

Wichita Bicycle Wayfinding System Plan Technical Report

Design Options and Placement Practices

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Contents

Introduction	3
Sign Design Options	3
Option 1: Keeper of the Plains.....	3
Option 2: Wichita Flag	4
Option 3: Together Wichita.....	4
Function and Placement of Wayfinding Elements.....	5
Family of Elements	6
Decision Sign.....	6
Confirmation Sign	7
Turn Sign.....	8
Street Name Sign	9
Pavement Marking	10
Mile Marker.....	11
Information Kiosk	12
Placement Guidance.....	12
Setback and Clearance	13
Spacing	14
General Placement.....	15
Typical Placement Scenarios	15
Off-street / On-street At-Grade Transition	16
Pathway Bifurcations and Under Crossings.....	17
Off-street / On-street Transition at Path Access Point.....	18
Navigation from Path to Destination	19
Gap between On-Street Facilities	20

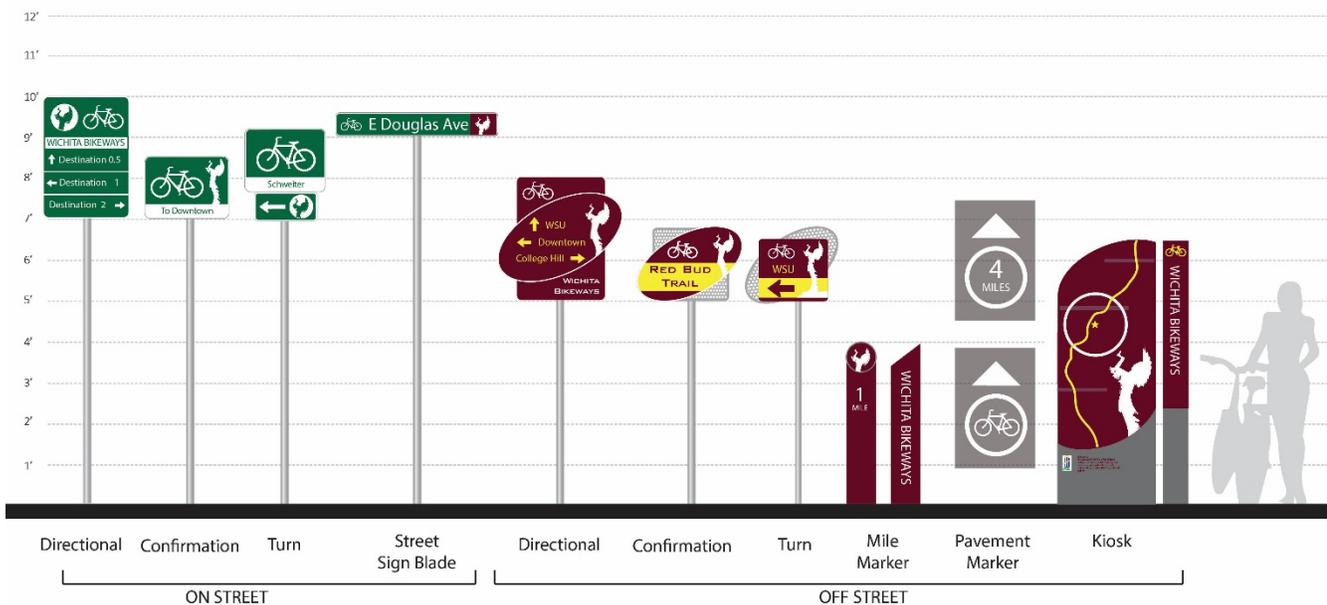
Introduction

This document provides an overview of two different bicycle wayfinding options for the City of Wichita. The designs were created based on survey feedback from Wichita stakeholders and input from the project Steering Committee. In addition, this document also includes recommendations for the placement of the wayfinding system elements.

