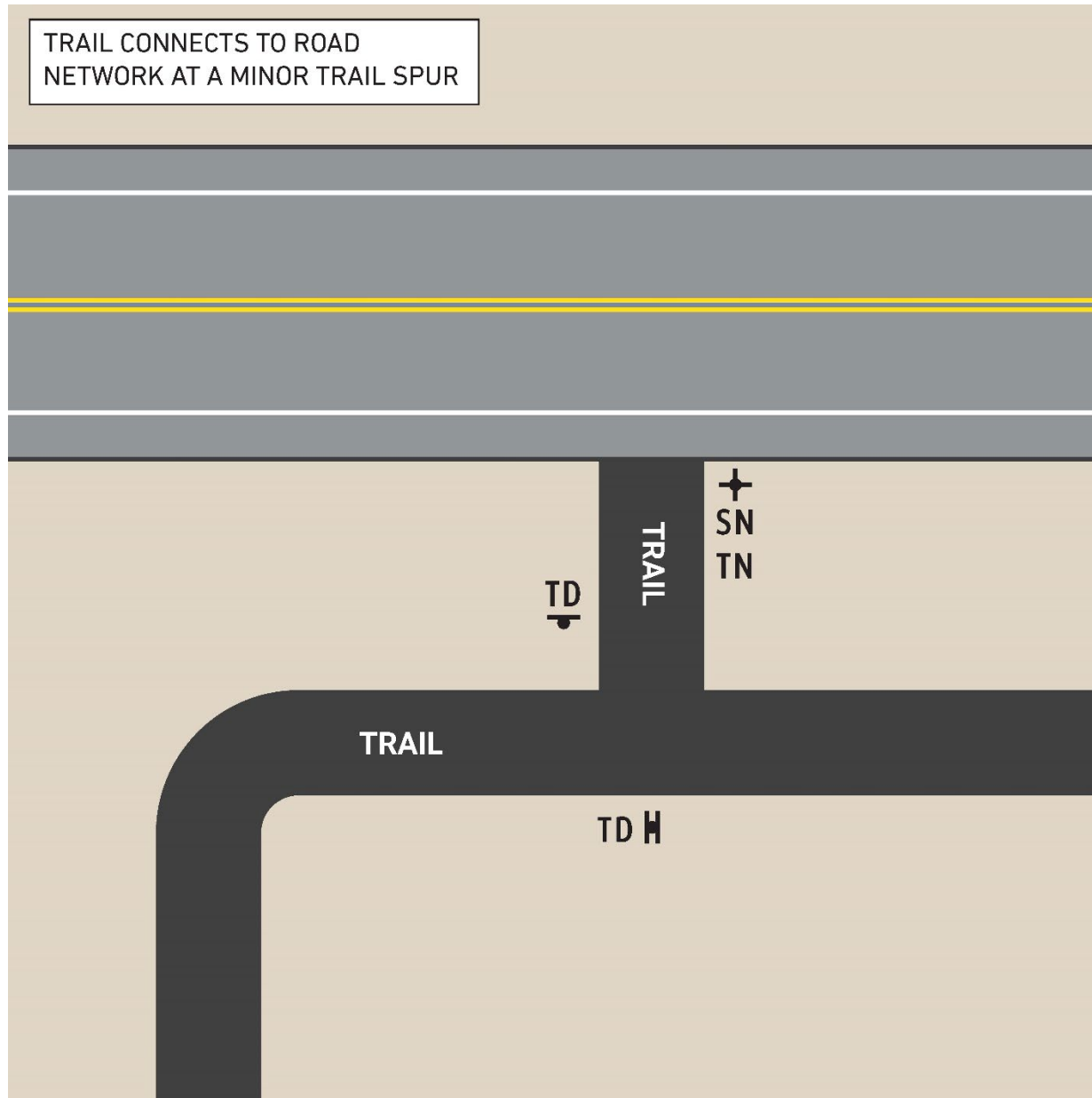


#### LD | LOCAL DIRECTIONAL





TRAIL CONNECTS TO ROAD  
NETWORK AT A MINOR TRAIL SPUR

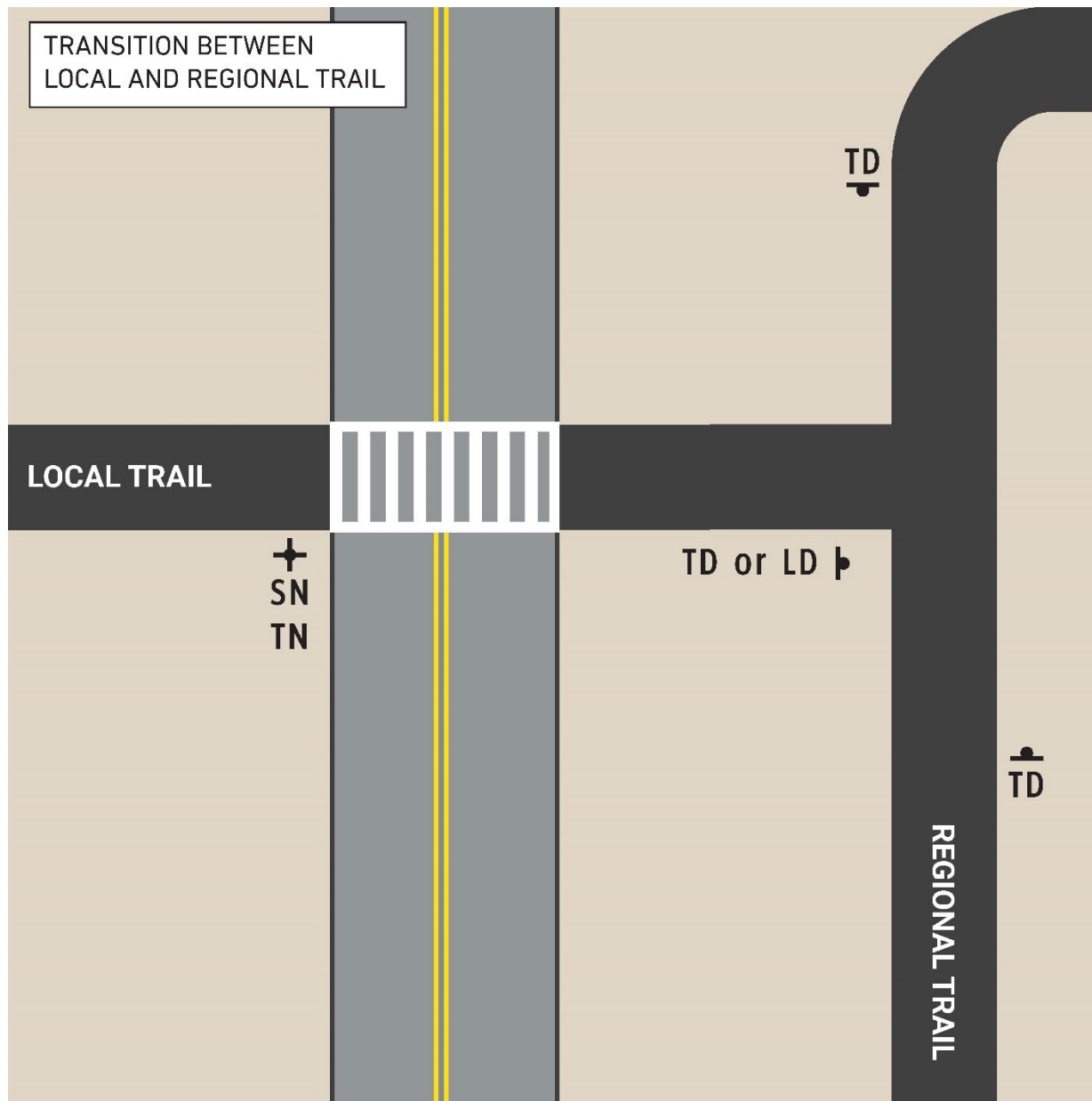


#### TD | TRAIL DIRECTIONAL

WHITE PINE SIGN EXAMPLE	
↑ Destination Name	0.4
← Destination Name	1.2
0.1 Destination Name →	
Jurisdiction Name/Sponsor	

