



# BIKE NETWORK MAPPING IDEA BOOK

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# INTRODUCTION

**This resource highlights ways that different communities have mapped their existing and proposed bicycle networks. It shows examples of maps at different scales, while also demonstrating a range of mapping strategies, techniques, and approaches. Facility types represented on the respective maps and legends are each different because they represent a community's unique context and needs.**

**It is intended to serve as a resource as communities work to identify, plan, and improve their bicycle networks.**

**Connected pedestrian and bicycle networks make walking, wheeling, and bicycling viable transportation choices for everyone. Networks enhance access to jobs, schools, and health care, while also promoting equity, physical activity, and health. Connected networks are comprised of a range of facility types (e.g. bike lanes, separated bike lanes, shared use paths, etc.), linked together to facilitate short trips to and from destinations and long linear connections across a city or region.**

**A first step to achieving connected networks is to document where bicycling infrastructure currently exists. It is also essential to establish a vision for the future network. This vision is often captured in the form of a map and it's developed as part of a local planning process that includes opportunities for public participation and input.**

**A community's existing and proposed bicycle network maps inform the day-to-day programming and prioritization of projects and help to ensure that all transportation improvements are enhancing the quality of the nonmotorized network and capturing opportunities to make linkages between existing and new facilities.**

## Network Principles

Cohesion

Directness

Accessibility

Alternatives

Safety and Security

Comfort

# PRINCIPLES

This *Bike Network Mapping Idea Book* highlights a range of approaches and techniques for showing connected networks, conveying information in map form, and incorporating local context.



## Connected Network

A bicycle transportation network consists of a series of interconnected facilities that enable bicyclists of all ages and abilities to safely and conveniently get where they need to go. By providing connected networks, communities are helping to facilitate all of the following types of bicycling trips:

- Access to work and school from residential areas
- Bicycling links to transit
- Recreation and physical activity opportunities
- Access to grocery stores, government buildings, health care, and other essential services

Understanding that different users have different needs, bicycle networks should be designed to provide options for continuous, safe, seamless, and convenient travel between all possible destinations.



## Mapping Techniques

Various mapping conventions can help your community to convey complex information graphically in a simple and easily digestible manner. The following pages highlight some tools and techniques used to develop effective bike network maps.

Planners and designers use various computer programs to create visually compelling maps. A typical workflow consists of the following:

1. Import and organize data in a GIS-based program.
2. Export maps to Adobe Illustrator or a similar program for minimal to extensive post-production work, such as editing of colors, lineweights, patterns, and type.
3. If the map will be presented in a report or plan, compile maps in Adobe InDesign or a similar program as part of a report or plan.



## Local Context

Within a planning-level bike network map, local context helps to orient users to their surroundings as well as support information the cartographer wishes to showcase.

Including local landmarks and points of interest helps users to quickly orient themselves and understand key bike network connections.

For instance, a map might display parks and open space as a background layer. This helps to clarify the connections between existing and proposed bicycle facilities and recreational destinations.

These layers may include information such as land use, community destinations, transit access points, and other important information. These vary based on the unique needs of each jurisdiction.

# MAP BASICS

Common approaches for bicycle infrastructure planning maps are highlighted below. The maps that follow demonstrate these general approaches to varying degrees.

## (1) COMMON INFORMATION LAYERS

### BIKE NETWORK LAYERS

#### Specific Facility Types

- Bike path, bike lane, buffered bike lane, bike boulevard, separated bike lane, greenway, etc.

OR

#### Flexible Facility Types

- On-street vs. off-street bikeway systems

### LOCAL CONTEXT LAYERS

- Transit lines & stations
- Bikeshare stations
- Community amenities: Schools, universities, libraries, community centers, hospitals etc.
- Building footprints
- Specific land use functions, such as commercial uses
- Study areas or corridors

### BASE LAYERS

- Parks & open space
- Streets
- Waterbodies
- City boundaries
- Labels

## (2) REPRESENTING DIFFERENT TYPES OF INFORMATION

### PROPOSED VS. EXISTING NETWORK

- Identify ways to clearly denote what is existing and what is being proposed.

Outline	Dashed
 existing	 existing
 proposed	 proposed

### COLOR SCHEME

- Consider how color will play a role in highlighting the bicycle network. Bright, saturated colors stand out against softer and more subdued tones.

### LEVEL OF INFORMATION

- Carefully consider the amount of information used to tell the story. More information can help, but it can also be overwhelming if not organized in a seamless way.
- Small icons and symbols can help to identify points of interest in a less obtrusive way

### (3) LEVEL OF DETAIL ON EXISTING/PROPOSED FACILITY TYPES

Providing more information about facility types requires more complex color schemes and line types.

