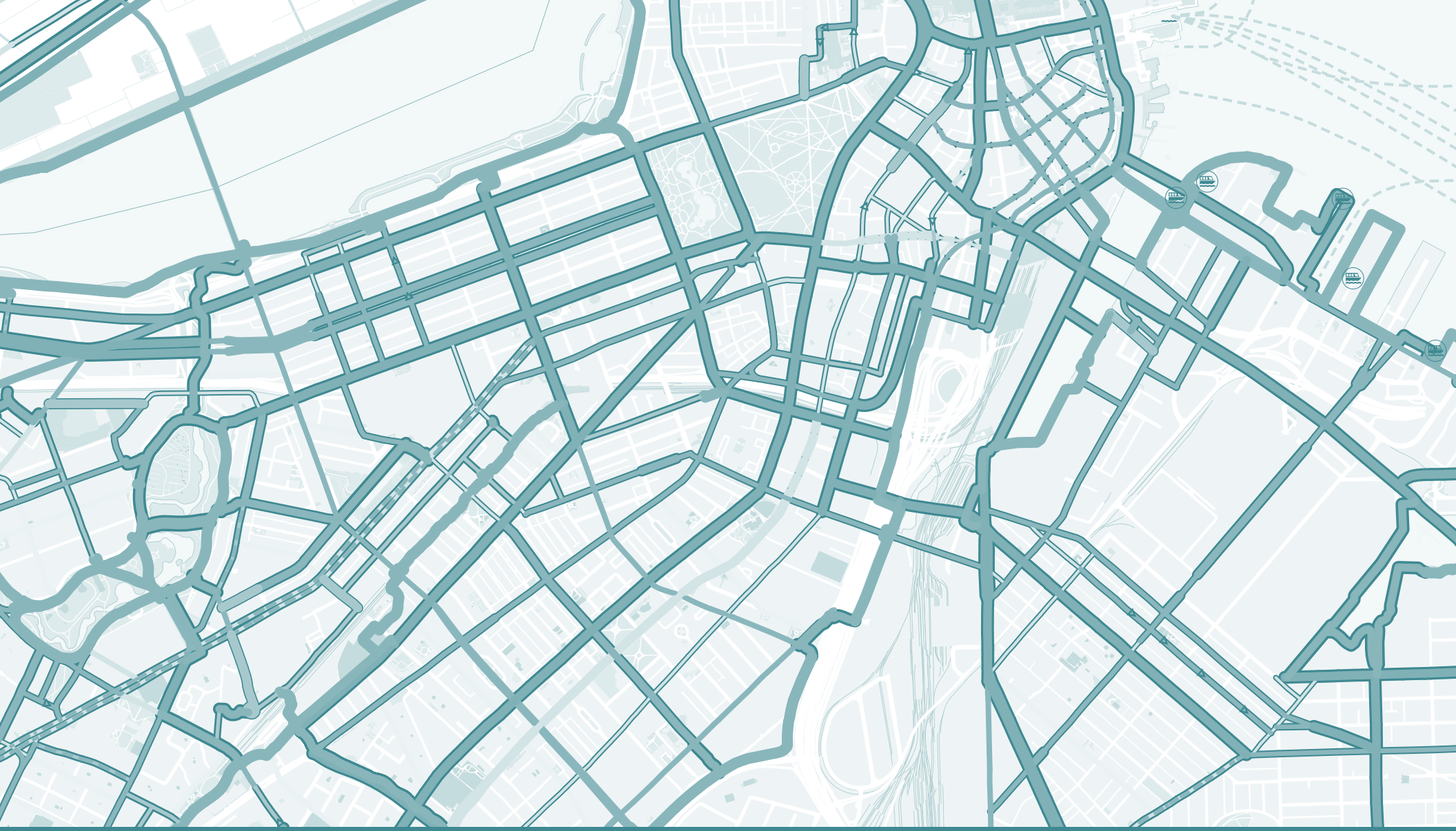


BIKE NETWORK MAPPING IDEA BOOK

JUNE 2016

U.S.Department of Transportation
Federal Highway Administration

U.S.Department of Transportation

Federal Highway Administration

NOTICE

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of information contained in this document.

The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this report only because they are considered essential to the objective of this document.

The contents of this report reflect the views of the authors, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official policy of the U.S. Department of Transportation. This report does not constitute a standard, specification, or regulation.

Publication Number: FHWA-HEP-16-054

TABLE OF CONTENTS

Introduction 4

Principles 5

Map Basics 6

Summary 8

State Maps

- Arkansas 10

Regional Maps

- Yellowstone, WY-ID-MT 12
- Albemarle Region, NC 14
- San Francisco Area, CA 16

County Maps

- Alameda County, CA 18
- Hennepin County, MN 20

City Maps

- Idaho Falls, ID 22
- Cambridge, MA 24
- Santa Barbara, CA 26
- Atlanta, GA 28
- Austin, TX 30
- Fort Collins, CO 32
- Portland, OR 34
- Boston, MA 36
- Salt Lake City, UT 38
- Chicago, IL 40
- Grafton, WI 42
- Cedar Rapids, IA 44
- Seattle, WA 46

Campus Maps

- North Santa Clara County, CA 48
- Port of Portland, OR 50
- Oregon State University 52
- University of North Carolina 54

Next Steps 56

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.**

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.

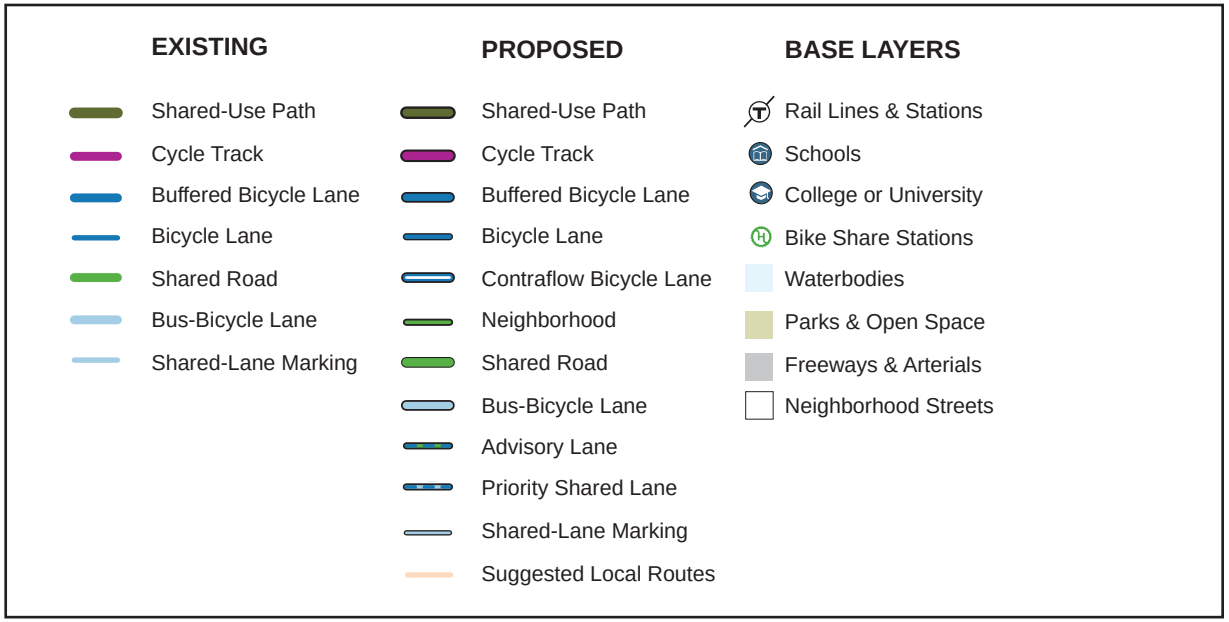
MULTIPLE LAYERS AND INFORMATION

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**



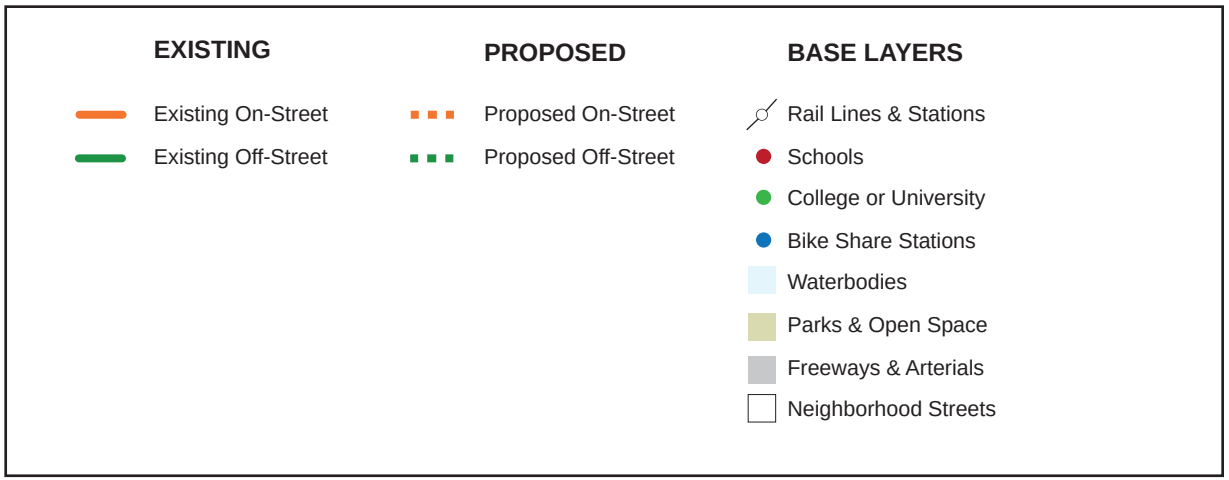
FLEXIBLE NETWORK MAPS

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.

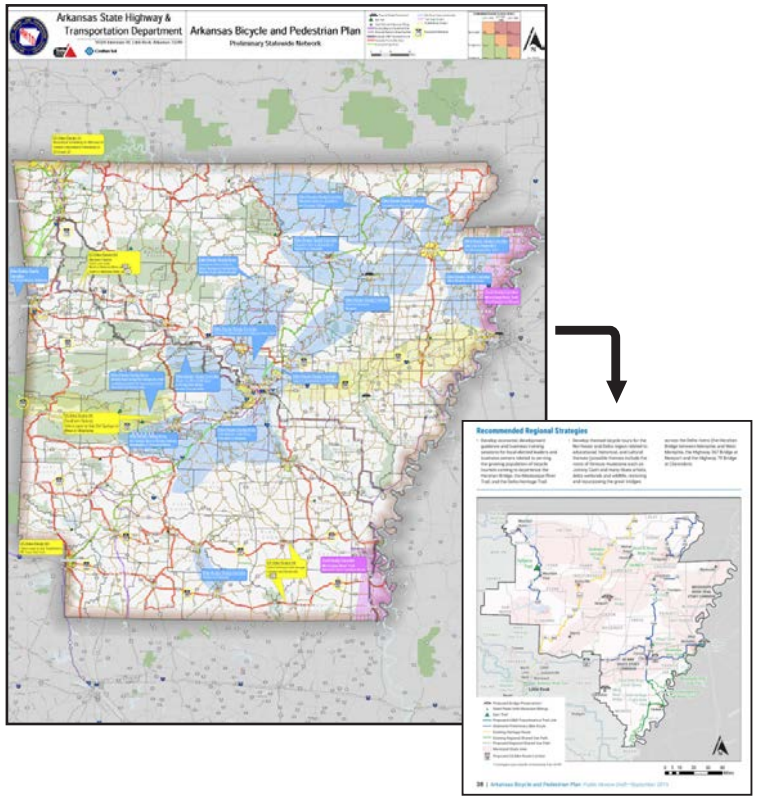
MAP	SCALE	DOES IT IDENTIFY: A GENERALIZED NETWORK	DOES IT IDENTIFY: SPECIFIC FACILITY TYPES	DOES IT SHOW: LINKAGES TO LOCAL DESTINATIONS	DOES IT SHOW: LINKAGES TO SURROUNDING JURISDICTIONS	DOES IT SHOW: BARRIERS	DOES IT SHOW: SPOT IMPROVEMENTS	DOES IT SHOW: OPPORTUNITIES TO RECONNECT COMMUNITIES	PAGE #
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

MAP	SCALE	DOES IT IDENTIFY: A GENERALIZED NETWORK	DOES IT IDENTIFY: SPECIFIC FACILITY TYPES	DOES IT SHOW: LINKAGES TO LOCAL DESTINATIONS	DOES IT SHOW: LINKAGES TO SURROUNDING JURISDICTIONS	DOES IT SHOW: BARRIERS	DOES IT SHOW: SPOT IMPROVEMENTS	DOES IT SHOW: OPPORTUNITIES TO RECONNECT COMMUNITIES	PAGE #
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

Full Map (Click to view full size)



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

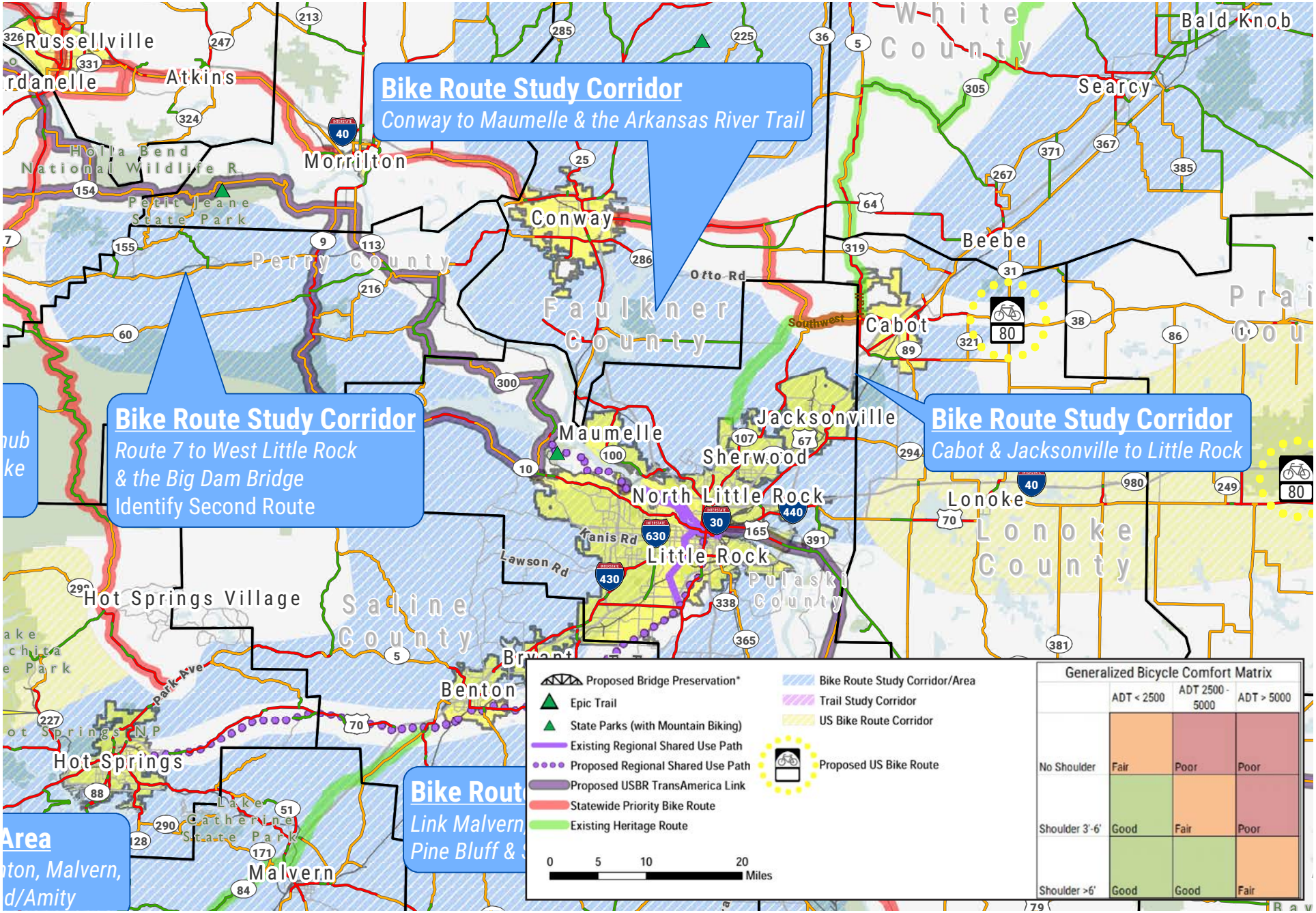
KEY MAP FEATURES

Calls out study corridors/areas

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

Highlights regional connections to cities

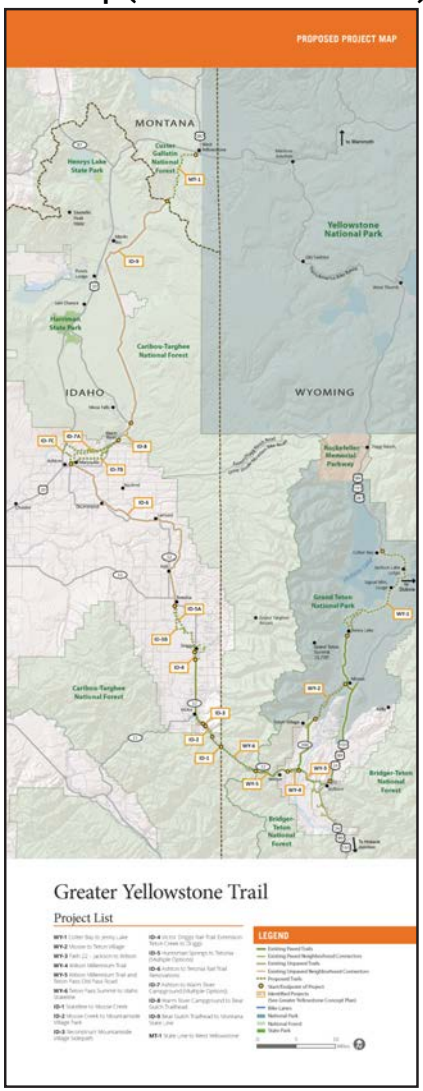
Identifies proposed U.S. bike routes


Bike Route Study Corridor
Conway to Maumelle & the Arkansas River Trail
Bike Route Study Corridor
Route 7 to West Little Rock
& the Big Dam Bridge
Identify Second Route
Bike Route Study Corridor
Cabot & Jacksonville to Little Rock
Area
ton, Malvern,
d/Amity
Bike Rout
Link Malvern
Pine Bluff &
Russellville
Atkins
Morrilton
Conway
Perry County
Faulkner County
Otto Rd
Beebe
Searcy
White County
Bald Knob
Cabot
Jacksonville
Maumelle
Sherwood
North Little Rock
Little Rock
Lonoke
Lonoke County
Pulaski County
Hot Springs Village
Saline County
Benton
Bryant
Hot Springs
Malvern
Lake Catherine State Park
Holla Bend National Wildlife R
Petit Jean State Park
Kanis Rd
Lawson Rd
Park Ave
Southwest Trail
Proposed Bridge Preservation*
Epic Trail
State Parks (with Mountain Biking)
Existing Regional Shared Use Path
Proposed Regional Shared Use Path
Proposed USBR TransAmerica Link
Statewide Priority Bike Route
Existing Heritage Route
Bike Route Study Corridor/Area
Trail Study Corridor
US Bike Route Corridor
Proposed US Bike Route
0 5 10 20
Miles
Generalized Bicycle Comfort Matrix
ADT < 2500
ADT 2500 - 5000
ADT > 5000
No Shoulder
Fair
Poor
Poor
Shoulder 3'-6'
Good
Fair
Poor
Shoulder >6'
Good
Good
Fair

YELLOWSTONE, WY-ID-MT

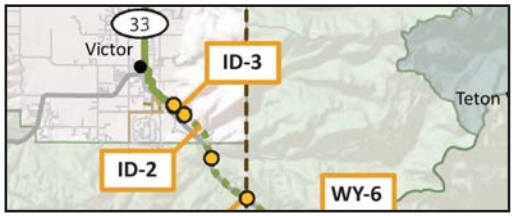
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
YELLOWSTONE REGION	2015	GREATER YELLOWSTONE TRAIL CONCEPT PLAN	WYOMING PATHWAYS (NONPROFIT)

Full Map (Click to view full size)