Sign Design Options

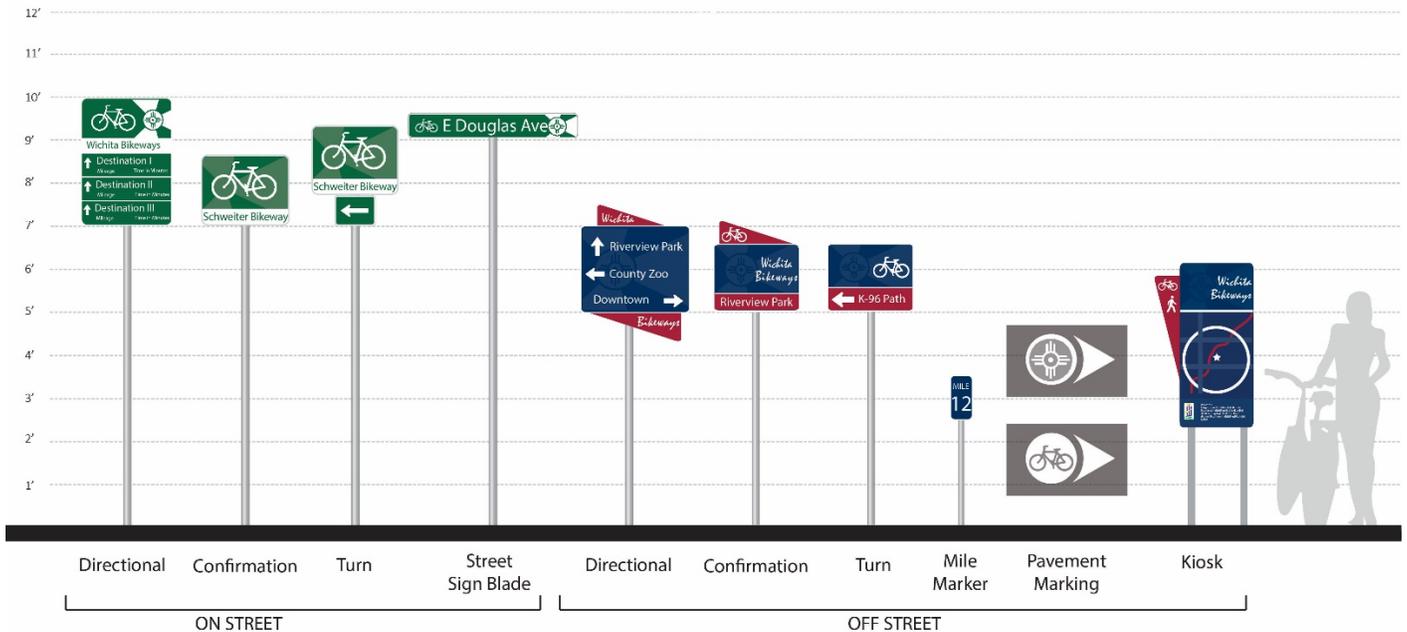
Option 1: Keeper of the Plains

Based on feedback collected from Wichita residents throughout the planning process, the Keeper of the Plains is the most defining symbol for the City. In this option, the Keeper is highlighted throughout both on-street and off-street wayfinding elements. This option includes several custom elements which would need to be built by a custom sign fabricator.



Option 2: Wichita Flag

The Wichita flag was noted by community members as a compelling graphic that would be an appropriate identifier for the City’s bicycle network. In this design option, wayfinding elements rely on readily available products to maximize cost effectiveness.



Option 3: Together Wichita

Option 3 was developed by the local business group Together Wichita. These signs have already been installed along portions of Wichita’s path network. Complimentary signs would need to be developed for the on-street bicycle network.



<Note the graphics of only one sign family are included below. We will update these to highlight the preferred alternative once we have one.>

Function and Placement of Wayfinding Elements

Based on field reconnaissance, best practices review, public input, and discussions with committee members regarding wayfinding needs in Wichita, a variety of sign typologies are recommended for the bicycle network wayfinding family. All wayfinding elements are oriented and scaled towards the bicycle user unless noted otherwise.

Family of Elements

Decision Sign



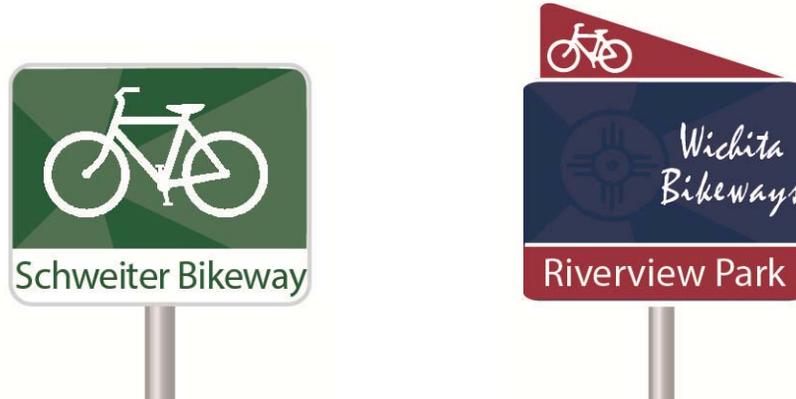
Function and Content: Decision signs clarify route options when more than one potential route is available. The sign content should include the following features.