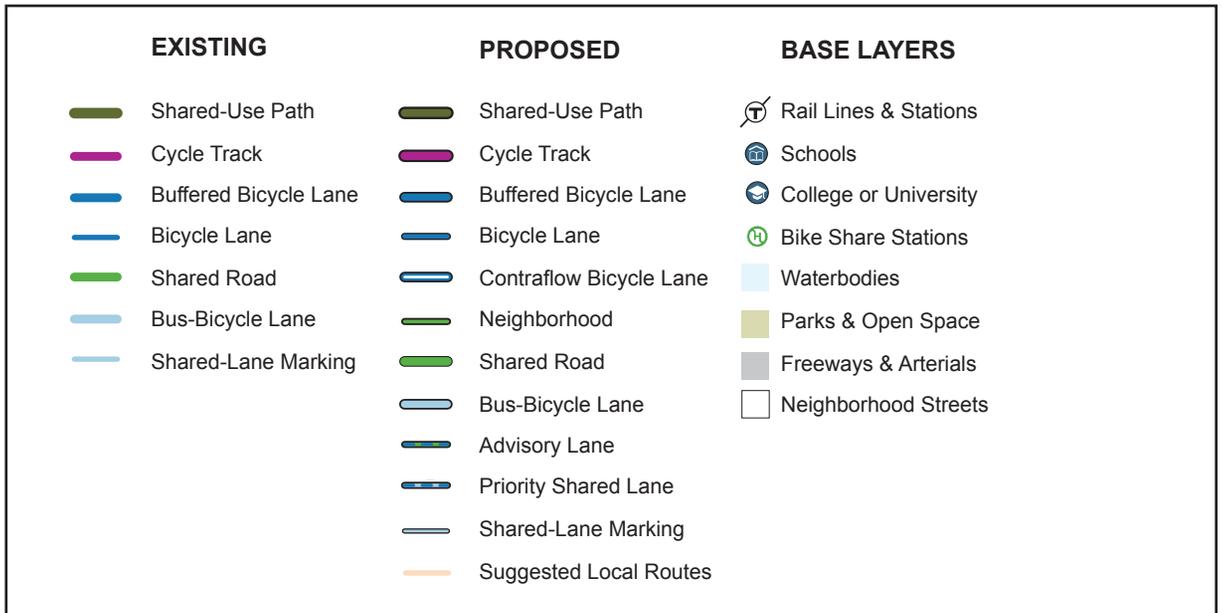
#### MULTIPLE LAYERS AND INFORMATION

Example: Boston, pg. 34

This scheme helps to convey multiple facility types and specific street conditions in a clear and easily digestible manner. It can also fully integrate a series of community base layers and contextual information, including supplemental data like bicycle counts or safety information to aid decision making.

Consider a similar palette if creating a map that:

- Identifies specific facility types
- Needs a clear and concise color palette



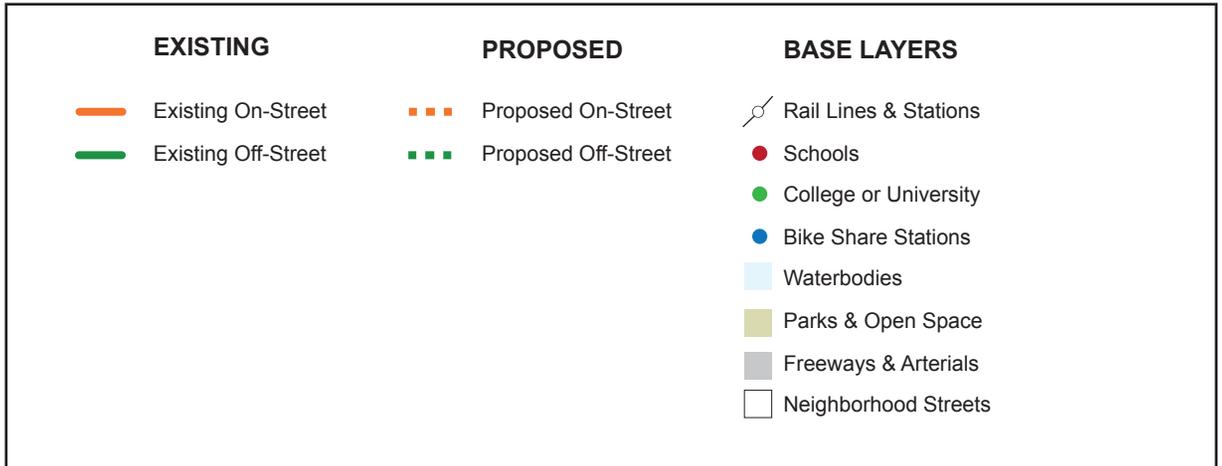
#### FLEXIBLE NETWORK MAPS

Example: Cedar Rapids, pg. 42

This scheme helps to convey a bicycle network that does not identify specific facility types.

