
appendix

- A.3 Best Practices
- A.29 Policies and Standards
- A.40 Online Survey Report - 1
- A.48 Online Survey Report - 2

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WAYFINDING BEST PRACTICES

Off-Street Bicycle Network Wayfinding Guide

Maricopa Association of Governments



August 27, 2014

Alta Planning + Design
MERJE | Environments & Experiences
Gunn Communications

A.4

Wayfinding consists of four questions; 'where am I?', 'what direction should I take?', 'where can I go?' and 'what can I remember?'

Overview

This best practice review is provided to assist in the development of a wayfinding strategy for the Phoenix Metro Area's off-street bicycle network.

This review aims to explain what is involved in effective wayfinding by using well researched and proven practices. Best practices are described with respect to wayfinding principles, wayfinding family elements, placement recommendations, and destination prioritization.

Wayfinding Design

The legibility of a place describes how easy it is to understand. Places that are arranged intuitively so that we can see obvious destinations from a distance, determine pathways, and recognize areas of different character are more legible.

Working at the regional scale, a simple and cohesive set of core principles should be outlined and applied to the wayfinding network. In addition, an effective system includes a consistent approach to placement working within local, state, and federal guidelines. The choices of sign materials, dimensions, colors, and forms should be cohesive to enhance legibility and community identity. Similarly, maps should employ consistent symbology, fonts, colors, and style.

Best Practices are outlined in the following sections:

- Core Principles
- Case Studies
- Precedents
- Technology



CORE PRINCIPLES

1. Connect Places

Wayfinding information should help people travel between destinations and develop an increased sense of how traveling through the region is easy and fun.

2. Maintain Motion

Cycling requires physical effort. Frequent stopping and starting to check directions may lead to frustration. Wayfinding information that can be quickly comprehended contributes to cycling enjoyment. Consistent, clear, and visible wayfinding elements allow cyclists to navigate while maintaining movement.

3. Be Predictable

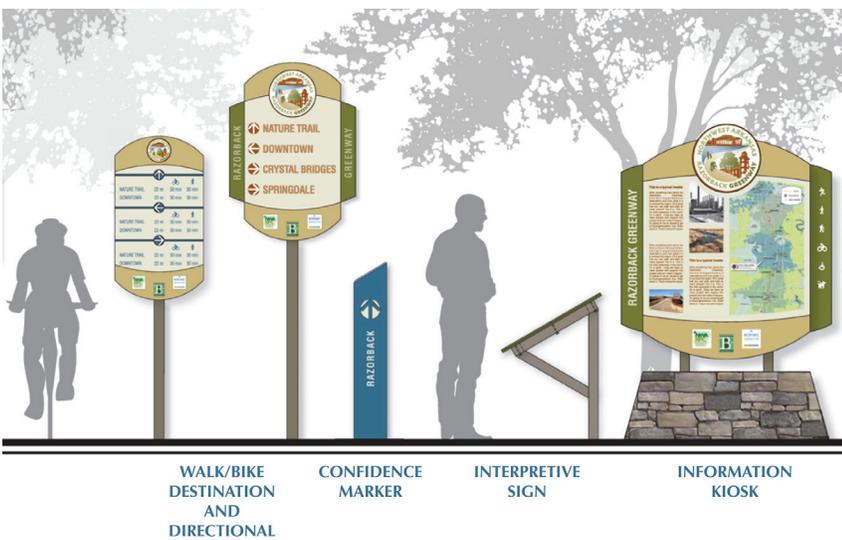
When information is predictable it can be quickly recognized, understood and used. Predictability can relate to all aspects of wayfinding information, from the placement of a sign element or marker to the design of its contents. Predictability also means that new situations are quickly understood. Once riders trust that they will encounter consistent and predictable information, new journeys become easier to attempt.

4. Progressive Disclosure

It is important to provide information in manageable amounts. Too much information can be difficult to understand; too little and decision-making becomes impossible. Information should be provided in advance of where major changes in direction are required, repeated as necessary, and confirmed when the maneuver is complete.

5. Keep Information Simple

Information should be presented to the rider in as clear and logical form as possible. Too much information requires extra time to understand and may overwhelm the user. Poorly designed, structured, or located information forces users to spend more time wayfinding. The longer someone has to try to understand information, the less likely it will be used.



CASE STUDY

Trail Signage Guidelines, City of San Jose, 2014

Overview

The City of San Jose Trail Signage Guidelines recommend a city-wide signage network encompassing 100 miles of trails including thirty-five unique pathways. Trail signs include:

Guidance Signs

To convey trail identity, orientation, direction, and welcome information.

Regulatory Signs

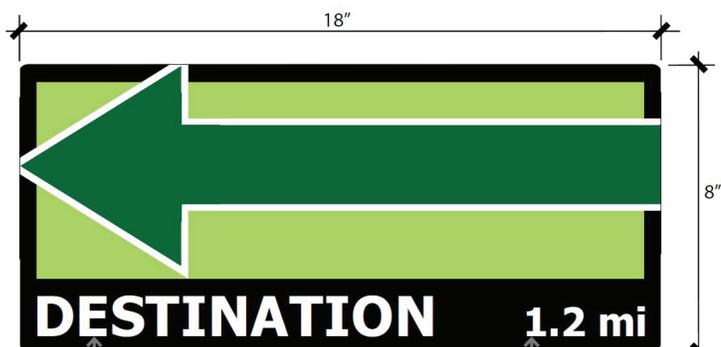
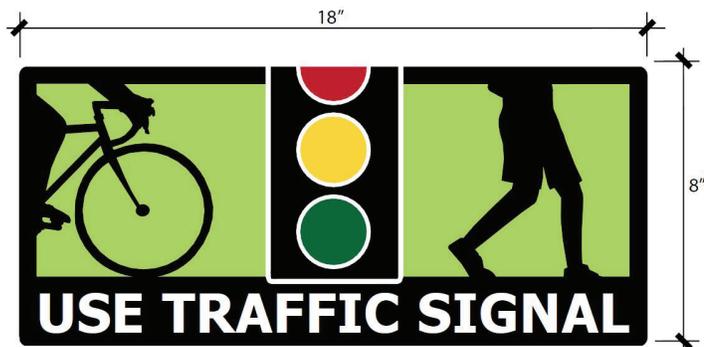
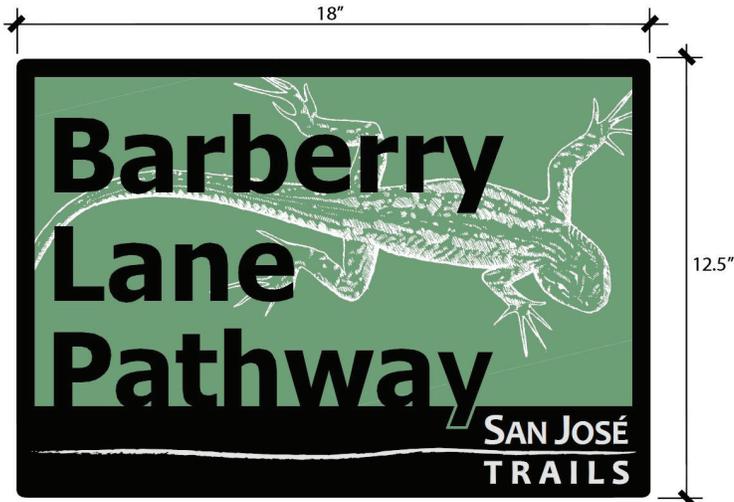
To convey information about trail rules.

Warning Signs

To indicate a potential hazard on the trail.

All signs were “influenced” by the Manual on Uniform Traffic Control Devices.” The family of signs “offer a related and unified graphic appearance.” A framework for customization of signs is included. Signs intended to identify unique trails include trail name, graphic icon, and colored background.





Destination:
Font: Tahoma Bold
Size: 190 pt
Tracking: 25
All Caps

Distance to Destination:
Font: Tahoma Bold
Size: 80 pt
Lower Case

Images from the City of San Jose
Trail Signage Guidelines

A.10

Sign Standards

Shape

Sign shapes are limited to rectangles/squares. Symbols or logos with other shapes (such as a stop sign or a circular trail identity badge) are set on a background color within a rectangular sign. Corner radii are large enough to avoid sharp corners.

Size

Common 18" width for signs that would typically be grouped together, allowing uniform vertical stacking on a pole sized for pedestrian and bicycle viewing speeds and distances, smaller than standard roadway signage.

Color Palette

Influenced by Manual on Uniform Traffic Control Devices (MUTCD) standards for background colors:

Yellow = warning

Red = regulatory, prohibitive

White = regulatory, permissive

Green = direction/guidance

Brown = recreation/amenity/parks

Text

Sized appropriately for pedestrian/bicyclist viewing distance and speed, single consistent font for all rules and regulations, directional, and traffic signs. Fonts for trail identification signs may vary to accommodate trail-specific design concepts.

Fabrication

Aluminum sign plaques with printed vinyl graphics and graffiti-resistant coating. Mounted on galvanized tube steel posts.

Unique Identification

Individual trails were each given unique names to aid in identification and sense of place. Trail name signs are installed at trail heads. Names and icons were selected and assigned to correspond to each trail's unique history, characteristics, or location.

Milestone Markers

Placement

Markers are installed at all trail heads and at 1/4 mile increments along each trail, measured from point 'zero' for each trail.

Point "Zero"

The "zero" or point of beginning for each trail is located at the northern-most or western-most point of each trail. Mileage counts restart at jurisdictional boundaries. Routes that include on-street segments include those portions within the mileage total however they are not signed with markers. Parallel routes, such as along a river or canal, include a geographic reference in addition to the same mileage number on each side, for example "1.5E" and "1.5W."

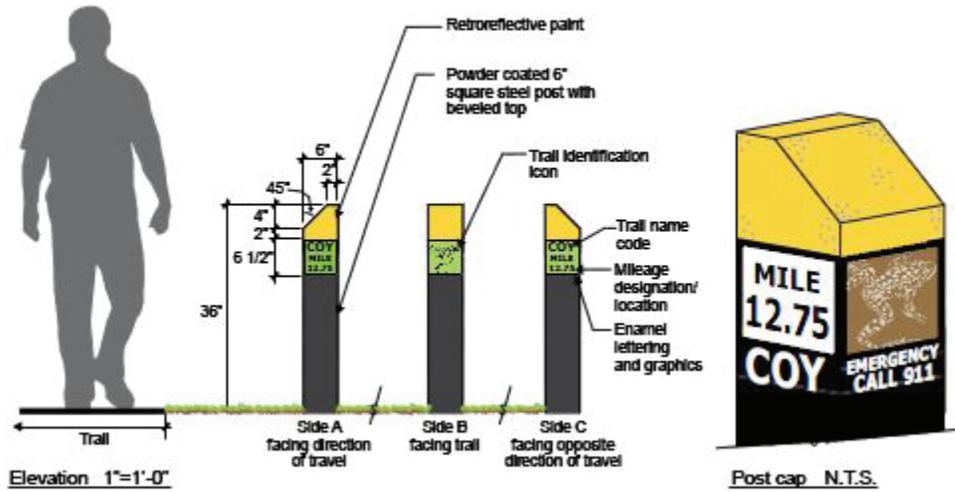
Format

Mileage is shown in decimal miles with hundredth-mile accuracy (13.00, 13.25, 13.50, etc.).

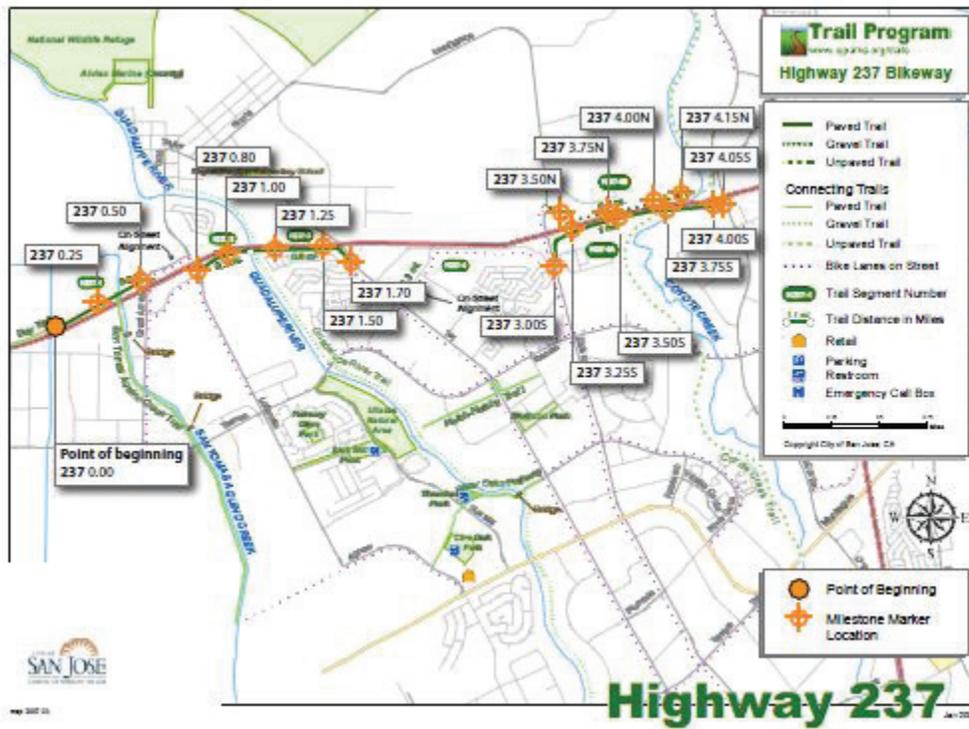
Emergency Response

Once installed, each marker's location and access point information will be recorded and transmitted for entry into the City of San José emergency dispatch system.

Images: City of San Jose



Milestone Marker



San Jose Milestone Map

CASE STUDY

Louisville Loop, Wayfinding Master Plan, 2012

Overview

The goal for wayfinding along the Louisville Loop trail system:

All signs are to be informative, functional, and to capture the identity of the Louisville Loop. There is also a need to identify the unique segments of the Loop with a color-coding system.

Uniformity in design layout, materials, and style are key components of ensuring that this wayfinding system delivers the intended results.

Design Principles

- The wayfinding sign program will serve to compliment and reinforce the OVERALL AIMS of the Louisville Loop.
- The wayfinding sign program will promote HEALTH and WELLNESS in Louisville.
- The wayfinding sign program will provide ORIENTATION and promote EASE OF USE.
- The wayfinding sign program shall highlight and promote CONNECTIONS along the Loop.
- The wayfinding sign components shall reinforce the IDENTITY of the Louisville Loop, providing a unified character for the system, even in disparate or disconnected segments.



Louisville Loop



Images from the Louisville Loop
Wayfinding Master Plan.

A.14

Sign Standards

Family of Elements

The Wayfinding Master Plan is comprised of a family of sign types including:

Directional Signs

Directional signs are used at key decision or access points where the Signature Marker is not used.

Mile Markers

Mile markers allow users of the Louisville Loop to identify their location and segment and aid in emergency response.

Trailhead Signs

Trailhead signs shall be included at all trailheads for the Louisville Loop. Signs shall include trail route segment, map of full trail system, and trail rules.

Trail Identity Signs

The purpose of the identification signage is to identify the Loop to vehicles where the Loop and existing streets come together or cross.