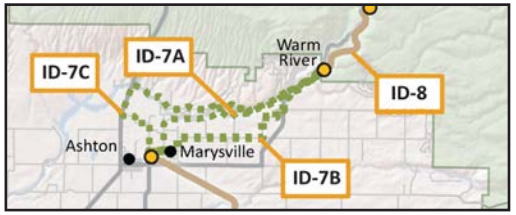
KEY MAP FEATURES

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

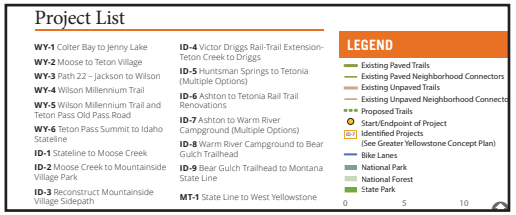


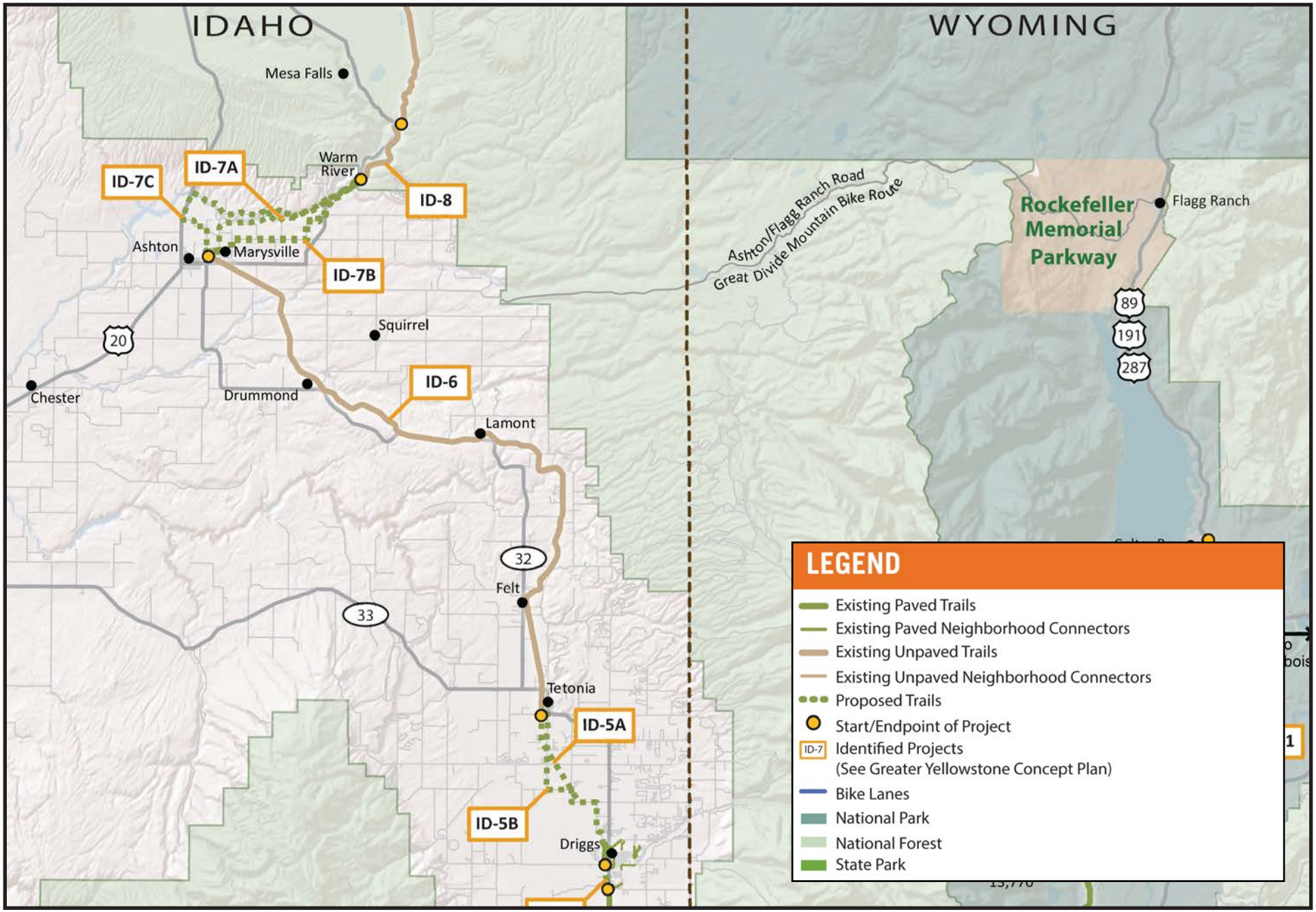
Highlights connections to State and Federal lands

Legend highlights paved, unpaved, and proposed connections



Legend includes a numbered list of projects

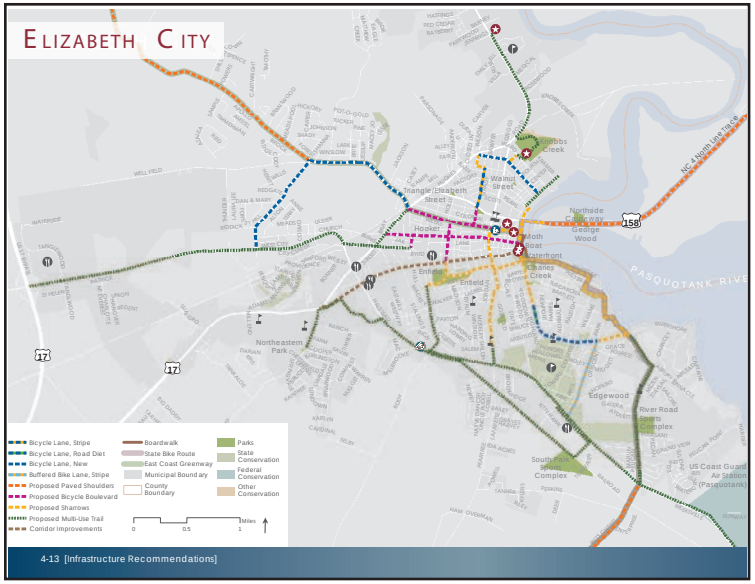



IDAHO
WYOMING
Mesa Falls
Warm River
ID-7C
ID-7A
ID-8
Ashton
Marysville
ID-7B
Squirrel
20
Chester
Drummond
ID-6
Lamont
32
Felt
33
Tetonia
ID-5A
ID-5B
Driggs
Ashton/Flagg Ranch Road
Great Divide Mountain Bike Route
Rockefeller Memorial Parkway
Flagg Ranch
89
191
287
LEGEND
Existing Paved Trails
Existing Paved Neighborhood Connectors
Existing Unpaved Trails
Existing Unpaved Neighborhood Connectors
Proposed Trails
Start/Endpoint of Project
ID-7 Identified Projects
(See Greater Yellowstone Concept Plan)
Bike Lanes
National Park
National Forest
State Park

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)



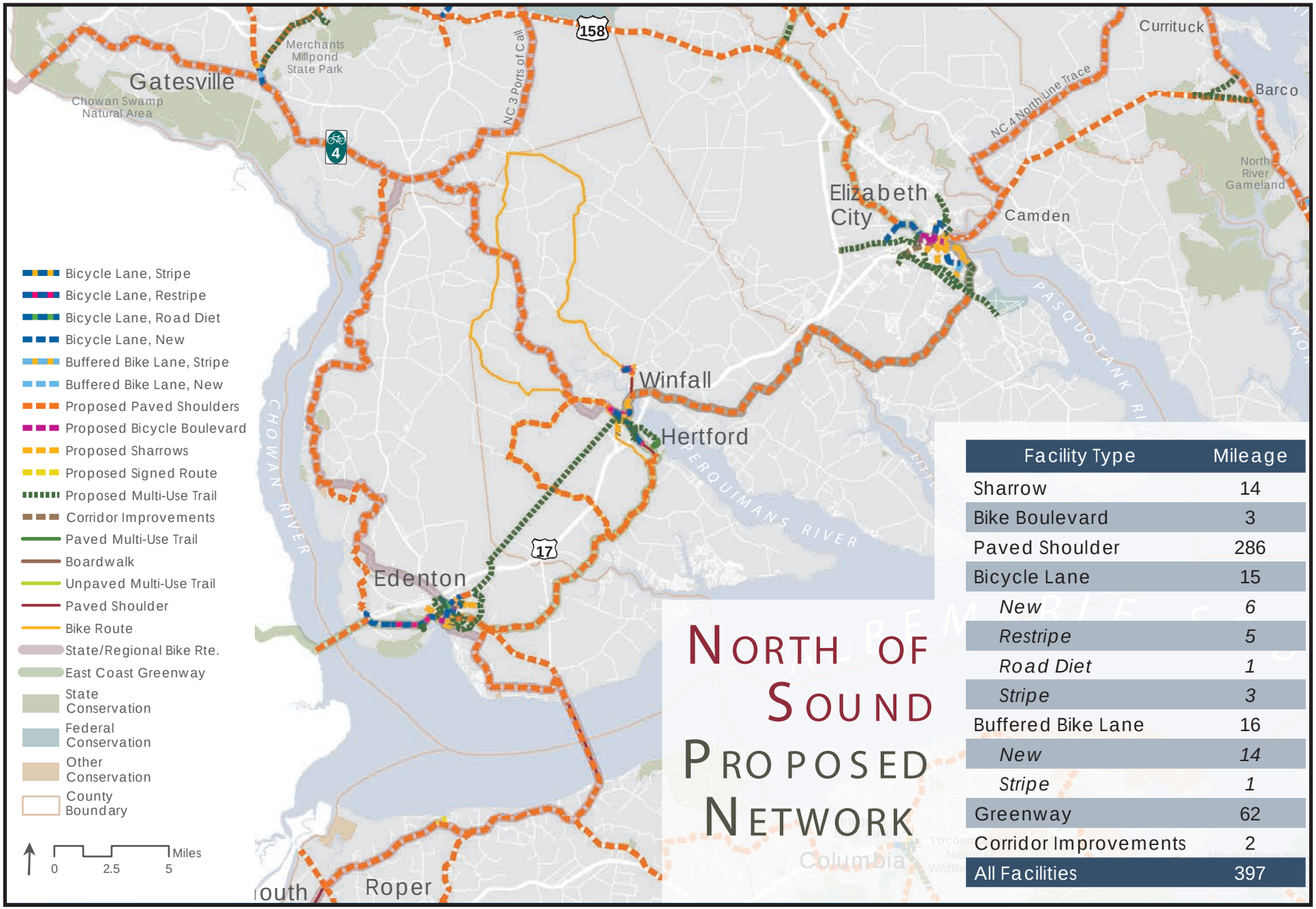
KEY MAP FEATURES

Neighborhood 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



North of Sound Proposed Network

Facility Type	Mileage
Sharrow	14
Bike Boulevard	3
Paved Shoulder	286
Bicycle Lane	15
New	*6*
Restripe	*5*
Road Diet	*1*
Stripe	*3*
Buffered Bike Lane	16
New	*14*
Stripe	*1*
Greenway	62
Corridor Improvements	2
All Facilities	397

SAN FRANCISCO AREA, CA

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

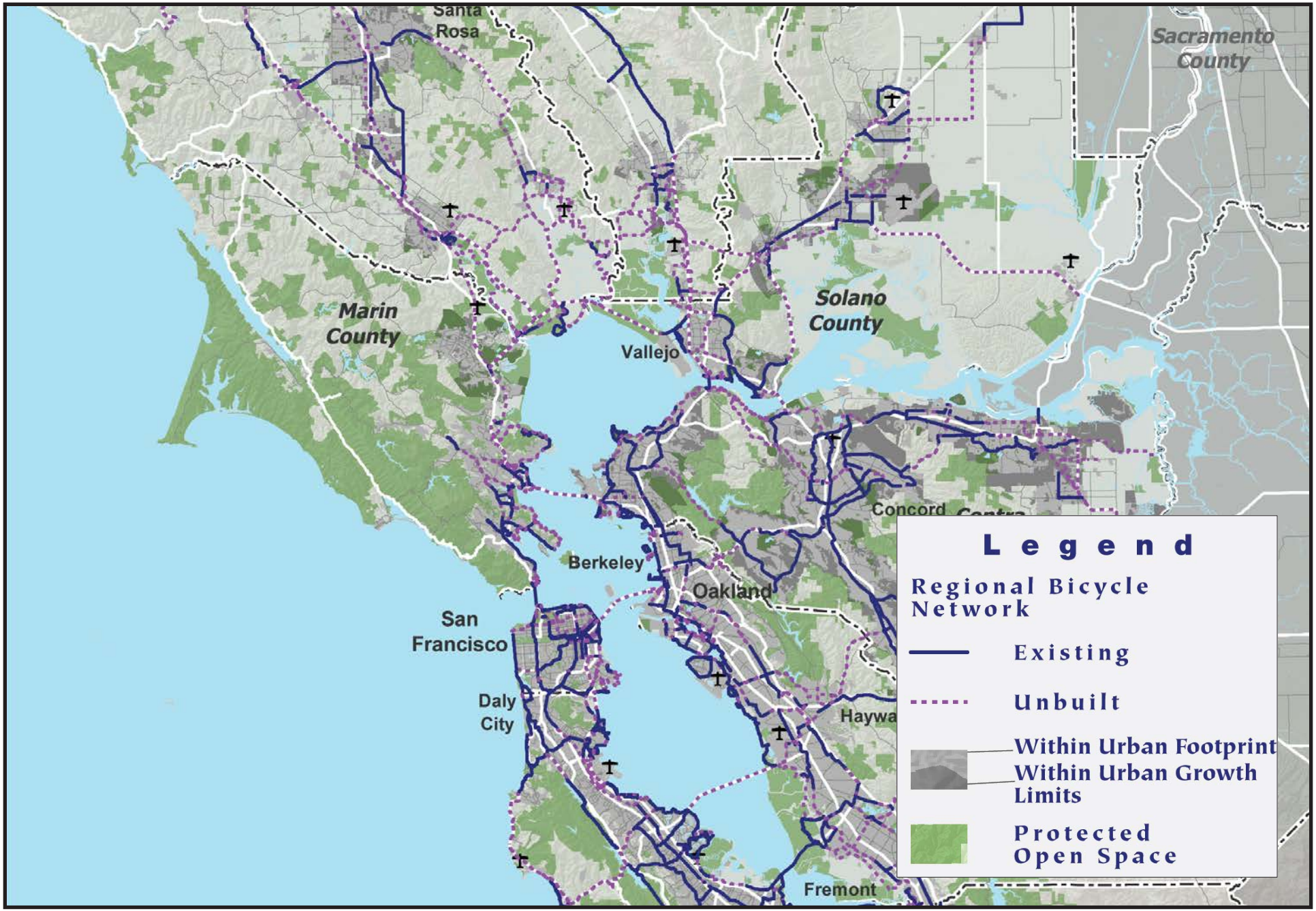
Full Map (Click to view full size)

KEY MAP FEATURES

Identifies existing and planned connections to protected open space

Differentiates between inside and outside the jurisdiction

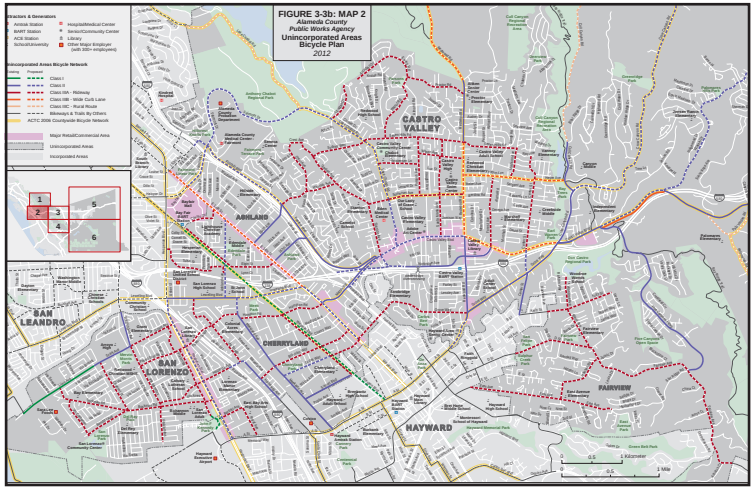
Identifies Urban Growth Limits, an important regional land use concept


Santa Rosa
Sacramento County
Marin County
Solano County
Vallejo
Concord
Berkeley
Oakland
San Francisco
Daly City
Haywa
Fremont
Legend
Regional Bicycle Network
Existing
Unbuilt
Within Urban Footprint
Within Urban Growth Limits
Protected Open Space

ALAMEDA COUNTY, CA

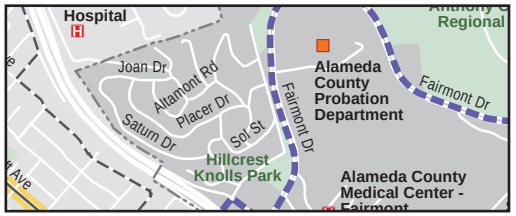
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
ALAMEDA COUNTY, CA	2012	BICYCLE AND PEDESTRIAN MASTER PLAN FOR UNINCORPORATED AREAS	ALAMEDA COUNTY PUBLIC WORKS AGENCY

Full Map (Click to view full size)

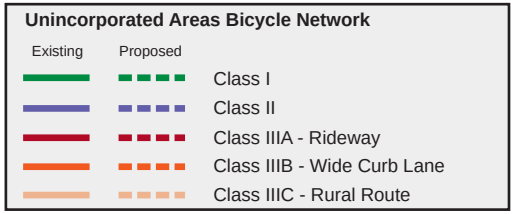


KEY MAP FEATURES

Highlights major employers, community centers, libraries, and hospitals

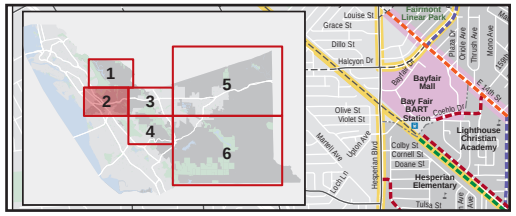


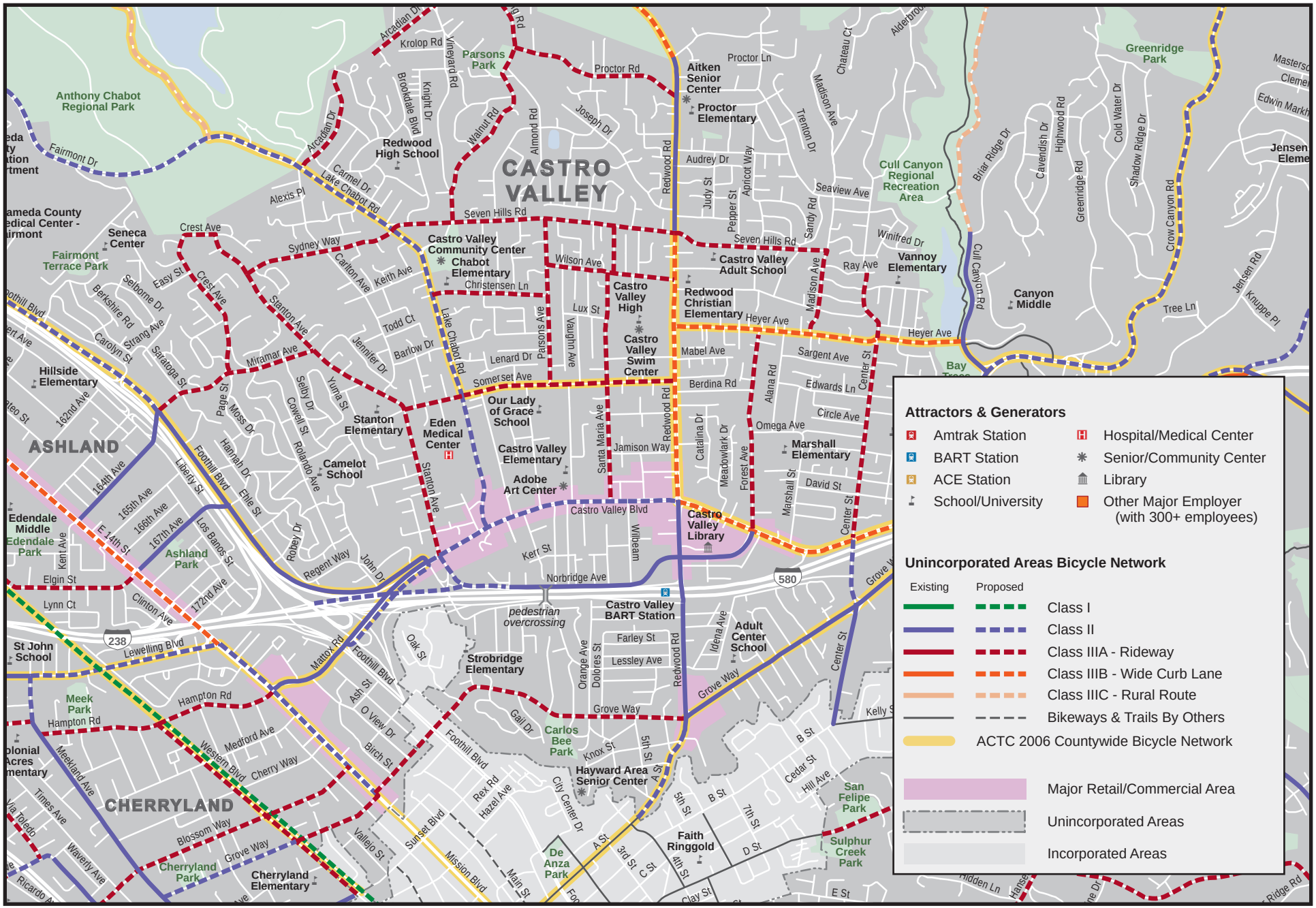
Streamlined legend labels



Identifies areas inside and outside the planning jurisdiction

Includes a key to each neighborhood map

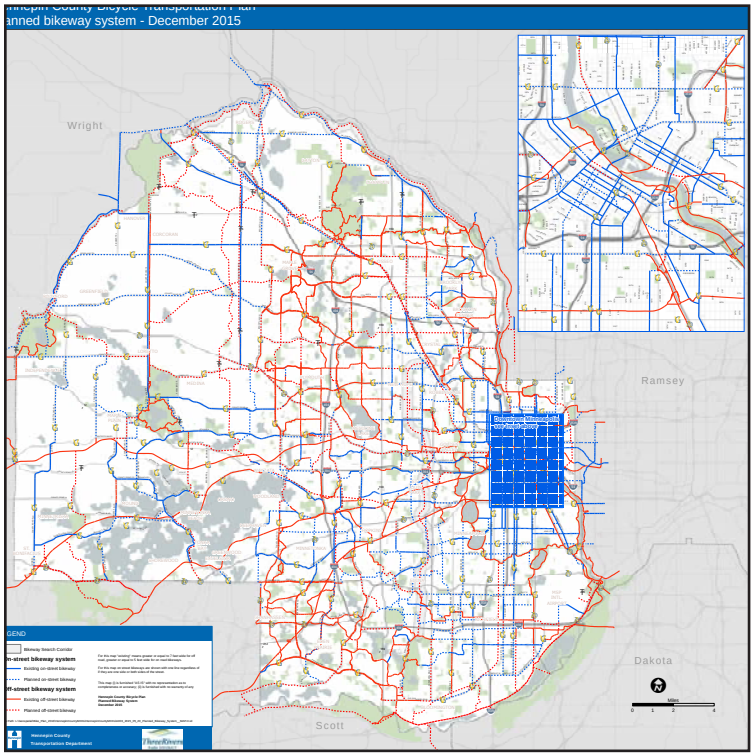



CASTRO VALLEY
ASHLAND
CHERRYLAND
Anthony Chabot Regional Park
Parsons Park
Greenridge Park
Cull Canyon Regional Recreation Area
Fairmont Terrace Park
Meek Park
Ashland Park
Edendale Park
Carlos Bee Park
San Felipe Park
Sulphur Creek Park
De Anza Park
Cherryland Park
Aitken Senior Center
Proctor Elementary
Redwood High School
Castro Valley Community Center
Chabot Elementary
Castro Valley Adult School
Redwood Christian Elementary
Vannoy Elementary
Canyon Middle
Castro Valley High
Castro Valley Swim Center
Our Lady of Grace School
Stanton Elementary
Eden Medical Center
Castro Valley Elementary
Adobe Art Center
Camelot School
Marshall Elementary
Castro Valley Library
Castro Valley BART Station
pedestrian overcrossing
Adult Center School
Strobridge Elementary
Hayward Area Senior Center
Faith Ringgold
Cherryland Elementary
Hillside Elementary
Edendale Middle
St John School
Seneca Center
Alameda County Medical Center - Fairmont
Bay
Attractors & Generators
Amtrak Station
BART Station
ACE Station
School/University
Hospital/Medical Center
Senior/Community Center
Library
Other Major Employer (with 300+ employees)
Unincorporated Areas Bicycle Network
Existing
Proposed
Class I
Class II
Class IIIA - Rideway
Class IIIB - Wide Curb Lane
Class IIIC - Rural Route
Bikeways & Trails By Others
ACTC 2006 Countywide Bicycle Network
Major Retail/Commercial Area
Unincorporated Areas
Incorporated Areas