- wayfinding system branding
- destinations (up to three)
- distance in miles
- (optional) time based on 10 mph or 6 minute per mile travel speed
- (optional) specific bikeway or roadway name

Placement: Placed prior to decision-making points or intersections with routes having bicycle facilities. Sufficient distance prior to the intersection should be provided to allow for safe recognition and response to information provided. Care should be taken so that the turn or options the sign refers to are obvious. Decision signs should not be placed near side or access paths that could be confused with the primary route. Signs should be placed the at approximately the following distances before an intersection depending on the number of lanes a bicyclist must travel across in order to initiate a legal left turn:

- 30 feet before a zero lane merge
- 100 feet before a one lane merge
- 200 feet before a two lane merge

Confirmation Sign



Function and Content: Placed after a turn movement or intersection to reassure cyclists that they are on the correct route. The sign content should include the following features.

- system brand mark
- bikeway or destination name

While confirmation may be given with a sign element, this reassurance may also occur via pavement markings. For bicycle boulevards, shared lane markings provide confirmation (note confirmation signs may be necessary where two or more bicycle boulevards intersect). For bike lane and side paths, reassurance occurs via standard bike symbol markings.

Placement: Typically placed one sign per $\frac{1}{4}$ directional mile (mid-block) and at the far side of key intersections. Signs should be placed 50 to 100 feet after turns. Confirmation signs need not occur after every intersection. They should be prioritized at locations where a designated route is not linear, as well as after major or complex intersections. Complex intersections include those having more than four approaches, non-right angle turns, roundabouts, or indirect routing.

Turn Sign



Function and Content: Used to clarify a specific route at changes in direction when only one route option is available. Content includes the following elements.

- system brand mark
- bikeway name
- directional arrow

Placement: Placed at turns prior to the turning action to provide cyclists advance notice of a change in direction. May be used in conjunction with a decision sign at complex intersections warranting additional information. Signs should be placed at the following distances before an intersection depending on the number of lanes a bicyclist must travel across in order to initiate a legal left turn:

- 25 feet before a zero lane merge
- 100 feet before a one lane merge
- 200 feet before a two lane merge

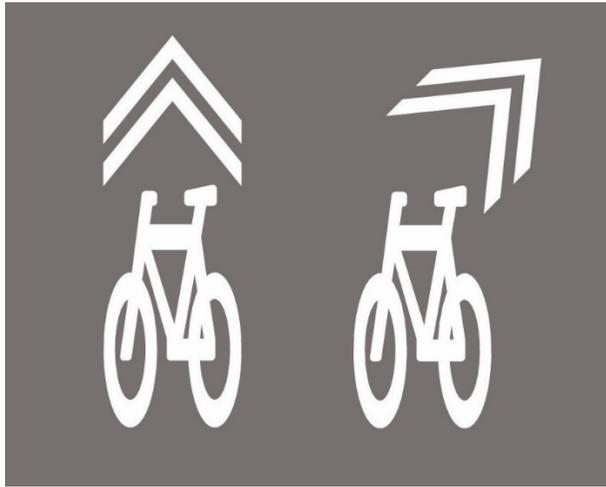
Street Name Sign



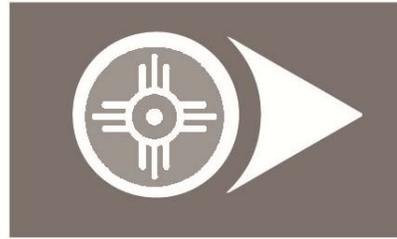
Function and Content: Adding the system brand mark to street name signs expands the visibility of the City's bicycle boulevards at an affordable rate. If a pictograph is used, it should be consistently used throughout the bicycle network.

Placement: Street name sign blades should be placed along bicycle boulevards. Custom signs do not need to be used for every instance of a street name blade. Their use at every other block on alternating corners is sufficient to raise visibility of the bikeway for both vehicle drivers and cyclists. Custom blades should be used to indicate the street which is a bicycle boulevard only. Cross streets which are not bicycle boulevards should use the standard sign.

Pavement Marking



Shared Lane Markings for on-street bicycle facilities (left).



Wayfinding medallions for path facilities (right).

Function and Content: Pavement markings among other functions, confirm for cyclists that they are on a bicycle facility. Pavement marking options for on-street facilities include the Shared Lane Marking. A wayfinding medallion including bicycle symbol in a circle with a directional arrow is currently used in Wichita on the paths to reinforce direction. This symbol may be used with travel distance to provide location reference information.

Placement: The Shared Lane Marking should be placed immediately after an intersection and spaced at intervals not greater than 250 feet thereafter.