Signature Markers

Signature Markers create a unique and recognizable symbol that identifies the Louisville Loop.

Color

Sign panel color corresponds to the designated color assigned to the physiographic region in which the sign is located. All destinations on the panel, regardless of the region in which the destination exists, shall be the same color. Individual destinations will not be color coded to the physiographic region in which they exist.

Milestone Markers

Placement

Vertical mile markers should be placed on the side of the shared-use path that is not adjacent to any street, a minimum of 2' from the edge of pavement.

Point "Zero"

Mileage calculations shall originate in downtown with the zero point of the Loop at the base of the Big Four Bridge (Critical Landmark). Mileage shall be calculated counter-clockwise. Vertical mile markers shall be used at every quarter mile designation with the exception of the Loop adjacent to Waterfront Park where the markers shall be in pavement plaques.

Format

Mileage is shown in decimal miles with hundredth-mile accuracy (13.00, 13.25, 13.50, etc.).

Emergency response

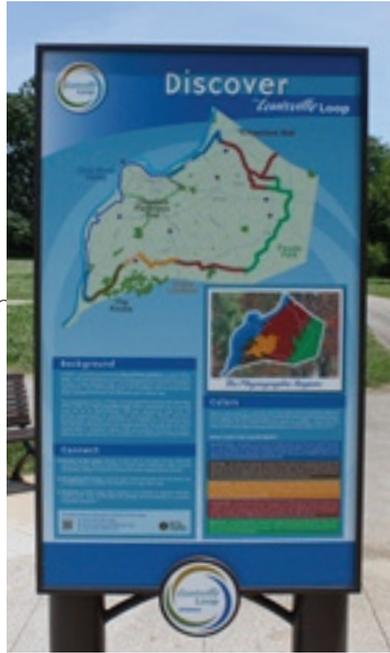
Regardless of section or time of construction, the entire Loop shall have sequential calculations and consistent mile markers to aid in emergency response on the trail per safety standards from Metro Safe.



Signature Brand Mark



Directional Sign



Trailhead Map



Mile Marker Sign



Trail System Identity Sign

Images: LouisvilleLoop.org

CASE STUDY

Get There by Bike, Wayfinding Guidelines for Utility Cycling in Metro Vancouver, BC 2013

Overview

The goals of the Translink Wayfinding Guidelines is to increase cycling as a choice for journeys where it is already competitive i.e. those journeys of 8 km or less. If successful, thousands more people will be starting to cycle to work, to school, and for other normal journeys over the next three decades.

Knowing your Audience

It is critical to identify the types of cyclists you are interested in attracting in order to better organize information around this user group. Below are three groups of cyclists and the needs associated with these groups.

Utility Cycling

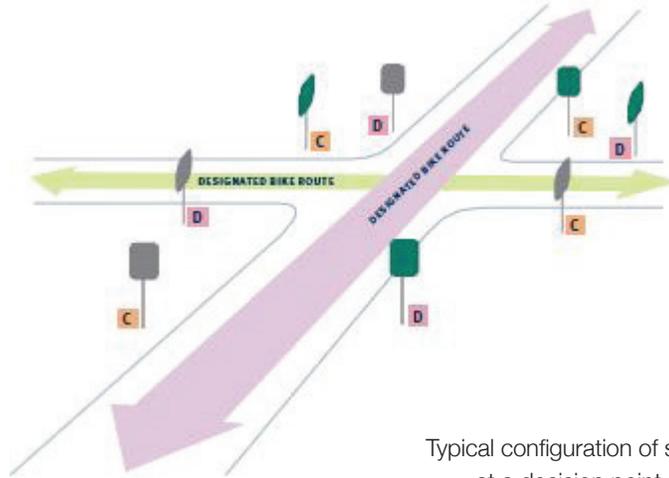
Some people use the network to get to work or other specific purposes. They need consistent, reliable information for their whole journey.

Recreational Cycling

Some people use the network for fun or exercise and with no specific destination. They may look for contextual information and directions to services.

Cycle Tourism

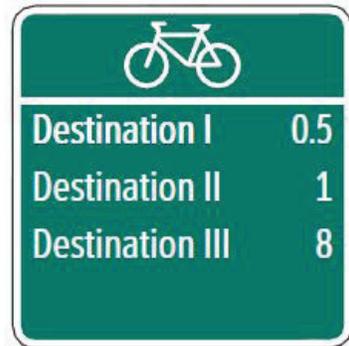
An increasing number of people travel by bike for vacations. They will have a route plan, but may look for places to explore before returning to their journey.



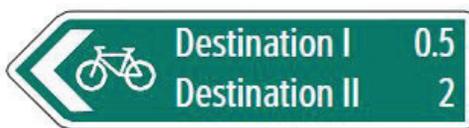
Typical configuration of signs at a decision point.



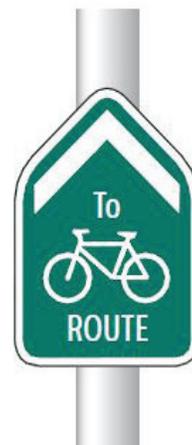
Decision Sign



Confirmation Sign



Turn Fingerboard



Off-Network Waymarker

A.18

Sign Standards

Family of Elements

Decision Signs

On the approach to a decision point, decision signs point the direction to control destinations.

Confirmation Signs

After decision points, confirmation signs reassure cyclists of their direction and confirm additional destinations reached along that route.

Turn Fingerboard

Optional fingerboard signs can be placed after the decision sign, at the point of the turn, to highlight unusual or easily missed turns.

Off-Network Waymarker

Waymarkers can be used on non-designated routes to guide cyclists to the designated cycling network.

Bike Route Sign

Standard TAC signage* can be used as repeaters to confirm that cyclists are on a designated route where full confirmation signs are not practical. At route jogs, an arrow tab can be added.

Wayfinding Logic

Preparing a wayfinding plan requires a consistent logic to be applied to the directional information. Once included on a sign it is important that a destination is signed continuously until it is reached. This can be challenging as signs have a limited text capacity and there may be many possible destinations that could be included.

With “progressive disclosure,” information is spread along the journey. This manages the demand on cyclists’ attention to just what is required at that point in the journey, and also decreases the amount of information on any individual sign and therefore avoids unnecessarily large signs.

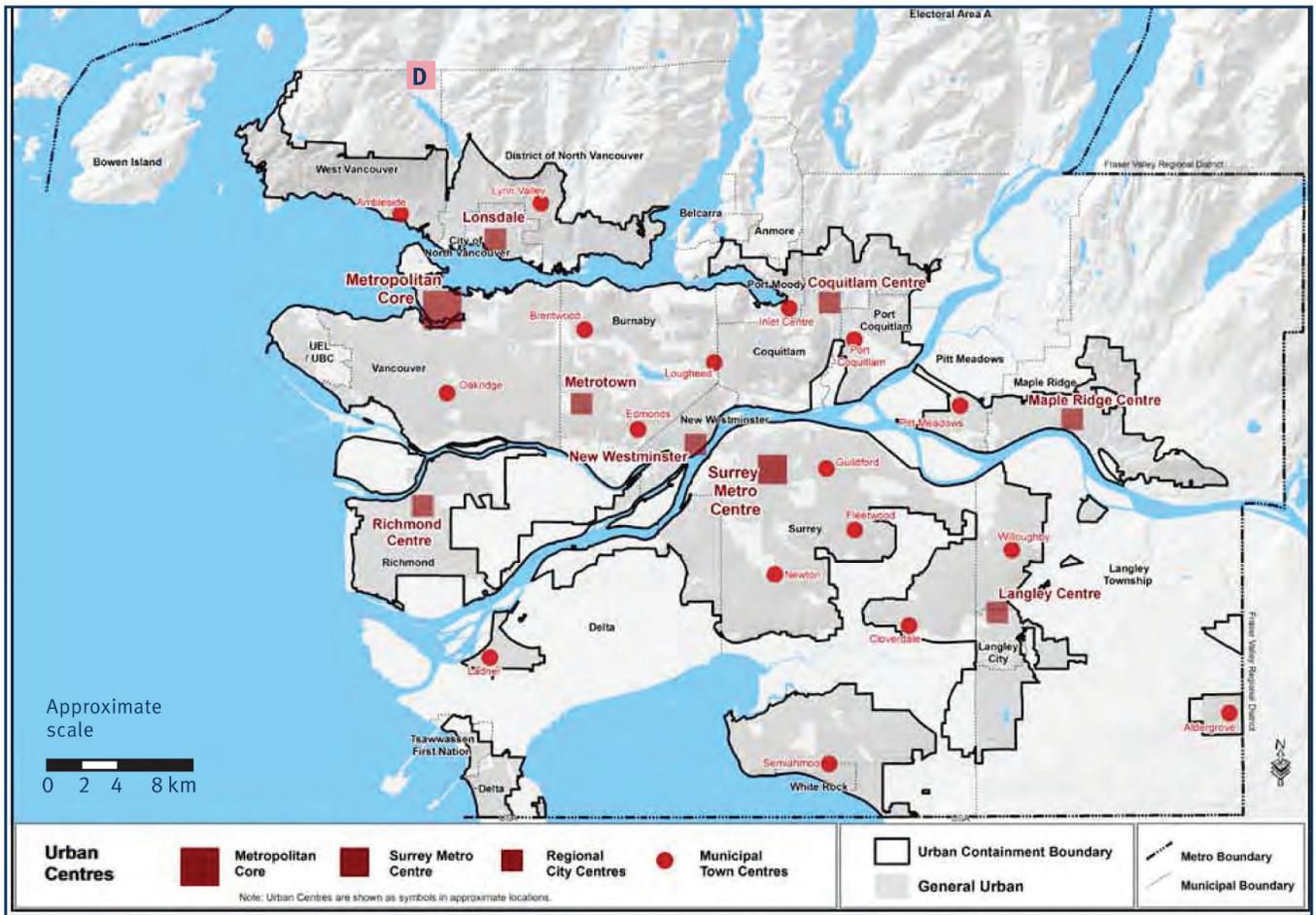
Signing distances suggest the maximum distance that different destinations should appear on directional signage. This simple process ensures that directions to the most important places take priority on signs.

Signing Distances

Type of Destination	Typical Max. Distance
Level 1 Urban Centres	8 km
Level 2 Local Neighborhoods	4 km
Level 3 Major Attractions	2 km

Destination Hierarchy

- Level 1 – Urban Centres
- Level 2 – Local Neighborhoods
- Level 3 – Major Attractions – Parks
- Level 3 – Major Attractions – Trails
- Level 3 – Transit Stations and Exchanges
- Level 3 – Gateways
- Level 3 – Centres outside Metro Vancouver
- Level 3 – Post-Secondary Education
- Level 3 – Major Tourism



Urban Centres as Identified in Metro Vancouver's Regional Growth Plan are Level 1 Destinations. Level 1 destinations are included on signs up to 8 km away.

Map: Translink

CASE STUDY

Intertwine Regional Trail Signage Guidelines,
2012

Overview

The Portland, Oregon Metro Area's Intertwine Regional Trail Signage Guidelines serve as a resource to guide parks and transportation agencies as they plan, design, and fabricate wayfinding signage along regional trails. The Metro Regional Government and its partners developed the manual in response to requests from the public for better uniformity and consistency of signage along regional trails.

Family of Elements

Off-Street Trail Signs

Located along off-street regional trails to provide directional information.

On-Street Connection Signs

Located in the street right-of-way to connect bicyclists and pedestrians between the off-street trail segments.

Intertwine Logo Components

Used in combination with other off-street regional trail and on-street connection signs. Examples illustrate how to add The Intertwine logo to various types of existing and new signs.



Network brand mark, directional sign, and trail access sign

Family of Elements



Trail head

Located at major trail access points which are distinguished by vehicle parking, restrooms, staging areas or other features. This sign type includes a map of the entire trail as well as nearby amenities.

Trail Access

Trail Access signs are located at access points where the trail typically meets the street right-of-way. This sign type identifies the trail and mode of travel and may include a trail map, directions or other information.

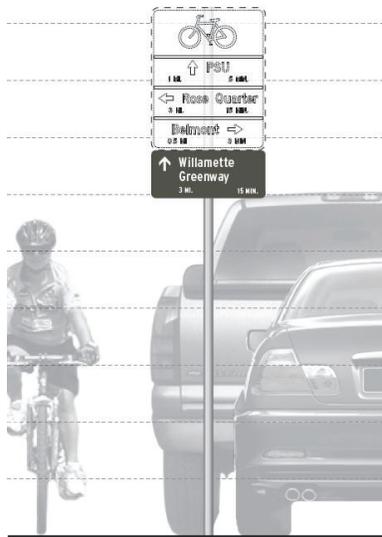
Off-Street Multi-Use Directional

This sign type is located along off-street multi-use regional trails to provide directional information.



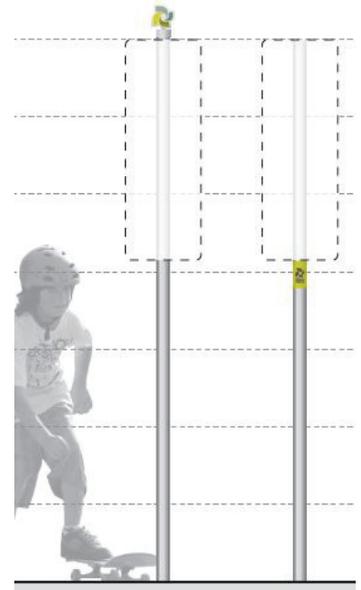
Mile Marker

Marker indicating distance. Half mile increments are shown.



On-Street Bicycle Directional

Located in the street right-of-way to connect bicyclists between the off-street and on-street trail segments.



The Intertwine Logo

The Intertwine logo may be used in combination with other off-street regional trail and on-street connection signs. Examples illustrate how to add The Intertwine logo to various types of existing and new signs.

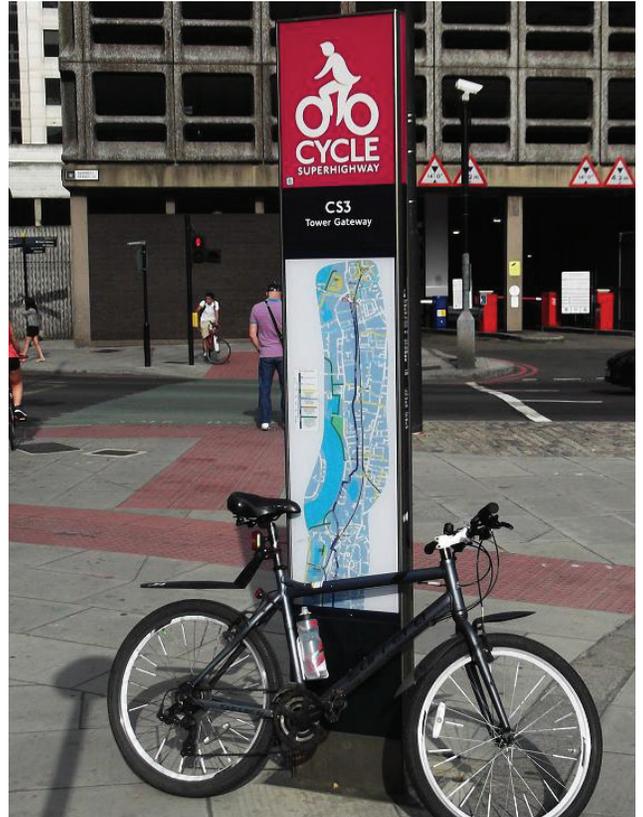
Precedents



Temporary signs allow members of the public to provide cycling encouragement and wayfinding in Memphis, Tennessee.