SN | STREET NAME  
TN | TRAIL NAME





#### TD | TRAIL DIRECTIONAL

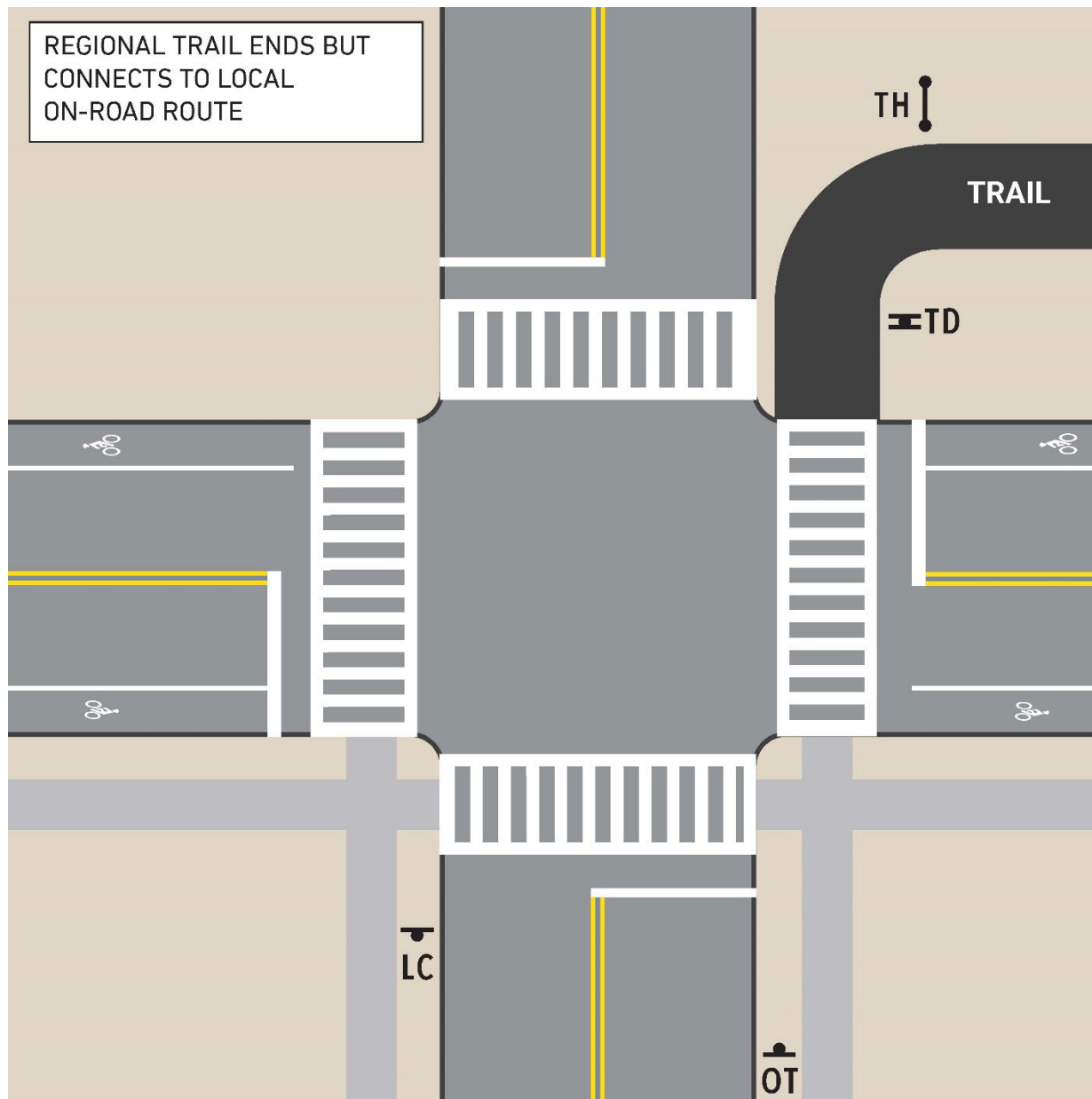


#### LD | LOCAL DIRECTIONAL



#### SN | STREET NAME TN | TRAIL NAME





#### TH | TRAILHEAD



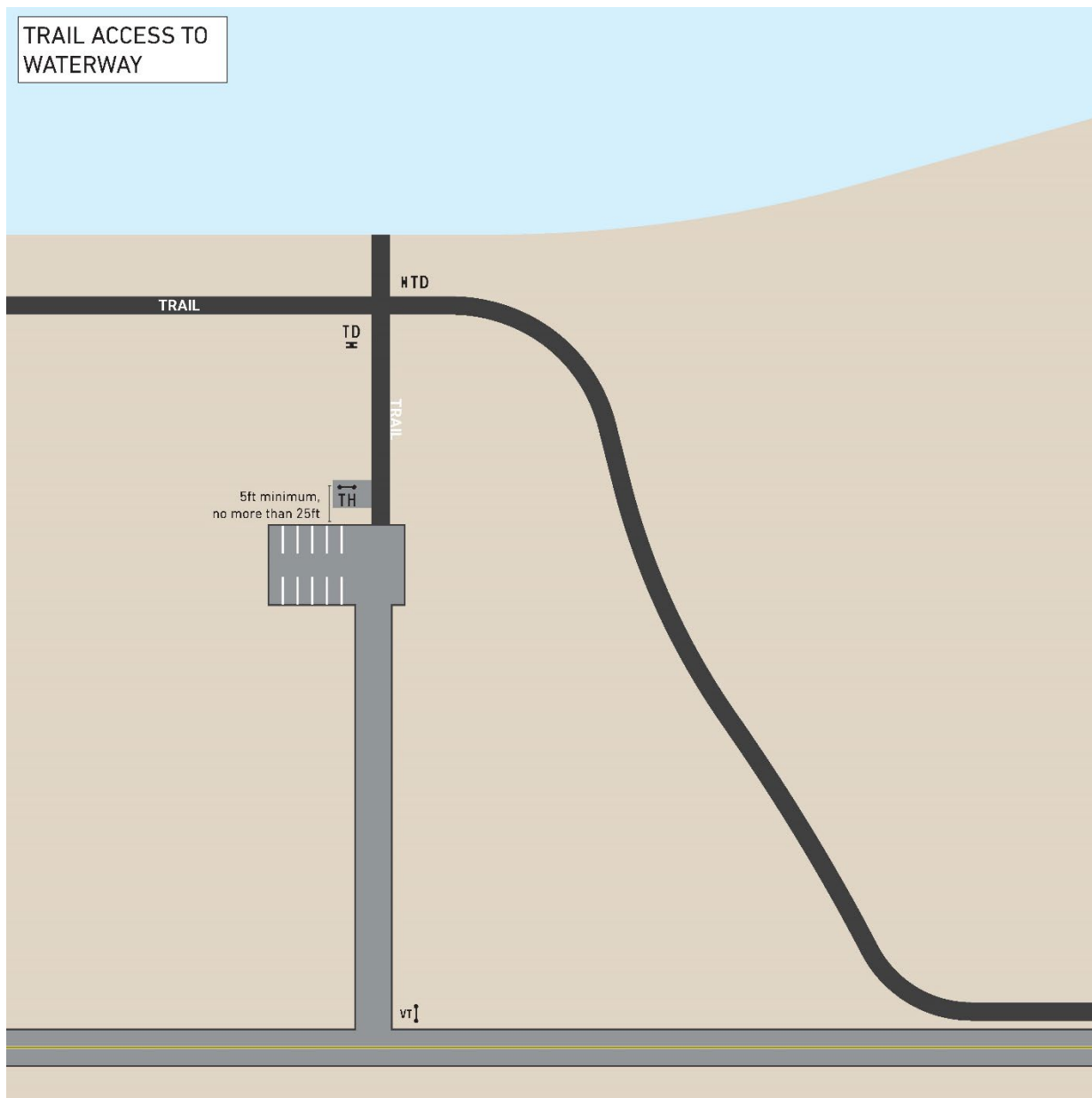
#### TD | TRAIL DIRECTIONAL



#### OT | ON-ROAD TURN LC | LOCAL CONFIRMATION



# TRAIL ACCESS TO WATERWAY



## VT | VEHICULAR TRAILHEAD

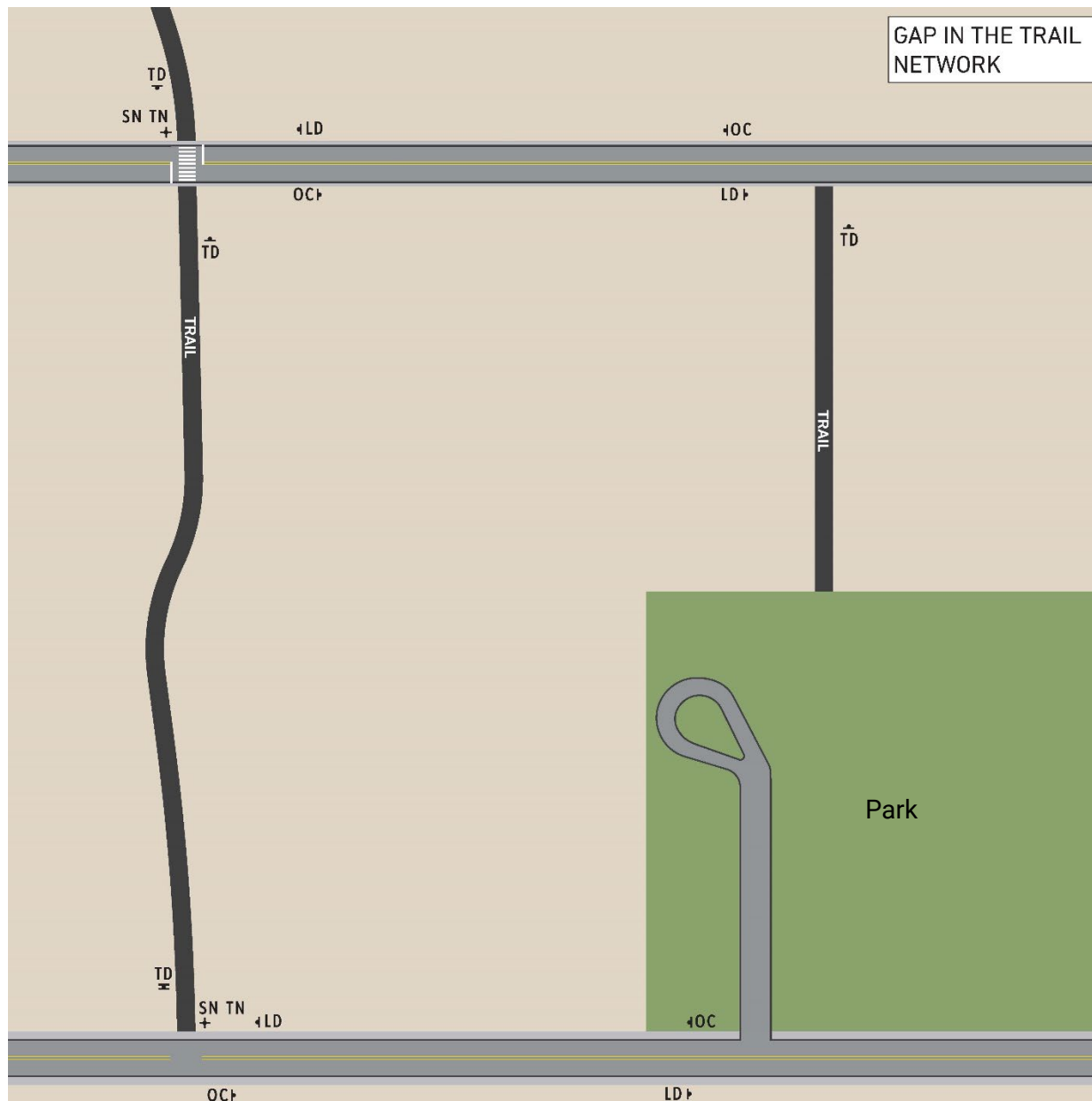


## TH | TRAILHEAD



## TD | TRAIL DIRECTIONAL



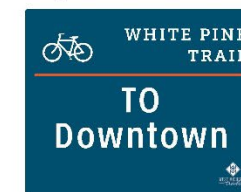


GAP IN THE TRAIL NETWORK

#### TD | TRAIL DIRECTIONAL



#### OC | ON-ROAD CONFIRMATION



#### SN | STREET NAME TN | TRAIL NAME



#### LD | LOCAL DIRECTIONAL



## Destination Selection

In many cases, sign planners and designers will have more possible destinations that could be included in a wayfinding assembly than space available for them. A destination hierarchy should be developed to guide planners and designers when deciding at what distance destinations should be included on wayfinding signs.

### Types of Destinations

Types of destinations that may be included in a destination hierarchy include the following:

- Parks
- Business districts
- Major event venues (such as stadiums, theatres, and major concert venues)
- Well-known landmarks
- Schools and universities
- Cultural institutions (such as libraries and museums)
- Major trails and bikeways such as a state or national bike route

In general, private businesses should not be included on wayfinding signage, due to a desire to remain impartial and due to the frequent turnover of commercial properties.

### Initial Scan of Destinations

An easy and rapid way to determine which destinations are the most important for wayfinding signs—and to identify potential abbreviations for those destinations—is to ask people who are familiar with the area to sketch quick maps of it. This is called “mental mapping” and is based on the process identified in *The Image of the City*, by Kevin Lynch (1960). An email to local “friends of the trail” organizations, running and bicycling clubs, chambers of commerce, or other stakeholders should ask:

*I would like your help identifying destinations and landmarks along the corridor for the upcoming wayfinding signs. Please do me a favor by making a “mental map” of the corridor:*

- 1) *Get an 8.5 x 11 sheet of paper and your preferred drawing or writing instrument.*