Custom wayfinding pavement markings or medallions on shared use paths should be used to clarify a primary travel route. They may also be used at regular intervals to denote reference distances.

Mile Marker

Function and Content: Aid pathway users with measuring distance travelled. Also provide pathway managers and emergency response personnel points of reference to identify field issues such as maintenance needs or locations of emergency events. System brand mark, distance in whole number miles or decimal miles. Path name and jurisdiction may be included. Marking distance in miles may be achieved via physical sign elements or pavement markings.

Placement: To be placed every $\frac{1}{4}$ to $\frac{1}{2}$ mile along the pathway network.

Point zero should begin at the southern and western-most terminus points of a pathway. Mile numbering should be reset at zero as a pathway crosses a jurisdictional boundary.

Although it is ideal to place mile markers on the right hand side of the path facing bicycle traffic, they may also be installed on one side of a pathway, on a single post back-to-back.



Information Kiosk

Function and Content: A clearing house of information for path users at a more detailed level than other elements. Includes space for orientation maps indicating: bicycle routes, on-street connections, major geographic features, and area destinations. Space shall be available for network rules and responsibilities, as well as emergency and pathway manager contact information and jurisdiction logo. Content is not intended to be read by cyclists in motion, thus MUTCD standards are not required.

Placement: Located at trailheads and major path system access points. Should be set back from the edge of the path travel way in order to provide areas to dwell and consider the information. Not locating the signs within the first three feet of a pathway edge removes a potential physical obstacle from the bicycle travel way, while providing a clear circulation area per accessibility guidelines.



Placement Guidance

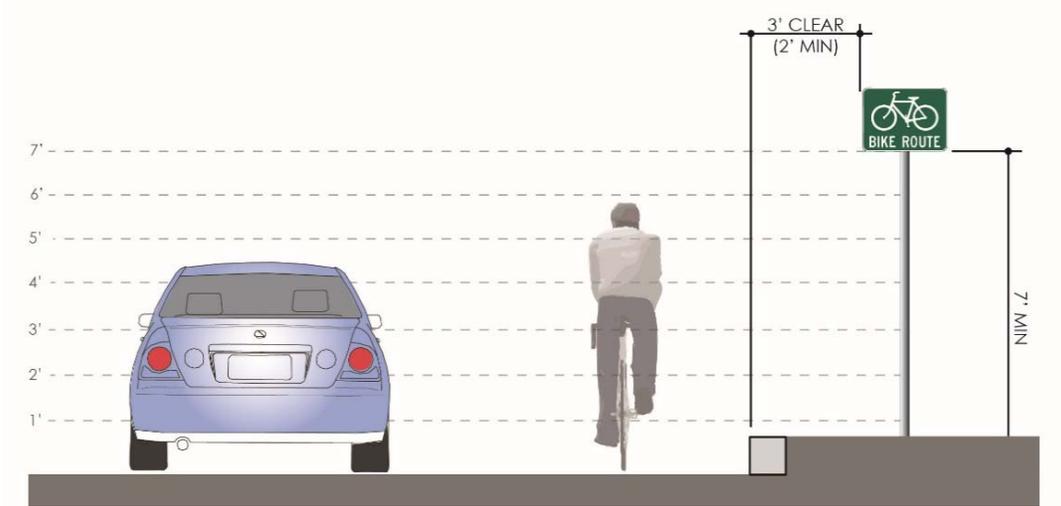
The following pages describe placement guidance for the Wichita Bicycle Wayfinding System. Elements of the wayfinding family should be located in a consistent and logical manner across the City. This will help network users learn and build confidence in the system encouraging additional bicycle use.

Setback and Clearance

Per both the MUTCD and AASHTO, the nearest edge of any potential bikeway obstruction including signs and mile markers should be a minimum of two feet from the edge of travelway. The lowest edge of post-mounted signs should be five feet (four feet minimum) above finish grade for off-street or path facilities. The lowest sign edge of on-street bicycle signs should be seven feet.



STANDARD SETBACK AND CLEARANCE FOR PATH WAYFINDING



STANDARD SETBACK AND CLEARANCE FOR ON-STREET WAYFINDING

Spacing

Bicycle-oriented wayfinding elements are designed to be legible by the cyclist while in motion. In order to help ensure that information is easily understood, care should be taken not to place multiple wayfinding signs too close together so that they obscure each other.

In general, regulatory and warning signs are a higher priority than wayfinding signs. Care should be taken to not obscure priority information. This is achieved by providing a minimum spacing between signs based on vehicle travel speeds and perception response times. Per the table below, signs may be spaced closer together when posted travel speeds are slower.