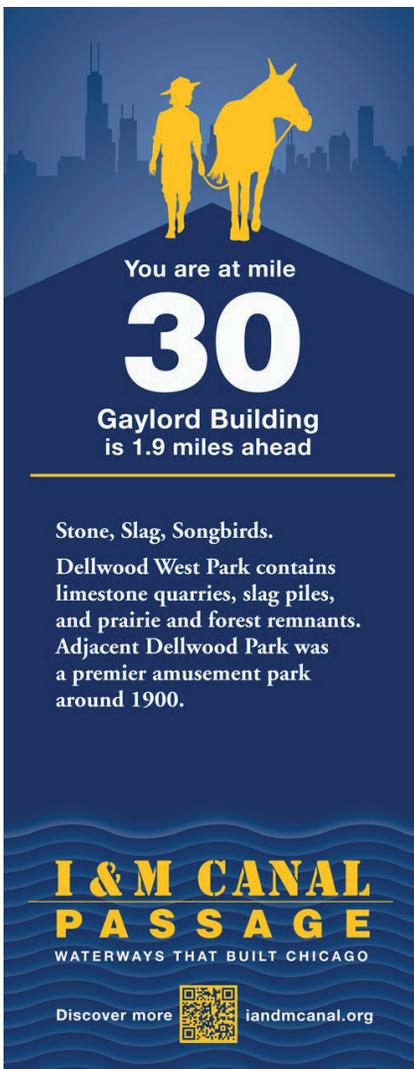


Mile markers integrated into paving, Los Angeles River Trail.

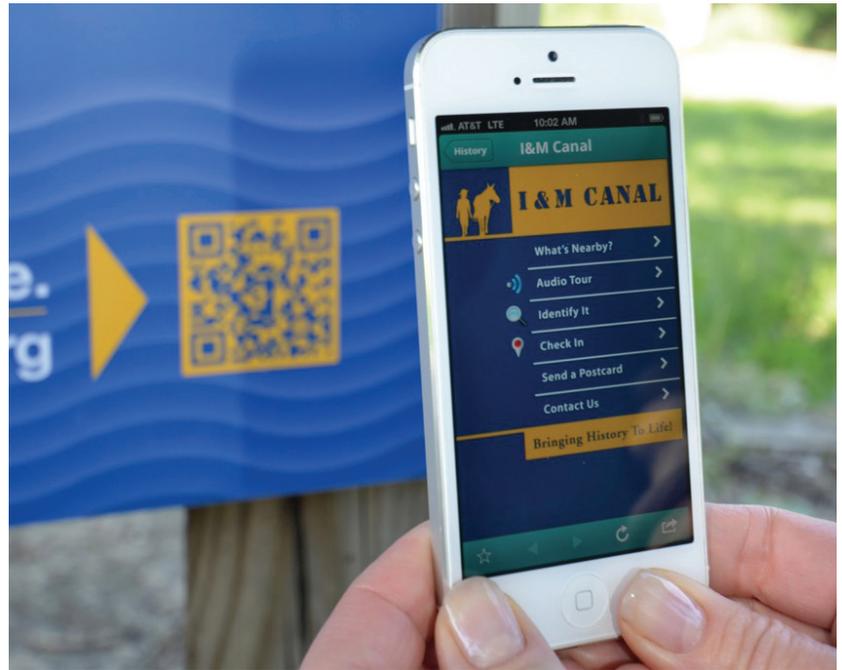


Pavement color, path name, and markings create continuity between on and off-street cycling facilities on London's Cycle Super Highway

TECHNOLOGY



Images: Cardosi Kiper Design Group, Inc.



I&M Canal State Trail

The Illinois & Michigan wayfinding program includes 61 miles of multi-use trails along the original 96 mile I&M Canal. A quality visitor experience was built around the combination of technology and accessible design. 300 sign panels along the network each include a unique QR code that links visitors to information relevant to their specific location. Information associated with the QR codes includes:

- What's Nearby: surrounding amenities.
- Audio Tour: An auditory narration of the history along the corridor.
- Identify It: Allows users to ask questions and identify local flora and fauna.
- Check-In: Links to social media outlets such as Twitter and Facebook.
- Send a Postcard: Historic photos that can be sent to friends with a personalized message.
- Contact: Encourages users to check in with agency staff regarding safety issues along the trail

Cyclodeo

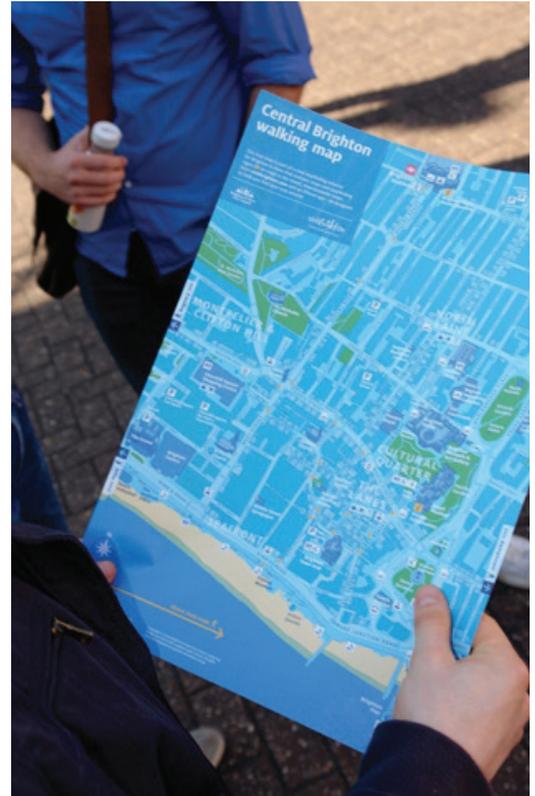
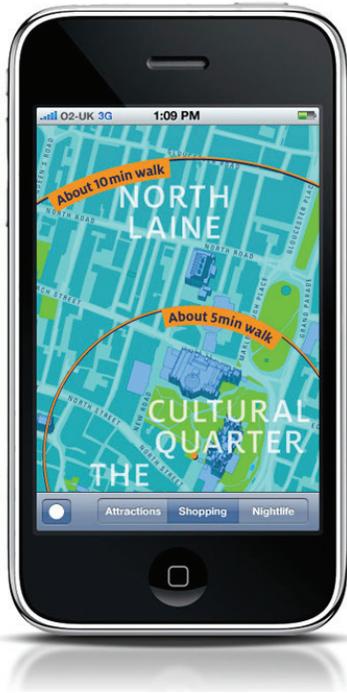
Dutch start-up, Cyclodeo has created an on-line collection of geo-tagged bike route videos. The video clips cover several bikeable cities including Amsterdam, Copenhagen, London, New York, and San Francisco. The clips are linked to on-line maps which allow internet users to select a route and watch an associated ride. The virtual bike rides allow potential riders to preview a route they may be interested in riding. Statistics on distance, ride time, elevation, and travel time are included for reference.

The screenshot shows the Cyclodeo website interface. At the top left is the Cyclodeo logo (a bicycle icon in a circle) and the name 'cyclodeo'. To the right is a search bar with a dropdown arrow and an 'Explore' button. Further right are social media icons for Twitter, Facebook, and Email, and a green 'Join!' button. The main content area is split into two parts: on the left, a Google Map showing a red route through Golden Gate Park and surrounding streets like Lincoln Way and John F Kennedy Dr; on the right, a video player showing a first-person perspective of a cyclist riding on a paved path. Below the map and video is the title 'EDIT Golden Gate Park _ John F Kennedy Dr _ martin Luther King Jr Dr'. Under the title are 'Like', 'Share' (with social media icons), and 'Report' buttons. Below these are the owner's name 'sam@uk', distance '3,314', and time '10m 3s'. A comment count of '81' is shown. Below the title and buttons is a 'Leave Your Comment' section. On the right side of the page is a 'Statistics' table.

Statistics	
Location	San Francisco,US
Duration	10m 3s
Speed avg/max (KPH)	19.78 / 77.34
Elevation start/finish (M)	21/ -26
Distance (m)	3,314
Recording time	25/05/2013 - 04:04 AM
Upload time	26/05/2013 - 07:58 AM

Image: cyclodeo.com

TECHNOLOGY



Brighton and Hove

The Brighton and Hove wayfinding scheme includes signage, printed maps, downloadable maps, and a smart phone app. The wayfinding components are designed to work together, using a consistent brand, visual language, and mapping aesthetic across all media.

The free app includes walking circles—loops that show how long it takes to walk to various points of interest from the user's current location.

The colorful map included in the app displays 3D icons of major landmarks. There are options to display attractions, shopping, and nightlife destinations.

Images: Applied Information Group

POLICIES AND STANDARDS

MAG Off Street Bicycle Network

Maricopa Association of Governments

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MUTCD

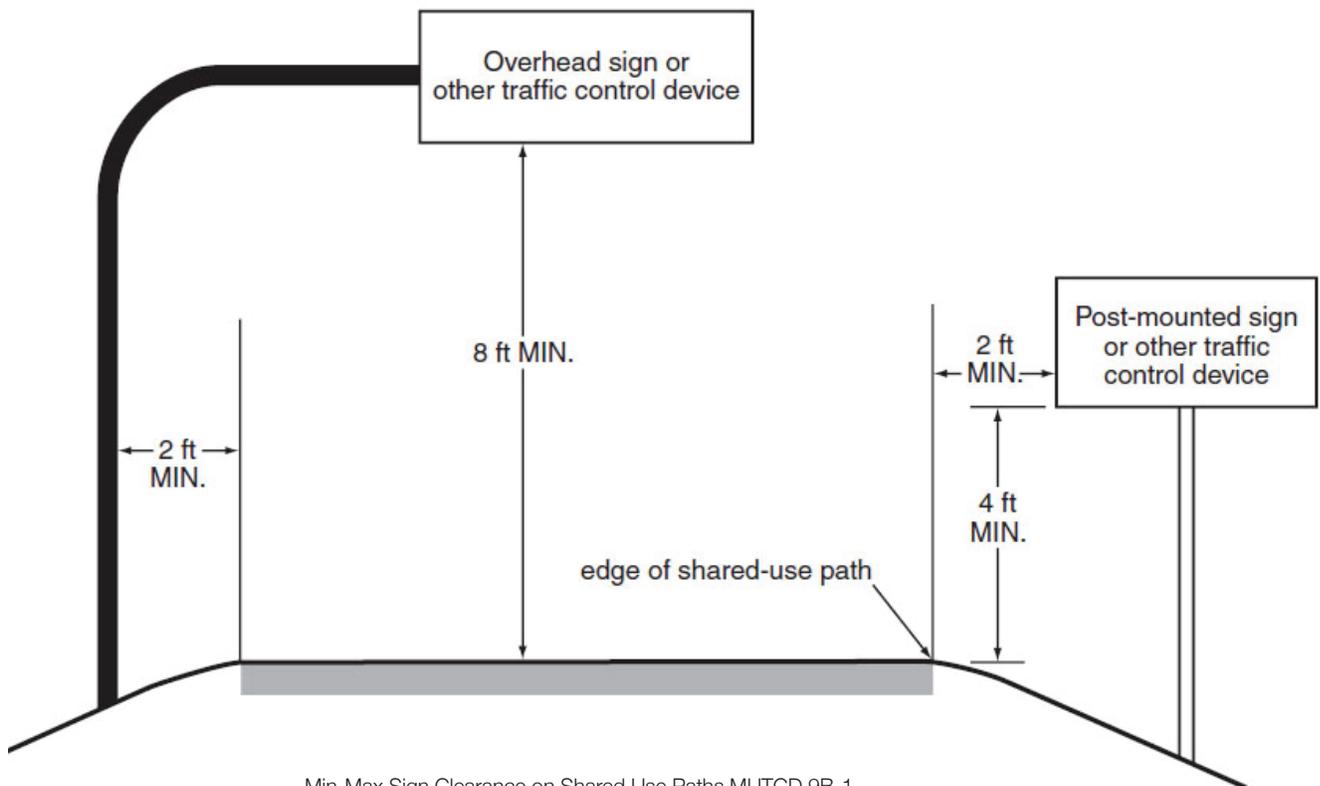
- The Manual on Uniform Traffic Control Devices, or MUTCD is the national standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel. While the MUTCD provides standards and guidelines for the design, size, and content of bikeway wayfinding signs, many jurisdictions have implemented unique signs to enhance visibility or reinforce local identity.

Devices should be designed so that:

- Size, shape, color, composition, lighting or retroreflection, and contrast are combined to draw attention to the devices.
- Size, shape, color, and 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.

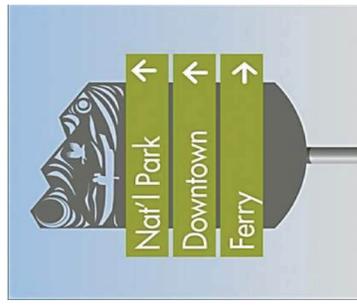
While many jurisdictions deviate from the MUTCD for pathway directional signage, the use of federal funds is more likely to be approved when the MUTCD is closely followed. Options for customizing signs while adhering to the MUTCD include adding unique mounting structures or an identifying enhancement marker. Refer to chapter 9 – section 9b.01 for more information on signage application and placement standards.

Refer to chapter 9 – section 9B.20 for more information on guide sign standards for bicycle facilities.



MUTCD Spectrum

Rigid



Flexible

- MUTCD compliant signs
- Information is clear and consistent.
- Regional context or local identity not present.
- Variation in sign sizes and shapes.
- Encouragement information not present.

- D1 series signs consolidated into a single sign reduces the number of signs required, overall sign clutter, and sign dimensional variation.
- MUTCD does not provide for travel times however numerous cities and states (Portland OR, Eugene OR, Nampa ID, Columbus, OH and Jackson WY) incorporate this additional information.

- Community signs may be augmented by unique system or municipality identifiers or enhancement markers as per Section 2D.50.
- MUTCD allows for custom color variations for community wayfinding signs.

- Directional sign with clear directional information and arrows, high contrasting text, custom sign post, and decorative elements.

- Custom framing and support structures. Unique sign shapes. High contrast graphic content, non-standard colors and layout.



**NCUTCD**

The National Committee on Uniform Traffic Control Devices (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 currently has a proposal into the FHWA to add community wayfinding standards officially apply to shared-use pathways.