HENNEPIN COUNTY, MN

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
HENNEPIN COUNTY, MN	2015	HENNEPIN COUNTY BIKE PLAN	HENNEPIN COUNTY

Full Map (Click to view full size)

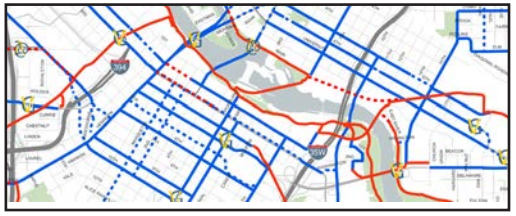


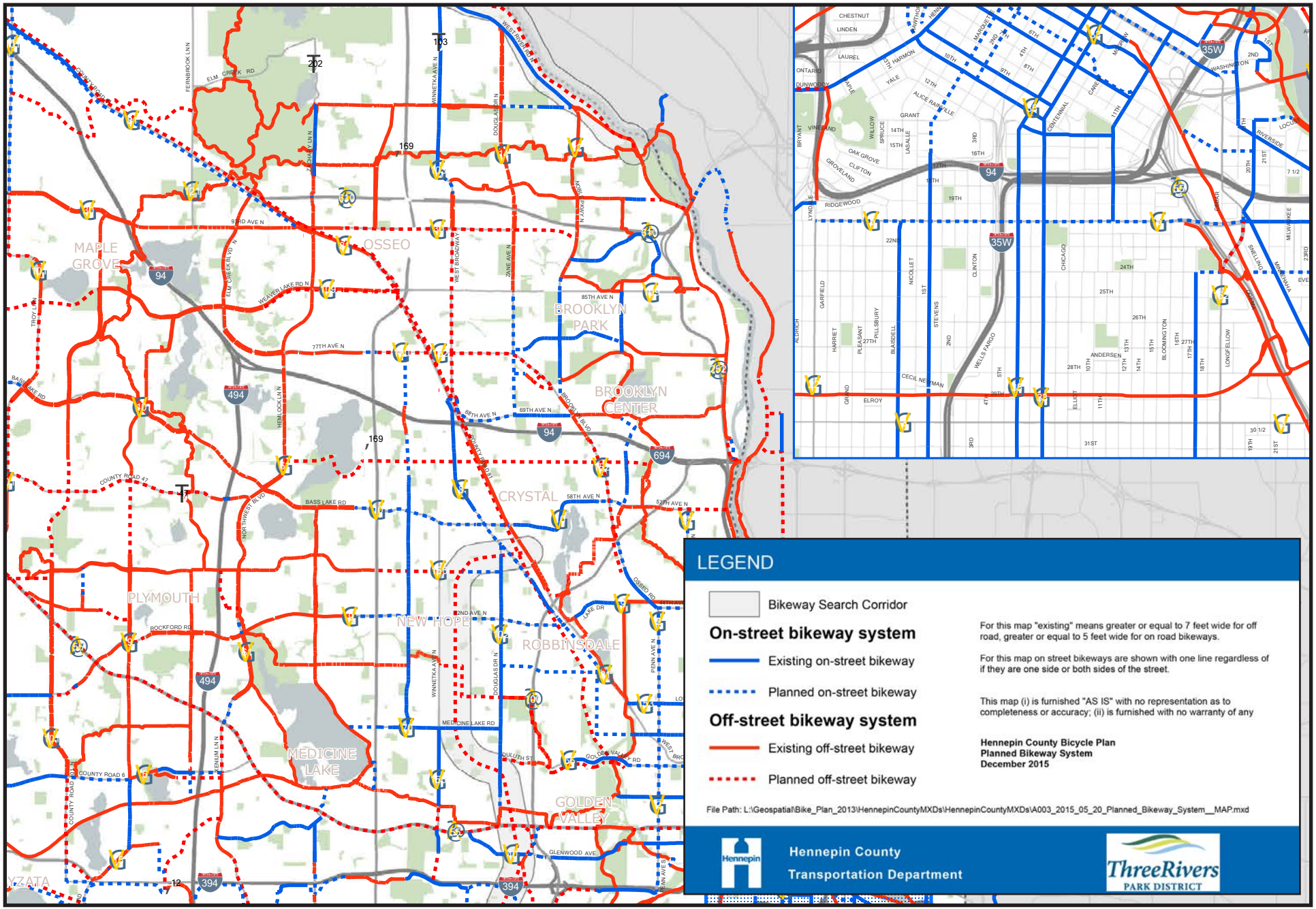
KEY MAP FEATURES

Simple symbology - Two colors and two line types

Map focuses on county and state roads. Local roads not shown to improve legibility.

Downtown area is shown in more detail for closer inspection

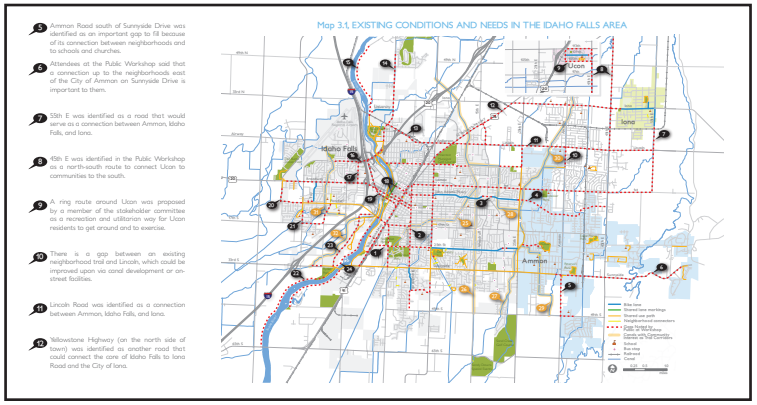



MAPLE GROVE
OSSEO
BROOKLYN PARK
BROOKLYN CENTER
CRYSTAL
PLYMOUTH
NEW HOPE
ROBBINSDALE
MEDICINE LAKE
GOLDEN VALLEY
LEGEND
Bikeway Search Corridor
On-street bikeway system
Existing on-street bikeway
Planned on-street bikeway
Off-street bikeway system
Existing off-street bikeway
Planned off-street bikeway
For this map "existing" means greater or equal to 7 feet wide for off road, greater or equal to 5 feet wide for on road bikeways.
For this map on street bikeways are shown with one line regardless of if they are one side or both sides of the street.
This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any
Hennepin County Bicycle Plan
Planned Bikeway System
December 2015
File Path: L:\Geospatial\Bike_Plan_2013\HennepinCountyMXDs\HennepinCountyMXDs\A003_2015_05_20_Planned_Bikeway_System__MAP.mxd
Hennepin County
Transportation Department
ThreeRivers
PARK DISTRICT

IDAHO FALLS, ID

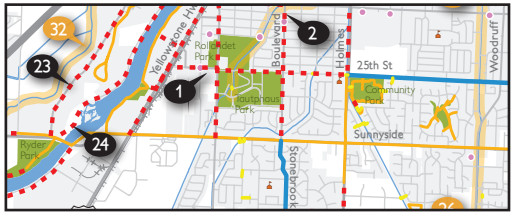
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
IDAHO FALLS, ID	2014	CONNECTING OUR COMMUNITY	IDAHO FALLS PARKS AND RECREATION DIVISION AND THE BONNEVILLE METROPOLITAN PLANNING ORGANIZATION

Full Map (Click to view full size)

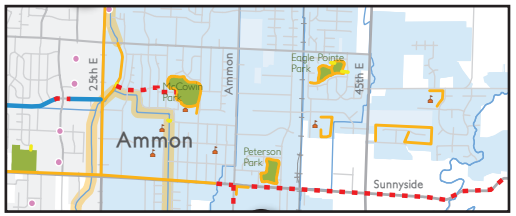


KEY MAP FEATURES

Incorporates community feedback gathered from a range of public workshops and committees



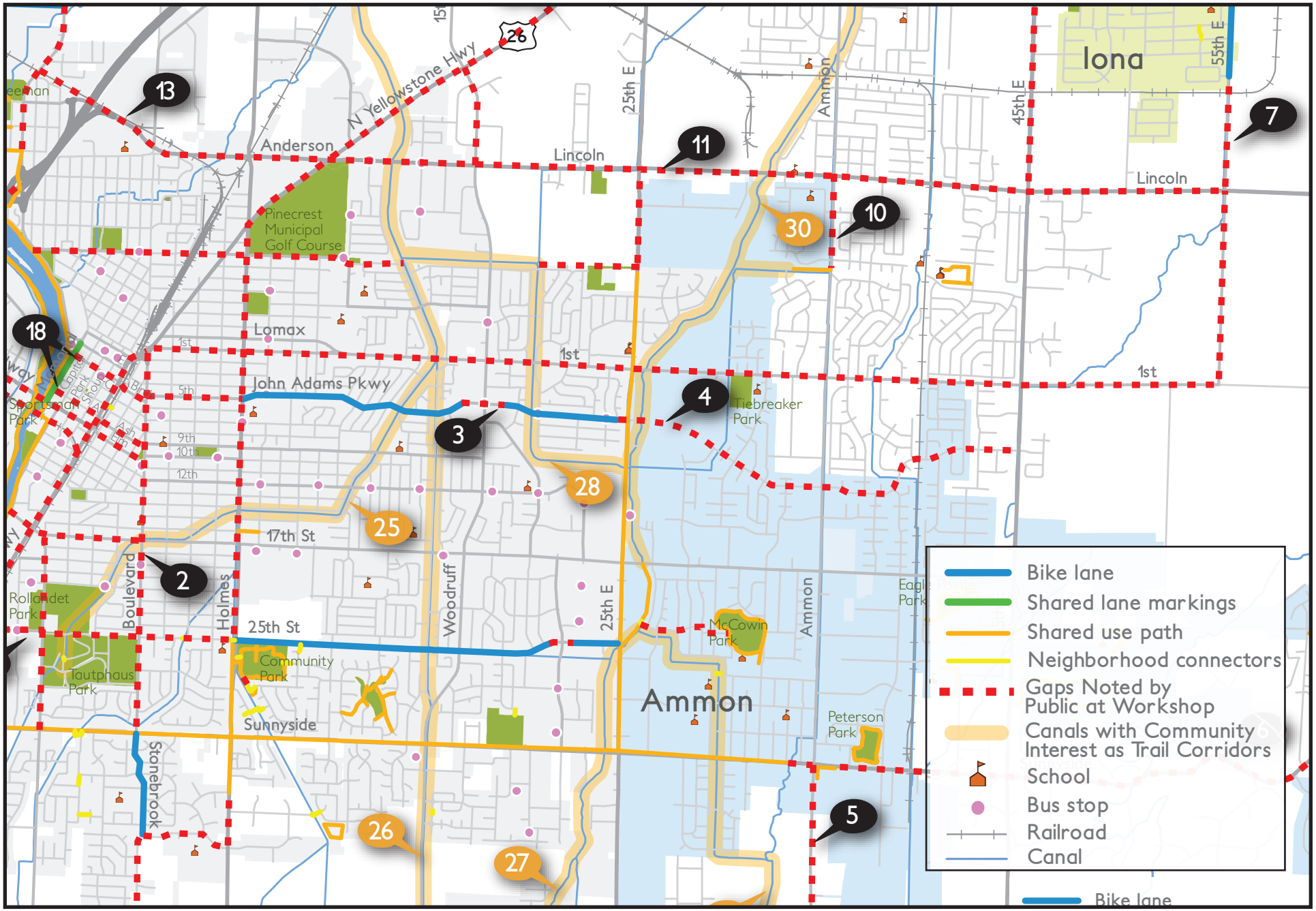
Highlights connections to nearby jurisdictions



Community comment sidebar included

> 9 A ring route around Ucon was proposed by a member of the stakeholder committee as a recreation and utilitarian way for Ucon residents to get around and to exercise.

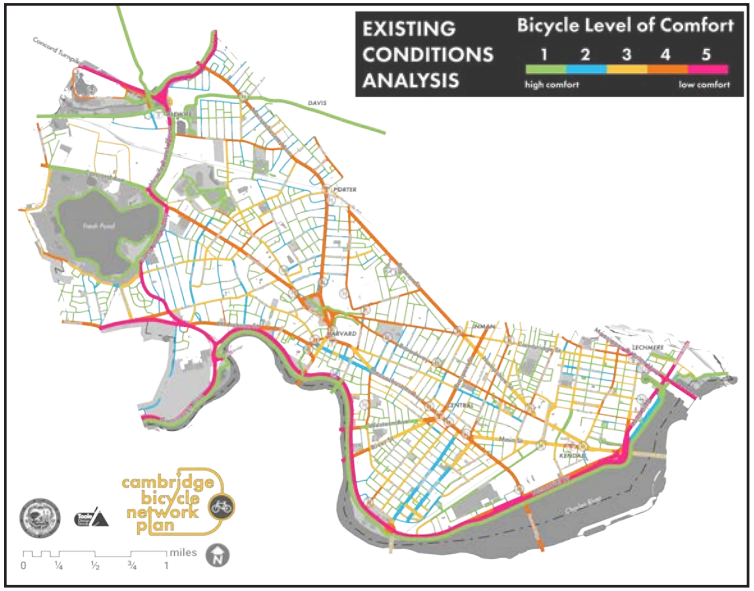
Notes gaps in the bikeway network


Iona
Ammon
Anderson
Lincoln
Lomax
John Adams Pkwy
17th St
25th St
Sunnyside
Boulevard
Holmes
Woodruff
Stonebrook
N Yellowstone Hwy
25th E
Ammon
45th E
55th E
1st
5th
9th
10th
12th
Pinecrest Municipal Golf Course
Tiebreaker Park
McCowin Park
Peterson Park
Community Park
Rollandet Park
Tautphaus Park
Sportsman Park
Eagle Pointe Park
Bike lane
Shared lane markings
Shared use path
Neighborhood connectors
Gaps Noted by Public at Workshop
Canals with Community Interest as Trail Corridors
School
Bus stop
Railroad
Canal
Bike lane

CAMBRIDGE, MA

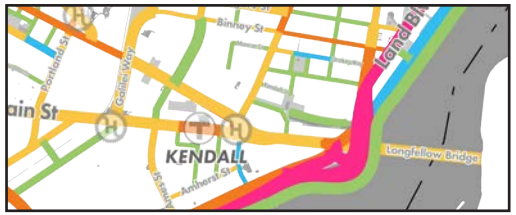
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
CAMBRIDGE, MA	2015	INTERNAL PLANNING MAP	CITY OF CAMBRIDGE

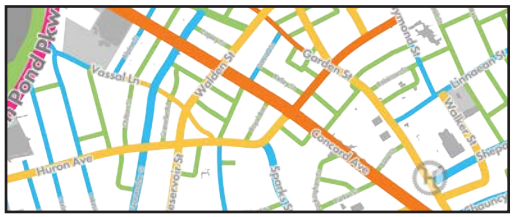
Full Map (Click to view full size)

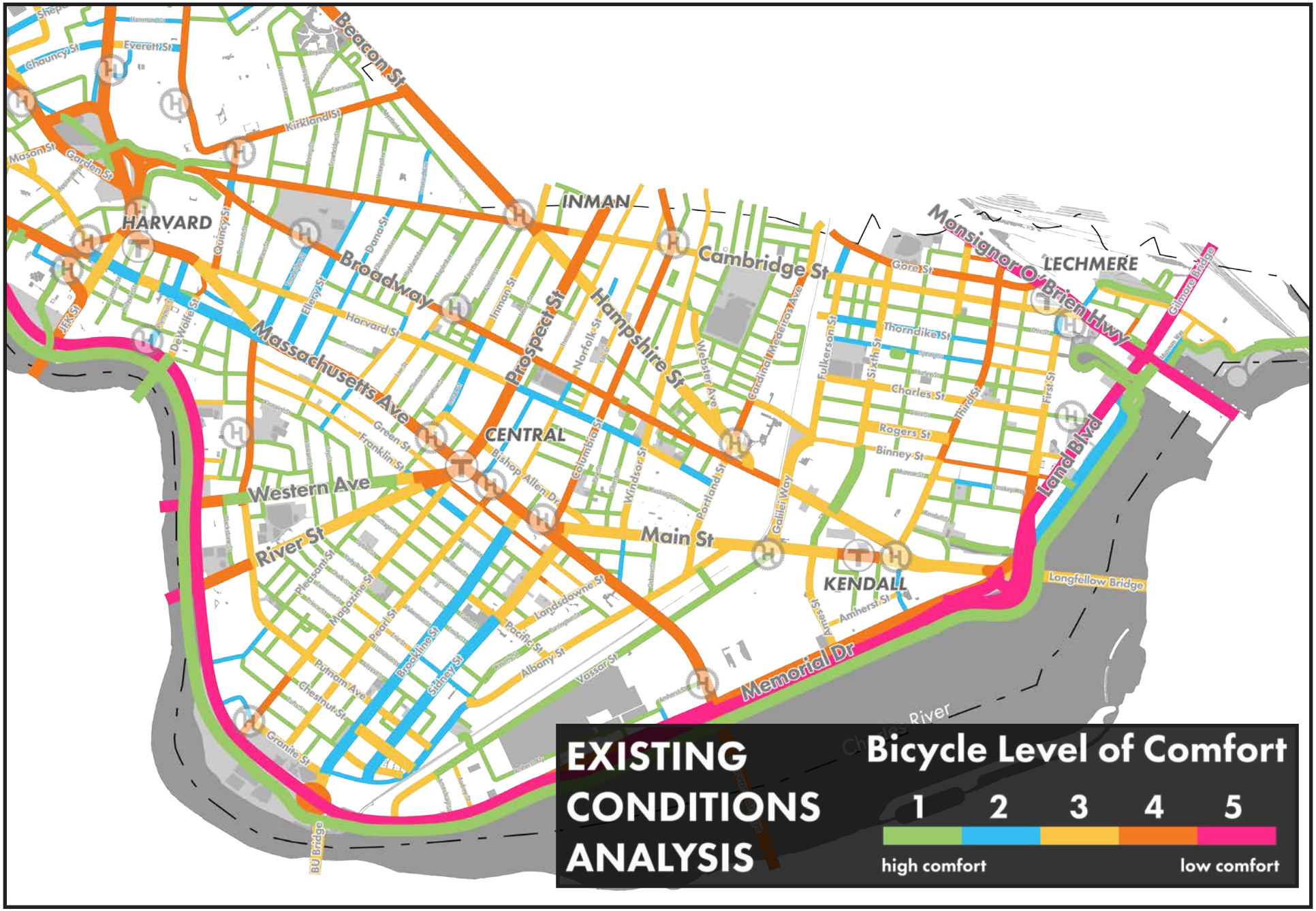


KEY MAP FEATURES

- **Identifies access points to transit hubs**
- **Bright and easily understandable color scheme**
- **Highlights how low and high stress networks connect**



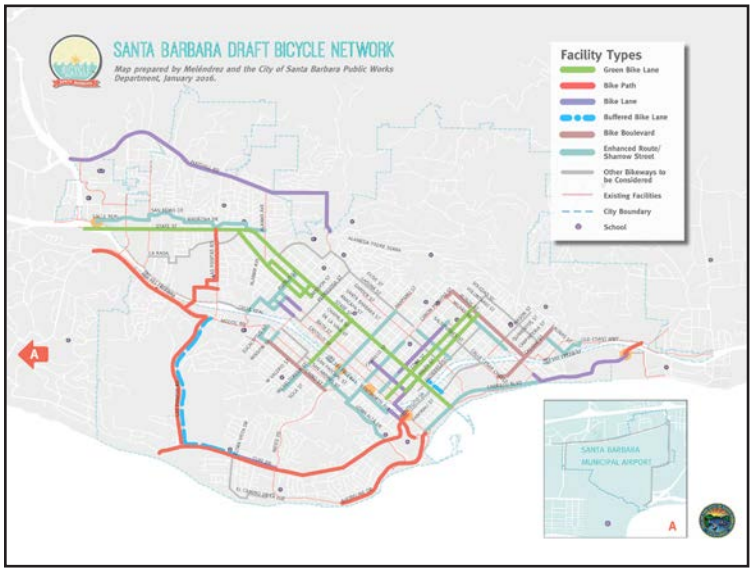



EXISTING CONDITIONS ANALYSIS
Bicycle Level of Comfort
1
2
3
4
5
high comfort
low comfort
HARVARD
INMAN
CENTRAL
KENDALL
LECHMERE
Beacon St
Broadway
Massachusetts Ave
Prospect St
Hampshire St
Cambridge St
Monsignor O'Brien Hwy
Western Ave
River St
Main St
Memorial Dr
Longfellow Bridge
Land Blvd
Gilmore Bridge
BU Bridge
Charles River

SANTA BARBARA, CA

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
SANTA BARBARA, CA	DRAFT 2016	SANTA BARBARA BICYCLE MASTER PLAN	CITY OF SANTA BARBARA

Full Map (Click to view full size)