Per AASHTO, 18 mph is the design speed used on shared use pathways. Thus, all signs on paths should be spaced 75 feet apart in order to maintain their legibility. On roadways, spacing is increased so that both motorists and cyclists have adequate time to recognize and respond to information provided on signs.

Design speed should not be confused with travel time. When travel time is added to wayfinding signs, a casual pace of 10 mph or six minutes per mile is typically used.

Minimum Suggested Sign Spacing

<i>Speed (mph)</i>	<i>X = Distance between signs (feet)</i>
18	75
25	100
30	125
35	150
40	200
45	250
50	300

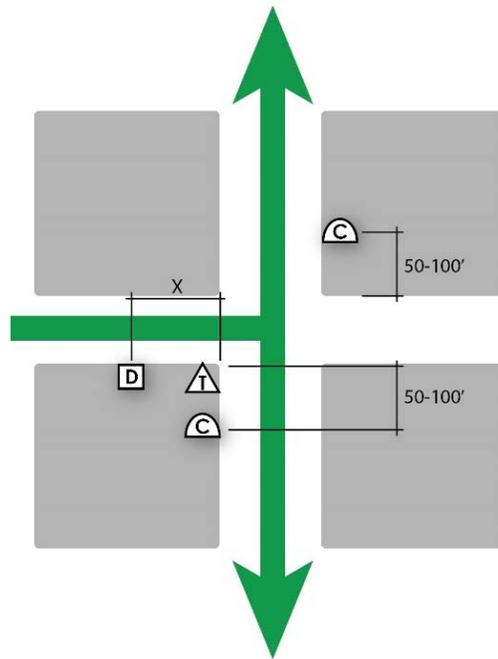
*Distance "X" in the general placement diagram below is based on posted roadway speed.
Source: ODOT Sign Policy Manual*

General Placement

When two bikeways intersect, the general approach is to place a directional sign prior to the decision point followed by a confirmation sign or pavement marking after the intersection to confirm intended direction. While this approach provides redundant information, it ensures that the system does not break down if one sign is compromised.

See the text above for typical distance “x” between signs. When higher priority signs are present, the suggested sign placement distances may adjust per the above Minimum Suggested Sign Spacing table in order to not obscure other roadway signs.

Signs may be placed on existing posts, poles, or other supports as practical, if such supports allow mounting in accordance with the MUTCD.



C: confirmation sign

D: Decision sign

T: Turn sign

Typical Placement Scenarios

A variety of navigational challenges were reported by Wichita community members. In response, the following typical placement scenarios were identified by project stakeholders as navigational issues in need of clarification:

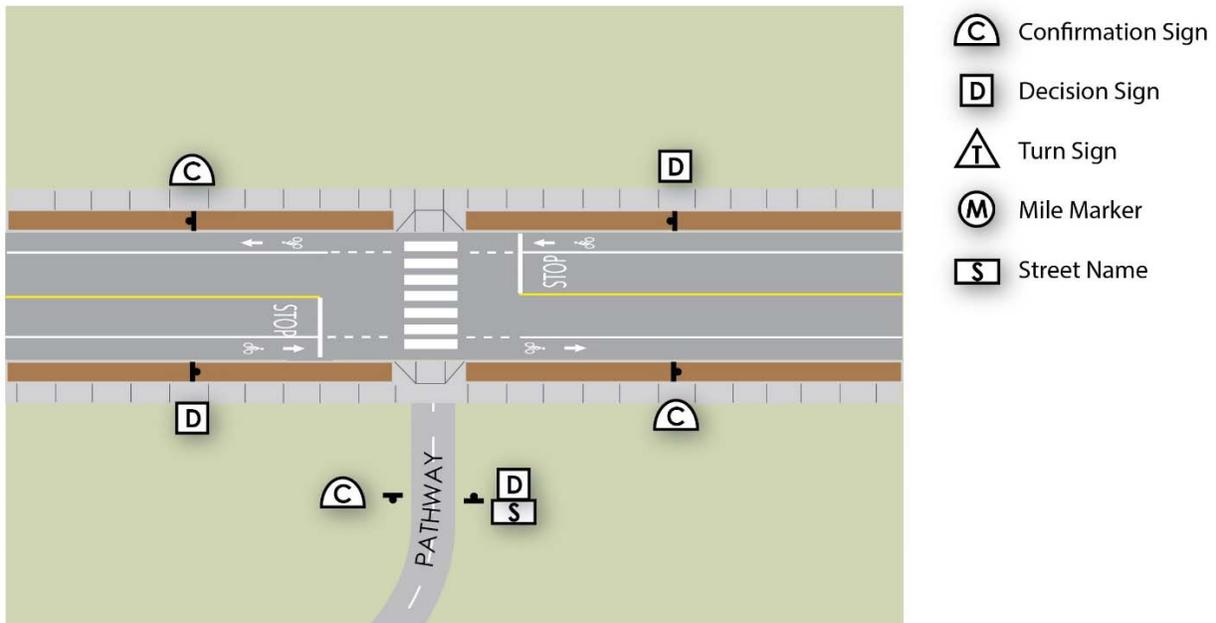
- Off-street / On-street At-Grade Transition
- Pathway Bifurcations and Under Crossings
- Off-street / On-street Transition at Path Access Point
- Navigation from Path to Destination
- Circuitous Routes