ADA Guidance

The Architectural and Transportation Barriers Compliance Board provides guidance for accessible design for the built environment including Shared Use Paths. Guidance which should be considered when designing and placing wayfinding signs includes the following:

- **Vertical Clearance:** Vertical clearance, including protruding objects such as signs, shall be 80 inches high minimum.
- **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.
- **Post-Mounted Objects:** Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches maximum when located 27 inches minimum and 80 inches maximum above the finish floor or ground. 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.
- **Required Clear Width:** Protruding objects shall not reduce the clear width required for accessible routes.
- **Reach:** Where a forward reach is unobstructed, the high forward reach shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the finish floor or ground. Note that different standards exist for exhibits designed specifically for the primary use by children.
- **Intersection Treatments:** The width of curb ramps runs and blended transitions shall be equal to the width of the shared use path.
- **Detectable Warning Surfaces:** shall extend 2.0' minimum in the direction of pedestrian travel. At curb ramps and blended transitions, detectable warning surfaces shall extend the full width of the ramp run (excluding any flared sides).
- **Horizontal Surface Openings:** Shall not permit passage of a sphere more than 0.5" in diameter. Elongated openings in gratings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

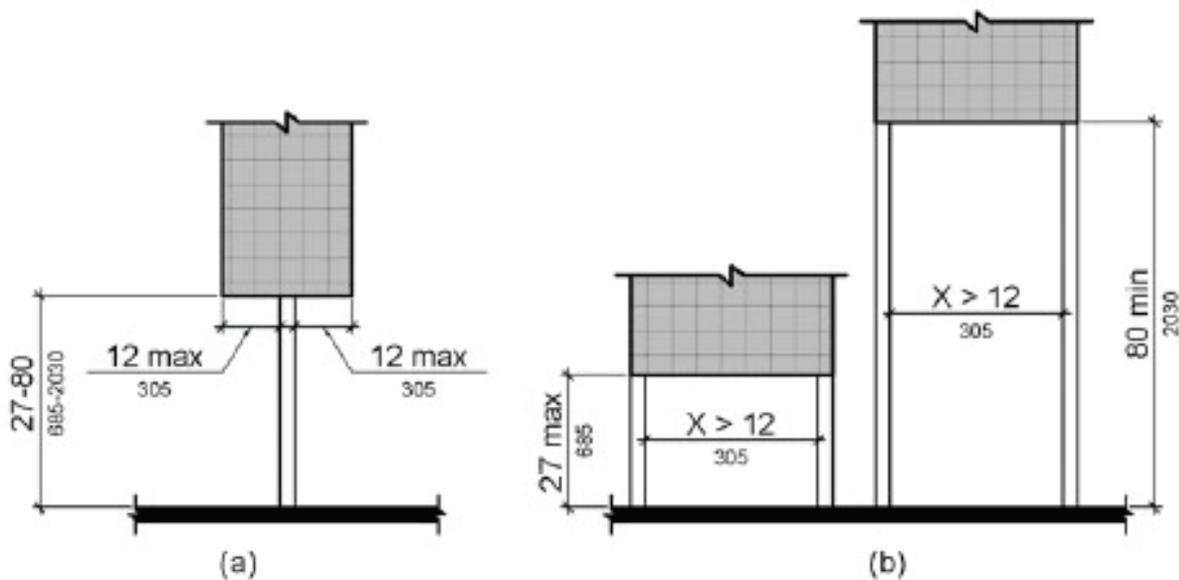


Figure 307.3 Post-Mounted Protruding Objects



AASHTO Guide for the Development of Bicycle Facilities

The AASHTO Guide for the Development of Bicycle Facilities provides information on the physical infrastructure needed to support bicycling facilities. The AASHTO guide defers to Part 9 of the Manual on Uniform Traffic Control Devices (summarized above) for basic guidelines related to the design of wayfinding systems for bikeways. Additional information provided by AASHTO on locating wayfinding signs in the landscape is listed below.

- Many communities find that a wayfinding system for bicycles is a component of a bicycle network that enhances other encouragement efforts, because it provides a visible invitation to new bicyclists, while also encouraging current bicyclists to explore new destinations.
- Routes should be named with either a term that describes the corridor (for example, a route that generally follows a waterway or valley, or a route that follows or parallels a well-known street), or destination, using a relatively well-known place reference that is at the end of that specific route.
- The M1-8 signs are appropriate for local and regional networks of numbered or lettered routes. They are generally more appropriate for longer distance routes. With numbered or lettered routes, it is important to establish an organized approach. For example, a numbered system could be set up to use even numbers for east-west routes and odd numbers for north-south routes.
- Bicycle wayfinding signs should supplement other infrastructure improvements so that conditions are favorable for cycling, as signs alone do not improve safety.
- Guide signs may be used to designate continuous routes that may be composed of a variety of facility types and settings.
- Wayfinding guidance may be used to provide connectivity between two or more major bicycle facilities, such as a street with bike lanes and a shared use path.
- Wayfinding may be used to provide guidance and continuity in a gap between existing sections of a bikeway, such as a bike lane or shared use path.
- Road name/path name signs should be placed at all path-roadway crossings to help users track their locations.
- Reference location signs (mile markers) assist path users in estimating their progress, provide a means for identifying the location of emergency incidents, and are beneficial during maintenance activities.
- On a Shared-Use Path, obstacles, including signs, shall be placed no closer than 2' from the near edge of the travelway and no more than 6' away. For pole mounted signs, the lowest edge of the sign shall be between 4 – 5' above the existing ground plane.
- For advance warning sign placements on shared use paths, the sign should be placed to allow adequate response time. The location of the sign should be based on the stopping sight distance needed by the fastest expected path user; however, in no instance should the sign be located closer than 100 feet from the location warranting the advance warning.

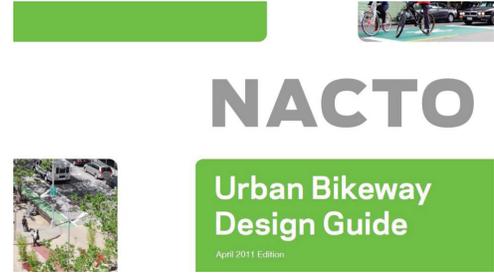


USBR: United States Bicycle Route System

Established in 1978 the purpose of the U.S. bicycle route numbering and marking system is to facilitate travel between the states over routes which have been identified as being more suitable than others for cycling.

1. **Route Numbering:** Like United States Numbered Highways and many national routing systems, the U.S. Bicycle Route system is designed to roughly follow a grid. Mainline routes are the major cross-country routes and are represented with one- or two-digit numbers. Even-numbered routes are planned to primarily run east-west, with low-numbered routes in the north and high-numbered routes in the south. Odd-numbered routes will primarily run north-south, with low-numbered routes starting in the east and ascending in number toward the west. Three-digit numbers are assigned to auxiliary routes, with the last two digits denoting the parent that the auxiliary connects to.
- In order for a route to qualify as a U.S. Bike Route, it needs to connect two or more states, connect multiple U.S. Bike Routes, or connect a U.S. Bike Route with a national border.

Currently Arizona does not have any designated cross state routes, but possible routes have been identified. The Arizona Department of Transportation is currently working towards the development of these route locations. Possible routes are listed below and should be considered for integration into the MAG wayfinding design guidelines.



NACTO:

National Association of City Transportation Officials

NACTO facilitates the exchange of transportation ideas, insights and best practices among large cities, while fostering a cooperative approach to key issues facing cities and metropolitan areas. Elements of a successful wayfinding signage system are outlined by NACTO below as Required features, Recommended features, and Optional features. Required: Follow MUTCD guidelines for signage placement.

Recommended:

1. Decision signs should be placed in advance of all turns (near side intersection) or decision points along a bicycle route.
2. Decision signs should include destinations, directional arrows, distance, and travel time (based on a 10 mph bicycle speed)
3. Place the closest destination to each sign in the top spot. For longer routes, show intermediate destinations rather than including all destinations on a single sign.
4. Distance may be indicated in time as well as length as an encouragement tool.
5. Turn signs should be placed on the near-side of the intersection to indicate where the bike route turns.
6. Confirmation signs should be placed every ¼ to ½ mile along off-street bicycle routes or every 2-3 blocks along on-street routes, as well as on the far side of major intersections.
7. Clearview Highway Font is recommended as it is a commonly used font for guide signs in the US per MUTCD.
8. Green is the color identified by MUTCD for directional guidance signage and is the most common color used for bicycle wayfinding.

Optional:

9. Signs may be placed on feeder streets between bicycle routes and nearby destinations.
10. Route Maps may be placed periodically along routes.
11. Conventional street name signs may be re-designed to incorporate the street's identity as a bicycle route.
12. Pavement markings may be used to help reinforce routes.
13. Numbered bicycle route systems may not be intuitive – include maps and directories as often as possible where these systems are in place.



Delivering more than power.™

Salt River Project Design Guidelines

SRP is the oldest multipurpose federal reclamation project in the United States. Today the SRP power district is one of the nation's largest public power utilities. With a 375-square-mile service area, the watershed includes an extensive system of reservoirs, wells, canals and irrigation laterals.

Many of the shared use paths integrated into the MAG off-street bicycle program occur with right-of-way along these canals owned and operated by SRP. SRP allows for the construction of public recreational amenities by municipalities within SRP canal right of way (ROW) if the improvements are in conformance with the SRP Canal Multiple Use Principles. While SRP does not outline specific signage design guidelines, all permit drawings and interventions in the canal right of way must reference the design approval process listed in the following link: http://azmag.gov/Documents/RFP_2013-08-19_OffStreet-Bicycle-Network-Wayfinding-Guide_SRP-CMU-Design-and-Approval-Requirements.pdf

- SRP requires a minimum 20' wide drivable service road on the canal bank adjacent to the top of canal lining
- On roadways having curb and gutter, fully depressed curbs thirty (30) feet wide (minimum) are required at –entrances to canal roads.

- On divided roadways having a concrete curb median, an opening of sixteen (16) feet wide minimum is required through the median and shall be aligned with the depressed curbs of the canal roads.
- Existing canal road gates may be eliminated with SRP approval or replaced by SRP with a recreational friendly canal road gate.
- Landscaping, fencing, walls, signs or any other objects shall not restrict the safe site distance necessary for safe transition of vehicles from canal roadway to public roadway.
- SRP prefers that sign elements be mounted to existing infrastructure including posts, poles, and railings.
- The installation of any pathway amenities requires the review and approval of SRP prior to installation.
- The right to install improvements on the SRP canal banks will be granted via a Land Use License issued by SRP.
- The right to install improvements within an SRP power easement will be granted via a Consent to Use of Easement issued by SRP.

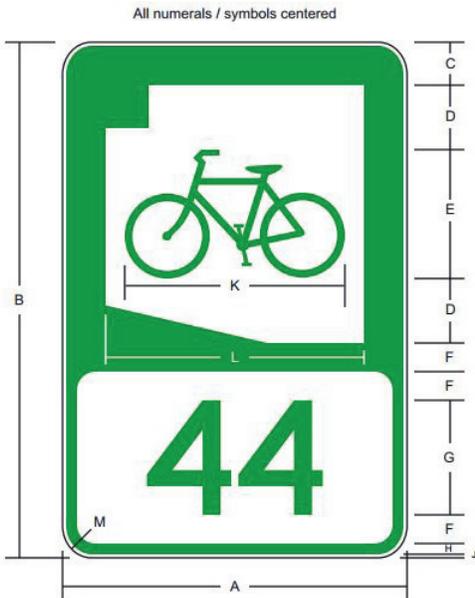
**Arizona Manual of Approved Signs**

The Arizona Manual of Approved Signs (MOAS) is the official list of road, highway, and traffic signs for use on state highways in the State of Arizona, and establishes standard codes and designations for Arizona-specific signs.

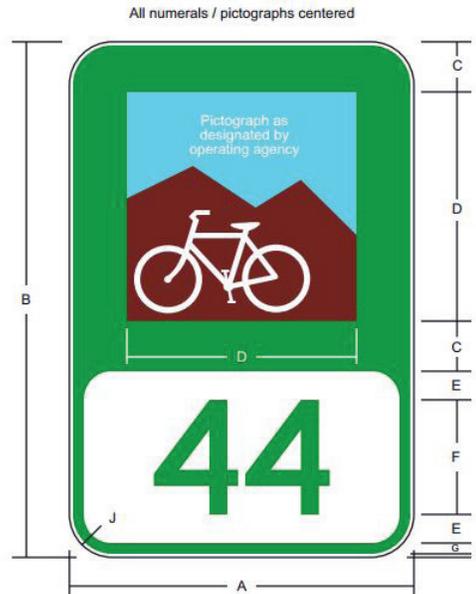
Bicycle signs approved by ADOT are shown on following page.

CODE: M1-8
STATE-LEVEL
ROUTE

CODE: M1-8a
PICTOGRAPH
OPTION



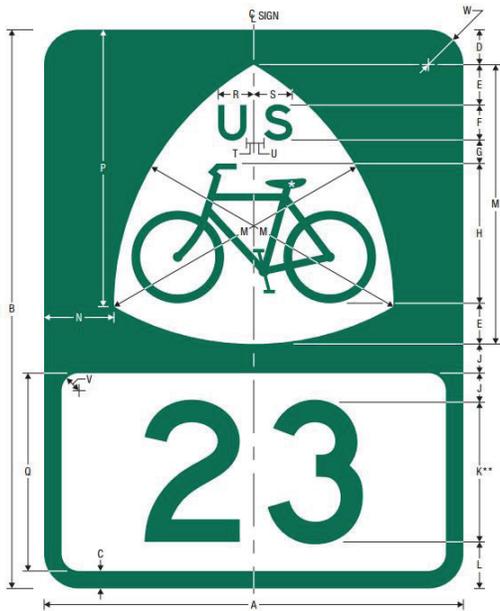
Numbered Bicycle Route
(State, Regional, or Local)



Bicycle symbol
minimum height:
0.20 A

Numbered Bicycle Route
(Pictograph or Word Legend)

M1-9 (Alternate)
Issued 6/1/2012



M1-9 (Alternate)
11 S. Bicycle Route (Alternate)
US Bicycle Route



M4-9a
BICYCLE PEDESTRIAN DETOUR

*Series 2000 Standard Alphabets.
**See page 6-10 for symbol design.
***See page 6-7 for symbol design.
****See page 6-2 for arrow design.

Bike / Ped Detour

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MAG Off-Street Bicycle Network

Online Survey Report #1 – Network Identity

5 May 2014

Introduction

An online survey was conducted to involve the public and users of the off-street bicycle network in the development of a system identity for the off-street bicycle network to ensure the branding reflects the unique character of the off-street paths and the Maricopa Associations of Governments (MAG) region. The survey consisted of eight questions designed to capture how residents feel about the existing network, as well as preferences for local and global brands and potential names for the system. Three demographic questions were included to gain an understanding of how the survey responders currently use the network and where they live.

Members of the MAG Bicycle and Pedestrian Committee, local jurisdictions, MAG staff and bicycle activists forwarded an email invitation and survey link to their constituents encouraging them to participate in the survey. A total of 163 responses were collected between April 17, 2014 and May 3, 2014.

1. Summary of Findings

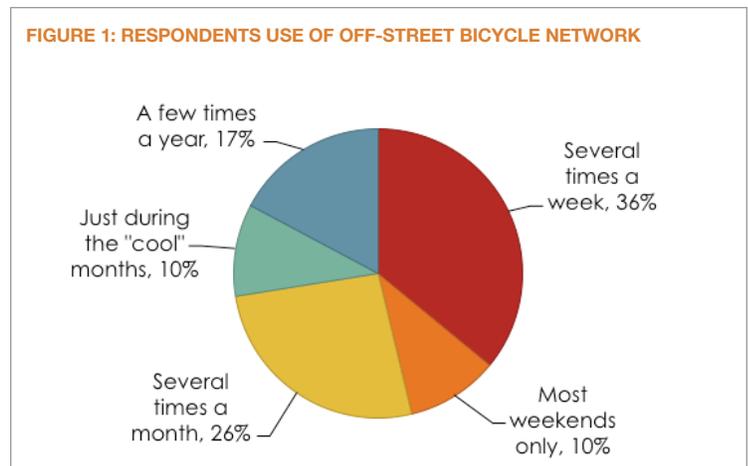
Following are the general findings based on the survey results presented in this report.