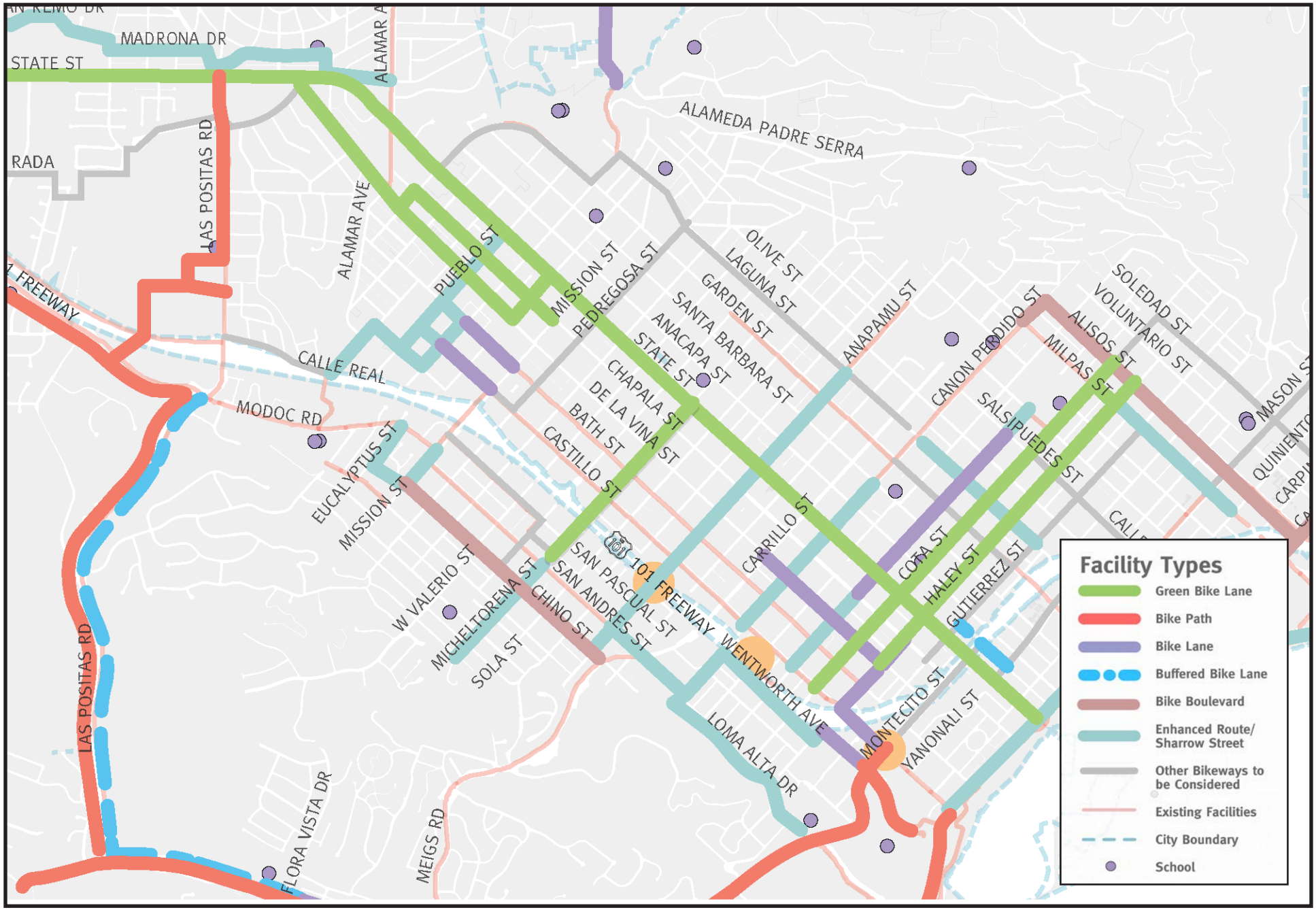


KEY MAP FEATURES

Vibrant color palette while maintaining legibility

Shows alternate bikeways that were considered

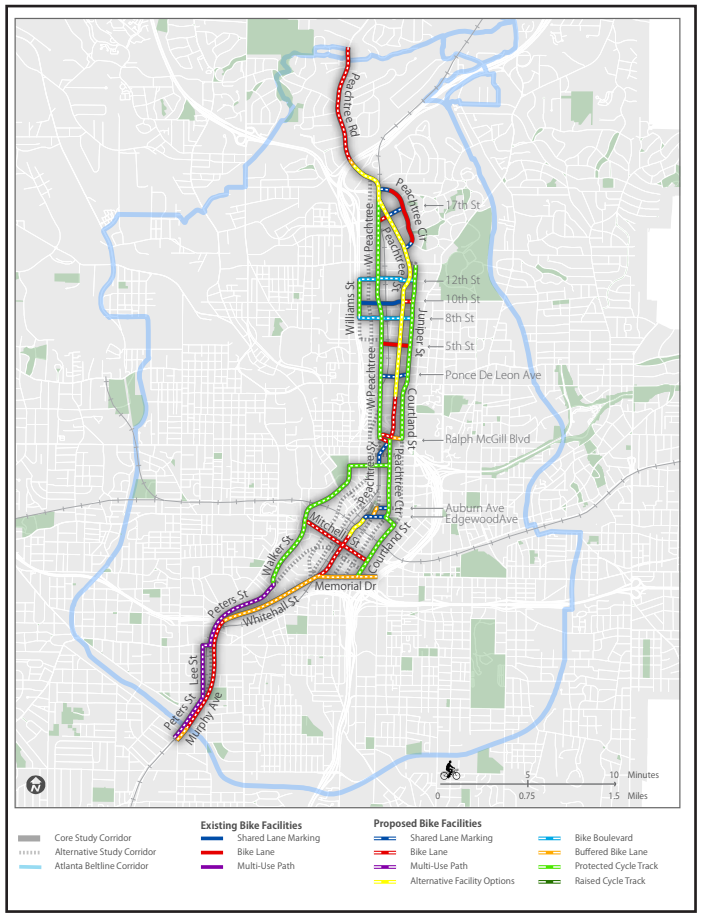
Clearly symbolizes two facilities on the same road


MADRONA DR
STATE ST
RADA
LAS POSITAS RD
ALAMAR AVE
ALAMEDA PADRE SERRA
PUEBLO ST
MISSION ST
PEDREGOSA ST
OLIVE ST
LAGUNA ST
GARDEN ST
SANTA BARBARA ST
ANACAPA ST
STATE ST
ANAPAMU ST
CANON PERDIDO ST
SOLEDAD ST
VOLUNTARIO ST
ALISOS ST
MILPAS ST
MASON ST
SALSIPUEDES ST
CALLE REAL
MODOC RD
CHAPALA ST
DE LA VINA ST
BATH ST
CASTILLO ST
EUCALYPTUS ST
MISSION ST
CARRILLO ST
COTA ST
HALEY ST
GUTIERREZ ST
W VALERIO ST
MICHELTORENA ST
SAN PASCUAL ST
SAN ANDRES ST
CHINO ST
SOLA ST
101 FREEWAY
WENTWORTH AVE
MONTECITO ST
YANONALI ST
LOMA ALTA DR
FLORA VISTA DR
MEIGS RD
Facility Types
Green Bike Lane
Bike Path
Bike Lane
Buffered Bike Lane
Bike Boulevard
Enhanced Route/ Sharrow Street
Other Bikeways to be Considered
Existing Facilities
City Boundary
School

ATLANTA, GA

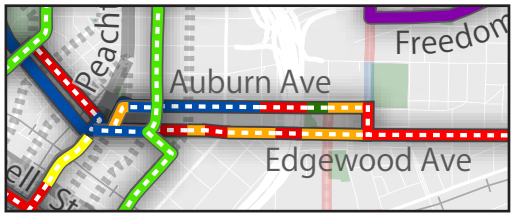
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
ATLANTA, GA	2015	COMPREHENSIVE TRANSPORTATION PLAN - CONNECT ATLANTA	CITY OF ATLANTA

Full Map (Click to view full size)



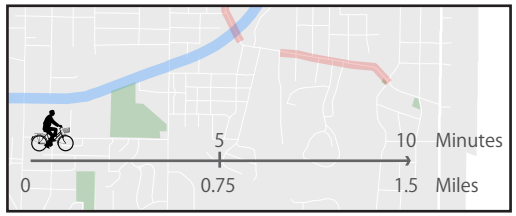
KEY MAP FEATURES

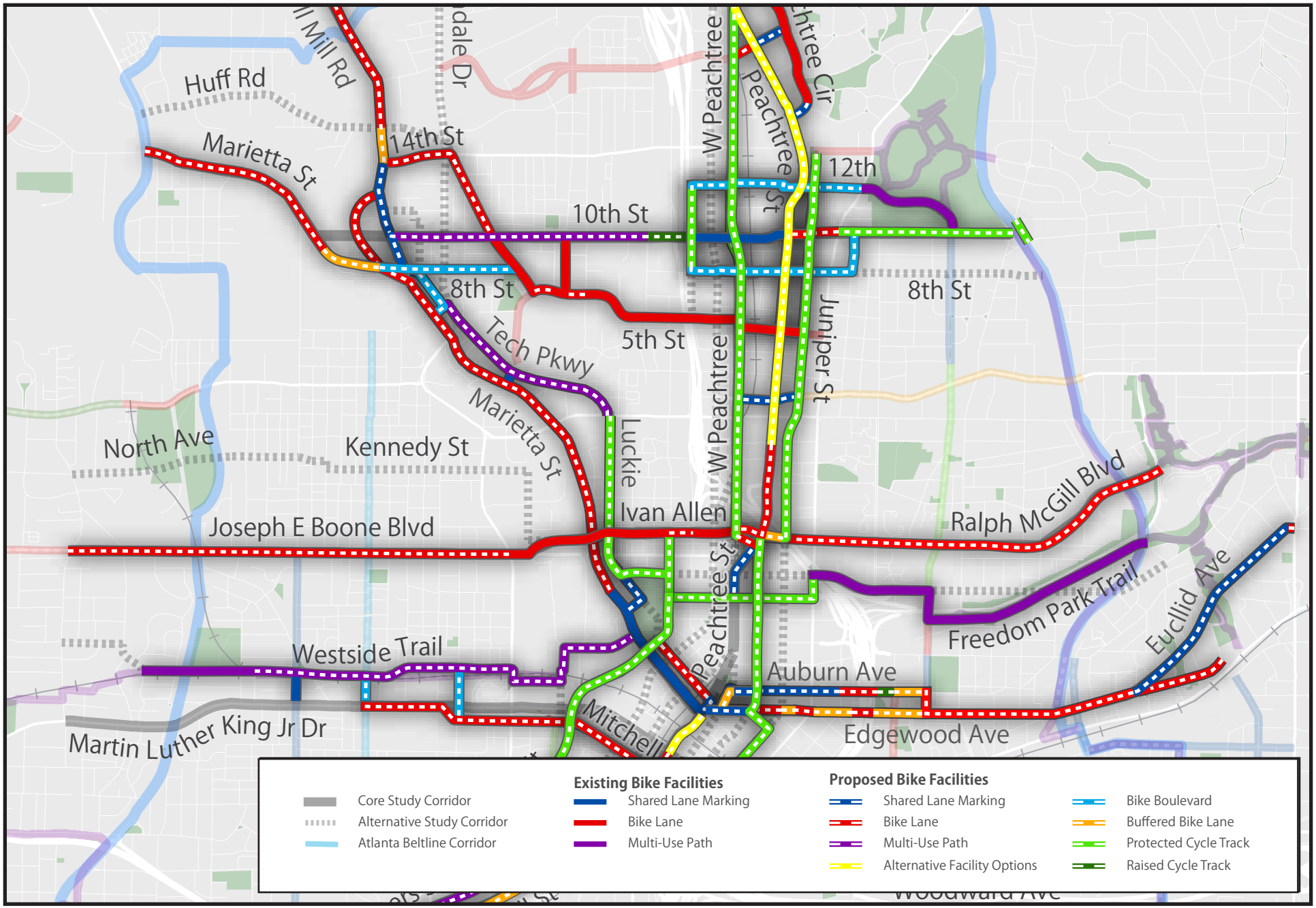
Highlights corridors and transitions between facility types



Unique line convention for proposed facilities

Scale communicates to user how long travel will take

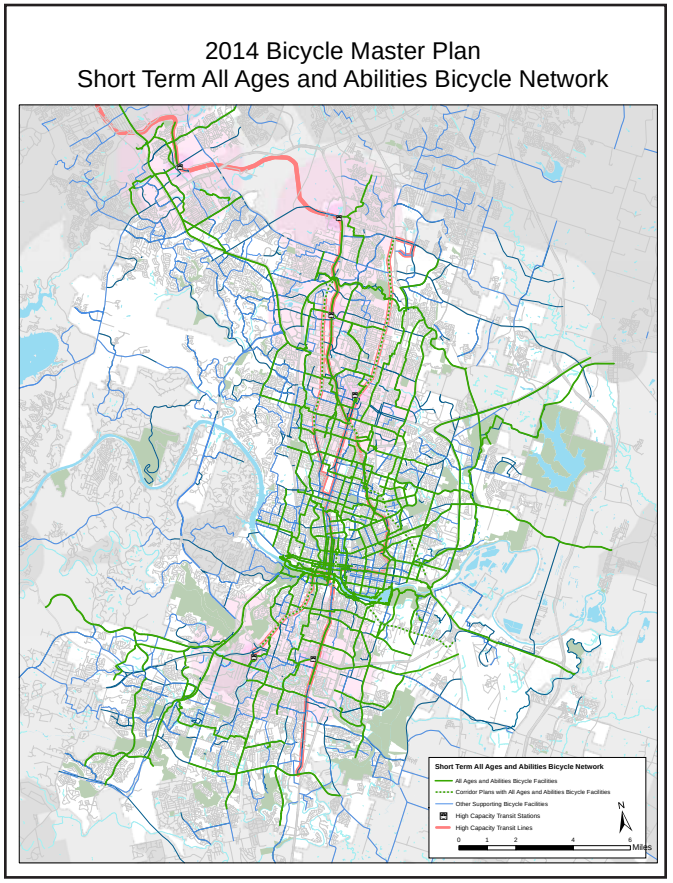



Huff Rd
Marietta St
14th St
10th St
8th St
5th St
Tech Pkwy
Marietta St
North Ave
Kennedy St
Joseph E Boone Blvd
Luckie
Ivan Allen
W Peachtree
Peachtree St
Juniper St
12th
8th St
Ralph McGill Blvd
Freedom Park Trail
Euclid Ave
Auburn Ave
Edgewood Ave
Westside Trail
Martin Luther King Jr Dr
Mitchell
Core Study Corridor
Alternative Study Corridor
Atlanta Beltline Corridor
Existing Bike Facilities
Shared Lane Marking
Bike Lane
Multi-Use Path
Proposed Bike Facilities
Shared Lane Marking
Bike Lane
Multi-Use Path
Alternative Facility Options
Bike Boulevard
Buffered Bike Lane
Protected Cycle Track
Raised Cycle Track

AUSTIN, TX

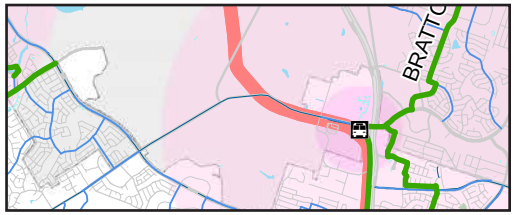
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
AUSTIN, TX	2014	AUSTIN BICYCLE MASTER PLAN	CITY OF AUSTIN

Full Map (Click to view full size)

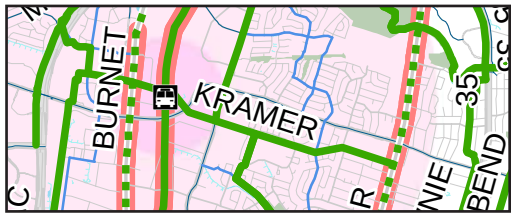


KEY MAP FEATURES

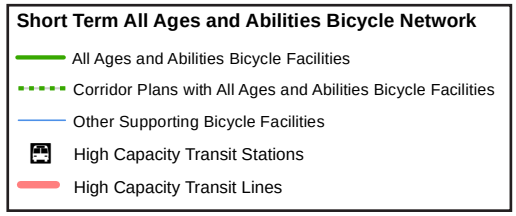
Highlights connections to high capacity transit stations and lines

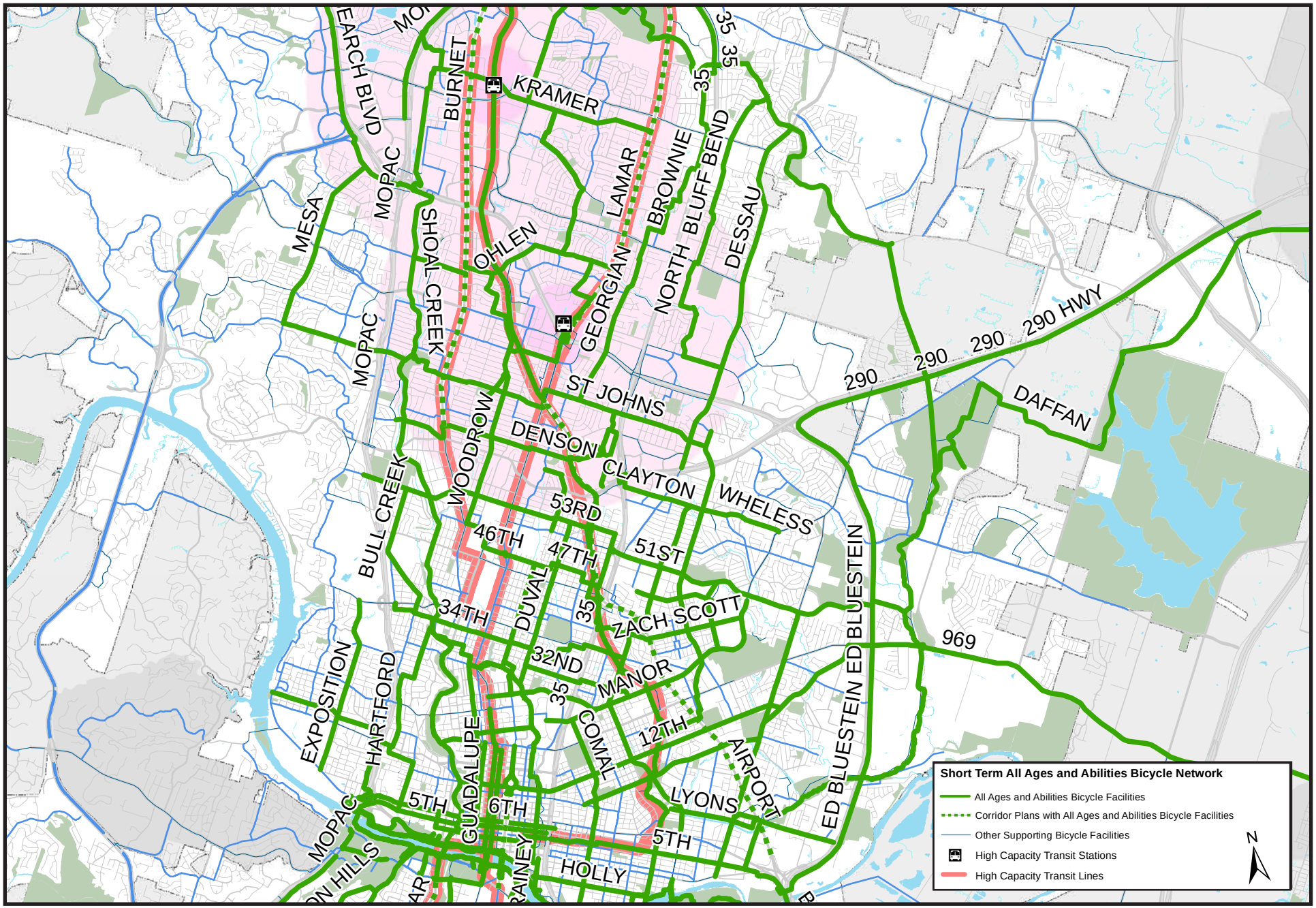


Highlights 'all ages and abilities' network



Denotes facilities from corridor plans

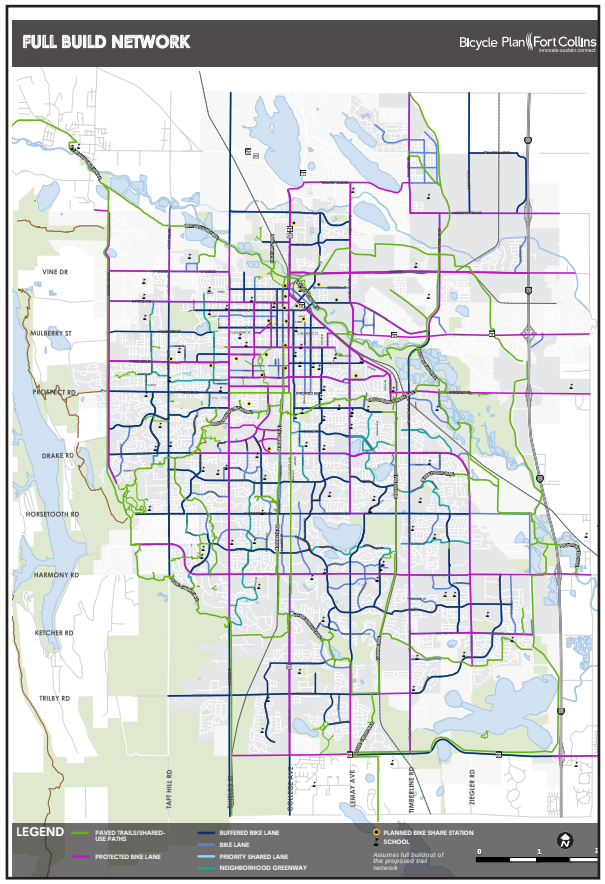



KRAMER
BURNET
LAMAR
BROWNIE
NORTH BLUFF BEND
DESSAU
35
MESA
MOPAC
SHOAL CREEK
OHLEN
GEORGIAN
ST JOHNS
DENSON
CLAYTON
WHELESS
WOODROW
BULL CREEK
53RD
46TH
47TH
51ST
DUVAL
34TH
ZACH SCOTT
32ND
MANOR
12TH
AIRPORT
LYONS
5TH
6TH
HOLLY
GUADALUPE
COMAL
EXPOSITION
HARTFORD
ED BLUESTEIN
290
290 HWY
DAFFAN
969
Short Term All Ages and Abilities Bicycle Network
All Ages and Abilities Bicycle Facilities
Corridor Plans with All Ages and Abilities Bicycle Facilities
Other Supporting Bicycle Facilities
High Capacity Transit Stations
High Capacity Transit Lines
N