The following exhibits show wayfinding information only. Regulatory signing is to be placed as per the MUTCD.

Off-street / On-street At-Grade Transition

When transitioning between an off-street path facility and an on-street facility, it is important to advise travelers of their route options as well as provide confirmation. In this scenario, decision signs direct cyclists to their destination choices while confirmation signs reinforce that the user is on a designated facility after they have made their transition between facility types.

When a path facility meets a road, the roadway should be identified by name. When a stop sign is present, a street name sign may be placed on top. When no stop is required, the roadway name may be included in the content of the directional sign.

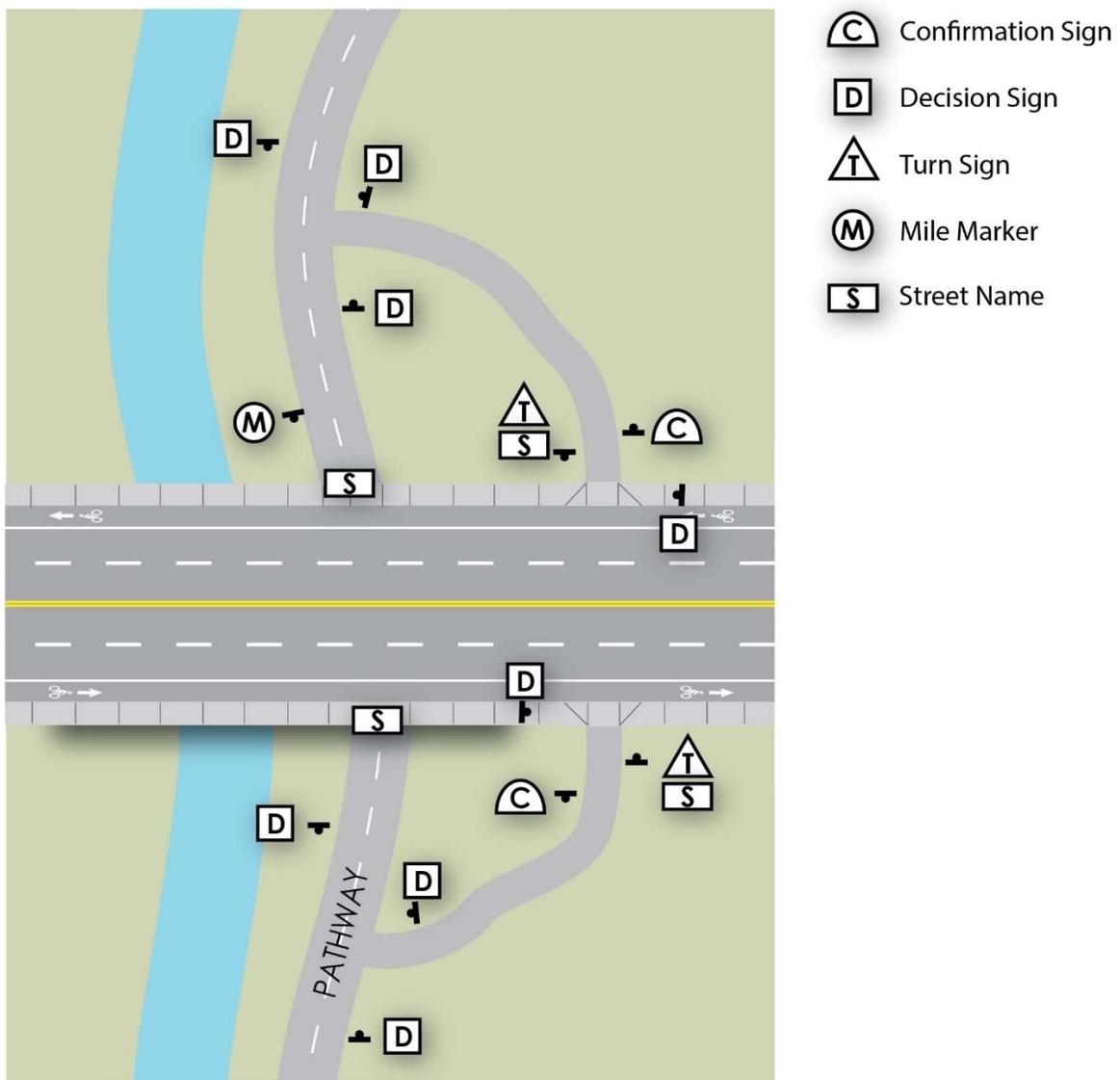


Off-street / On-street At-Grade Transition

Pathway Bifurcations and Under Crossings

Connections and access points between the off-street and on-street network may result in path bifurcations. At such junctions, it is important to inform cyclists of where the alternative route option goes. This may be done via decision signs located at junctions.