- 2) *Draw a quick map of the corridor as if you were making a rapid description of the corridor to a stranger, covering all the main features and destinations. It doesn't have to be accurate—just a rough sketch.*
- 3) *Once you have completed your map (don't spend more than 15 minutes on it), take a picture of it with your phone and email it back to me at (email address).*

If mental mapping is not possible, planners can review existing maps and use online maps to develop an initial list of destinations served by the trail, such as landmarks, parks, municipalities, business districts, shopping areas, major trails or bikeways, and schools along or near the route.

### Organizing Destinations into a Hierarchy

The destinations should then be sorted into a hierarchy. Developing a destination hierarchy ensures that as users travel along the trail network, they encounter simple, legible, and consistent destinations. It also helps planners choose which destinations to include on which wayfinding signs. One way of organizing a destination hierarchy includes creating three levels to describe the regional significance of different destinations.

- **Level 1: Citywide Destinations**
  - » This level of a destination hierarchy typically includes cities and other regionally significant destinations. These destinations could begin to appear on wayfinding signage once trail users are five or more miles away from the destination. Examples of Level 1 destinations may include a major event venue or a nearby city.
- **Level 2: Local Destinations**
  - » This hierarchy level may include specific districts, neighborhoods, or major landmarks. Cyclists may want to know about these destinations once they are around two miles away. Examples of Level 2 destinations may include large parks or major cultural institutions.
- **Level 3: Neighborhood Destinations**
  - » This level of a destination hierarchy typically includes destinations that will likely be visited by people who live and work nearby. These destinations may only appear on wayfinding signs within a quarter of a mile from the destination. Examples of Level 3 destinations may include small parks or schools.

Figure 22 shows possible distance guidelines for each level of the destination hierarchy, although these distances will vary based on the context and number of destinations nearby.

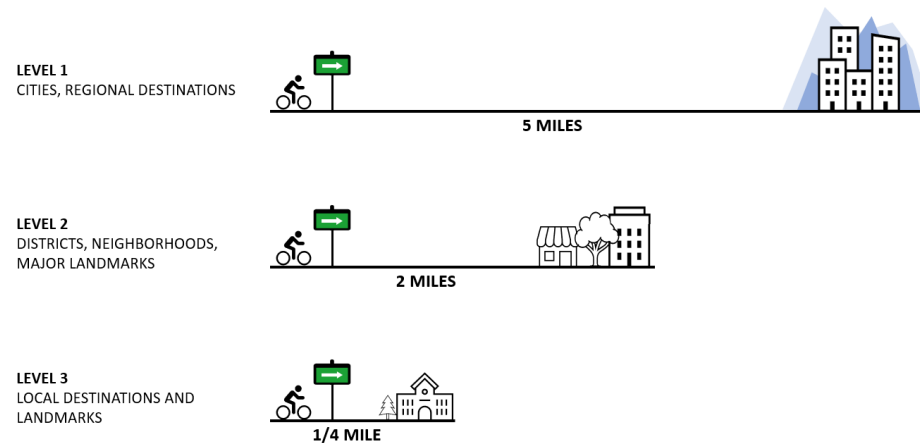


Figure 22: Possible organization structure for a destination hierarchy.