FORT COLLINS, CO

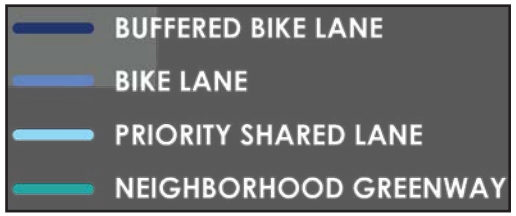
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
FORT COLLINS, CO	2014	CITY OF FORT COLLINS BIKE PLAN	CITY OF FORT COLLINS

Full Map (Click to view full size)



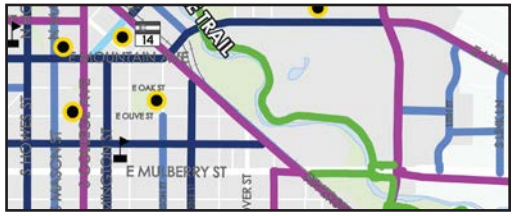
KEY MAP FEATURES

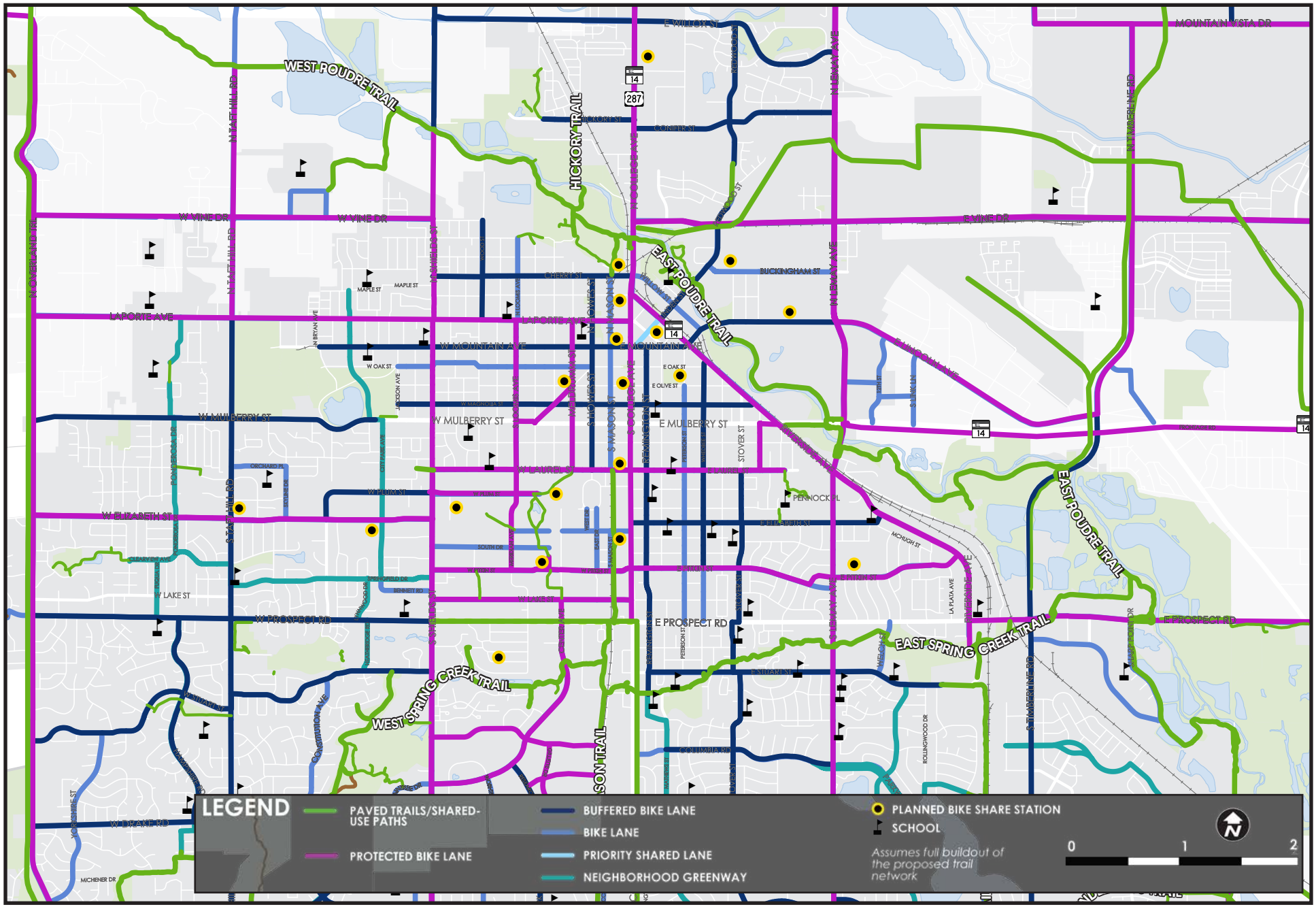
Simple symbology and color scheme



Shows planned bike share stations

Lower stress facilities more visible

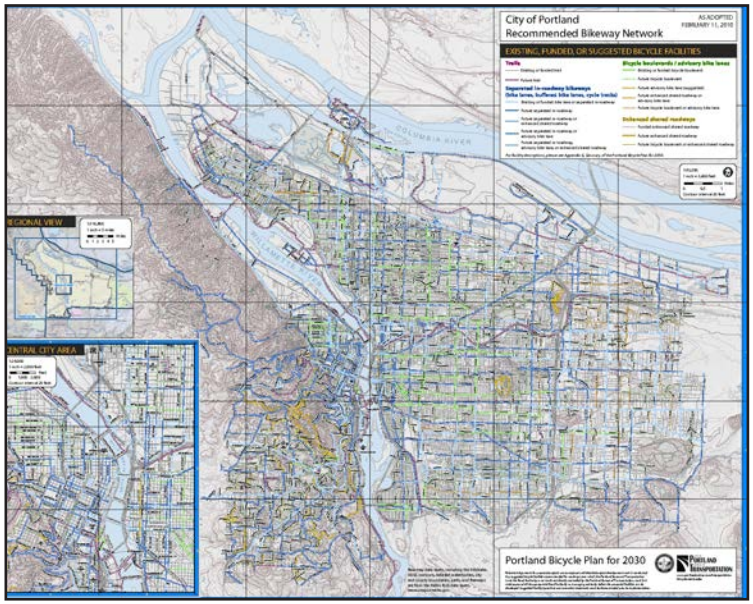



WEST POUDRE TRAIL
HICKORY TRAIL
EAST POUDRE TRAIL
EAST SPRING CREEK TRAIL
WEST SPRING CREEK TRAIL
W VINE DR
E VINE DR
LAPORTE AVE
W MULBERRY ST
E MULBERRY ST
W PROSPECT RD
E PROSPECT RD
MOUNTAIN VISTA DR
LEGEND
PAVED TRAILS/SHARED-USE PATHS
PROTECTED BIKE LANE
BUFFERED BIKE LANE
BIKE LANE
PRIORITY SHARED LANE
NEIGHBORHOOD GREENWAY
PLANNED BIKE SHARE STATION
SCHOOL
Assumes full buildout of the proposed trail network
0
1
2

PORTLAND, OR

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
PORTLAND, OR	2010	CITY OF PORTLAND BICYCLE PLAN FOR 2030	CITY OF PORTLAND

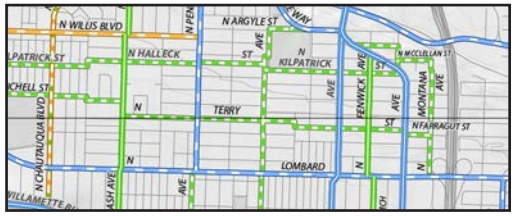
Full Map (Click to view full size)



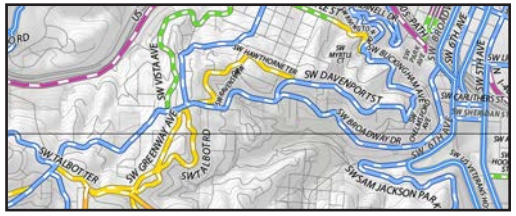
KEY MAP FEATURES

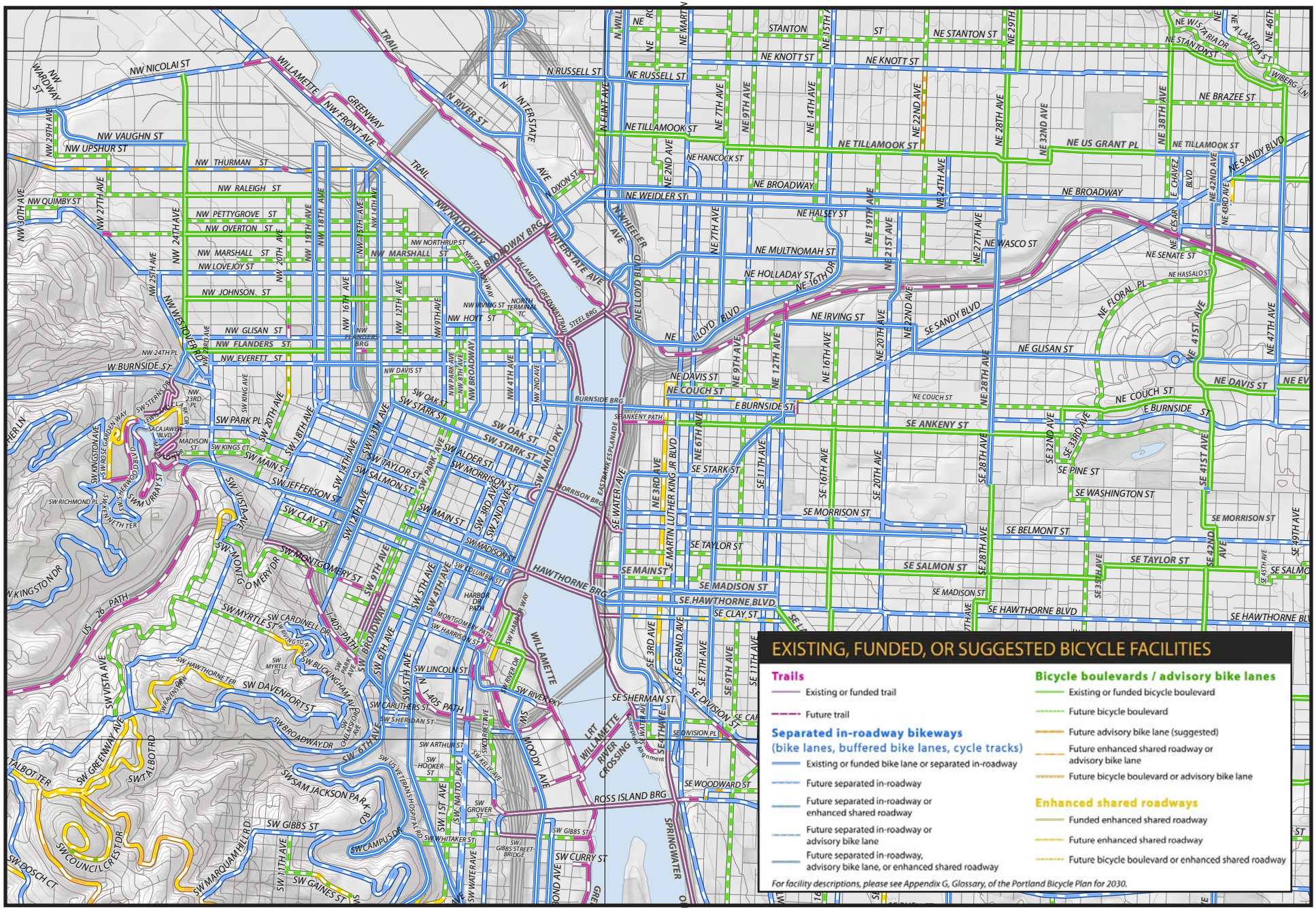
Highlights connections to regional trails and parks

Identifies both 'existing and funded' and 'planned' bike routes



Shows elevation change

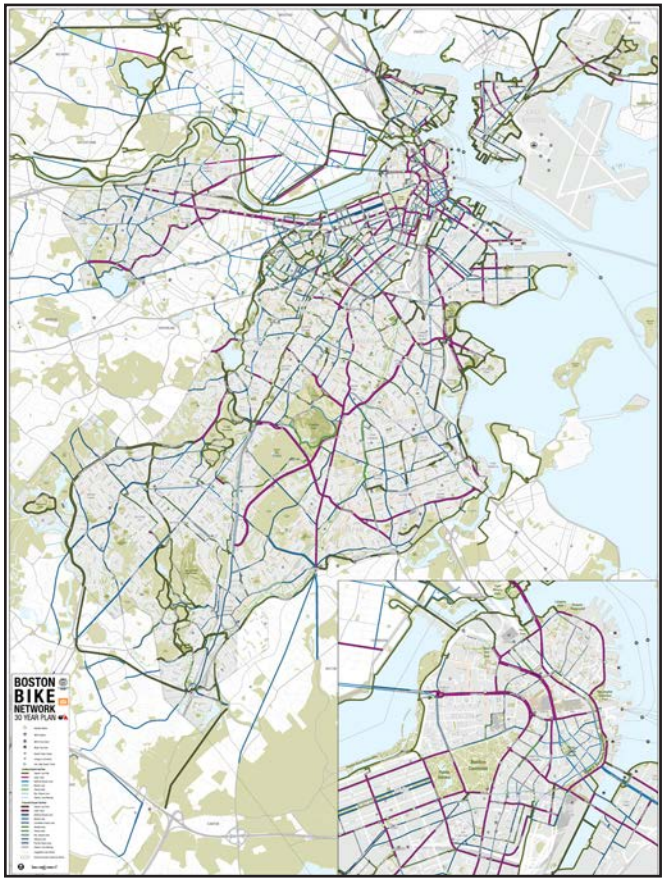



EXISTING, FUNDED, OR SUGGESTED BICYCLE FACILITIES
Trails
Existing or funded trail
Future trail
Separated in-roadway bikeways
(bike lanes, buffered bike lanes, cycle tracks)
Existing or funded bike lane or separated in-roadway
Future separated in-roadway
Future separated in-roadway or enhanced shared roadway
Future separated in-roadway or advisory bike lane
Future separated in-roadway, advisory bike lane, or enhanced shared roadway
Bicycle boulevards / advisory bike lanes
Existing or funded bicycle boulevard
Future bicycle boulevard
Future advisory bike lane (suggested)
Future enhanced shared roadway or advisory bike lane
Future bicycle boulevard or advisory bike lane
Enhanced shared roadways
Funded enhanced shared roadway
Future enhanced shared roadway
Future bicycle boulevard or enhanced shared roadway
For facility descriptions, please see Appendix G, Glossary, of the Portland Bicycle Plan for 2030.

BOSTON, MA

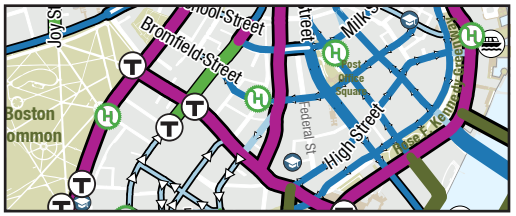
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
BOSTON, MA	2015	BOSTON BIKE NETWORK PLAN	BOSTON DEPARTMENT OF TRANSPORTATION

Full Map (Click to view full size)



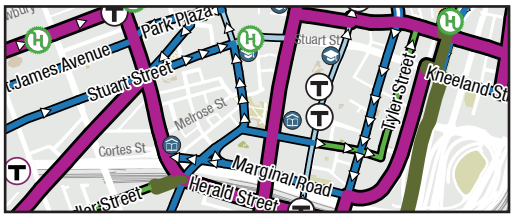
KEY MAP FEATURES

Shows connections between bike network and transportation hubs including rail and bike share stations

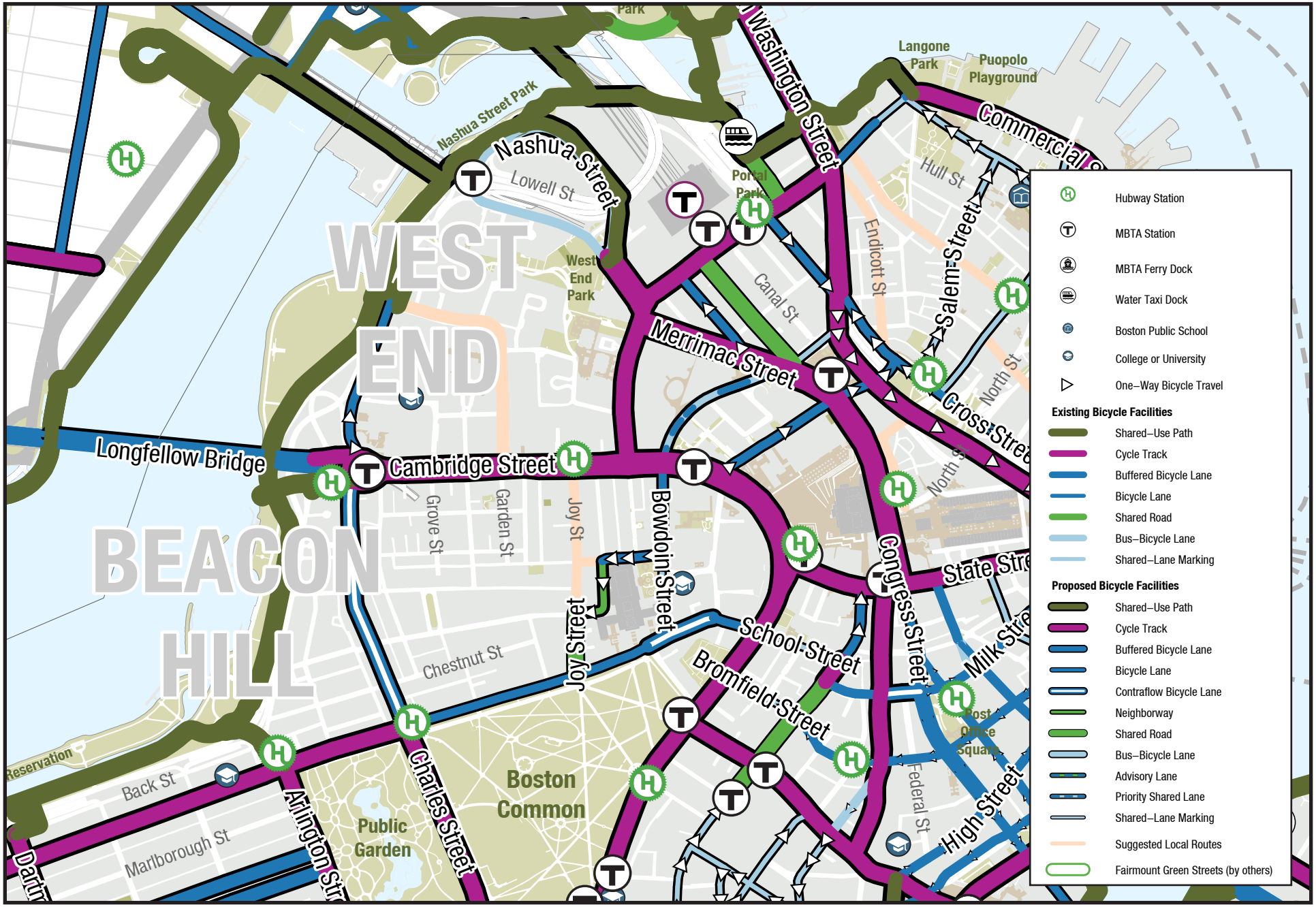


Shared use paths is similar to the color used for parks to indicate low-stress

A dominant color is used for cycle tracks, emphasizing the high comfort level this facility type provides



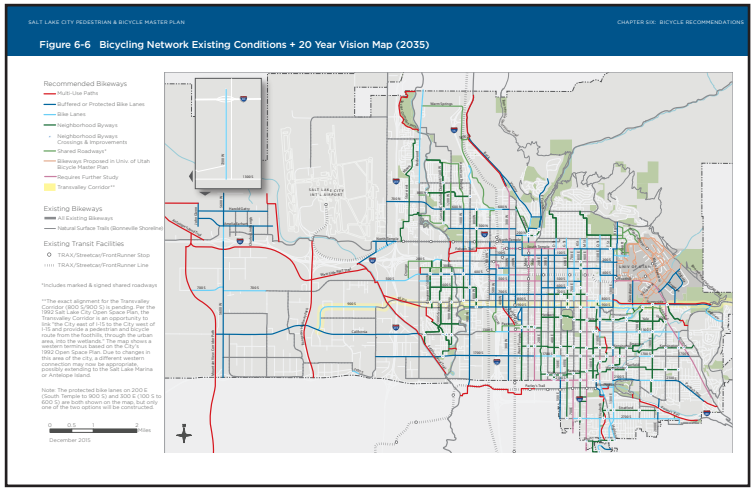
Neighborhood scale maps are included within the plan for more specific details


WEST END
BEACON HILL
Boston Common
Public Garden
Nashua Street Park
Nashua Street
Lowell St
West End Park
Portal Park
Washington Street
Langone Park
Puopolo Playground
Commercial St
Hull St
Endicott St
Salem Street
Canal St
Merrimac Street
North St
Cross Street
Longfellow Bridge
Cambridge Street
Grove St
Garden St
Joy St
Bowdoin Street
Joy Street
Chestnut St
School Street
Bromfield Street
Congress Street
State Street
Milk Street
Post Office Square
Federal St
High Street
Charles Street
Arlington St
Back St
Marlborough St
Reservation
Hubway Station
MBTA Station
MBTA Ferry Dock
Water Taxi Dock
Boston Public School
College or University
One–Way Bicycle Travel
Existing Bicycle Facilities
Shared–Use Path
Cycle Track
Buffered Bicycle Lane
Bicycle Lane
Shared Road
Bus–Bicycle Lane
Shared–Lane Marking
Proposed Bicycle Facilities
Shared–Use Path
Cycle Track
Buffered Bicycle Lane
Bicycle Lane
Contraflow Bicycle Lane
Neighborway
Shared Road
Bus–Bicycle Lane
Advisory Lane
Priority Shared Lane
Shared–Lane Marking
Suggested Local Routes
Fairmount Green Streets (by others)