Consider a similar palette if the map:

- Is not intended to identify specific facility types
- Is focused on existing & proposed routes



# SUMMARY

The following chart identifies key features in each map.

**DOES IT IDENTIFY:**    **DOES IT SHOW:**

<b>MAP</b>	<b>SCALE</b>	<b>A GENERALIZED NETWORK</b>	<b>SPECIFIC FACILITY TYPES</b>	<b>LINKAGES TO LOCAL DESTINATIONS</b>	<b>LINKAGES TO SURROUNDING JURISDICTIONS</b>	<b>BARRIERS</b>	<b>SPOT IMPROVEMENTS</b>	<b>OPPORTUNITIES TO RECONNECT COMMUNITIES</b>	<b>PAGE #</b>
Arkansas	State	X		X	X			X	10
Yellowstone, WY-ID-MT	Regional	X		X			X	X	12
Albemarle Region, NC	Regional		X		X			X	14
San Francisco Area, CA	Regional	X			X			X	16
Alameda County, CA	County	X		X	X			X	18
Hennepin County	County	X			X			X	20
Idaho Falls, ID	City		X	X	X	X		X	22
Cambridge, MA	City	X		X		X		X	24
Santa Barbara, CA	City		X	X				X	26
Atlanta, GA	City		X					X	28
Austin, TX	City	X		X				X	30
Fort Collins, CO	City		X	X				X	32

**DOES IT IDENTIFY:**      **DOES IT SHOW:**

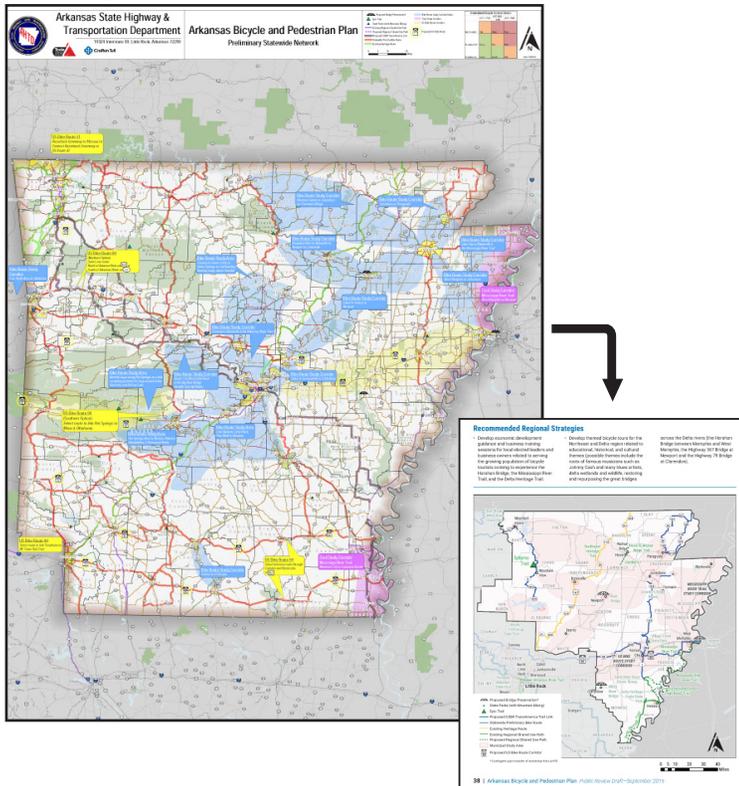
<b>MAP</b>	<b>SCALE</b>	<b>A GENERALIZED NETWORK</b>	<b>SPECIFIC FACILITY TYPES</b>	<b>LINKAGES TO LOCAL DESTINATIONS</b>	<b>LINKAGES TO SURROUNDING JURISDICTIONS</b>	<b>BARRIERS</b>	<b>SPOT IMPROVEMENTS</b>	<b>OPPORTUNITIES TO RECONNECT COMMUNITIES</b>	<b>PAGE #</b>
Portland, OR	City		X		X			X	34
Boston, MA	City		X	X	X			X	36
Salt Lake City, UT	City		X	X	X		X	X	38
Chicago, IL	City	X		X				X	40
Grafton, WI	City		X	X	X			X	42
Cedar Rapids, IA	City	X		X	X			X	44
Seattle, WA	City		X	X	X			X	46
North Santa Clara County, CA	Campus		X	X	X			X	48
Port of Portland, OR	Campus		X	X	X			X	50
Oregon State University	Campus	X			X	X		X	52
University of North Carolina	Campus		X		X			X	54