## Location Identification for EMS on Trails

Location identification should be discussed with the [State of Michigan's 911 Committee](#) and local emergency services to understand what the final location identification will be along trails. It is important that the approach to location identification is consistent throughout the state. Street name identification and mileage markers are the preferred methods that should be used along trails to ensure users have some type of location identification throughout the trail network.

### Street Name Identification

Street name identification is a way of location identification for emergency management systems. Street names should be identified when users are crossing under, over, and at grade. These should be retroreflective, so they are visible at night.

### Address

On trailhead signs, the street address should be included for location identification for emergency management systems.



## Mile Markers

Mile markers should be included on trail systems throughout the region. Mile Marker signs should include the trail name, mile, emergency response number, [what3words](#), and maintenance number. Mile Marker signs should be placed back-to-back and should have the same mile number on both sides.

For trails that are a loop system, access numbering should be used on a Mile Marker-style sign (Figure 23). Access numbering systems are implemented to assist with multiple access points within the loops. The first loop which would have the first access point would be marked 100 through 199, another loop in the system with a different access point would include a mile-marker style sign with 200 through 299 and so on. More information on Location Identification options for EMS on trails can be found in **Appendix A: Grand Region Wayfinding Best Practices Memo**.

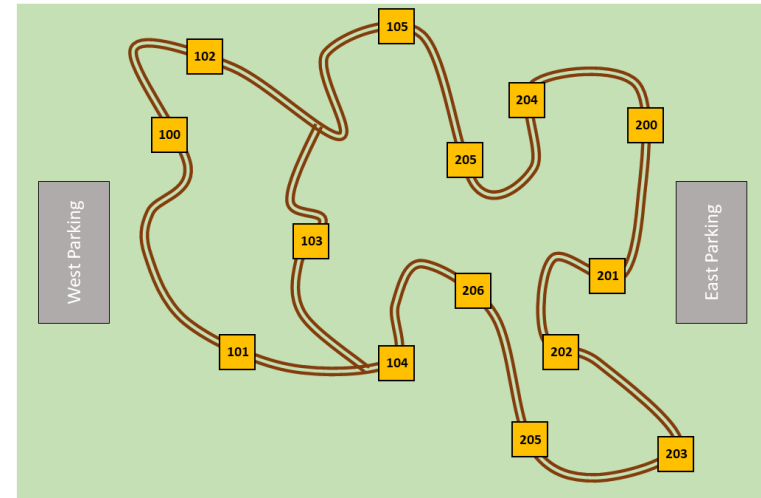


Figure 23: Access Numbering System; Source: <http://www.citymtb.org/home/creating-an-emergency-location-marker-system>

# SIGN DESIGN STANDARDS



# Sign Design Standards

## General Graphic Guidance

### Typography

Text height, especially in relation to contrast and line weight, is one of the factors that determines the readability and accessibility of signs. Both the Americans with Disabilities Act (ADA) and the *Manual on Uniform Traffic Control Devices* (MUTCD) provide guidance on the required height of letters on signs. In general, capital letters should be at least 2 inches tall on wayfinding signs, specifically when the signs are 6-10 feet off the ground or if the signs will be read by moving bicyclists. The relationship between text height and other factors, such as contrast and line weight, also informs the ultimate accessibility of a sign. For example, smaller text could be presented with higher contrast or bolder letters to increase readability. Meanwhile, very large text could potentially still be readable at lower levels of contrast or with finer letters.

The position of signs should also be considered in relation to text height. ADA guidelines may be used for determining the position of signs on trails or sidewalks, while the MUTCD provides requirements for roadway signs. When determining the appropriate positioning for signage, consider how far away people will be from the sign when they are expected to read it. Also consider whether the sign needs to be read by people in motion (such as joggers or cyclists), as the range of view for someone depends on both their height and their traveling speed. People cycling or using mobility devices (such as wheelchairs) generally have a lower eye level than people walking or running.

### Symbols (Icons and Logos)

#### *NPS Recreation Symbols*

The symbols used in the signs are the recreation symbols used by the National Park Service. These symbols were created by the Society for Environmental Graphic Design (SEGD) and can be download from their website for free: <https://segd.org/symbols>.

#### *Michigan Symbol*

The Michigan symbol used on multiple signs is a stylized version of the shape of Michigan (Figure 24). Contact West Michigan Trails for the Michigan symbol.



Figure 24: Michigan Symbol

## Color and Contrast

While wayfinding sign colors are limited due to the MUTCD, their color combinations still need to have high levels of contrast for accessibility purposes. Accessible signs need to have high levels of contrast between the text and the background, and the general industry guideline is to achieve at least a 70 percent contrast ratio between the light reflectance value (LRV) of the background and foreground. Signs are typically more legible for pedestrians with low vision when the text contrasts as much as possible with the background. The colors used for the West Michigan sign family are shown in Figure 25. The contrast ratio between C1 and C3 is 90 percent and the contrast ratio between C2 and C3 is 70 percent.

## Sign Drawings

The drawings on the following pages are presented as an expression of design intent only and does not necessarily include all details required for the structural integrity and/or mounting of signs. The sign fabricator should plan for additional time needed to develop additional design and materials specifications in collaboration with the client. Any additional design and materials specifications developed should become the property of the client or Western Michigan Trails. In addition, the sign fabricator and/or installer will need to complete structural design of the signs, field verification of conditions, and issue shop drawings for review by client and designer.

## Workmanship




All fabricated signs shall be built to withstand normal maintenance operations and use by site staff. All signs shall be built to withstand vandalism, including graffiti coating and tamper-proof hardware.

## Submittals and Mock-ups

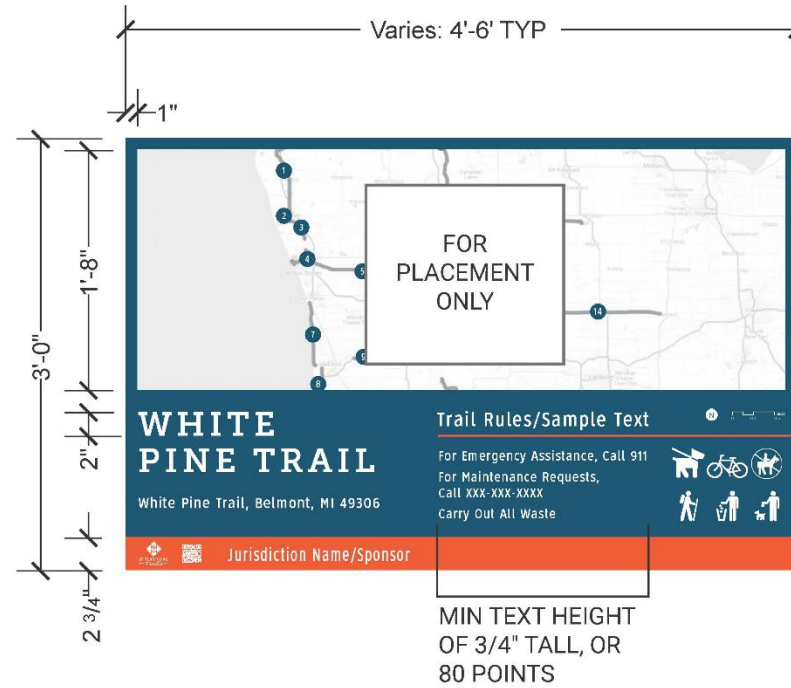
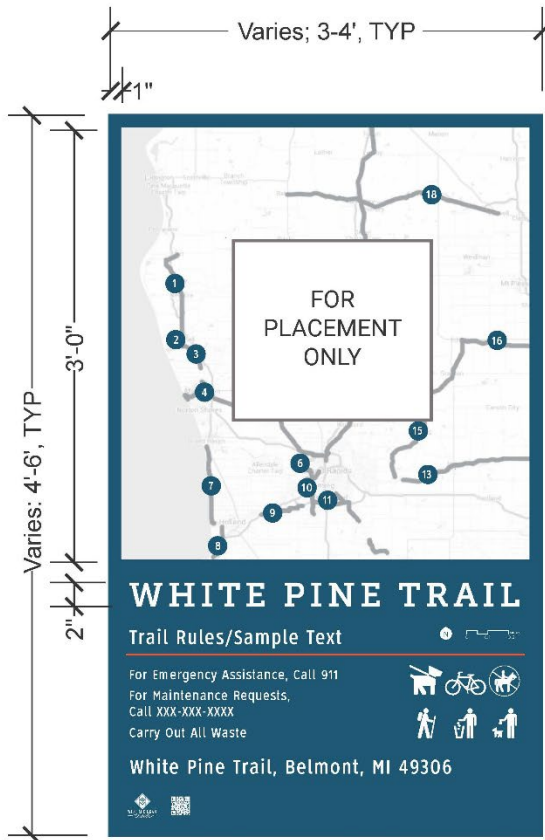
It is important for both client and design team to review submittals of materials and mockups prior to the fabrication or installation of final signage. Samples of all materials such as metals, vinyls, and hardware assemblies should be submitted for review and approval. Materials should be submitted in as close to their final state as possible; for example, if the sign fabricator will use a printable vinyl, the submitted sample should be printed with artwork from the project and mounted to the appropriate substrate. All paint colors should be submitted as 8"x 8" painted metal samples.