Under crossings benefit from applying street name sign blades above pathways on bridge or tunnel infrastructure. These signs should be mounted to the bridge or tunnel structure, centered over the pathway. Street name sign blades should also be added to signs when paths meet roadways at-grade. If a stop sign is located at these facility intersections, a standard street name sign blade may be added to the top.



Pathway Bifurcations and Under Crossings

Off-street / On-street Transition at Path Access Point

When transitions are made between off-street and on-street facilities, decision signs shall be placed prior to intersections with confirmation signs provided after turn movements. In a situation where a short access path connects the on-street and off-street facilities, decision signs provide both confirmation and directional options to a user entering the pathway.

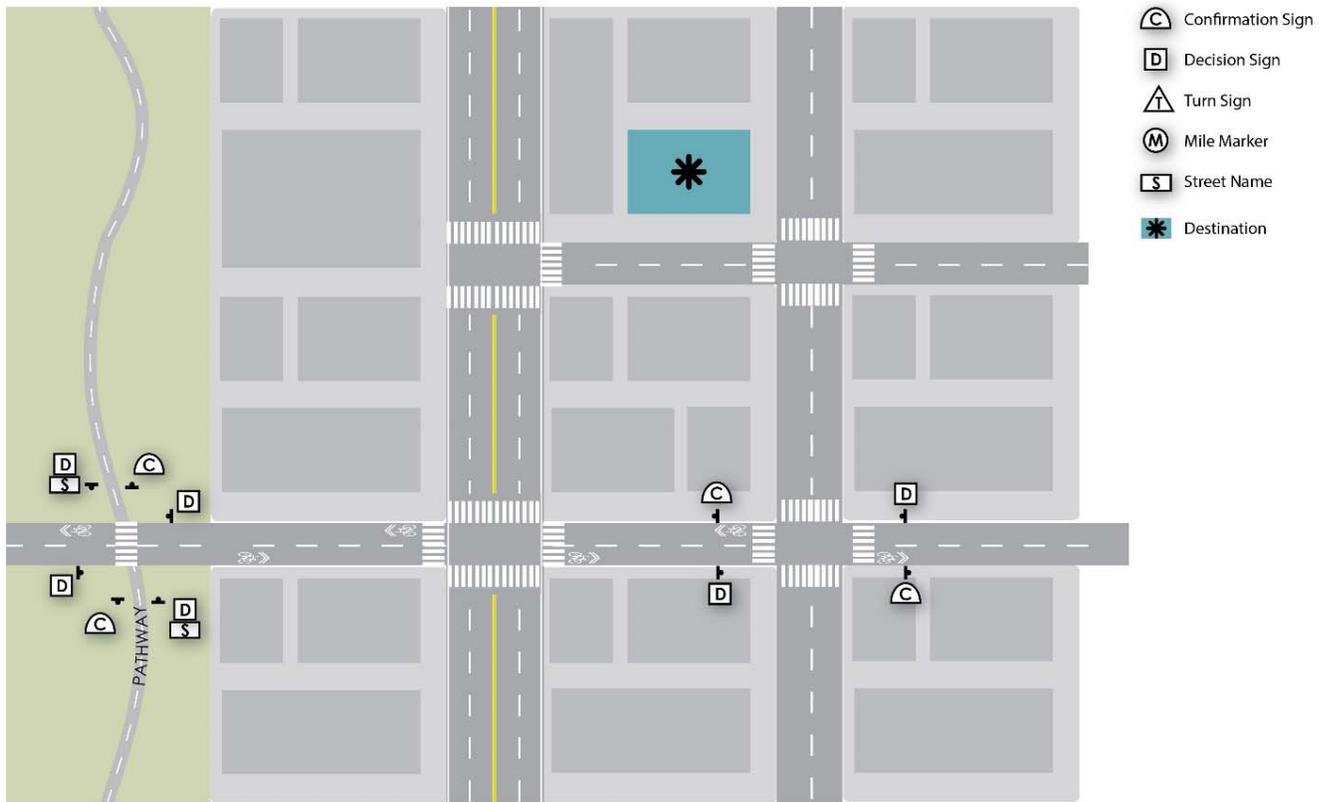
In this scenario, custom street name sign blades should be used along the bicycle boulevard heightening awareness of these routes as bicycle facilities. The presence of route identifying street name sign blades and shared lane markings minimizes the need for confirmation signs along the bicycle boulevard.