# ARKANSAS

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
STATE OF ARKANSAS	2015	ARKANSAS STATE BICYCLE AND PEDESTRIAN PLAN	ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

## KEY MAP FEATURES

Full Map (Click to view full size)



Region-specific maps are identified in the plan with more detail provided



Calls out study corridors/areas



Features State-specific landmarks; shown here are proposed bridge preservation projects

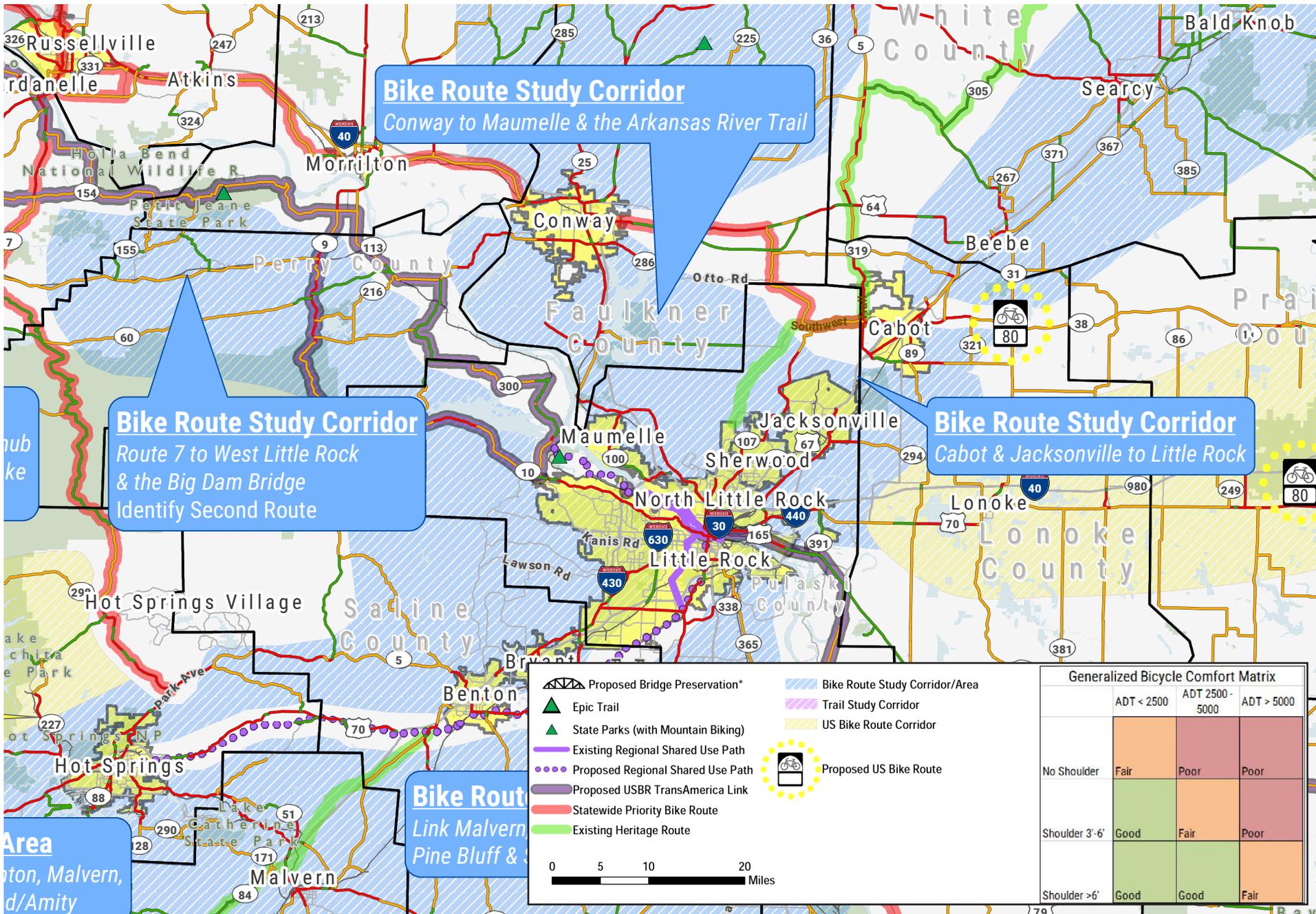


Highlights regional connections to cities



Identifies proposed U.S. bike routes

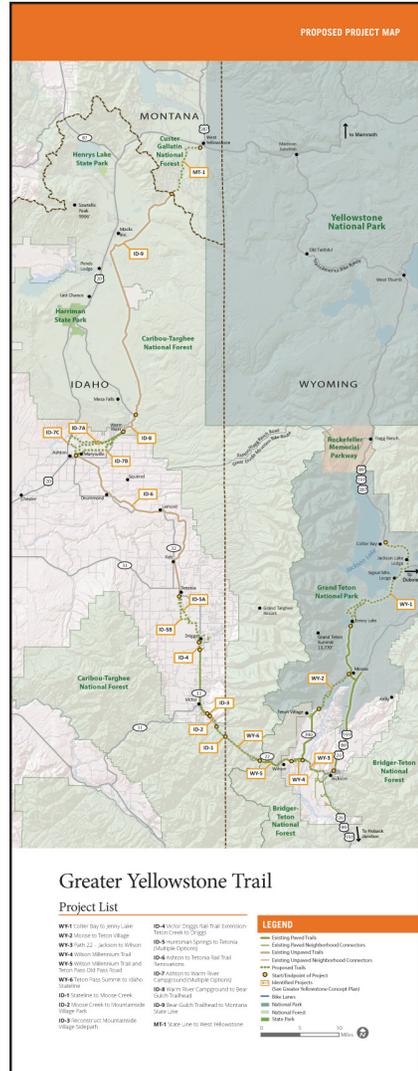




# YELLOWSTONE, WY-ID-MT

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