If and when the production of a sample is such a substantial product that it approaches a completed sign product, and is cost prohibitive to produce, the fabricator and client may agree to a "first article" submittal, in which the fabricator produces one full sign assembly, and if it is approved, may install that sign as part of the completed scope.

## Colors:

	PMS 3025C CMYK 100/65/37/21
	PMS Orange 021C CMYK 0/82/100/0
	True White CMYK 0/0/0/0

*Figure 25: Colors used for West Michigan signs*



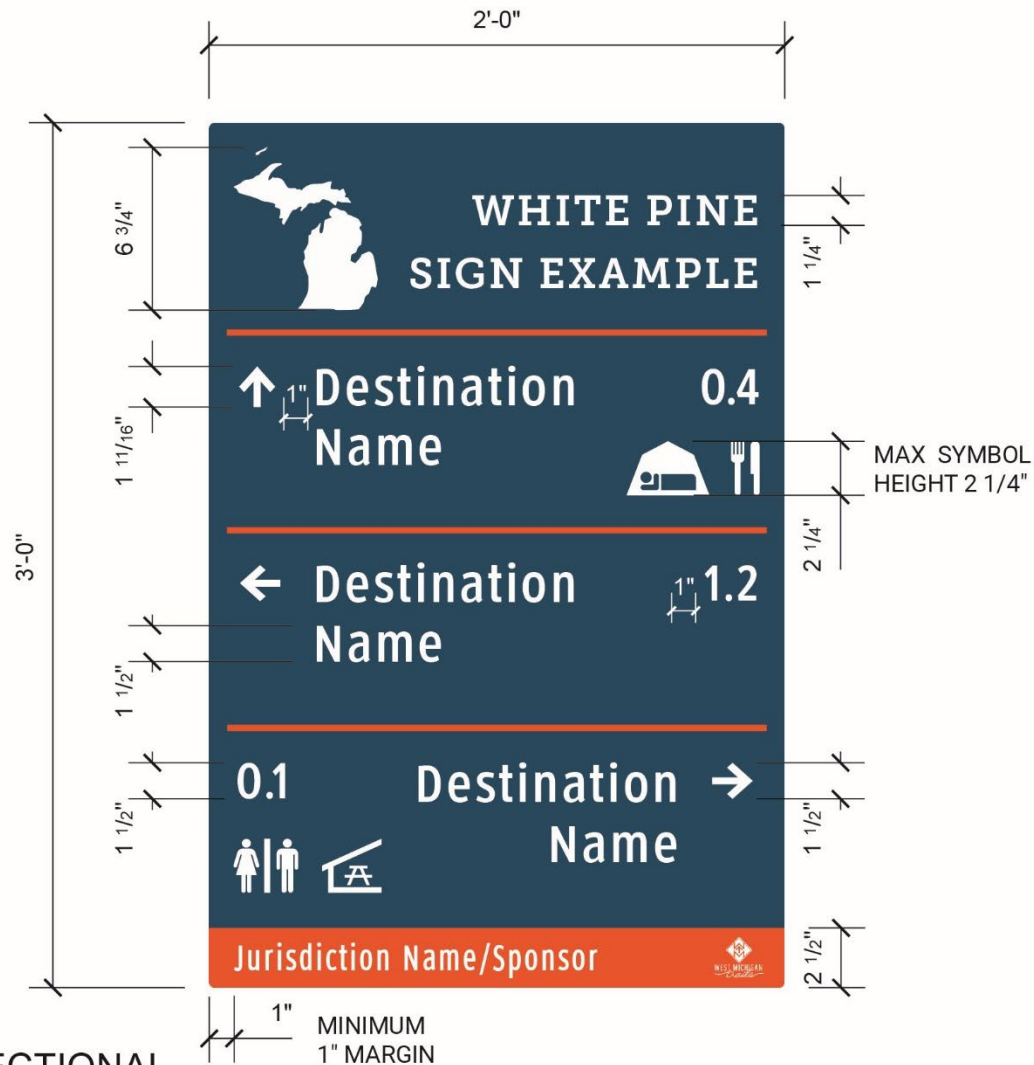
## Sign Material(s)

Aluminum with custom printed retroreflective vinyl

## 1 TRAILHEAD

SCALE: 3/4" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*



### Note(s)

Michigan symbol can be replaced with local jurisdiction logo if desired.

Use no more than three amenities per destination. Select the most pertinent amenities. Use SEG D recreation symbols.

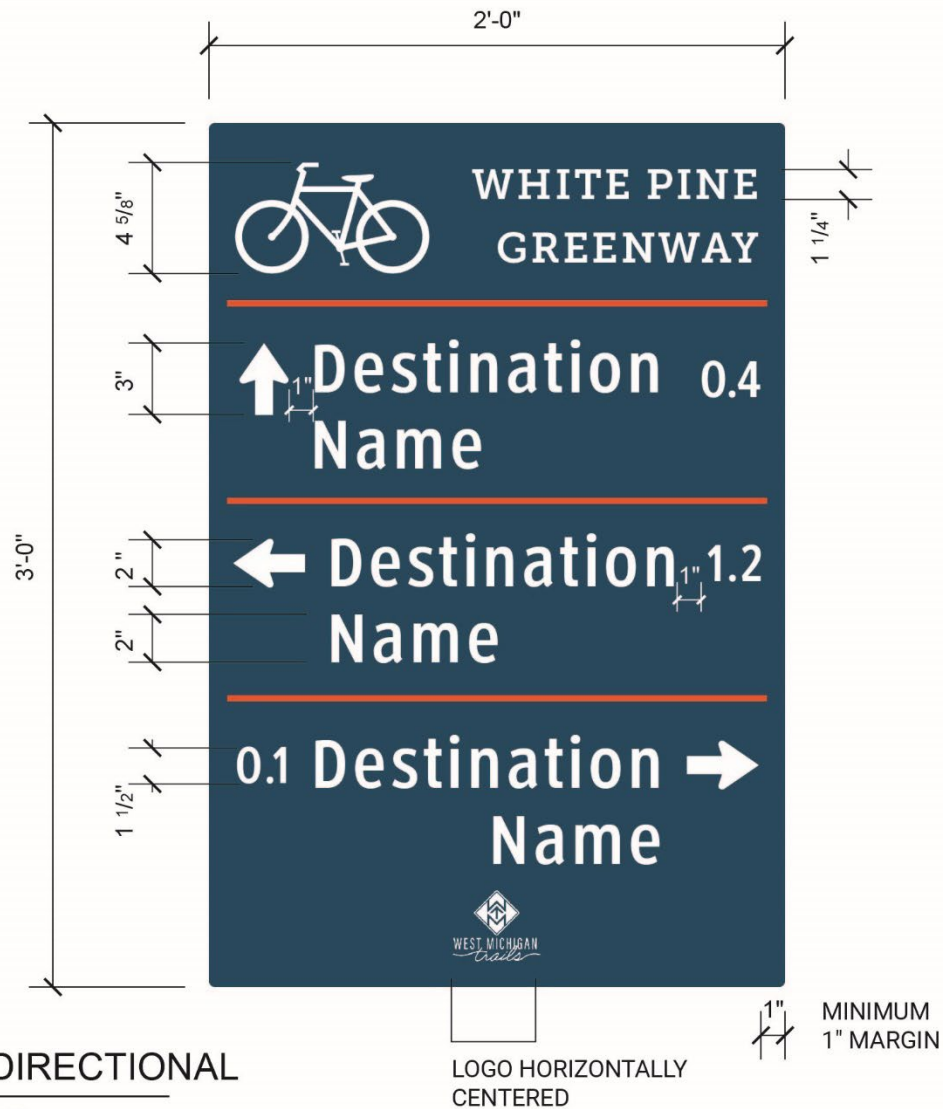
### Sign Material(s)