Off-street / On-street Transition at Path Access Point

Navigation from Path to Destination

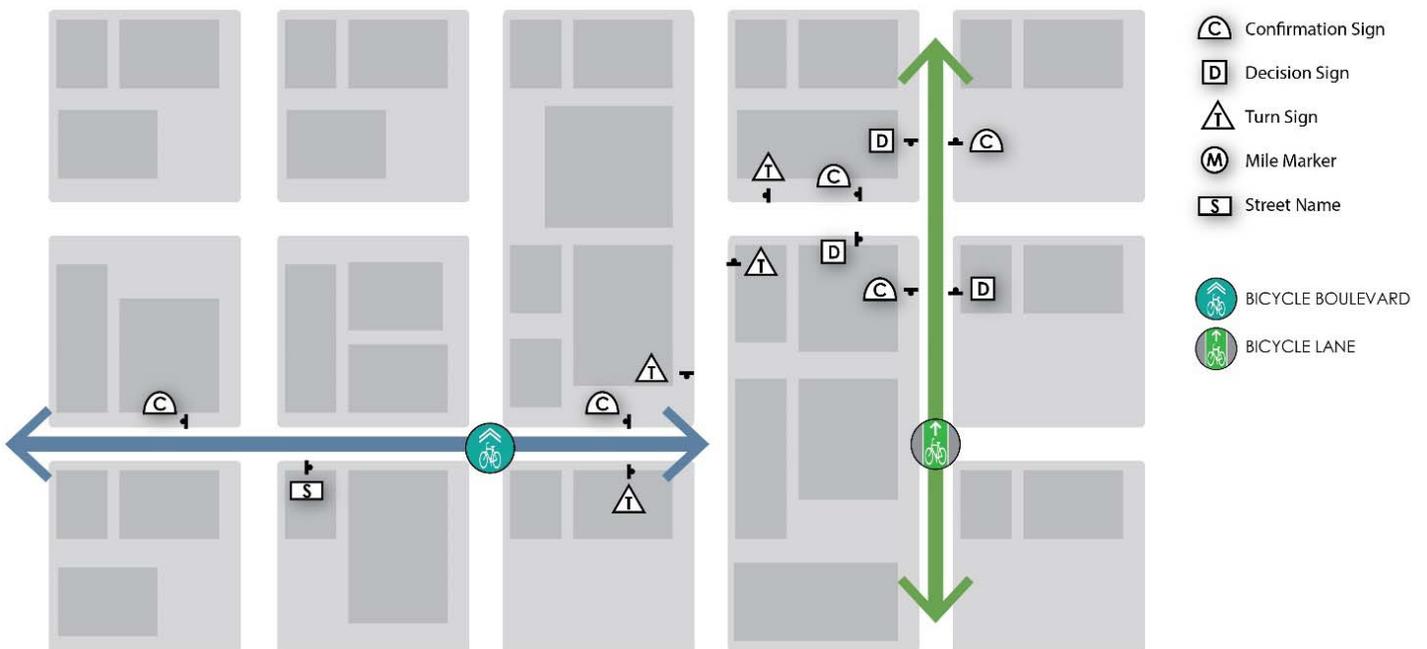
Oftentimes destinations occur without direct connections to the bicycle network. Destinations off-network may be signed when a straight, safe bicycle connection or route is available. Engineering judgement must be used to determine whether the connecting route is suitable for cycling.



Navigation from Path to Destination

Gap between On-Street Facilities

When gaps occur between on-street facilities, wayfinding signs may be used to provide connectivity if the route is suitable for bicycle travel. When jogs in an on-street route occur, a series of turn and confirmation signs should be used to emphasize the correct direction of travel. Turn signs should be placed well enough in advance of the required turn movement to allow the cyclist to perceive the information and respond accordingly. Confirmation signs need not be used after a turn movement when block size is so short that the next turn sign is visible.



Gap between On-Street Facilities