SALT LAKE CITY, UT

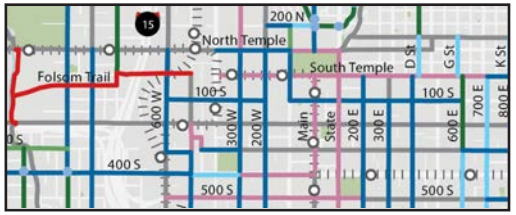
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
SALT LAKE CITY, UT	2015	SALT LAKE CITY PEDESTRIAN AND BICYCLE MASTER PLAN	SALT LAKE CITY

Full Map (Click to view full size)



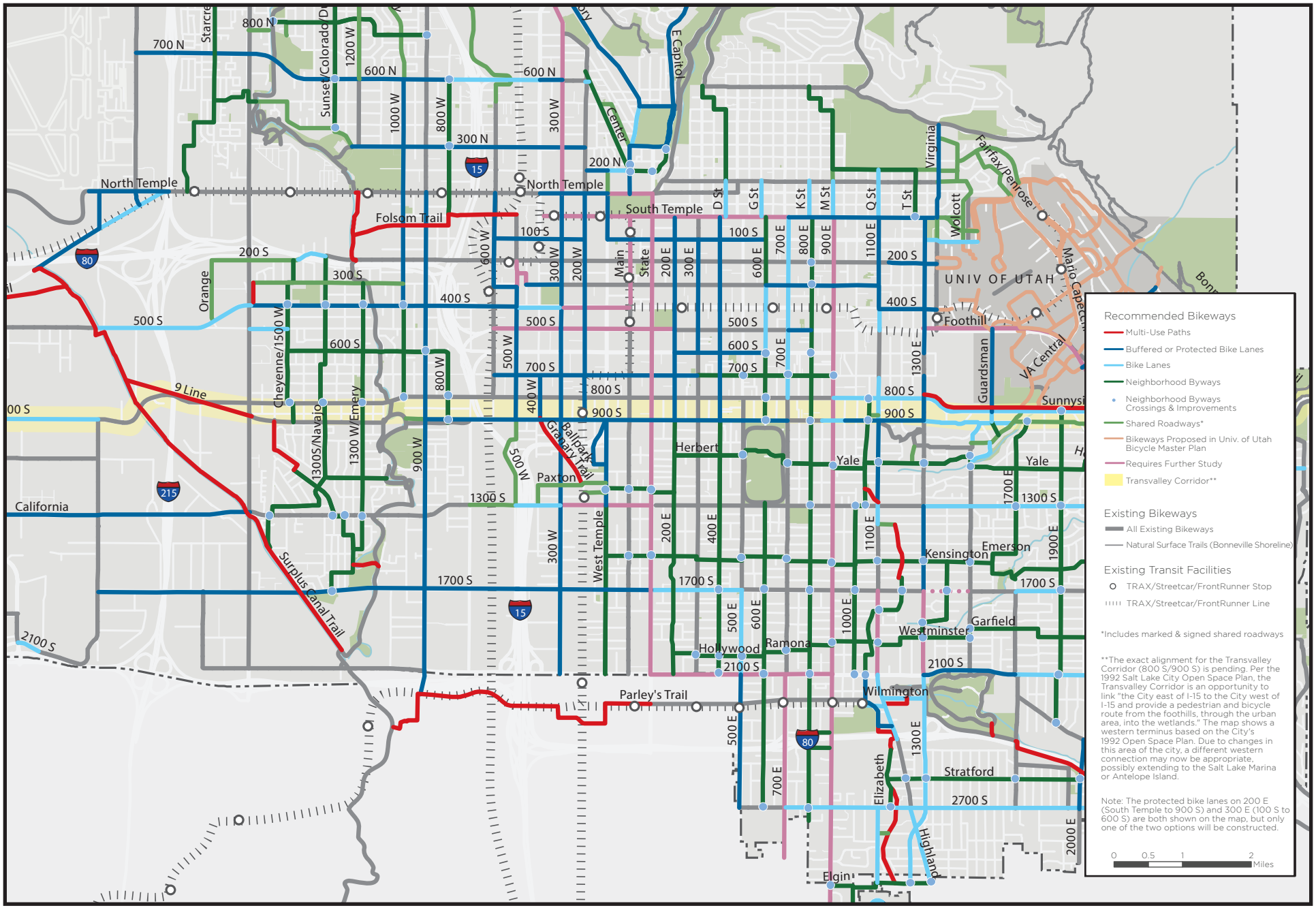
KEY MAP FEATURES

Shows connections to transit lines and stops



Highlights a university campus master plan

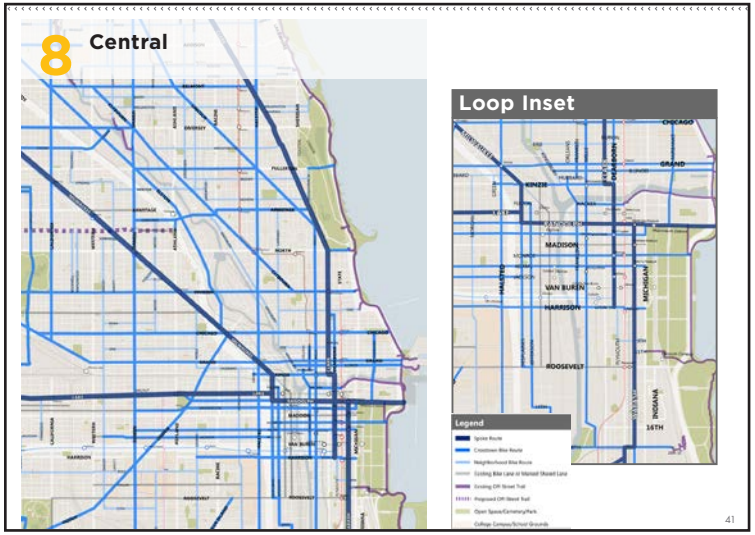
Highlights the Transvalley corridor, a planned future investment


Recommended Bikeways
Multi-Use Paths
Buffered or Protected Bike Lanes
Bike Lanes
Neighborhood Byways
Neighborhood Byways Crossings & Improvements
Shared Roadways*
Bikeways Proposed in Univ. of Utah Bicycle Master Plan
Requires Further Study
Transvalley Corridor**
Existing Bikeways
All Existing Bikeways
Natural Surface Trails (Bonneville Shoreline)
Existing Transit Facilities
TRAX/Streetcar/FrontRunner Stop
TRAX/Streetcar/FrontRunner Line
*Includes marked & signed shared roadways
**The exact alignment for the Transvalley Corridor (800 S/900 S) is pending. Per the 1992 Salt Lake City Open Space Plan, the Transvalley Corridor is an opportunity to link "the City east of I-15 to the City west of I-15 and provide a pedestrian and bicycle route from the foothills, through the urban area, into the wetlands." The map shows a western terminus based on the City's 1992 Open Space Plan. Due to changes in this area of the city, a different western connection may now be appropriate, possibly extending to the Salt Lake Marina or Antelope Island.
Note: The protected bike lanes on 200 E (South Temple to 900 S) and 300 E (100 S to 600 S) are both shown on the map, but only one of the two options will be constructed.
0 0.5 1 2 Miles
North Temple
South Temple
Folsom Trail
9 Line
Surplus Canal Trail
Parley's Trail
Granary Trail
Ballpark
UNIV OF UTAH
Foothill
Sunnyside
Herbert
Yale
Paxton
Kensington
Emerson
Garfield
Westminster
Ramona
Hollywood
Wilmington
Stratford
Elizabeth
Highland
Elgin
California
Orange
Cheyenne/1500 W
1300S/Navajo
1300 W/Emery
West Temple
Main
State
Center
E Capitol
Virginia
Fairfax/Penrose
Wolcott
Guardsman
VA Central
Mario Capecchi
800 N
700 N
600 N
300 N
200 N
100 S
200 S
300 S
400 S
500 S
600 S
700 S
800 S
900 S
1300 S
1700 S
2100 S
2700 S
80
15
215

CHICAGO, IL

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
CHICAGO, IL	2012	CHICAGO STREETS FOR CYCLING 2020	CITY OF CHICAGO

Full Map (Click to view full size)

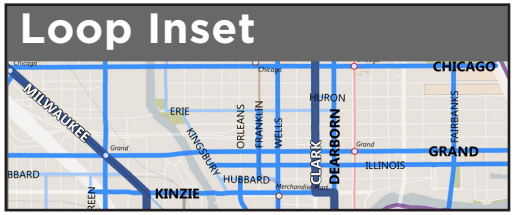


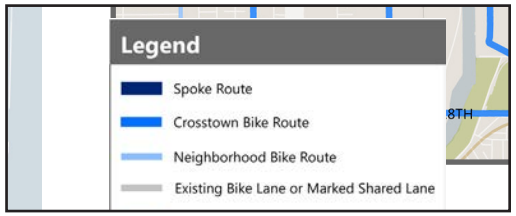
KEY MAP FEATURES

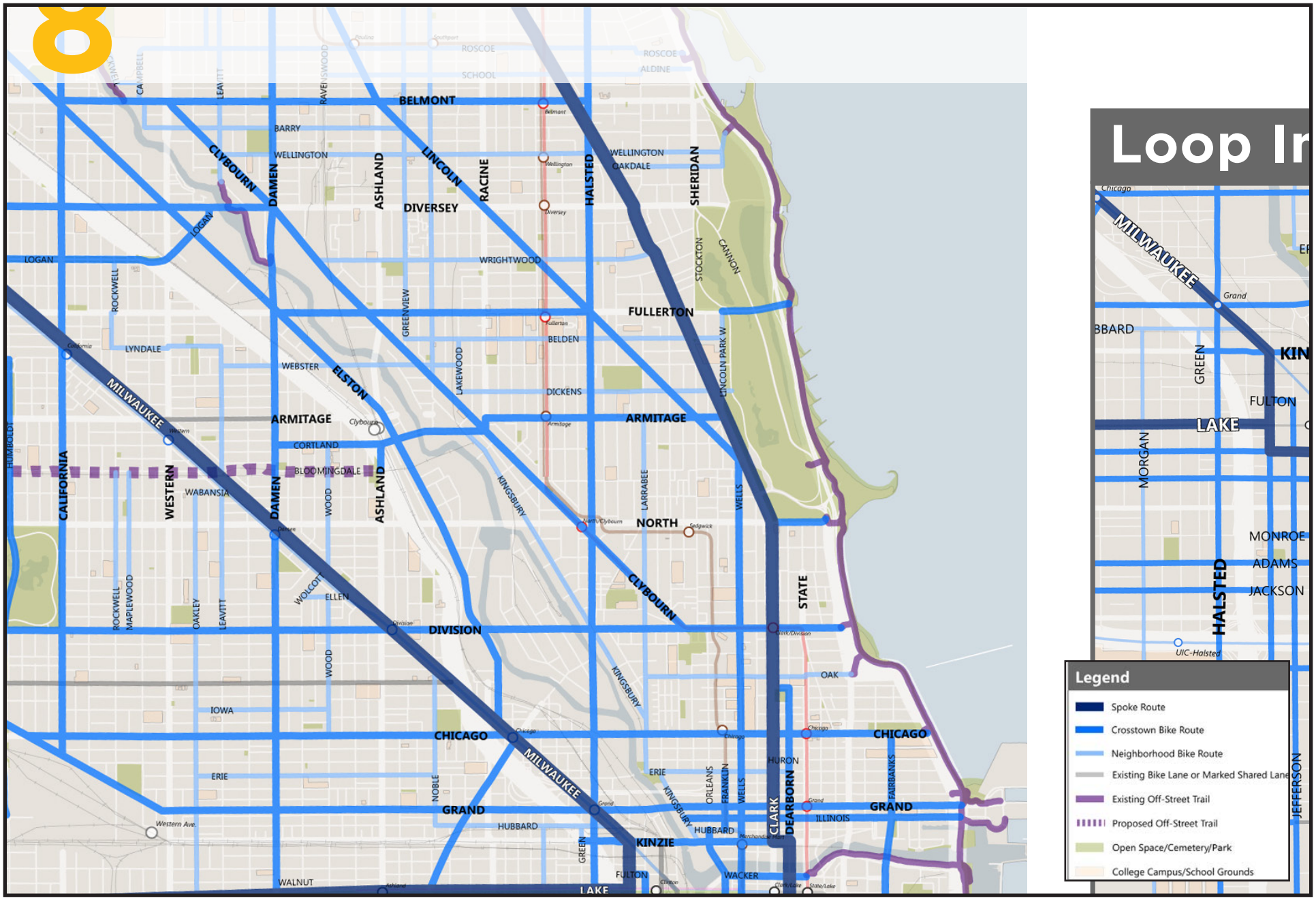
Inset map provides additional information about important area

Route hierarchy shown using line thickness and color saturation

Shows connections to network of off-street trails



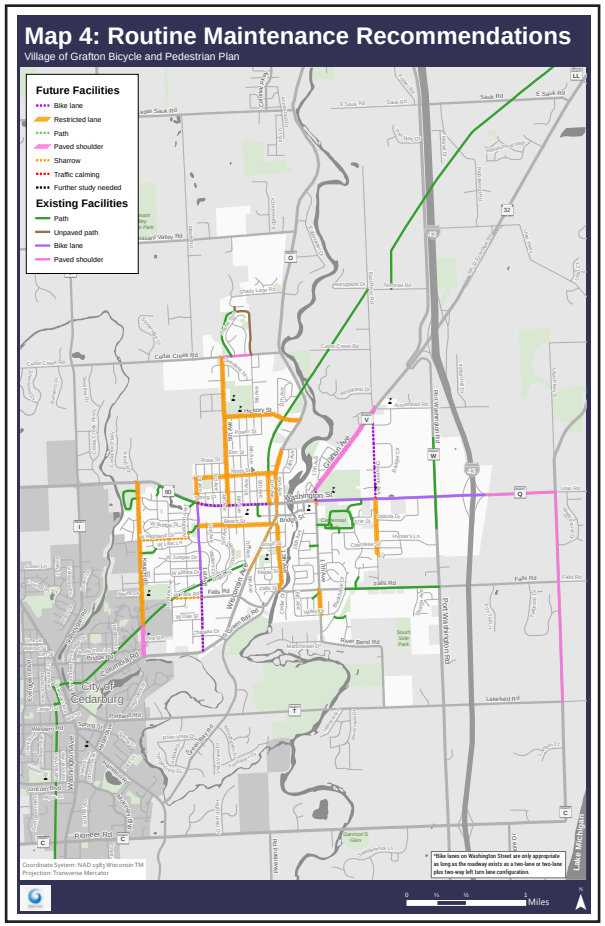



Loop In
Legend
Spoke Route
Crosstown Bike Route
Neighborhood Bike Route
Existing Bike Lane or Marked Shared Lane
Existing Off-Street Trail
Proposed Off-Street Trail
Open Space/Cemetery/Park
College Campus/School Grounds
BELMONT
DIVERSEY
FULLERTON
ARMITAGE
NORTH
DIVISION
CHICAGO
GRAND
KINZIE
LAKE
MILWAUKEE
CLYBOURN
DAMEN
ASHLAND
LINCOLN
RACINE
HALSTED
SHERIDAN
ELSTON
WESTERN
CALIFORNIA
STATE
CLARK
DEARBORN
KINGSBURY
WELLINGTON
OAKDALE
WRIGHTWOOD
BELDEN
DICKENS
CORTLAND
BLOOMINGDALE
WABANSIA
ELLEN
IOWA
ERIE
HUBBARD
WALNUT
FULTON
WACKER
HURON
OAK
ILLINOIS
LOGAN
LYNDALE
WEBSTER
BARRY
ROSCOE
SCHOOL
ALDINE
CANNON
STOCKTON
LINCOLN PARK W
WELLS
LARRABEE
LAKEWOOD
GREENVIEW
WOOD
NOBLE
ORLEANS
FRANKLIN
FAIRBANKS
ROCKWELL
MAPLEWOOD
OAKLEY
LEAVITT
HUMBOLDT
MORGAN
GREEN
MONROE
ADAMS
JACKSON
JEFFERSON
UIC-Halsted
Chicago
Grand
Western Ave.

GRAFTON, WI

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
GRAFTON, WI	2015	VILLAGE OF GRAFTON BICYCLE AND PEDESTRIAN PLAN	VILLAGE OF GRAFTON

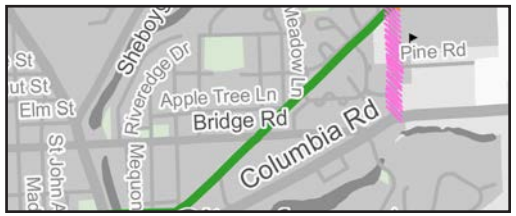
Full Map (Click to view full size)



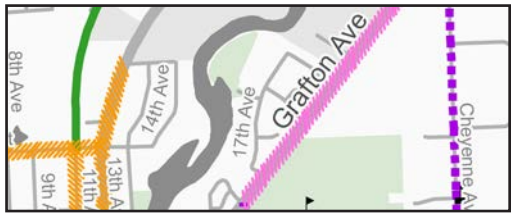
KEY MAP FEATURES

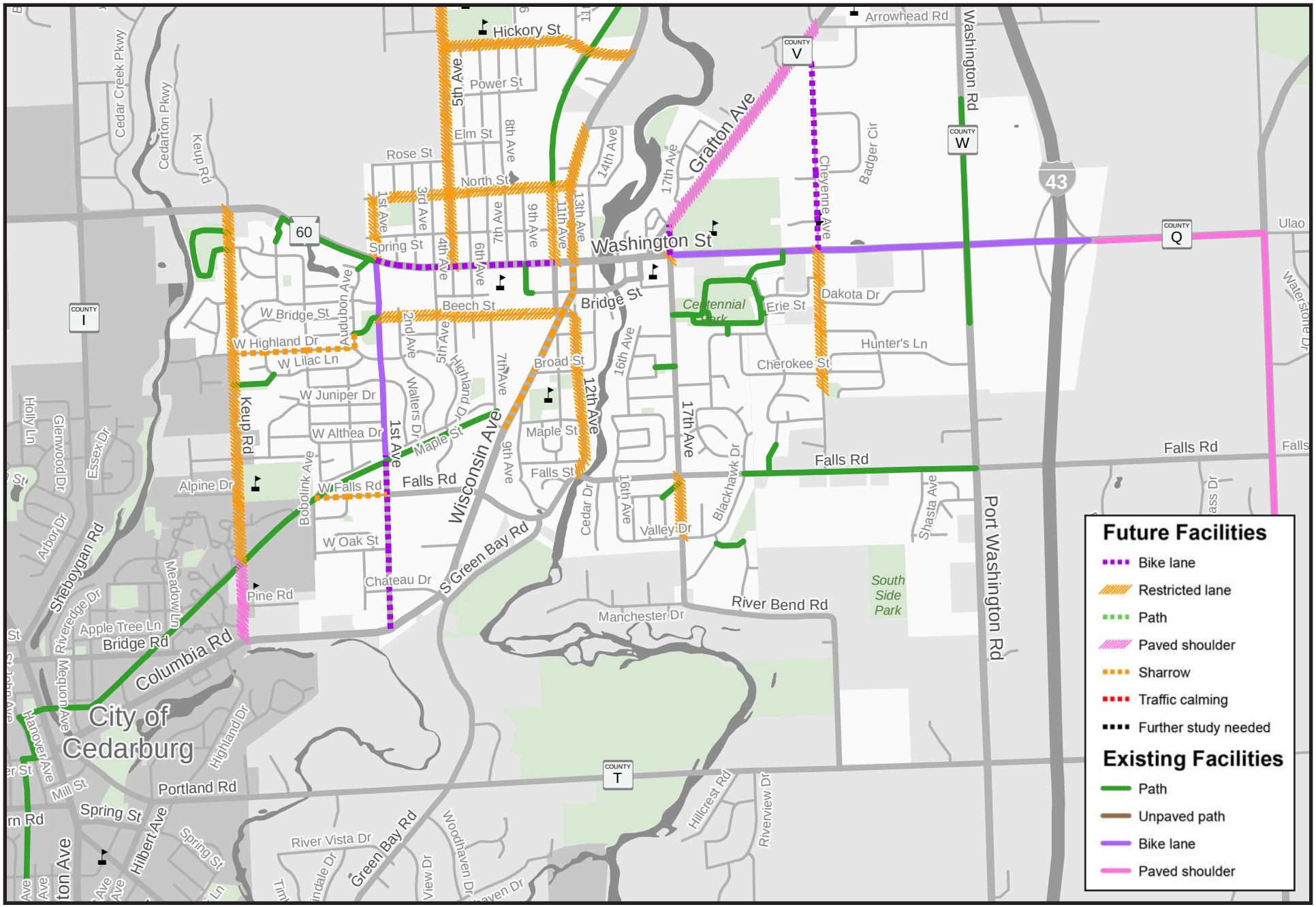
Shows 'restricted lanes,' a unique facility where bicyclists share a lane with parking and right-turning vehicles

Highlights future and existing paved shoulders, an important bike facility in more rural communities