- People who took the survey are frequent users of the off-street bicycle network and live in all parts of the Valley.
- Participants seemed to have a difficult time in naming the path they use, often using geographic locations to identify the path.
- The network is "disconnected" but functional.
- Users enjoy the outdoor experience.
- Participants are split on whether or not they can connect to the places they want to go.
- Only about 1/3 of participants are using the network to reach a specific destination.
- Words most commonly suggested as part of the network name include: Arizona, canal, bike (or variation), bikeway or cycleway, sun, greater or grand, Maricopa, words related to the desert, and valley.
- People chose the "upcycled" and "generic" chairs to represent the network.
- The "relaxed" and "free spirited" people images were chosen to represent the attitude of the network.

- Common elements among the most preferred Arizona brands include Sedona red and Arizona colors, simplicity of design, use of desert elements, and use of the word Phoenix.
- Most of the favorite global brands are simple in design and have a strong visual element using iconic images.

2. Participants

The people who responded to the survey are **frequent users of the off-street bicycle network**. Almost half (46%) use the network several times a week or on most weekends. Seventy-two percent (72%) of the people who responded to the survey use the network at least several times a month. *(Figure 1)*



Northwest Valley	29
Southeast Valley	29
Eastside	24
Central	18
North Central	14
Westside	11
Southwest Valley	9
Northeast Valley	9
South Central	2

Survey respondents also include a cross section of the region with 49 responses (34%) from the West Valley, 34 (23%) from the Central part of the valley, and 62 (43%) from the East Valley. **People seemed to find it difficult to name the path they use most frequently.** Some referred to a path by a lesser-known name and others referred to the location of the path. Six reported they used canals but did not indicate which one. The paths receiving multiple responses are listed below. The number indicates the total number of responses for each name.

- Western Canal - 12
- Arizona Canal - 10
- Grand Canal - 9
- New River/Rio Vista - 7
- Canals (not specified) - 6
- Skunk Creek - 6
- Paseo Trail - 5
- AC/DC - 4
- Indian Bend Wash - 4
- Consolidated Canal - 3
- Cross Cut Canal - 3
- Scottsdale Greenbelt - 3
- Trail 100 - 3
- Central Canal - 2
- Tempe Town Lake - 2
- Tempe Western Canal - 2
- Dreamy Draw - 2

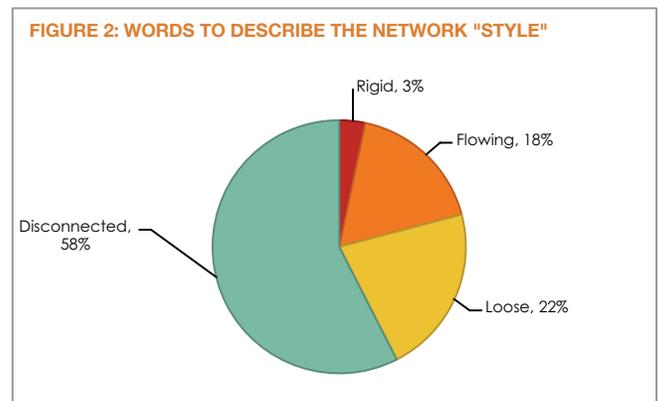
The following paths received one mention each as the path currently used by the responder. Some of the paths may be known by other path names, but the responses were left as written to show the many ways people refer to the paths.

- 107th Ave.
- Bullard Wash
- Bush Highway
- Canal path (paved part by Piestewa Park)
- Canal path along Guadalupe
- Canal path by Freestone Park
- Canal Path from Kiwanis out to Gilbert
- Canal path south of Guadalupe
- Canal path that goes by Biltmore
- Canal paths(Papago/ Kiwanis)
- Canal: South of Camelback between 7th Ave and 7th Street
- Desert Classic (South Mountain)
- Fairway Drive
- Garden Lakes HOA paths
- Hayden Greenbelt

- Highline Canal
- Just left of 95th way. N. sweet water up to 100th. Would be nice to have names.
- Kyrene Canal Path
- Litchfield Park city pathway
- Palm Valley Blvd.
- Route 51
- Scottsdale Multi-Use Paths
- Sidewalk
- South Mountain
- Southeast valley
- SRP canal
- Canal from Indian School and 16th to Tempe
- The canal system - from Agua Fria both directions
- Tempe bike path
- Thunderbird mountain
- Unnamed in Ahwatukee
- Vistancia Discovery Trail

3. Describing the Off-Street Network

More than half of the respondents (58%) described the network as disconnected and 22% say it is loose. (Figure 2)



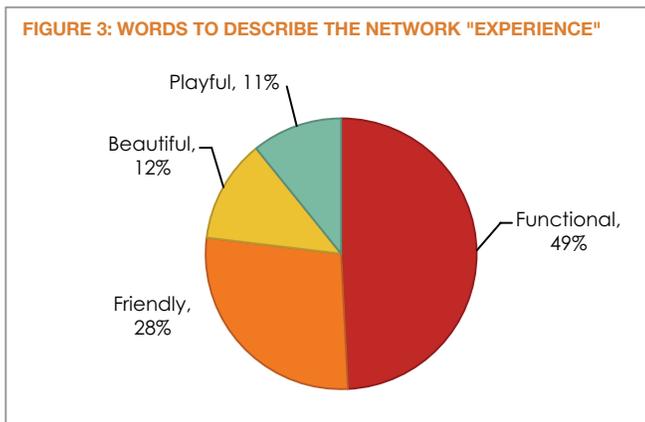
Other words:

Respondents were able to provide additional words to describe the off-street bicycle network style. These included the following:

- Free
- Bumpy - bikes need asphalt
- Low traffic cycling
- Random
- Faraway (2)
- Still lots of gaps, like the Happy Valley connection still dirt and not bikeable in some areas but getting better

- As it crosses jurisdictions, comes to intersections and crosses streets there is no line of sight means to stay connected or to orient a user where they are or where they can go
- Bricolage, accidental
- Getting better, too many gaps

Functional was the word used by almost half of the respondents (49%) to describe the network experience, followed by friendly (28%). (Figure 3)



Other words:

Other words respondents used to describe the experience of the off-street bicycle network included:

- Choppy
- Confusing
- Corridors of opportunity
- Dysfunctional (2)
- Easy-quiet-cycling
- Emerging
- Enjoyable but bewildering
- Frustrating
- Hot and Sweaty
- In certain places the network is beautiful
- Inadequate
- Incomplete
- Inconsistent
- Insufficient
- Meh
- Not connected or disjointed without safe crossings
- Often dysfunctional, especially in Phoenix
- OK
- Only beautiful is connected
- Partial

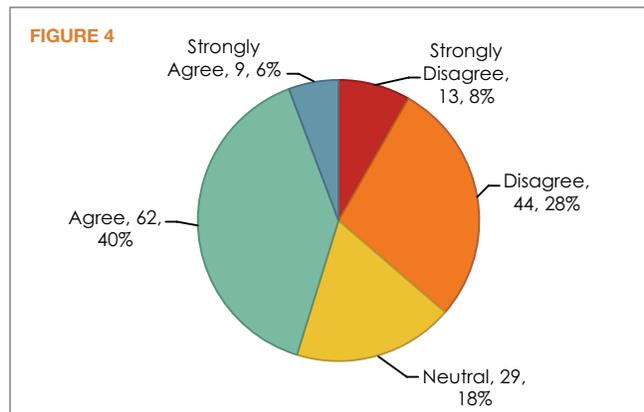
- Peaceful
- Pleasant, relaxing
- Questionable
- Really??
- Relaxing (2)
- Rough
- Safe
- Territorial
- Too short
- Unreliable and nonexistent
- Unusable
- With disconnects
- Serendipitous. It's mostly hidden. People don't know where they go, and none of them start or end at major attractors. If you can use a canal path and you know about it, you're lucky.

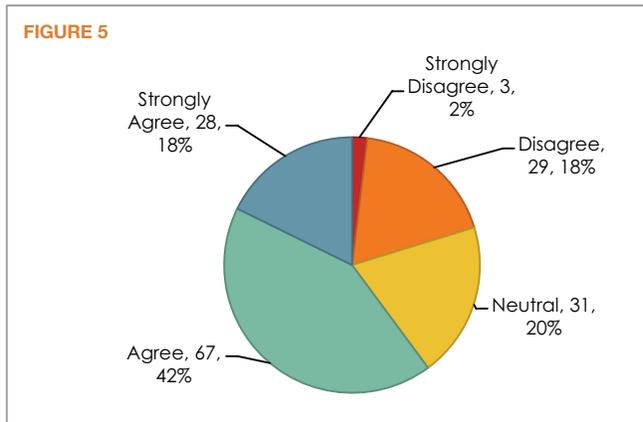
4. Rating the Off-Street Bicycle Network

Participants were asked to rate how strongly they disagreed with the following four statements.

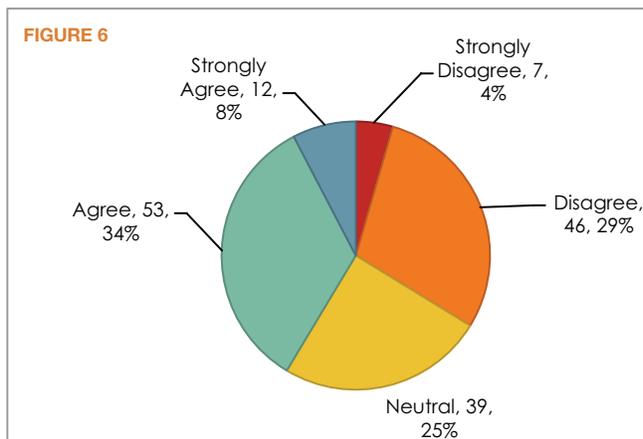
The network connects me to places I want to visit. (Figure 4)

Although just under half (46%) agreed or strongly agreed the network connected them to the places they wanted to go, 36% disagreed or strongly disagreed with this statement.

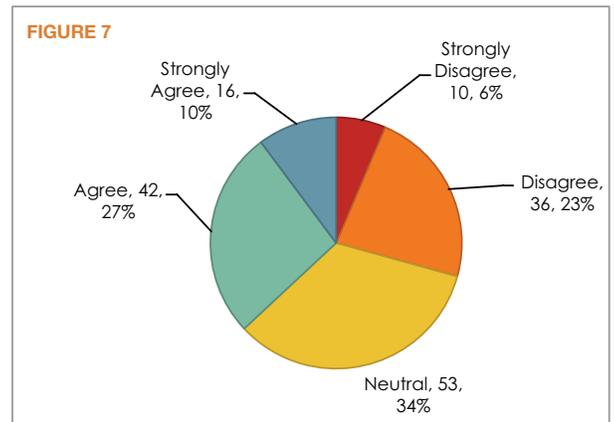




The network is a glorious outdoor Arizona experience. (Figure 5)
 More than half agreed or strongly agreed with this statement, with 18% strongly agreeing and 42% agreeing. Only 21% either strongly disagreed or disagreed the network is a glorious outdoor experience.



When I am on the network I have no worries. (Figure 6)
 Although 42% agree or strongly agree with this statement, 33% disagree or strongly disagree and 25% were neutral. With this large number of neutral ratings, the participants seem to be somewhat divided on whether or not the network is worry-free.



When I use the network I need to get to a specific destination. (Figure 7)
 Again responses to this question are split with just over one-third agreeing or strongly agreeing (37%), one-third rating the statement as neutral (34%) and just under one-third (29%) disagreeing or strongly disagreeing. This indicates participants are using the off-street bicycle network for multiple purposes, such as recreation and transportation, or that they are not able to use the network to reach their desired destination.

5. Naming the Network

Participants were asked to provide a name for the off-street bicycle network. A wide variety of names were suggested but many of the names include these common key words: Arizona, canal, bike (or variation), bikeway or cycleway, sun, greater or grand, Maricopa, words related to the desert, and valley.

- "City? What city?"
- Adventure Bike Network
- Arizona Canal Trail (2)
- Arizona Healthy
- BAM - Biking Around Maricopa
- BAT - Bike Arizona Trailways
- Best bike paths EVER
- Bicycle SunBelt
- Bikeazona
- BikeFragNet
- BikeIT; The Regional Ride; ; Here to There;
- Bikeway
- BOMB--beautiful outdoor Maricopa on Bikes
- Chain Link
- Connector
- Cycle City
- Cycling JAM (Journey Around Maricopa)

- East Valley Bikeway
 - Gilbert Oasis
 - Greater Phoenix Bikeway
 - Greater Phoenix Grand Cycleways
 - Grand Cycleways of Greater Phoenix
 - Phoenix Trail System
 - Maricopa Trail System
 - Phoenix Trail Network
 - Maricopa Trail Network
 - High-Desert Bike-Ways or Bike-Bahn
 - Hohokam Bike Pedestrian Route
 - HUB - Half-Mile Urban Biking (since primary lanes on half mile streets)
 - Incorporate it into the "Phoenix Sonoran Bikeway" system, aka "The PSB".
 - Junk trail
 - Line Wire
 - Lizard tracks
 - MAGnet
 - Maricopa Bike Map
 - Maricopa Cycleway
 - Maricopa Multi-use System
 - Motor Free Lane (MFL)
 - Mountain Dreams
 - Off da chain
 - Off the grid
 - Off-Road County Cycling Network
 - P.A.T.H. (People using Active Transportation for Health)
 - Paseo de Sol
 - Pathway (2)
 - Pedal Freeways
 - Pedal Pathways
 - Bike Expressway
 - Pedal Powered Network
 - Phoenix Bicycle Routes
 - Phoenix Bicycle something
 - Phoenix Metro Bikeways
 - Phoenix Off the Beaten Path
 - Playground of the Valley
 - Rock 'n' Roll Phoenix!
 - Rock Rabbit Off Road Routes
 - Scenic Cycling Route
 - Saguaro Cycleway (2)
 - Sonoran Stream
 - Spokes and Folks
 - The Bataan Death March
 - The Flow
 - The Hidden Pathway (2)
 - The Hohokam
 - The Hub
 - The Maricopa Regional Trail or Valley of the Sun Regional Trail
 - The NCA.... no cars allowed.
 - The P.U.M.P (Phoenix Urban Multi-use Paths)
 - The People Path
 - The Phoenix Metropolitan Pathway
 - The Suburban Urban Neighborhood (SUN) System
 - The Urban Desert Flow
 - The Valley Network
 - The Valley Way
 - Tour Phoenix
 - Treck
 - Two Wheel Arizona Network (TWAN)
 - UCAP(urban canal access path(s))
 - Valley Bicycle Network of the Sun
 - Valley Bicycle Route Network
 - Valley of the Sun Bicycle Pathways
 - Valley of the Sun bike network
 - Valley of the sun bike path system
 - Valley of the Sun Bikeways
 - V--B--Way (Valley Bike Way)
 - Zona OSBN
- Other comments on the network name:
- Create it and I'll let you know.
 - Please try to avoid using "bike" or "bicycle" in the name because we need to demonstrate that these trails can be used for commuting by foot, skateboard, rollerblades, jogging, etc.
 - Grand ties it to the Grand Canyon State, Phoenix ties it to this location and not others, and Cycleways (to borrow a European term) ties it to bicycles and not bikes/motorcycles.
 - <http://nacto.org/cities-for-cycling/design-guide/bike-lanes/>
 - Needs to emphasize transportation since many miles of shared use path have been funded through CMAQ. Also, network not just a bicycle transportation facility: used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users, too.