YELLOWSTONE REGION	2015	GREATER YELLOWSTONE TRAIL CONCEPT PLAN	WYOMING PATHWAYS (NONPROFIT)

Full Map (Click to view full size)



## KEY MAP FEATURES



Shows the beginning and end points of projects and identifies project areas



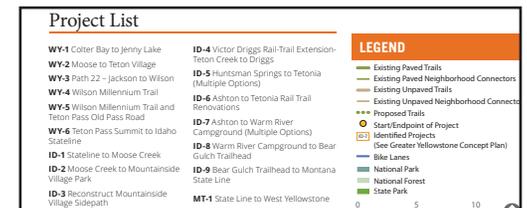
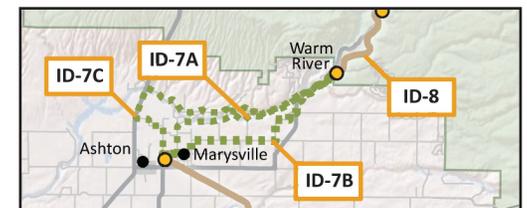
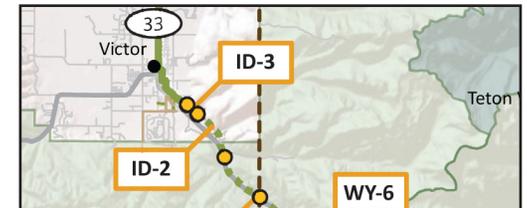
Highlights connections to State and Federal lands



Legend highlights paved, unpaved, and proposed connections



Legend includes a numbered list of projects

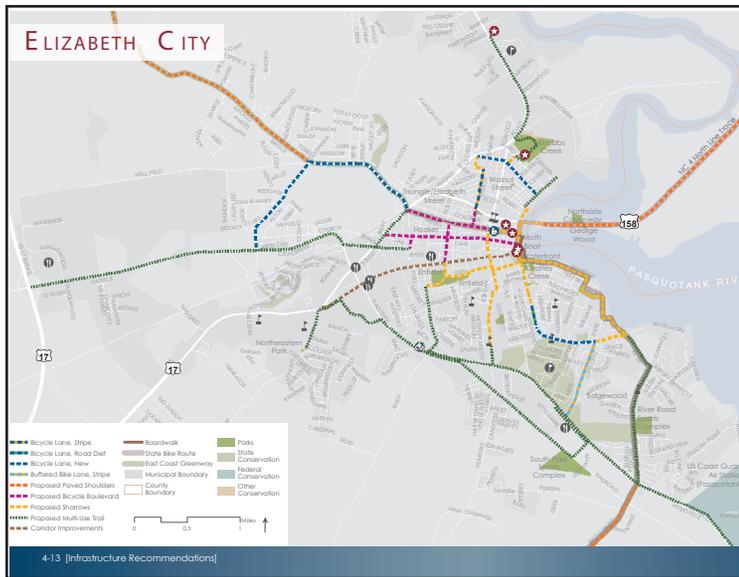




# ALBEMARLE REGION, NC

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
ALBEMARLE REGION, NC	2013	ALBEMARLE REGIONAL BICYCLE PLAN	ALBEMARLE RURAL PLANNING ORGANIZATION