Aluminum with custom printed retroreflective vinyl

## 1 TRAIL DIRECTIONAL

SCALE: 1 1/2" = 1'-0"

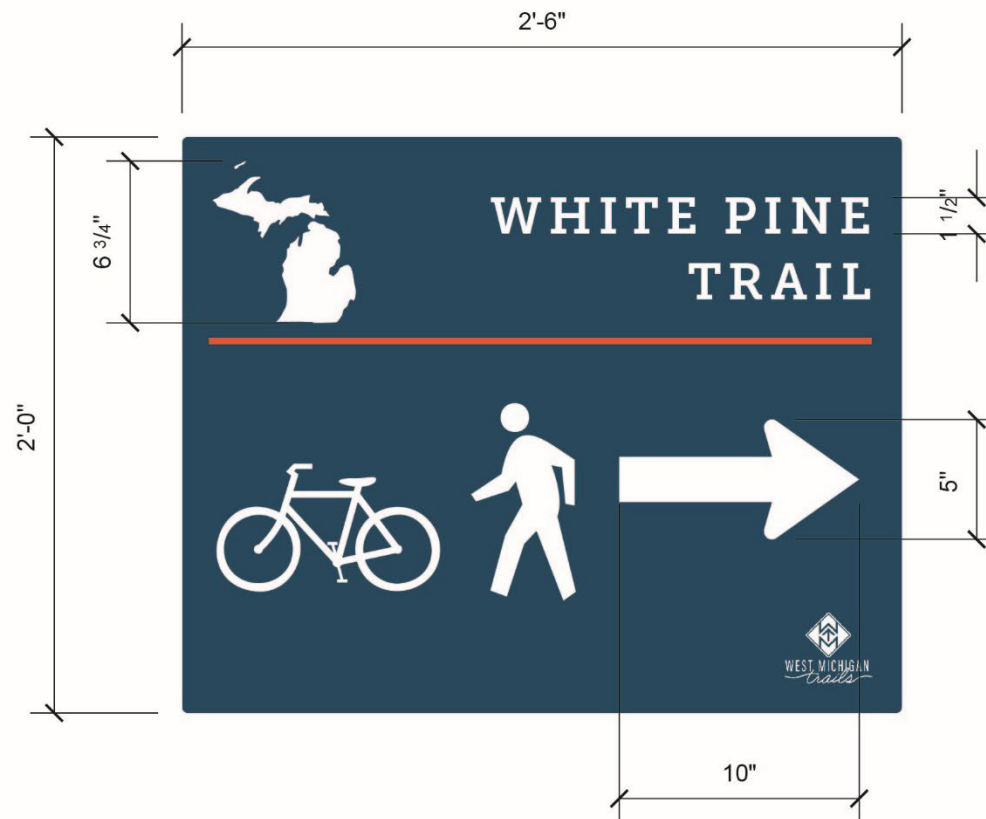
*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*