6. Visual Preferences

Survey participants were asked to review a series of photographs of chairs representing various styles to select the one they felt best reflected the style of the off-street bicycle network. Most of the respondents picked either the "upcycled" chair or the "generic" chair.

The chart below shows the percentage and (actual number) of respondents who picked each of the chair options.



Upcycled



Generic



Modern



Retro



Traditional

- Upycled - 45% (71)
- Generic - 33% (52)
- Modern - 8% (13)
- Retro - 8% (13)
- Traditional - 5% (8)

Participants were also shown photographs of people and asked to select which images best reflected the attitude of the off-street network. Most respondents agreed the network is "relaxed" or "free spirited."



Relaxed



Free Spirited



Family



Reserved



Corporate

- Relaxed - 45% (68)
- Free Spirited - 22% (33)
- Family - 15% (23)
- Reserved - 11% (16)
- Corporate - 7% (10)

7. Preferred Local and National Brands

Participants were asked to list the Arizona and global brands they like the most. A wide variety of brands were named. The following is a complete list and images of the brands most often mentioned. The numbers in the parenthesis indicate the number of time the brand was mentioned.

Arizona Brands:

There are several common elements among the Arizona brands mentioned most often by the participants, including color, simplicity of design, use of desert elements, and use of the Phoenix.

- Diamondbacks (7)
- Arizona State Flag (7)
- Arizona Centennial Logo (5)
- Four Peaks (5)
- Coyotes 4)
- ASU (2)
- City of Phoenix (2)
- Intel (2)
- Pivot Cycles (2)
- Desert Botanical Garden (2)
- Sun Devil - Sparky (2)
- Suns (2)
- San Tan Brewery (2)
- University of Arizona (2)
- CycloMesa Arizona flag, as used on Phoenix Metro Bicycle Club jerseys
- Arizona Materials
- Arizona Rattlers
- Arizona state emblem red/gold beams with blue bottom half and heart in center. Pic available.
- Arizona State University
- Ash Ave Comics
- ASU Pitchfork
- Arizona Highways Magazine
- Banner Health
- Be a Roll Model
- Cardinals
- Cartel
- Downtown Phoenix Partnership (Purple, Orange, Lime Green)
- Grand Canyon
- Grand Canyon State
- Greyhound
- Grid
- Grooming Humans
- Hazel & Violet
- Hula's Modern Tiki
- Local First
- Logo of the Rusty Spoke Bike Collective prior to 2014
- Look at multi-use path W of Jackrabbit Trail @ Thomas.
- National Bank of Arizona <https://www.nbarizona.com>
- Northern Arizona University (blue background with the mountains rendered in reverse)
- Phoenix Sonoran Bikeway
- Pima Indian maze circle
- Pita Jungle
- Postino
- RedRock
- Road Runner
- Sedona Fire
- Southwest Gas
- Sun City
- TBAG
- TCR Tempe Camera Repair
- The heavy pedal
- The mountain morphing into the camel- from the Camelback mountain anti-tobacco ad
- Tres Rios Nature Festival
- Valley of the Sun

Arizona Bicycle Related Brands

(Mentioned by respondents at least once)

- Phoenix Metro Bicycle Club
- Phoenix Sonoran Bikeway
- Mesa Cycles

Global Brands:

Participants tended to favor the same global brands. Most of the favorite global brands are simple in design and have a strong visual element using iconic images.

- Apple (13)
- Nike (7)
- Google (4)
- British Petroleum (3)
- Starbucks (3)
- Patagonia (2)
- Recycling symbol (2)
- Twitter (2)
- Under Armour (2)
- Adidas
- Amazon smile

- Astrazeneca
- AT&T's Death Star
- Atari
- BMW
- British Airways
- Cloud 9 eSports
- Coca-cola
- Diet Coke- Simple, crisp, upbeat, young/vivid
- Dodge Ram
- Earth image / green/ recycle based
- ebay
- FedEx
- Ford
- Get Active
- Giant Bicycles (circle with swoosh - looks like a sunset)
- Goodwill
- Gyro Bicycle
- Honda
- Ikea
- John Deere - leaping deer
- Mazda
- Mercedes-Benzes
- New England Patriots
- Newcastle United
- Nikon
- Oakley
- RATP (Paris, France) <http://ratp.fr>
- REI
- Sanuk shoes
- Specialized
- Steal Your Face, Grateful Dead
- Tom/s shoes
- Trek
- Untappd
- USA Cycling
- Virgin Atlantic
- Yacht

Other branding comments:

- Anything clean and easily recognizable, nothing fussy or busy.
- No need to get costly or too elaborate. The current system is fine. It just needs gaps filled.

8. General Comments

There were a few comments throughout the survey that did not directly apply to the question. These general responses are listed below.

- Unused - it is very hot in Arizona and too hot to use bicycles often.
- What we have is good, but there are not enough, and they are not connected. Also, if the speed limit on the street is more than 45 mph, the bike lane should be separated.
- Whoever came up with this survey is on Crack
- It is asphalt - doesn't have concrete slabs

Prepared by Gunn Communications, Inc.

MAG Off-Street Bicycle Network
Online Survey #2 Report - Wayfinding Needs
7 August 2014

Introduction

A second online survey was conducted in July 2014 to determine the type of directional information people need before and during their ride on the off-street bicycle network. The survey consisted of eight questions designed to capture how people used the network (frequency, distance and destination), identify their wayfinding challenges and gain their interest in potential solutions. Three demographic questions were included to gain an understanding if age, gender or place of residency affects how a person utilizes network.

Members of the MAG Bicycle and Pedestrian Committee, local jurisdictions, MAG staff and bicycle activists forwarded an email invitation and survey link to their constituents encouraging them to participate in the survey. A total of 274 responses were collected between June 30, 2014 and July 31, 2014.

1. Summary of Findings

Following are the general findings based on the survey results presented in this report.

- The typical respondent to this survey was a male who lives in Southeast Valley/Eastside or Central/North Central and uses the network one or more times a week.
- Age of participants was spread from age 26 to over age 55.
- The average length of trip (one way) is 6-20 miles.
- The older respondents and those living on the Westside are more likely to make the longer trips.
- Residents in Central Phoenix make the shortest trips.
- Respondents ages 36-45 and Westside/Southwest Valley residents are more likely to ride every day.
- People are using the network to go both to work and for recreational purposes.
- A secondary use of the network is to connect to other trails and the regional transportation system.
- Most of the recreational use is for exercise and bicycle training.
- All of the top four wayfinding challenges are related to the lack of connectivity of the system including gaps in the system and inability to find entrances and connections on the network.

- The majority would like to have a map which indicates the destinations which can be reach by the network. Mile markers are also important to the riders.
- Trip planning information available online and via Smartphone was agreed as important in helping navigate the network.
- People find it difficult to locate the network and available parking near entrances.

2. Participants

The geographic spread of respondents was not as diverse as the first survey. A majority of the responses (78%) were submitted by people who live in Central/North Central (39%) and Eastside/Southeast Valley (39%). (Figure 1)

The age of the respondents were fairly evenly distributed over four age ranges: twenty-five percent (25%) are age 26-35; twenty-five percent (25%) are 36-45; twenty-two percent (22%) are age 46-55; and nineteen percent (19%) are over age 55. (Figure 2)

A majority of the respondents are male (68%) compared to thirty-eight percent (38%) female. (Figure 3)

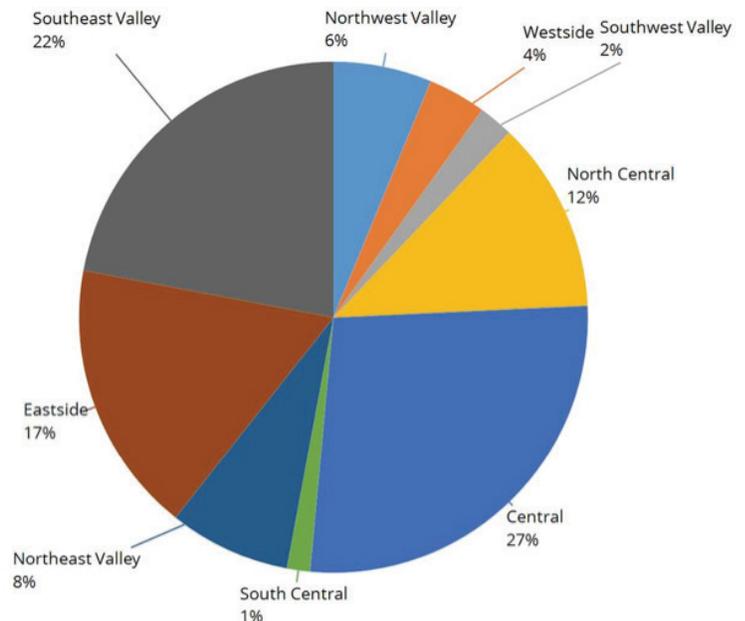


FIGURE 2

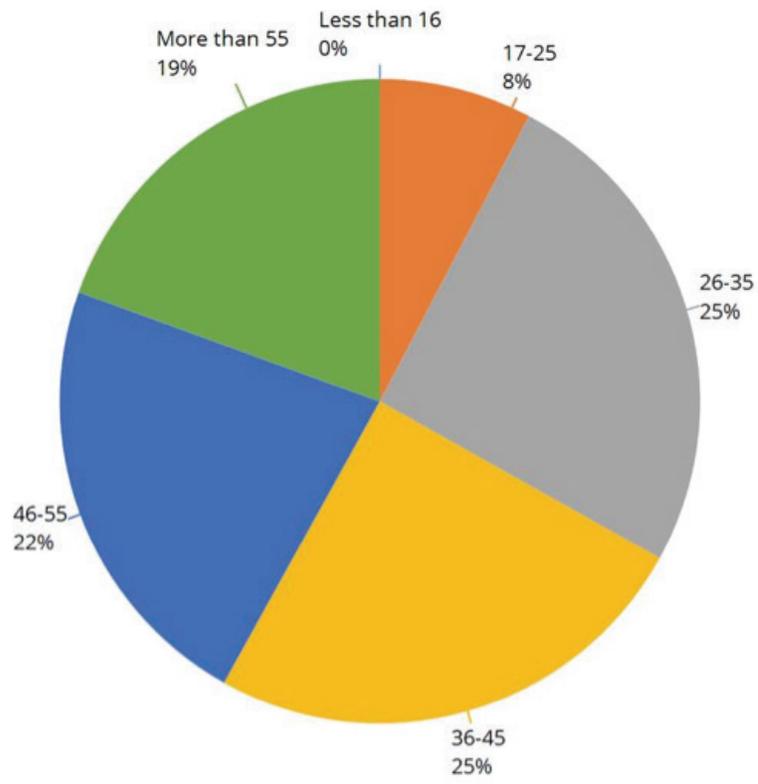
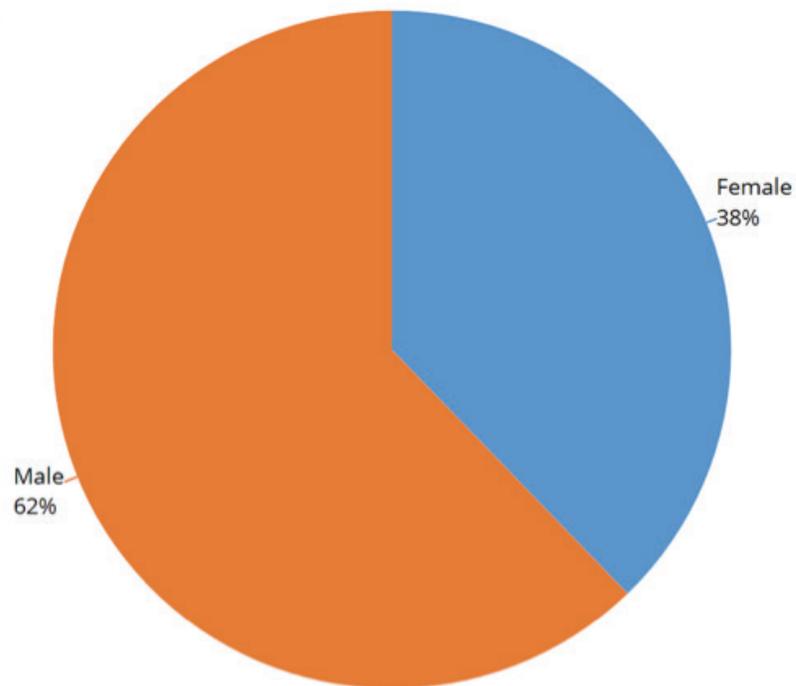


FIGURE 3



3. Distance Traveled and Frequency of Use

More than half of the respondents (51%) reported traveling 6-20 miles (one way) when riding on the off-street bicycle network. (Figure 4)

To better understand who are riding the longer distances, the responses were cross tabulated by age, gender and location. According to these survey results:

- Residents traveling the furthest distances tend to be the older residents with the younger residents reporting the shorter distances traveled. (Figure 5)
- Men are more likely to travel 10-20 miles than women. (Figure 6)
- Most Southwest Valley and South Central residents travel 10-20 miles. (Figure 7)
- 30% of Westside residents ride more than 20 miles one way. (Figure 7)
- Central residents ride the shortest distances. (Figure 7)