One of a series of additional local maps  
(Click to view full size)



## KEY MAP FEATURES



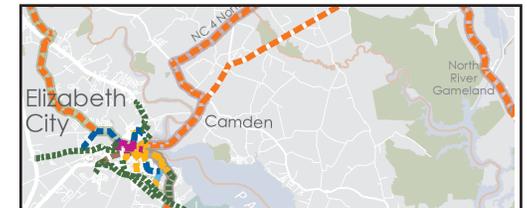
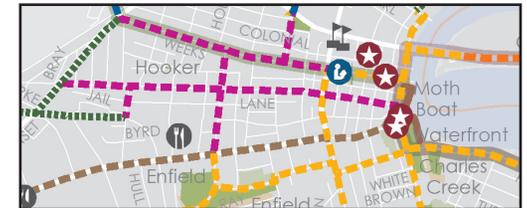
Nighborhood maps show connections to community destinations



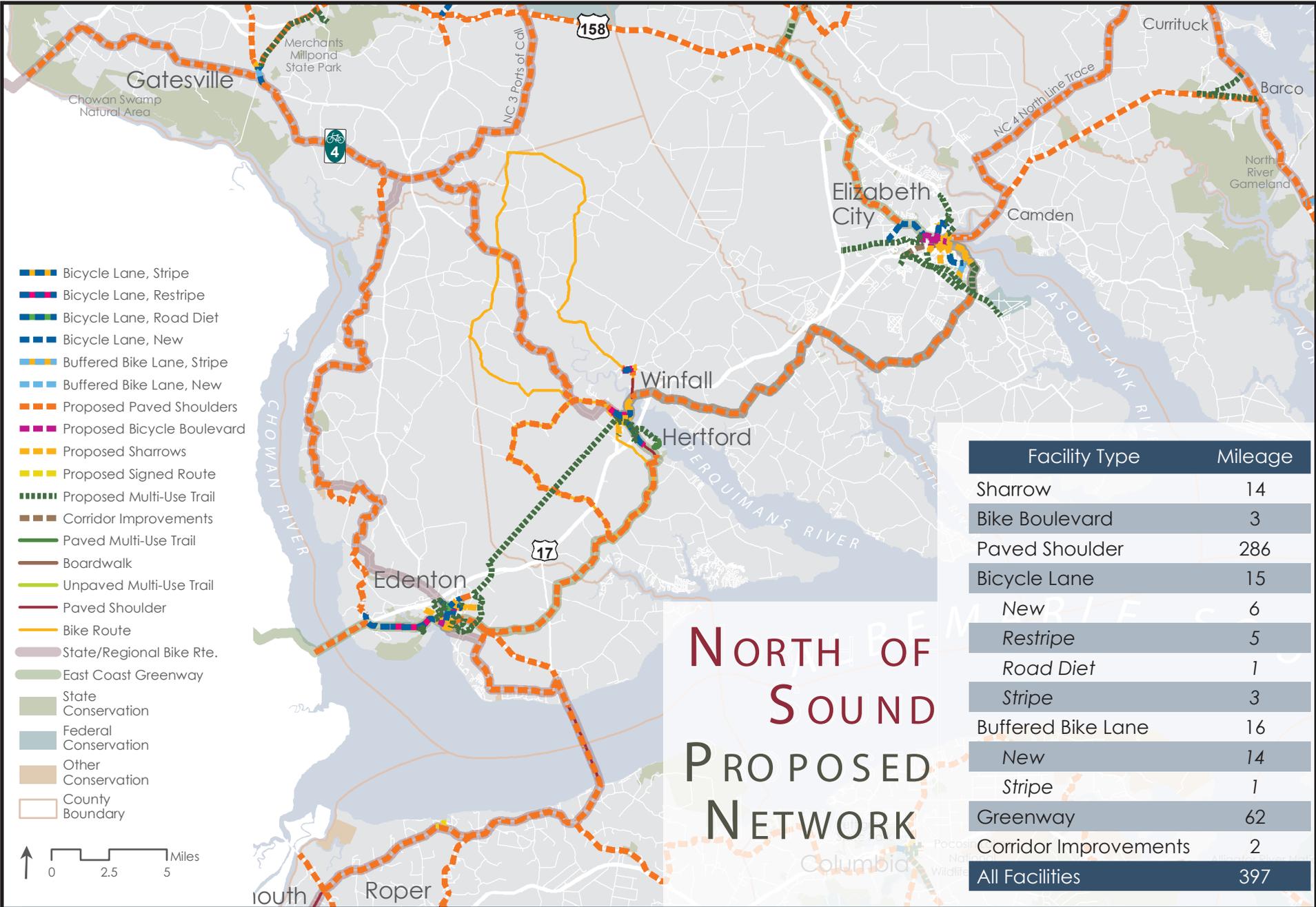
Highlights connections to State and Federal conservation lands