Highlights streets keyed for future traffic calming

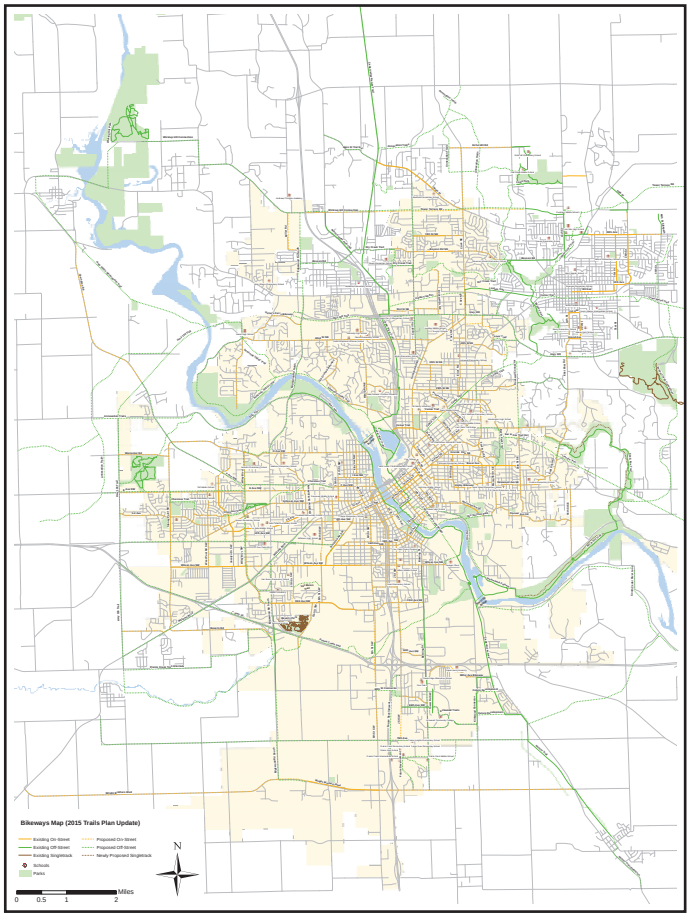



Future Facilities
Bike lane
Restricted lane
Path
Paved shoulder
Sharrow
Traffic calming
Further study needed
Existing Facilities
Path
Unpaved path
Bike lane
Paved shoulder
City of Cedarburg
Washington St
Bridge St
Falls Rd
Wisconsin Ave
S Green Bay Rd
Columbia Rd
Port Washington Rd
Grafton Ave
Hickory St
Power St
Elm St
North St
Rose St
Spring St
Beech St
Broad St
Maple St
Falls St
W Bridge St
W Highland Dr
W Lilac Ln
W Juniper Dr
W Althea Dr
W Falls Rd
W Oak St
Chateau Dr
Pine Rd
Alpine Dr
Keup Rd
Bridge Rd
Portland Rd
Spring St
River Bend Rd
Manchester Dr
Valley Dr
Cherokee St
Erie St
Dakota Dr
Hunter's Ln
Arrowhead Rd
Washington Rd
Cheyenne Ave
Badger Cir
Ulao
Centennial Park
South Side Park
Green Bay Rd
River Vista Dr
Hillcrest Rd
Riverview Dr
Sheboygan Rd
Apple Tree Ln
Meadow Ln
Riveredge Dr
Mequon Ave
Hanover Ave
Mill St
Hilbert Ave
Highland Dr
Cedar Creek Pkwy
Cedarton Pkwy
Keup Rd
Audubon Ave
Bobolink Ave
Walters Dr
Cedar Dr
Blackhawk Dr
Shasta Ave
Waterstone Dr
Holly Ln
Glenwood Dr
Essex Dr
Arbor Dr
Woodhaven Dr
Hillcrest Rd
Riverview Dr
1st Ave
2nd Ave
3rd Ave
4th Ave
5th Ave
6th Ave
7th Ave
8th Ave
9th Ave
11th Ave
12th Ave
13th Ave
14th Ave
16th Ave
17th Ave
60
43
COUNTY I
COUNTY T
COUNTY V
COUNTY W
COUNTY Q

CEDAR RAPIDS, IA

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
CEDAR RAPIDS, IA	2015	CEDAR RAPIDS COMPREHENSIVE TRAILS PLAN	CORRIDOR METROPOLITAN PLANNING ORGANIZATION

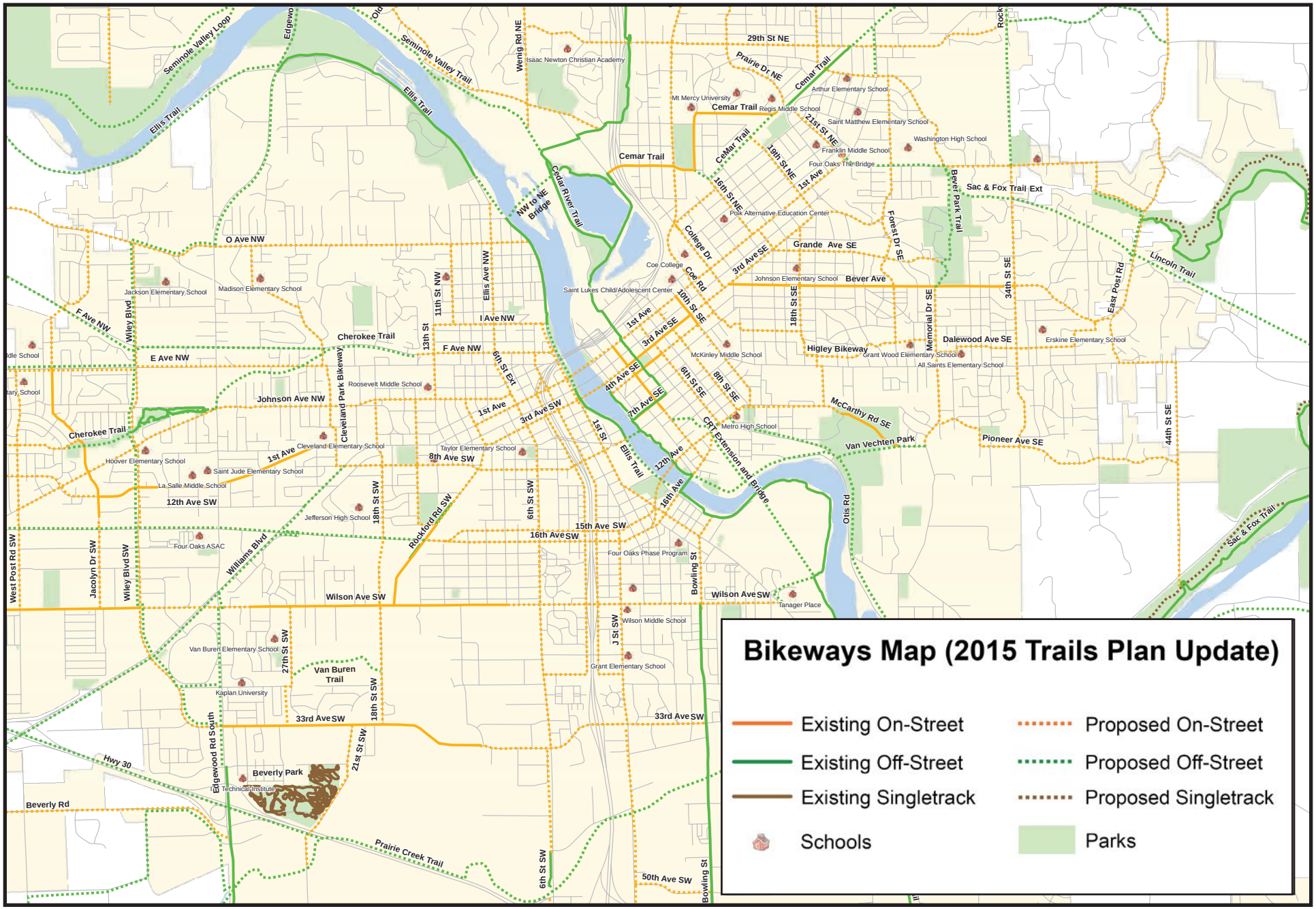
Full Map (Click to view full size)



KEY MAP FEATURES

Highlights nearby jurisdictions

Includes flexible facility typologies


Bikeways Map (2015 Trails Plan Update)
Existing On-Street
Existing Off-Street
Existing Singletrack
Schools
Proposed On-Street
Proposed Off-Street
Proposed Singletrack
Parks
Seminole Valley Loop
Seminole Valley Trail
Ellis Trail
Cedar River Trail
NW to NE Bridge
Cemar Trail
Wenig Rd NE
Isaac Newton Christian Academy
29th St NE
Prairie Dr NE
Arthur Elementary School
Mt Mercy University
Regis Middle School
Saint Matthew Elementary School
Washington High School
Franklin Middle School
Four Oaks The Bridge
21st St NE
19th St NE
16th St NE
1st Ave
Fox Alternative Education Center
Bever Park Trail
Sac & Fox Trail Ext
Forest Dr SE
Grande Ave SE
College Dr
Coe College
Coe Rd
3rd Ave SE
Johnson Elementary School
Bever Ave
34th St SE
East Post Rd
Lincoln Trail
Saint Lukes Child/Adolescent Center
10th St SE
1st Ave
3rd Ave SE
18th St SE
Memorial Dr SE
Erskine Elementary School
Dalewood Ave SE
Grant Wood Elementary School
All Saints Elementary School
Higley Bikeway
McKinley Middle School
4th Ave SE
6th St SE
8th St SE
7th Ave SE
McCarthy Rd SE
Pioneer Ave SE
Van Vechten Park
44th St SE
Metro High School
CRT Extension and Bridge
12th Ave
16th Ave
Ellis Ave NW
11th St NW
13th St
6th St Ext
I Ave NW
F Ave NW
E Ave NW
O Ave NW
Wiley Blvd
Jackson Elementary School
Madison Elementary School
Cherokee Trail
Roosevelt Middle School
Johnson Ave NW
Cleveland Park Bikeway
Cleveland Elementary School
Taylor Elementary School
8th Ave SW
1st Ave
3rd Ave SW
1st St
Ellis Trail
Hoover Elementary School
Saint Jude Elementary School
La Salle Middle School
12th Ave SW
Jefferson High School
18th St SW
6th St SW
Rockford Rd SW
15th Ave SW
16th Ave SW
Four Oaks ASAC
Four Oaks Phase Program
Otis Rd
Sac & Fox Trail
West Post Rd SW
Jacolyn Dr SW
Wiley Blvd SW
Williams Blvd
Wilson Ave SW
Bowling St
Wilson Ave SW
Tanager Place
Wilson Middle School
J St SW
Van Buren Elementary School
27th St SW
Van Buren Trail
Grant Elementary School
Kaplan University
33rd Ave SW
Edgewood Rd South
21st St SW
Hwy 30
Beverly Park
Technical Institute
Beverly Rd
Prairie Creek Trail
6th St SW
50th Ave SW
Bowling St

SEATTLE, WA

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
SEATTLE,WA	2015	SEATTLE BICYCLE MASTER PLAN UPDATE	SEATTLE DEPARTMENT OF TRANSPORTATION

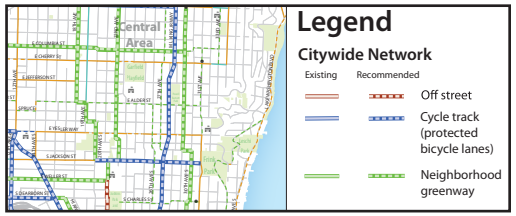
Full Map (Click to view full size)

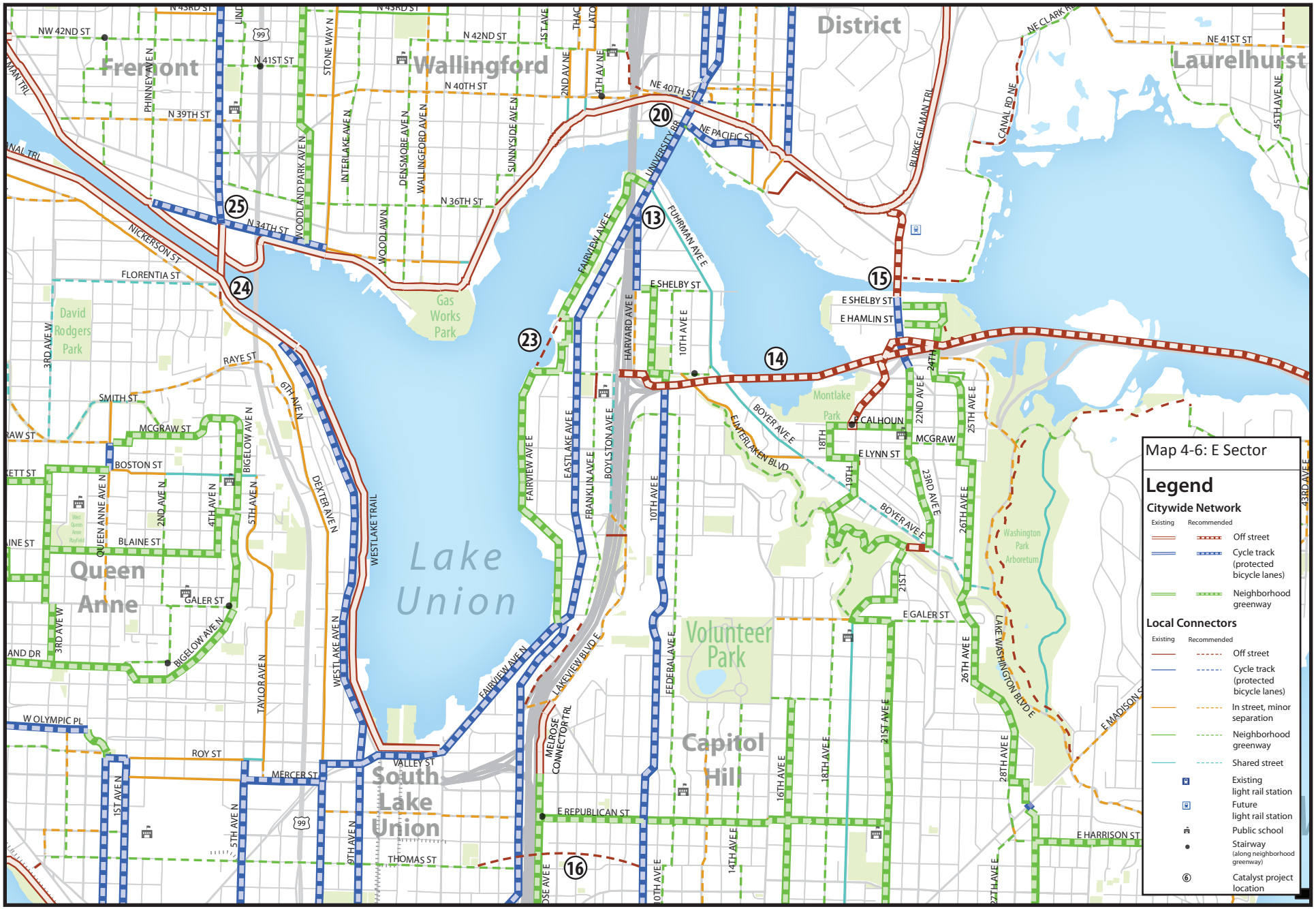
KEY MAP FEATURES

Unique symbology for proposed facilities

Recommendation hierarchy delineated by line weight

Neighborhood names highlighted to orient users

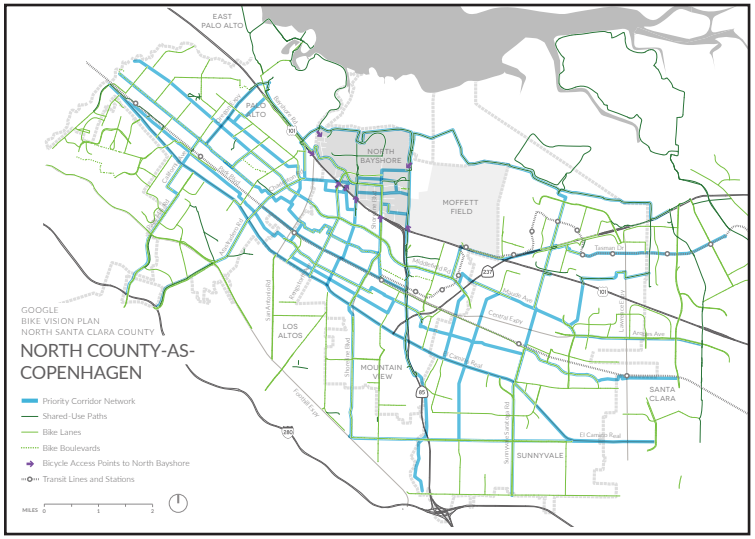



Fremont
Wallingford
District
Laurelhurst
Queen Anne
Lake Union
Capitol Hill
South Lake Union
Volunteer Park
Montlake
Gas Works Park
David Rodgers Park
Washington Park Arboretum
NW 42ND ST
N 41ST ST
N 40TH ST
N 39TH ST
N 36TH ST
N 34TH ST
NE 40TH ST
NE PACIFIC ST
NE 41ST ST
FLORENTIA ST
NICKERSON ST
RAYE ST
SMITH ST
MCGRAW ST
BOSTON ST
BLAINE ST
GALER ST
ROY ST
MERCER ST
VALLEY ST
THOMAS ST
E SHELBY ST
E HAMLIN ST
E CALHOUN
E LYNN ST
E GALER ST
E REPUBLICAN ST
E HARRISON ST
E MADISON ST
FAIRVIEW AVE E
FAIRVIEW AVE N
EASTLAKE AVE E
BOYLSTON AVE E
FRANKLIN AVE E
HARVARD AVE E
10TH AVE E
FEDERAL AVE E
14TH AVE E
16TH AVE E
18TH AVE E
19TH
21ST AVE E
22ND AVE E
23RD AVE E
24TH
25TH AVE E
26TH AVE E
28TH AVE E
43RD AVE E
BOYER AVE E
E INTERLAKEN BLVD
LAKEVIEW BLVD E
LAKE WASHINGTON BLVD E
FUHRMAN AVE E
UNIVERSITY BR
BURKE GILMAN TRL
CANAL RD NE
45TH AVE NE
WEST LAKE TRAIL
WOODLAND PARK AVE N
INTERLAKE AVE N
DENSMORE AVE N
WALLINGFORD AVE N
SUNNYSIDE AVE N
STONE WAY N
PHINNEY AVE N
1ST AVE N
2ND AVE N
3RD AVE W
4TH AVE N
5TH AVE N
6TH AVE N
9TH AVE N
BIGELOW AVE N
DEXTER AVE N
TAYLOR AVE N
QUEEN ANNE AVE N
W OLYMPIC PL
MELROSE CONNECTOR TRL
Map 4-6: E Sector
Legend
Citywide Network
Existing
Recommended
Off street
Cycle track (protected bicycle lanes)
Neighborhood greenway
Local Connectors
Existing
Recommended
Off street
Cycle track (protected bicycle lanes)
In street, minor separation
Neighborhood greenway
Shared street
Existing light rail station
Future light rail station
Public school
Stairway (along neighborhood greenway)
Catalyst project location

NORTH SANTA CLARA COUNTY, CA

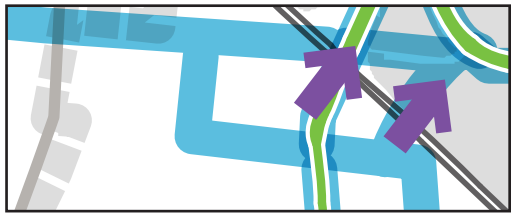
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
NORTH SANTA CLARA COUNTY, CA	2015	GOOGLE BIKE VISION PLAN	GOOGLE

Full Map (Click to view full size)

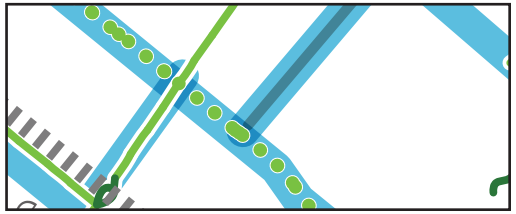


KEY MAP FEATURES

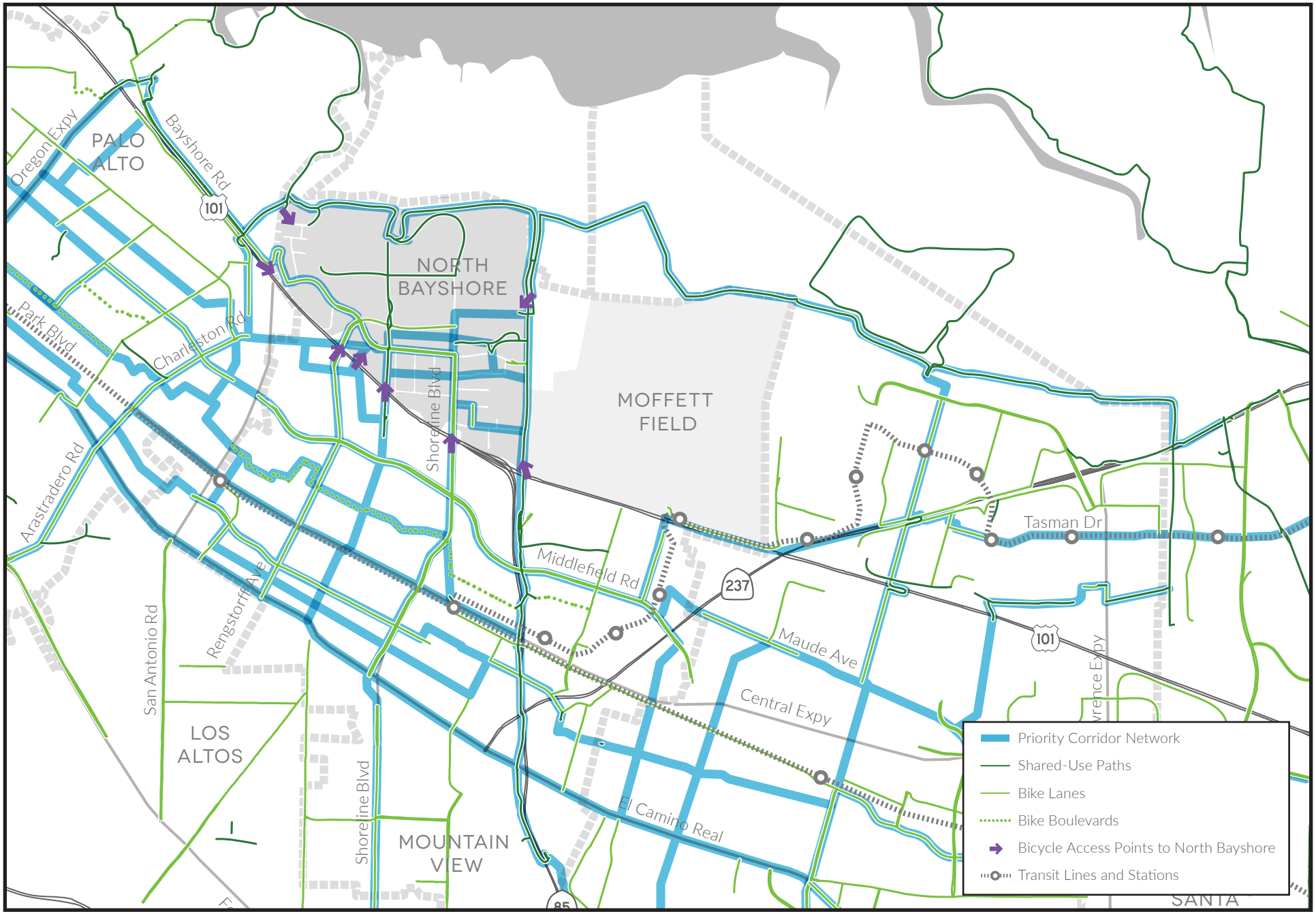
Identifies bike access points to Google's North Bayshore campus