FIGURE 4

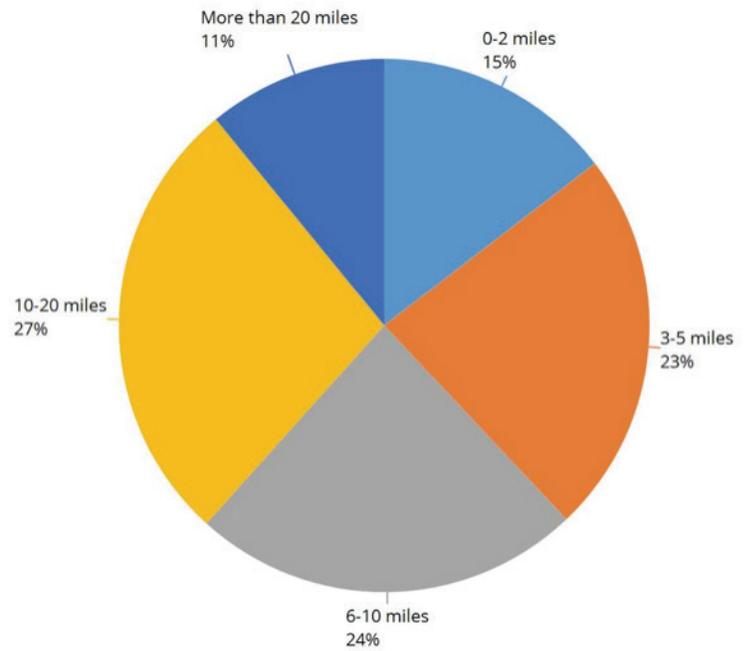


FIGURE 5

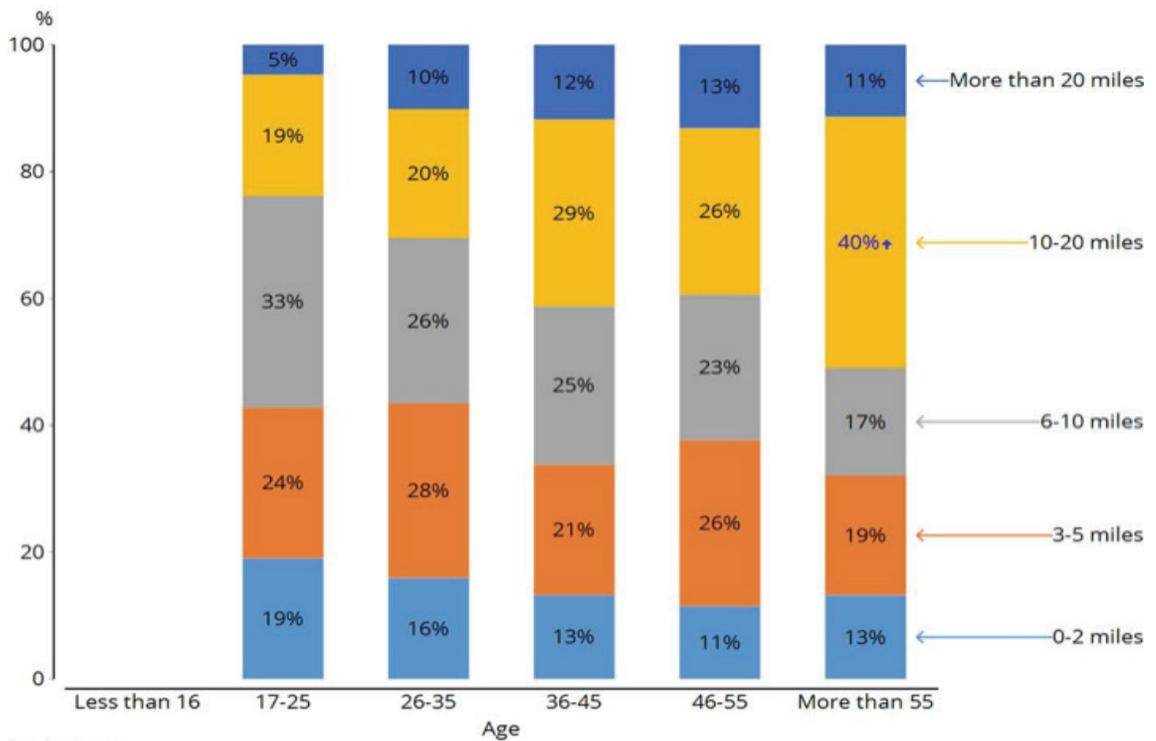


FIGURE 6

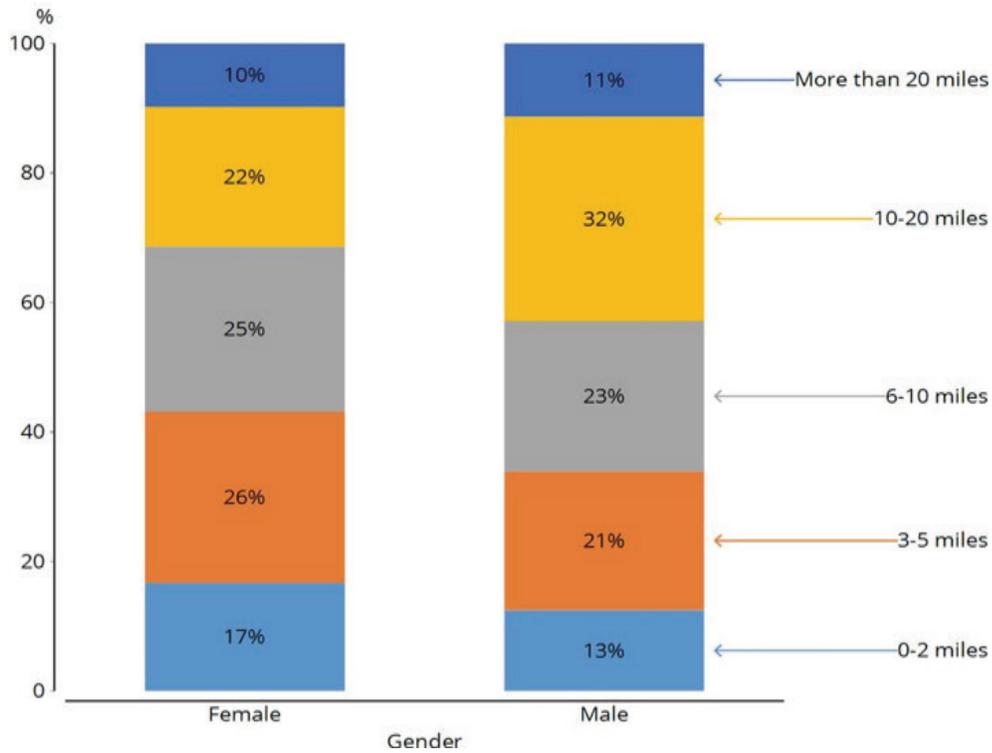
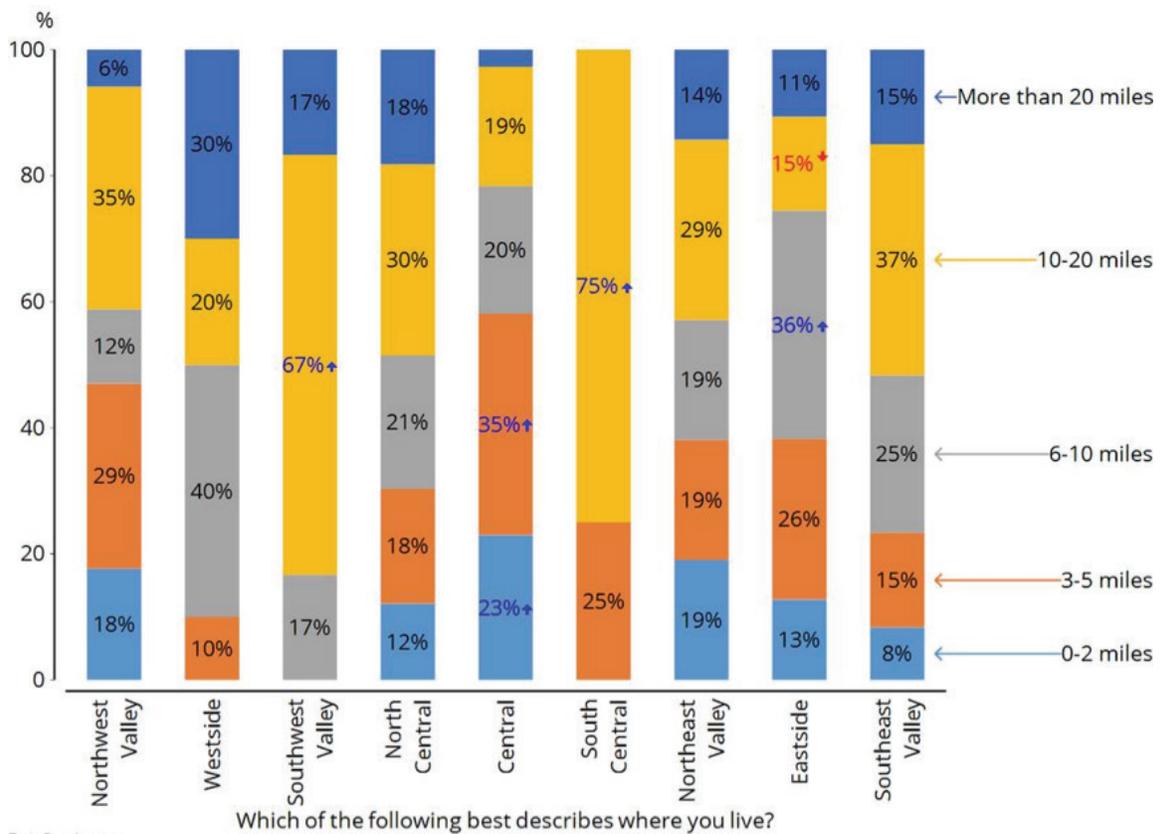


FIGURE 7



The people who responded to the survey are frequent users of the off-street bicycle network. Forty (40%) use the network one time a week and twenty-three percent (23%) use the network every day. (Figure 8)

To better understand who is using the network, the responses were cross tabulated by age, gender and location. According to these survey results:

- People age 36-45 are slightly more likely to ride at least once a week or more (Figure 9)
- There are no significant differences by gender. (Figure 10)
- Westside and Southwest Valley residents are more likely to ride every day. (Figure 11)