Includes the amount of mileage of each type of bike facility



Facility Type	Mileage
Sharrow	14
Bike Boulevard	3
Paved Shoulder	286
Bicycle Lane	15

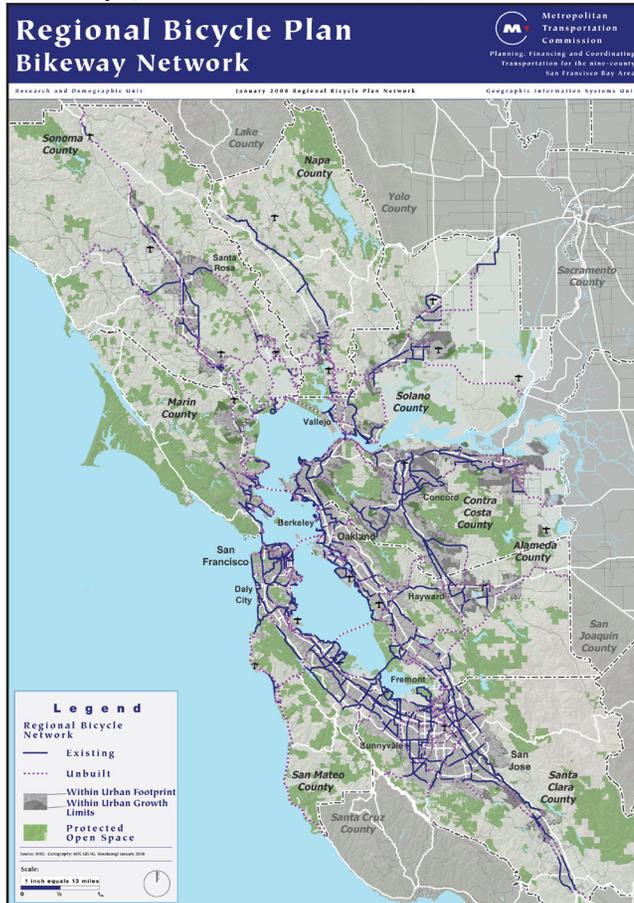


# SAN FRANCISCO AREA, CA

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
SAN FRANCISCO BAY AREA	2008	REGIONAL BICYCLE PLAN NETWORK	METROPOLITAN TRANSPORTATION COMMISSION

## KEY MAP FEATURES

Full Map (Click to view full size)