#### Sign Material(s)

Aluminum with  
custom printed  
retroreflective vinyl

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*



**Sign  
Material(s)**

Aluminum with  
custom printed  
retroreflective vinyl

**1 TURN SIGN**  
SCALE: 1 1/2" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*





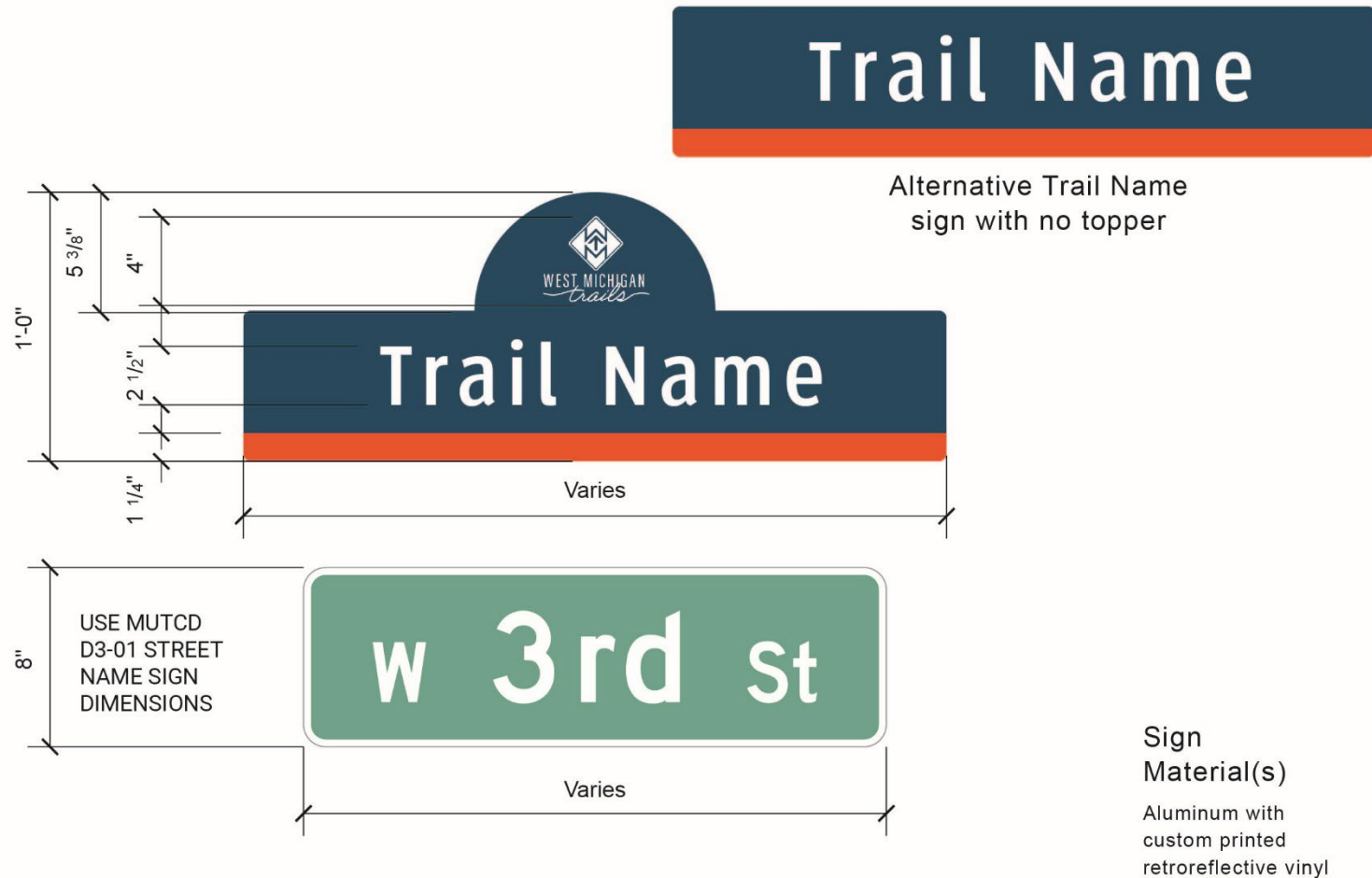
**Sign  
Material(s)**

Aluminum with  
custom printed  
retroreflective vinyl

**1 CONFIRMATION SIGN**

SCALE: 1 1/2" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*



# 1 STREET NAME/TRAIL NAME

SCALE: 1 1/2" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*



**Sign  
Material(s)**

Aluminum with  
custom printed  
retroreflective vinyl

**1 TRAIL ENDS**  
SCALE: 1 1/2" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*

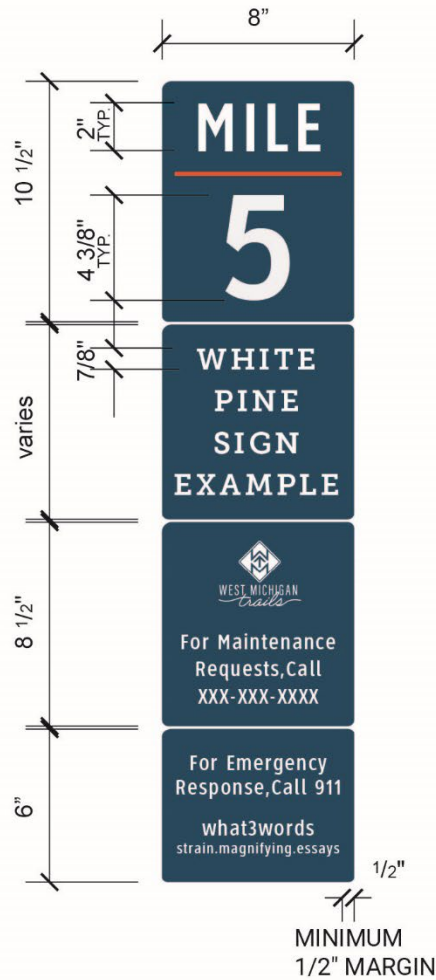


# 1 VEHICULAR TRAILHEAD

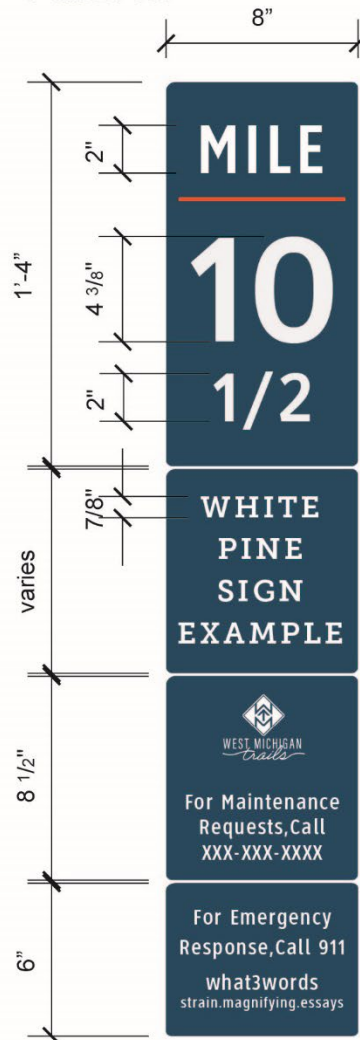
SCALE: 3/4" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*

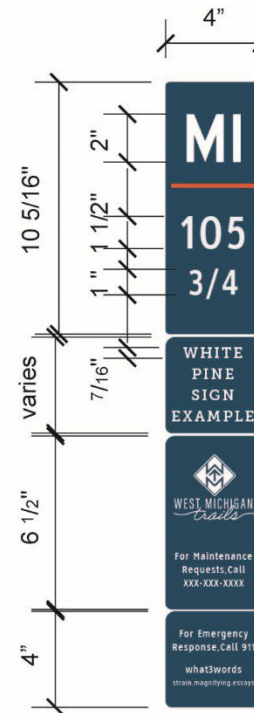
OPTION 1:  
MILE INCREMENTS, 8" WIDE POST



OPTION 2: HALF-OR  
QUARTER-MILE INCREMENTS,  
8" WIDE POST



OPTION 3: HALF-OR QUARTER  
MILE INCREMENTS, 4" WIDE POST



NOTE: GAPS  
BETWEEN  
PANELS TO  
BE 1/8", TYP.

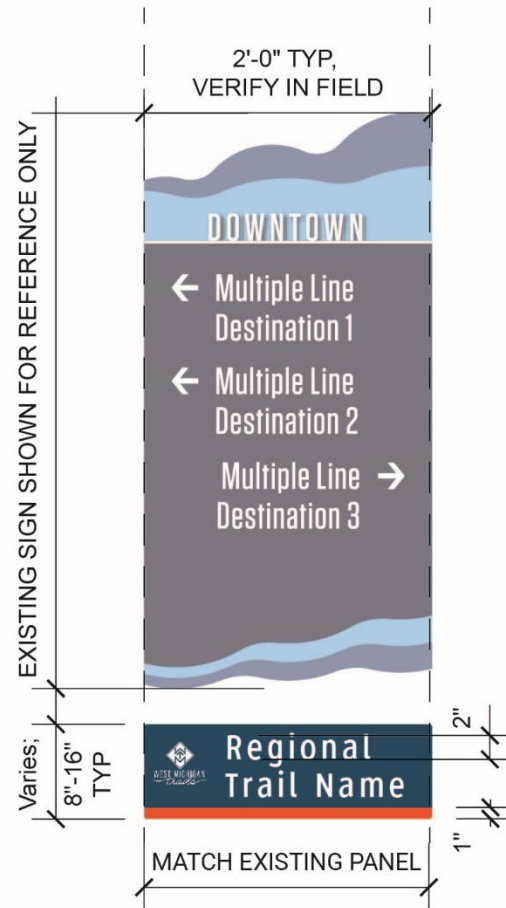
### Sign Material(s)

Custom printed  
retroreflective vinyl  
sticker/decals,  
applied to varying  
sign posts.

## 1 MILE MARKER

SCALE: 1 1/2" = 1'-0"

These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.



#### Sign Material(s)

Aluminum with  
custom printed  
retroreflective vinyl

## 1 MODULAR REGIONAL TRAIL SIGN PANELS

SCALE: 3/4" = 1'-0"

*These drawings are an expression of design intent only. Fabricator shall be responsible for all permitting, field verification, site condition assessments, engineering, and preparation of shop drawings, prior to implementing any of the recommendations contained herein.*

# IMPLEMENTATION



# Implementation

The information in this chapter is intended to help support trail agencies and other partners initiate future wayfinding sign implementation phases beyond the prototype sign plans included in this project.

## Sign Deployment Plans

After destinations, routes, sign design and placement are determined, the information is compiled into a deployment plan that is shared with the sign shop or work crews responsible for fabricating and/or installing the signs. A deployment plan should include the following components:

### *Graphics*

Develop detailed art and maps for the specific sign location. Signs require custom artwork and maps. This artwork should preferably be done by a professional graphic designer to convey legibility and accuracy of information. Prior to initiating the graphics, communicate with the sign shop responsible for fabricating the signs to determine the correct computer software program or file format to use (for example, Adobe Illustrator, CAD, or SignCAD).

### *Sign Schedule:*

A sign schedule is a table, such as an Excel spreadsheet, that lists all of the information about each sign on the corridor. The schedule should cover:

- Panel sizes and identification codes
- Sign orientation (direction the face of the sign faces)
- Location on street or trail
- Sign legends (destinations, arrows, and their order)
- Post locations and post type
- Co-location of other signs, adjustment to existing signs or posts, and other notes

### *Sign Design Drawings:*

- Typical and variations for each sign panel size; layout of text and symbols; spacing, letter sizes, symbol sizes, symbol types
- Colors, fonts, typographic specifications
- Mounting Details

Sign design drawings for each sign panel type can be found in the Sign Design Standards chapter (page 43).