FIGURE 8

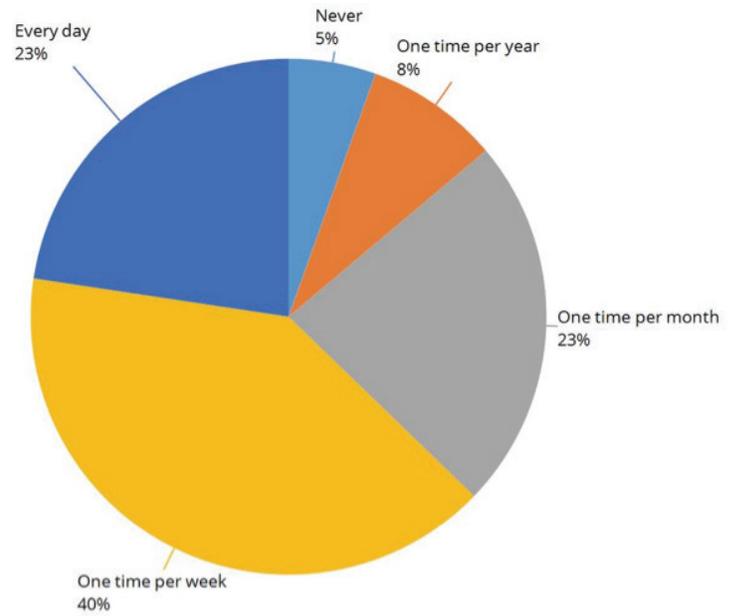


FIGURE 9

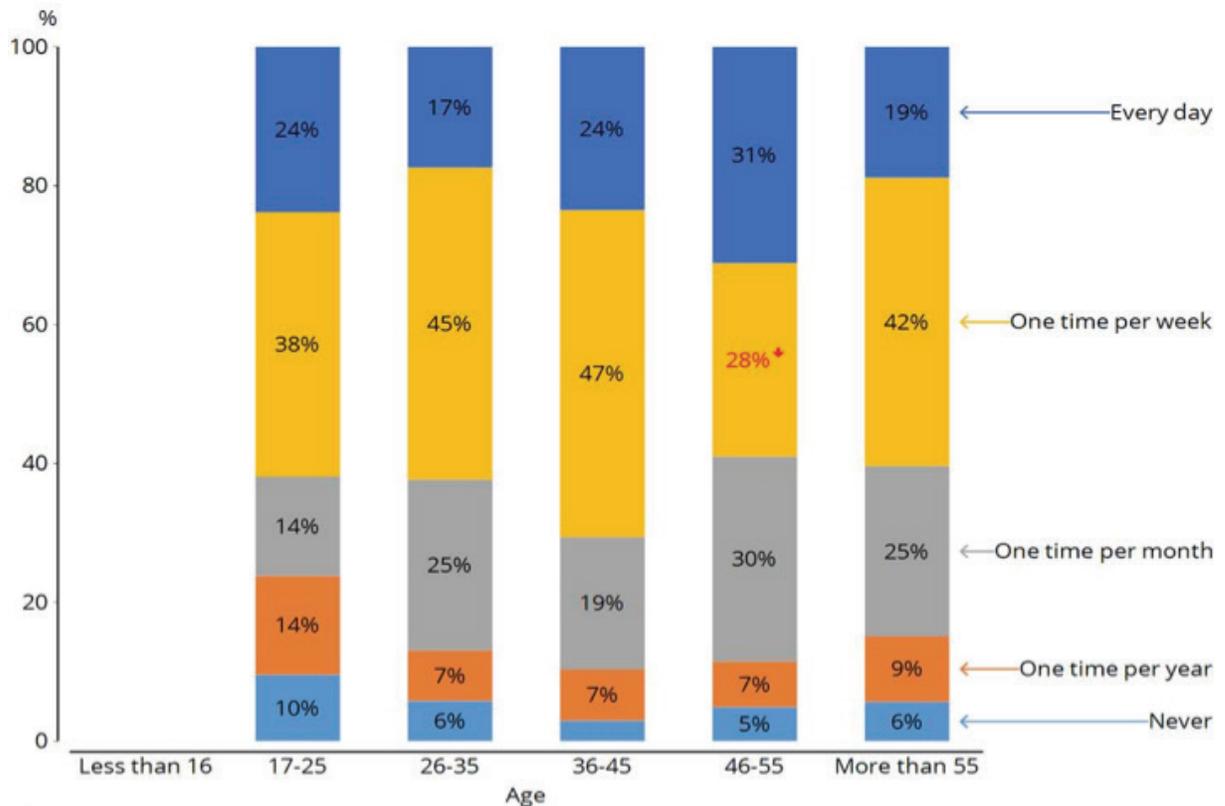


FIGURE 10

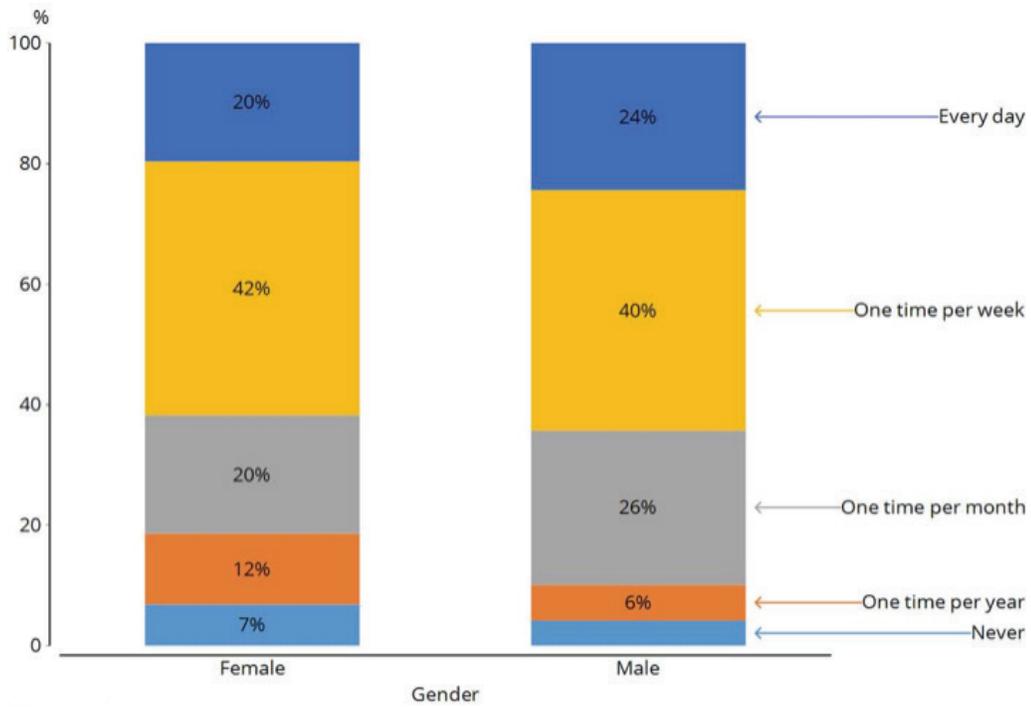
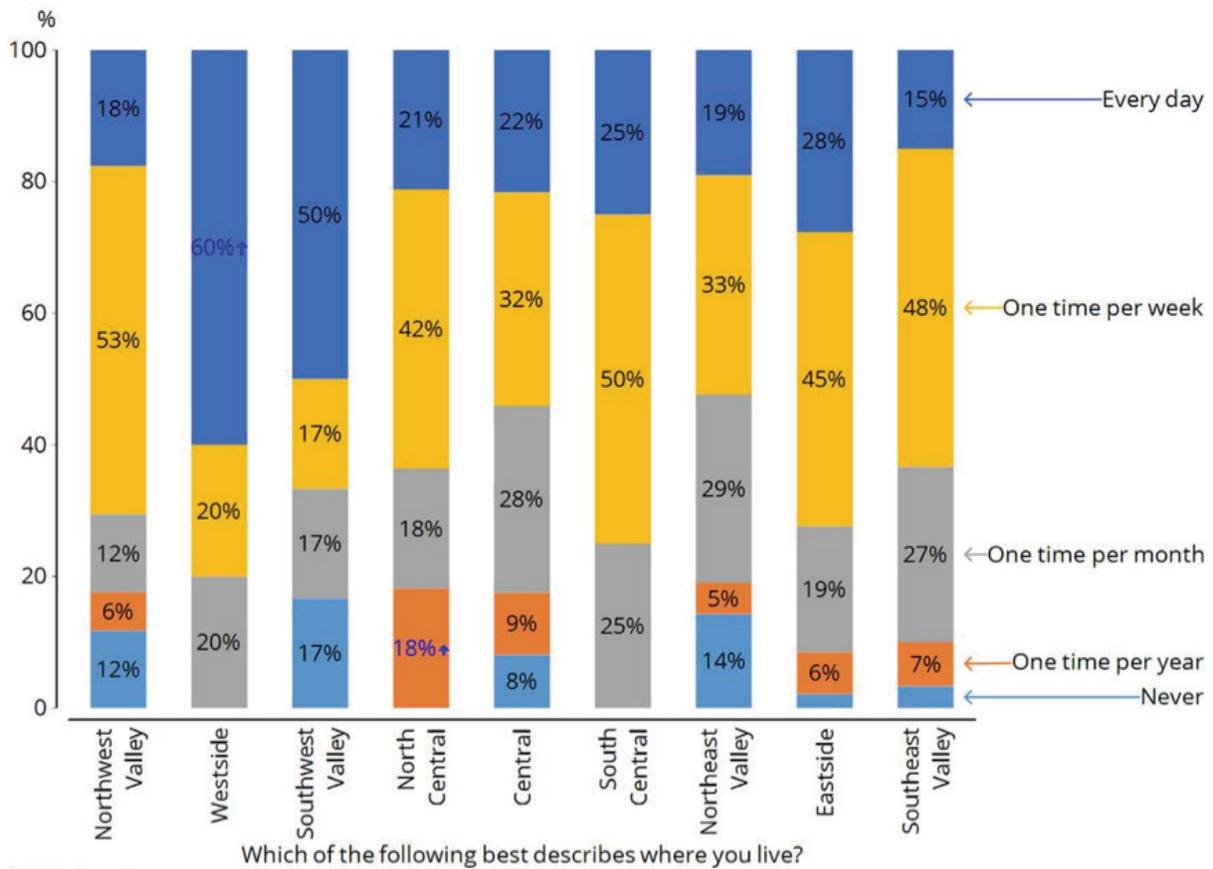


FIGURE 11



4. Trip Purpose

Participants were asked where they most often go when using the off-street bicycle network. According to these results, the network is BOTH an important part of people's commute to work (28%) and a popular recreational activity (35%). The network also provides residents with connections to other bicycle and transportation facilities. (Figure 12)

Other destinations (reasons) identified by respondents included the following.

Exercise

- Exercise/triathlon training
- Just exercising, or meeting friends to go eat, or run errands
- I cycle for fitness
- Exercise (3)
- I ride for exercise - I can't believe the lack of bike trails in the NE valley. I am from Iowa and the Des Moines and surrounding area are COVERED with amazing bike paths and trails.
- To run errands, just to get out and exercise
- I ride for exercise on Cave Creek road
- I ride for health, but often pick a restaurant as a destination.
- Just ride the path for exercise.

Training

- Training rides
- Shopping and training rides
- Routes for training rides - I am a competitive cyclist
- For fitness & training
- Training in north Scottsdale

School and Work

- School, family/friends, rec. activities
- Places to work - I'm a freelancer
- I ride to and from work, to run errands and recreational rides.

Restaurants

- Restaurants
- Restaurants
- Food and drink
- Bars
- Coffee shops, bars, restaurants

Recreation

- Trails (e.g. New River); Streets (leisure ride); Parks; School (planning to)
- Movies
- Recreational loop rides w/o a particular destination

Other Destinations

- Boulders on Broadway
- Streets close to home. Some desert trails at times
- Desert trails
- Circle route back home
- Random areas - SAFE no/low traffic rides for event training.
- Out-and-back from home, using the pathways as the route
- Downtown Phoenix
- Airport

Other Comments

- Would use it for all of these if available
- All over the place for all kinds of things
- EVERYWHERE!!!
- ALL OF THE ABOVE (My bike is my main form of transport)
- Everywhere. I am car-free.
- I would ride more if I had a good wayfinding map of bike routes (on and off street)
- Just to ride

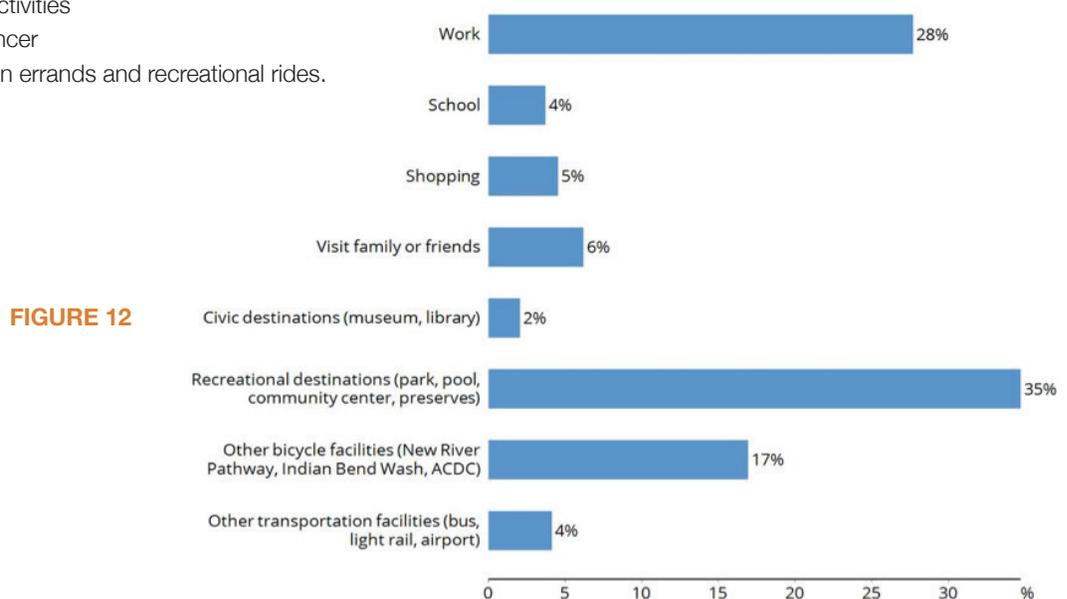


FIGURE 12

5. Wayfinding Challenges

Participants were asked to select the wayfinding challenges they had experienced while using the off-street bicycle network. A list of challenges was provided for the participants to select from. All of the top four challenges are related to the lack of connectivity of the system with riders reporting they lost their way when there was a gap in the network or a pathway terminated. They also have difficulties finding the entrance to the network and connections to another path. (Figure 13 - see next page)

Other comments by respondents included the following. For the first time, respondents identified several safety concerns about using the network which are not related to wayfinding.

Lack of complete network

- I wish the pathways were better connected, especially if you want to ride N-S.
- There are limited pathways on the routes I take and the routes terminate unexpectedly.
- There is not a solid bicycle network in neighborhoods like mine where people ride bicycles more out of necessity (money)
- Gaps in connections
- Disconnect
- Lack of underground tunnel beneath street
- I had to find another route due to there being no sidewalk or bike lane along a road (e.g. Grand Avenue)
- Simply: need more bike lanes on main roads!
- Paved path ended or had a gap in pavement
- Quality of pathway. Road bikes are not good on unpaved surfaces. Some of the canal areas are not paved or have gaps.
- The path/road not smooth, too rocky

Signage and map needs

- Street that crossed the pathway were not labeled
- Just finding an off-street bicycle network is a challenge in the west side of town.
- Many of the pathways don't mark the streets I am passing under. I like to know where I am in the pathway system, relative to the streets I am crossing or near.
- Not knowing what roadways I was crossing
- I am unable to tell if there are nearby business to eat, shop, or rest from most pathways.
- Some canal routes (Tempe is where I ride) don't have street name markers, sometimes can be confusing where I am
- Areas where over/underpasses to roadways switch sides of the pathway are not always clearly marked.

- Not enough signage (2)
- Street crossing signals do not trigger consistently. Some are immediate and others take several minutes.
- Love it would love to see maps on the way to see what's around

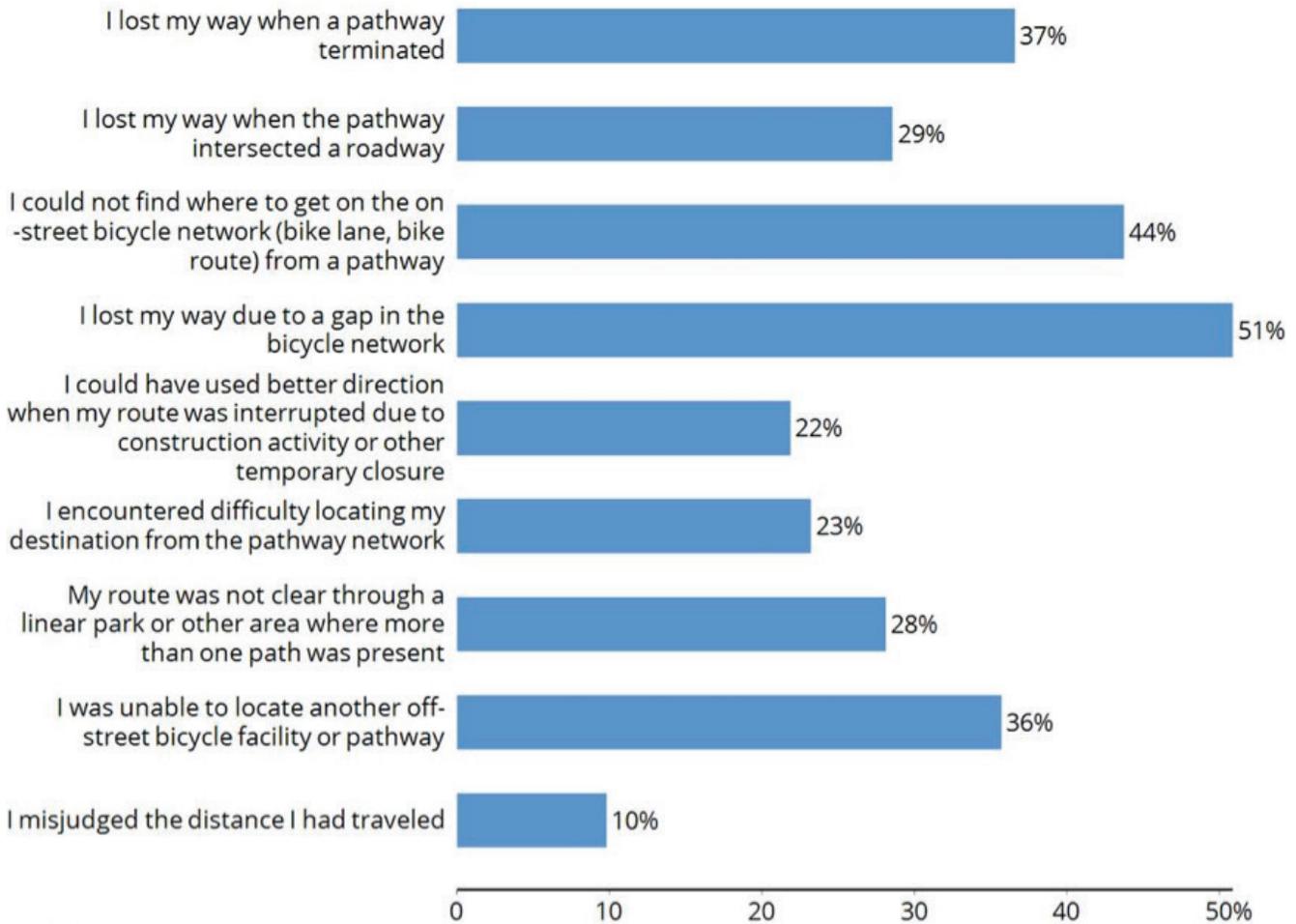
Safety

- There are too few amenities for non-auto transportation (bicycling/pedestrians) and it does not feel safe, so my trip is not as enjoyable or efficient
- Bike way intersects with busy road, example 3rd Ave and Bethany Home
- Homeless people sleeping in the underpasses beneath the roads. (major safety hazard)
- My journey is dramatically increased due to attempts to avoid areas I know are less safe and more difficult to bike through. (High traffic areas with poor bike lanes, etc.)
- Cars never see you - think you should put rubber florescent tubes for visual protection for the bicyclist
- The challenge is to find good streets to travel on that don't have heavy traffic where bike lanes don't end at intersections that make you vulnerable to automobile vs. bicycle problems. The next challenge is that the network although large does have gaps and the signage isn't always clear about where you need to go.
- Crossings are dangerous!
- Running out of water and not finding any accessible

Other

- The often-diagonal canal paths can cause confusion with directions
- I do not ride a bicycle anywhere in town
- 900 miles!!! WHERE????
- My pathway was blocked off by gates that didn't used to be there.
- Generally, I find them counter-productive as pathways to my destinations
- Multiple paths
- I am not yet plugged in to the network and therefore haven't had any challenges while riding the network.

FIGURE 13



6. Information Needs

Survey participants were asked to rate their level of agreement with a series of statements related to the type of information they feel is important. (Figure 14)

- More than two-thirds (67% strongly agree) would like to have a map indicating the destinations they can access from the network.
- A large majority (69%) plan their route online.
- More than thirty percent find it difficult to access the network and find parking.
- Although fifty-two percent (52%) prefer using their Smartphone for information, 34% stated they were neutral.
- 62% agree/strongly agree mile markers are needed.

Prepared by Gunn Communications, Inc.