Identifies existing and planned connections to protected open space

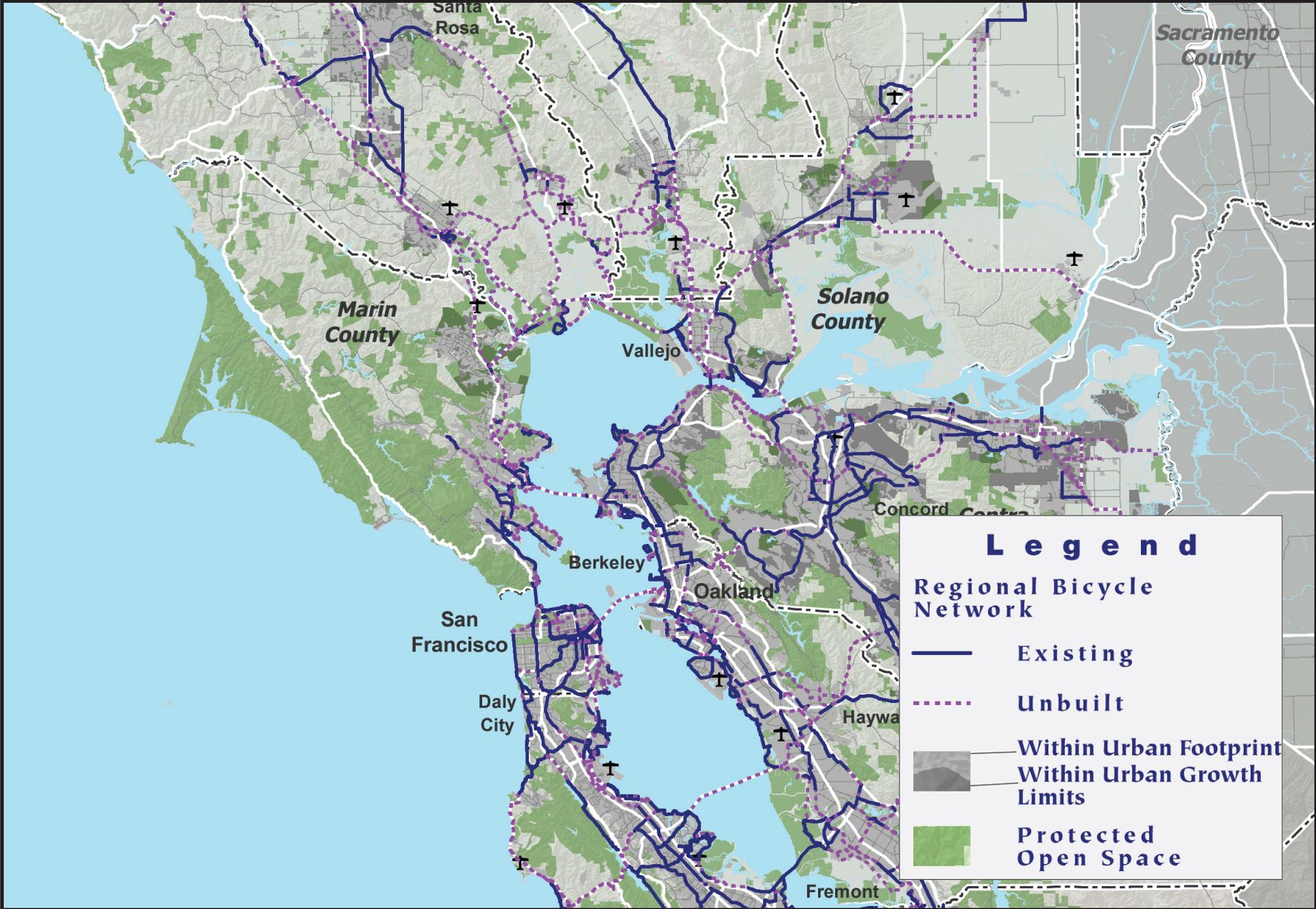


Differentiates between inside and outside the jurisdiction



Identifies Urban Growth Limits, an important regional land use concept



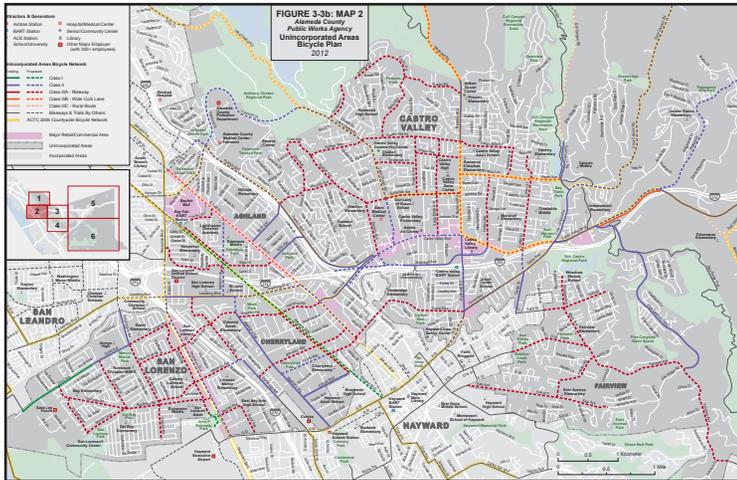


# ALAMEDA COUNTY, CA

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
ALAMEDA COUNTY, CA	2012	BICYCLE AND PEDESTRIAN MASTER PLAN FOR UNINCORPORATED AREAS	ALAMEDA COUNTY PUBLIC WORKS AGENCY

## KEY MAP FEATURES

Full Map (Click to view full size)



Highlights major employers, community centers, libraries, and hospitals



Streamlined legend labels



Identifies areas inside and outside the planning jurisdiction



Includes a key to each neighborhood map