## Horizontal and Vertical Clearance

### Mounting Height

Wayfinding guide sign mounting height and vertical clearance requirements vary by location. The minimum height, measured vertically from the bottom of the lowest sign on the assembly to the near edge of pavement or top of curb, are as follows (Figure 24 and Figure 25):

- Rural Areas—5 feet minimum
- Urban Areas (or where pedestrian traffic or parking is likely) —7 feet minimum
- Trails —4 feet minimum

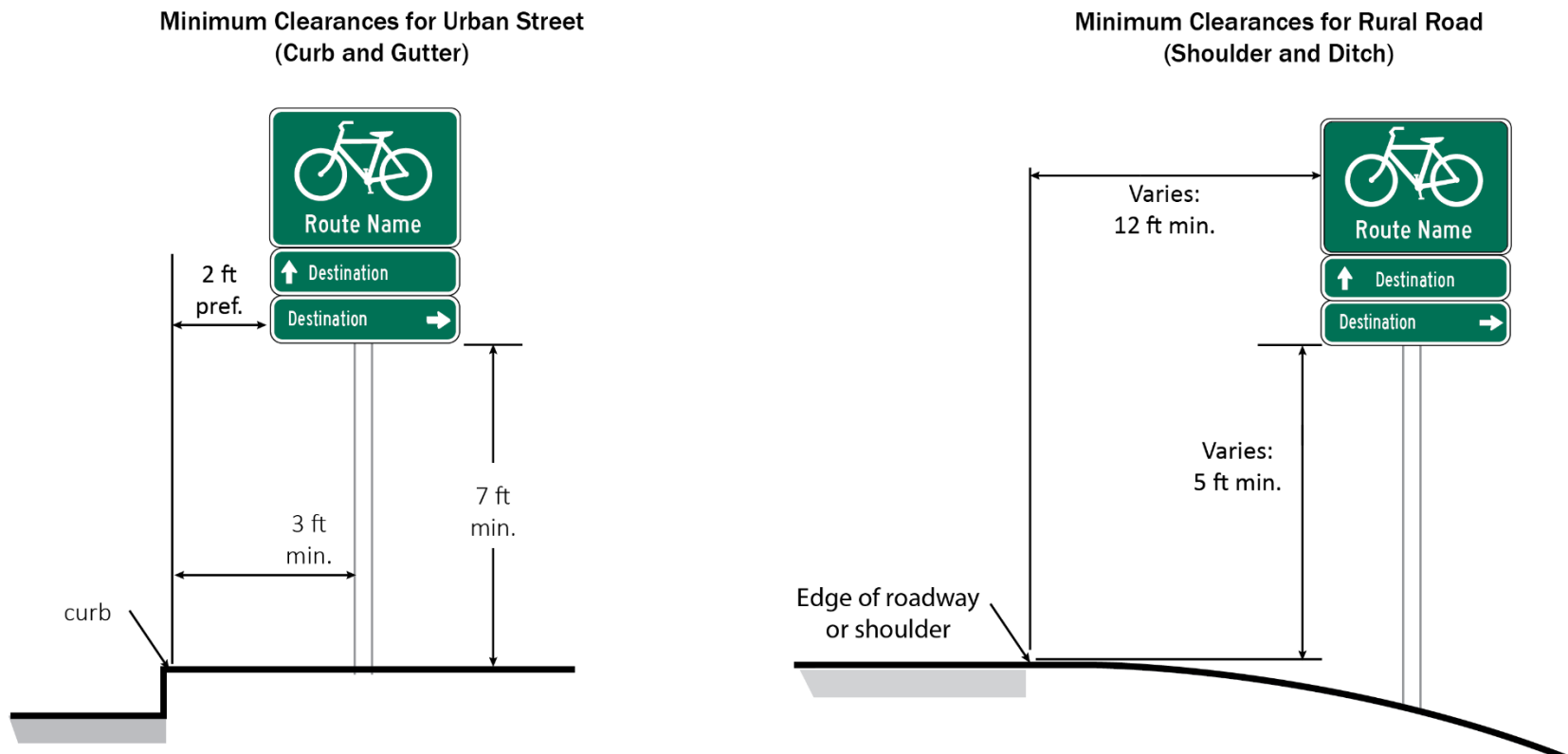


Figure 26: Minimum clearance requirements for signs on streets and roads based on MUTCD Part 2, Section 2A.18, and Part 9, Section 9B.01.

Sign placement and mounting height must meet pedestrian accessibility requirements. This is particularly important in urban areas where multiple sign panels are mounted on the same post and may be near pedestrian clear zones. See the Public Rights-of-Way Accessibility Guidelines (PROWAG) [Section R208](#) and [R402](#) and [MUTCD Section 2A.18](#) and [Section 9B.01](#) for more information.

### Horizontal Clearance

The MUTCD requires post-mounted signs on roads to be crashworthy if within the clear zone.

The lateral offset, measured horizontally from the edge of curb to the left edge of the largest sign panel on an assembly, are as follows for on-road signs:

- Rural Areas—12 feet minimum
- Urban Areas (or where pedestrian traffic or parking is likely)—2 feet minimum

For trails, a 2 feet minimum lateral offset is required.

### Maintenance Guidance

#### Sign Replacement Costs as Part of a Trail Maintenance Plan

Agencies that maintain trails should have an overarching maintenance and management plan for the trail that includes strategies for dealing with vandalism and theft. A maintenance plan would include and budget for both routine and remedial maintenance and define responsibilities between the different agencies and jurisdictions that have responsibilities for different segments of the trail.

- **Routine Maintenance** - Routine maintenance should be scheduled and occur weekly, monthly, and annually. Routine maintenance includes mowing, sweeping, trash-clean up, graffiti removal, and vegetation management. The best trail routine maintenance programs perform routine trail inspections that both inspect and respond to maintenance issues at the same time. Responding to issues immediately saves time and provides a better trail experience for users but requires that maintenance staff have equipment (such as paint, saws, brooms or trail sweepers, weed killer, graffiti removal supplies, trash bags, etc.) at all times. Regular maintenance and quick repair or replacement of vandalized signs sends a message that vandals will not impact the trail. Routine trail inspections should remove graffiti from signs and identify which signs need to be replaced due to damage, fading, or other issues.

#### Minimum Clearances for Path or Trail

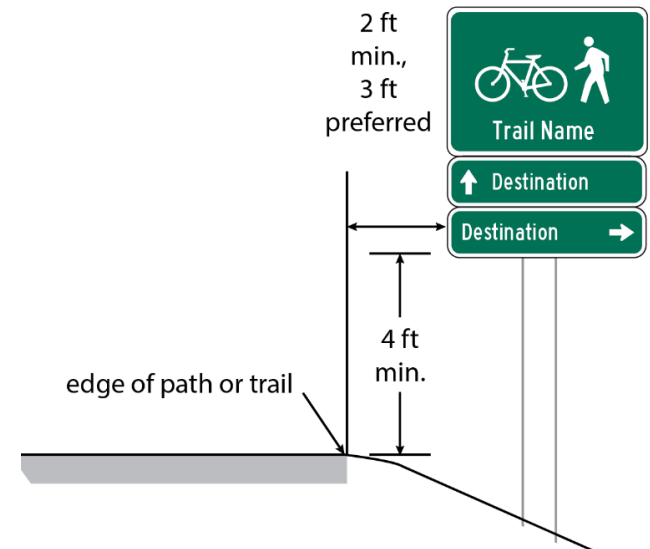


Figure 27: Minimum clearance requirements for trails based on MUTCD Part 2, Section 2A.18, and Part 9, Section 9B.01.

- **Remedial Maintenance** - Remedial maintenance is maintenance that remedies a specific issue that cannot be addressed immediately such as trail wash-outs, damaged bridges, or—in the context of signs—replacement of trail amenities. Agencies should expect to replace about 5 percent of their signs every year. It is important to address trail amenity issues – especially those that take an amenity off-line – because in doing so, trail users can have confidence in the information being provided by wayfinding.

[The Rails to Trails Conservancy's Rail-Trail Maintenance and Operation Survey](#) is a good resource for trail agencies to refer to when developing a trail maintenance plan. The report's Appendices include example maintenance schedules and maintenance budgets.

### Mitigate Maintenance Costs

When planning to purchase and install wayfinding signs, agencies can spend additional money during fabrication and installation on features that will help reduce future maintenance needs:

- **Anti-Graffiti Coating** - Graffiti overlays are available as film or liquid laminates. When these are overlaid on a sign, harsh solvents can be used to remove the graffiti without damaging the underlying sign. Some sign vendors may already include "Anti-Graffiti Overlay" as part of the cost of their standard sign fabrication. If they do not, it may be worth it to purchase overlays for an extra \$1-2 per sign.
- **Anti-Theft Sign Hardware** - A variety of theft-resistant sign hardware such as sloped nuts, security bolts, and special screws can help deter sign thieves. The additional cost of this hardware is an extra \$1-2 per sign.

## **Appendices**

**Appendix A: Grand Region Wayfinding Best Practices Memo**

**Appendix B: Existing Standards and Guidelines Memo**

**Appendix C: Visual Preference Survey Summary**

**Appendix D: Functional Field Testing Survey Summary**