Different line weights allow for layered information



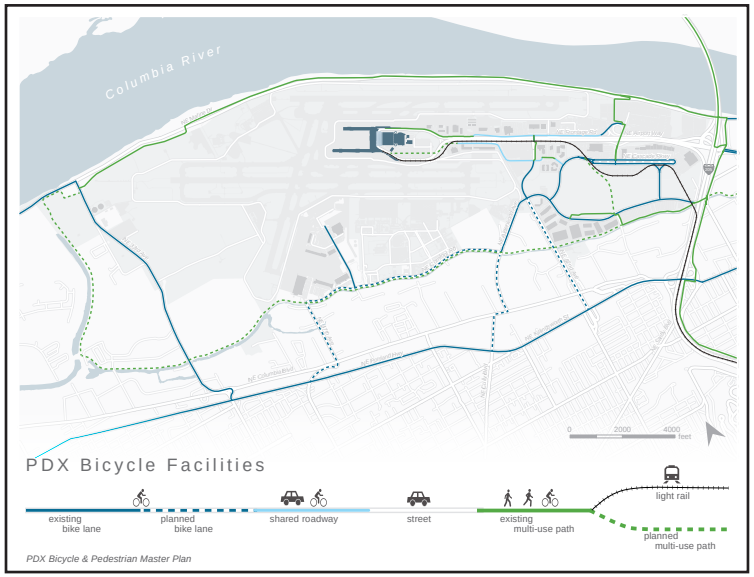
Clear color scheme and organization


PALO ALTO
Oregon Expy
Bayshore Rd
101
NORTH BAYSHORE
Park Blvd
Charleston Rd
Shoreline Blvd
MOFFETT FIELD
Arastradero Rd
Middlefield Rd
Tasman Dr
237
101
Maude Ave
Central Expy
San Antonio Rd
Rengstorff Ave
LOS ALTOS
Shoreline Blvd
El Camino Real
MOUNTAIN VIEW
85
SANTA
Priority Corridor Network
Shared-Use Paths
Bike Lanes
Bike Boulevards
Bicycle Access Points to North Bayshore
Transit Lines and Stations

PORT OF PORTLAND, OR

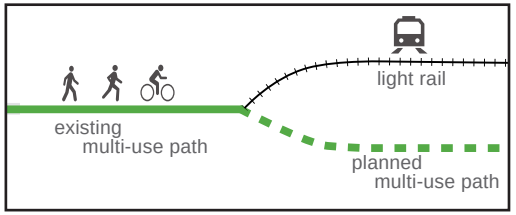
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
PORTLAND, OR	2014	PORTLAND INTERNATIONAL AIRPORT BICYCLE AND PEDESTRIAN MASTER PLAN	PORT OF PORTLAND

Full Map (Click to view full size)



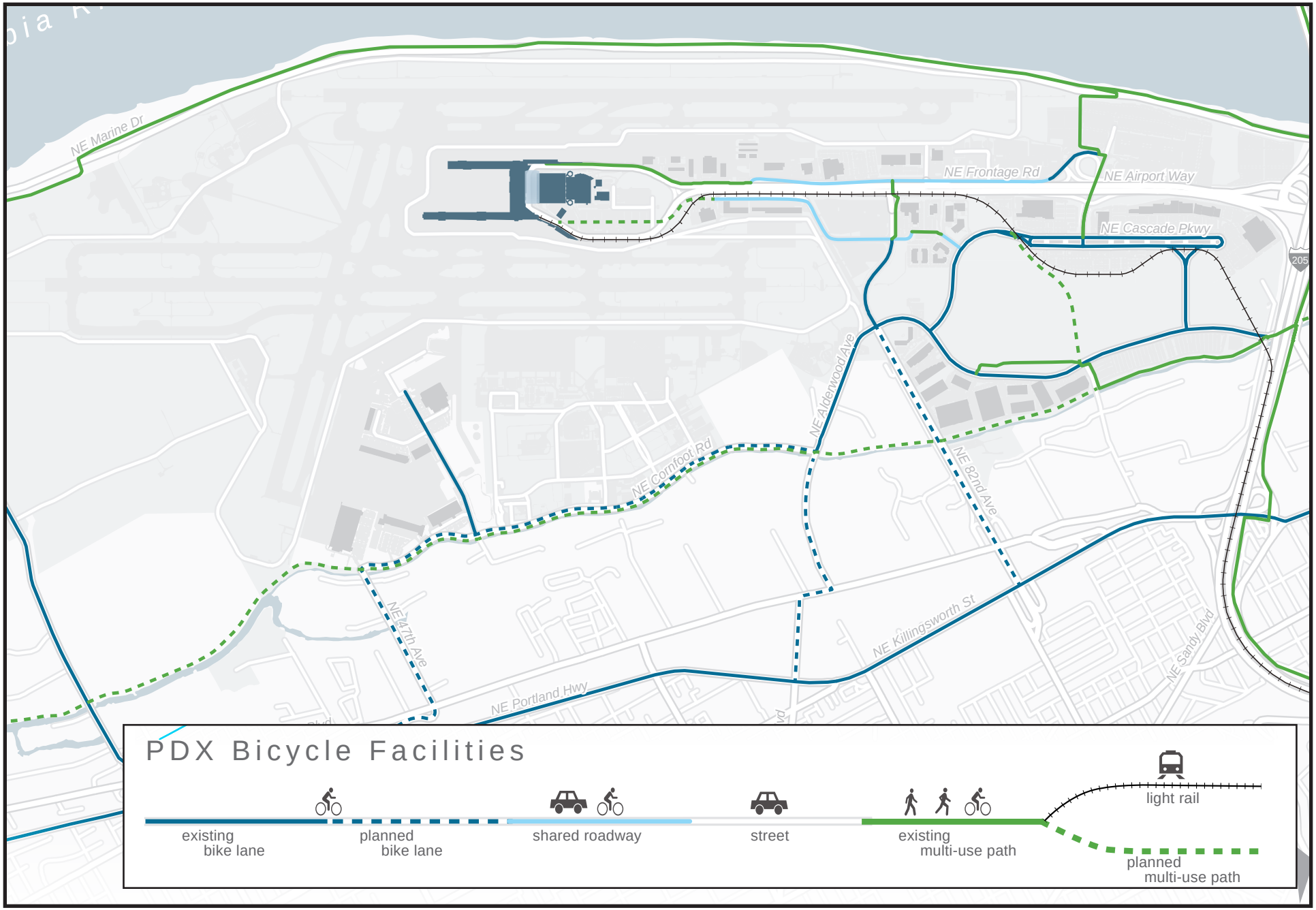
KEY MAP FEATURES

Legend integrates facility types with user types



Simple color palette and contextual background layers including buildings and waterways

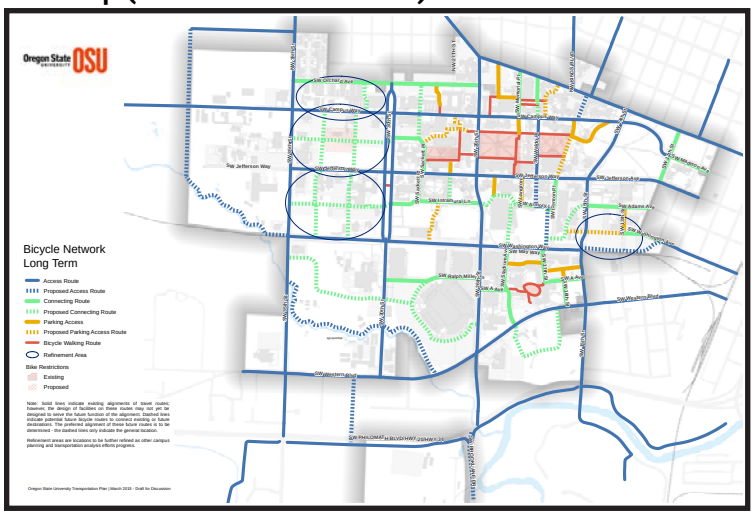
Highlights connections to citywide bike network and other multimodal options


NE Marine Dr
NE Frontage Rd
NE Airport Way
NE Cascade Pkwy
205
NE Alderwood Ave
NE Cornfoot Rd
NE 82nd Ave
NE 47th Ave
NE Killingsworth St
NE Portland Hwy
NE Sandy Blvd
PDX Bicycle Facilities
existing bike lane
planned bike lane
shared roadway
street
existing multi-use path
light rail
planned multi-use path

OREGON STATE UNIVERSITY

LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
CORVALLIS, OR	2015	OREGON STATE UNIVERSITY TRANSPORTATION PLAN	OREGON STATE UNIVERSITY

Full Map (Click to view full size)

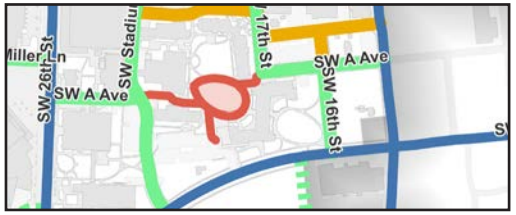


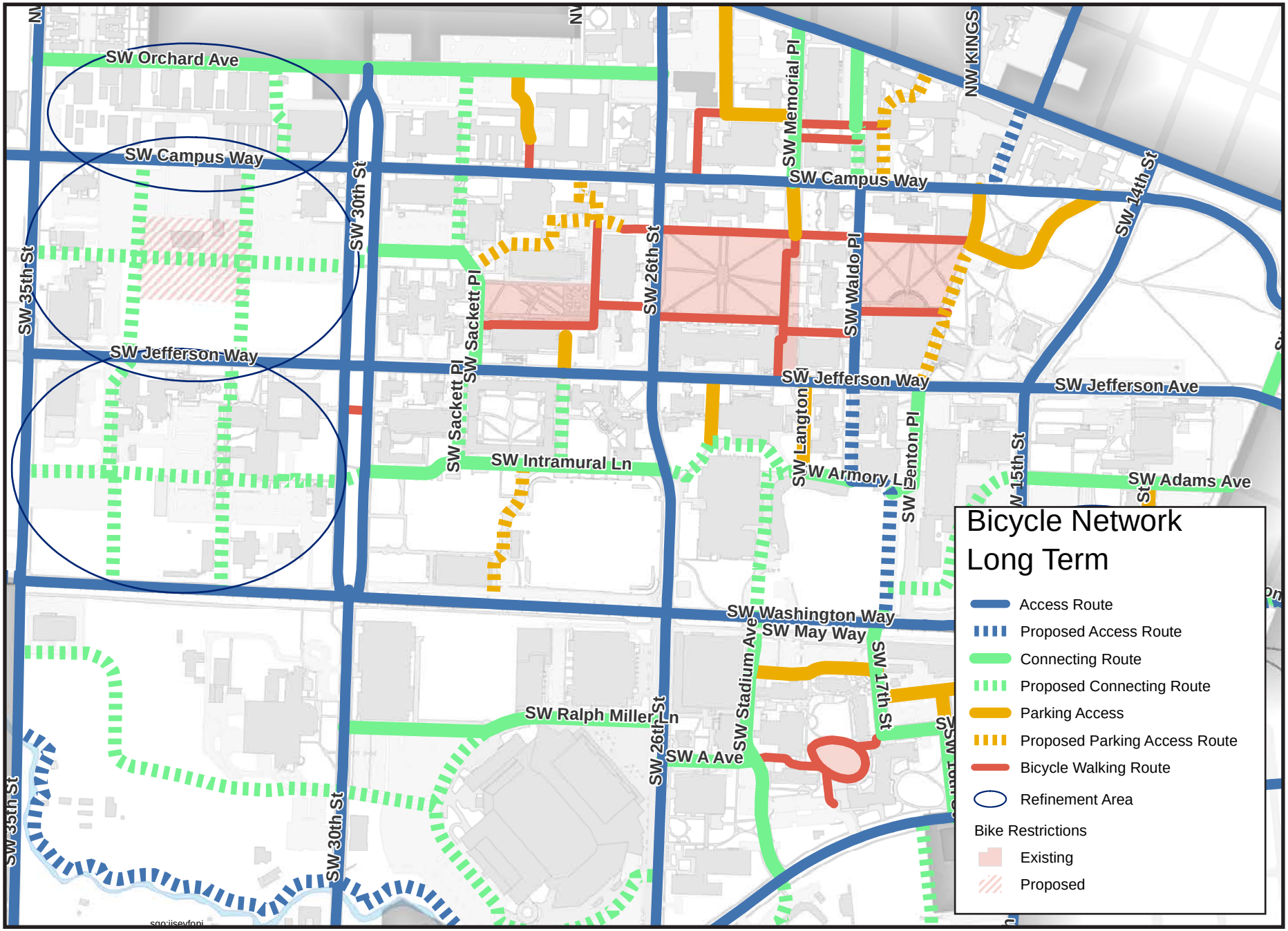
KEY MAP FEATURES

Highlights dismount zones

Identifies areas for further refinement

Highlights bicycle parking access routes

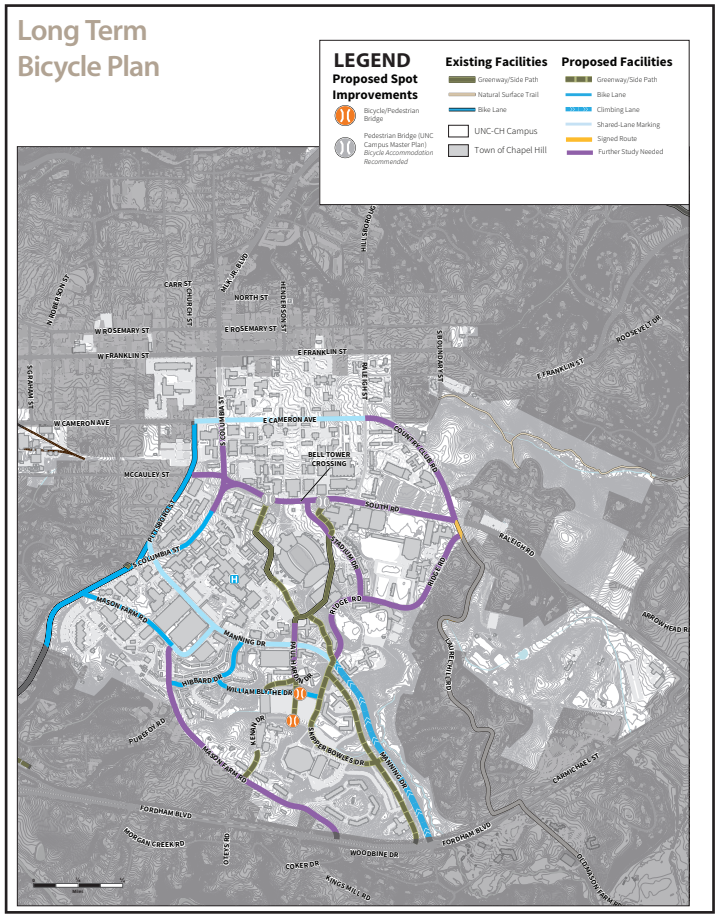



SW Orchard Ave
SW Campus Way
SW 30th St
SW 35th St
SW Jefferson Way
SW Sackett Pl
SW Intramural Ln
SW 26th St
SW Memorial Pl
SW Waldo Pl
SW Langton
SW Lenton Pl
NW KINGS
SW 14th St
SW Jefferson Ave
SW Armory Ln
SW 15th St
SW Adams Ave
SW Washington Way
SW May Way
SW Stadium Ave
SW 17th St
SW Ralph Miller Ln
SW A Ave
Bicycle Network
Long Term
Access Route
Proposed Access Route
Connecting Route
Proposed Connecting Route
Parking Access
Proposed Parking Access Route
Bicycle Walking Route
Refinement Area
Bike Restrictions
Existing
Proposed

UNIVERSITY OF NORTH CAROLINA

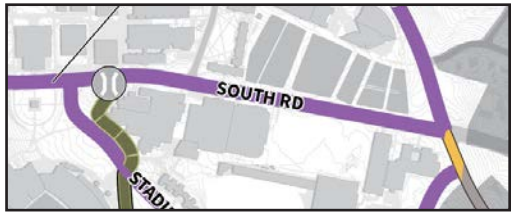
LOCATION	YEAR	PUBLICATION	RESPONSIBLE AGENCY
CHAPEL HILL, NC	2014	UNC CHAPEL HILL BIKE MASTER PLAN	UNIVERSITY OF NORTH CAROLINA

Full Map (Click to view full size)

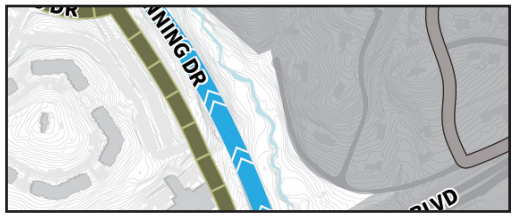


KEY MAP FEATURES

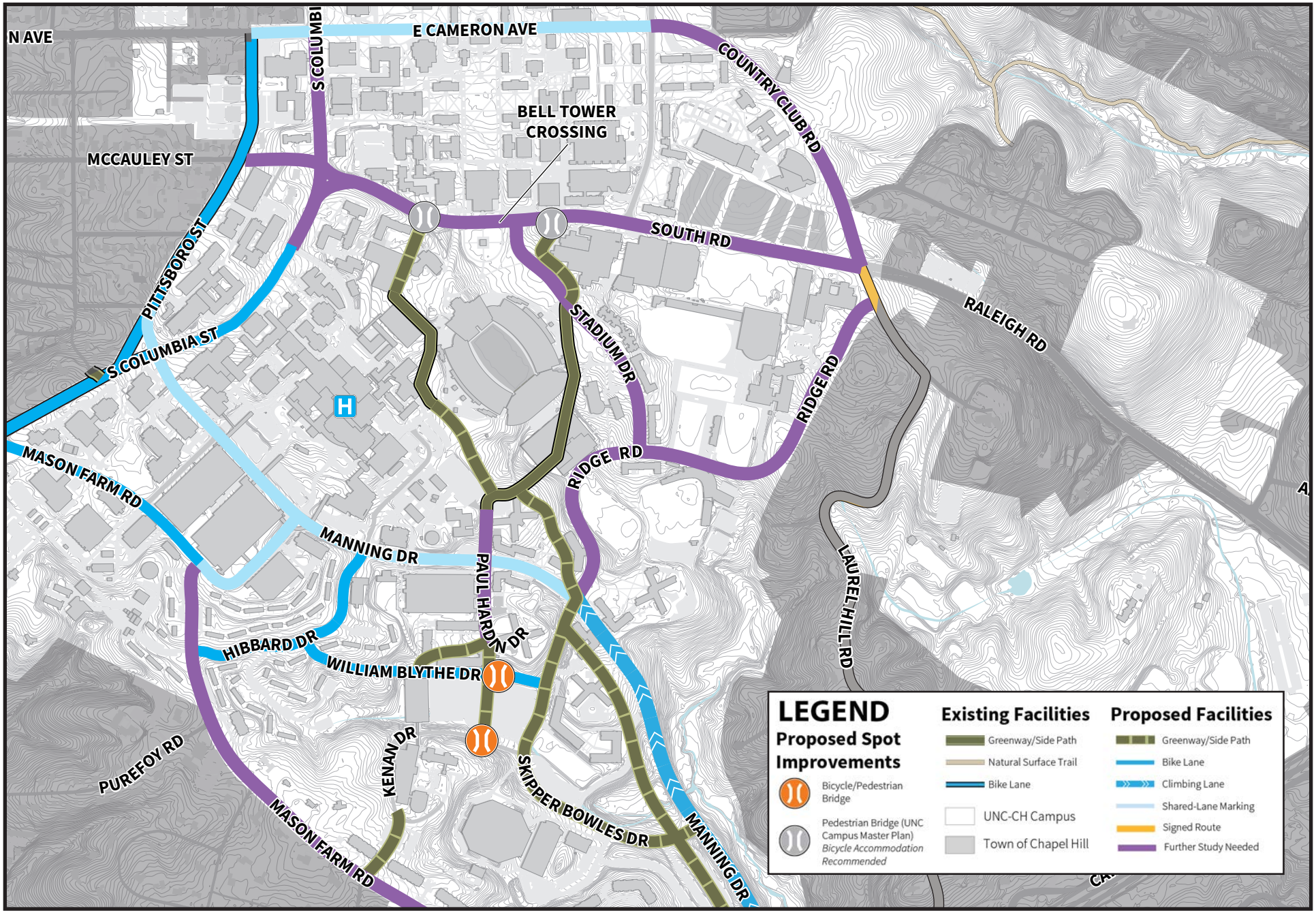
Shows recommended bridges with clean icons



Clever symbology for climbing lanes



Shows greenways


N AVE
S COLUMBIA ST
E CAMERON AVE
COUNTRY CLUB RD
BELL TOWER CROSSING
MCCAULEY ST
PITTSBORO ST
S COLUMBIA ST
SOUTH RD
STADIUM DR
RIDGE RD
RALEIGH RD
MASON FARM RD
MANNING DR
PAUL HARDIN DR
HIBBARD DR
WILLIAM BLYTHE DR
PUREFOY RD
KENAN DR
SKIPPER BOWLES DR
LAUREL HILL RD
LEGEND
Proposed Spot Improvements
Bicycle/Pedestrian Bridge
Pedestrian Bridge (UNC Campus Master Plan) Bicycle Accommodation Recommended
Existing Facilities
Greenway/Side Path
Natural Surface Trail
Bike Lane
UNC-CH Campus
Town of Chapel Hill
Proposed Facilities
Greenway/Side Path
Bike Lane
Climbing Lane
Shared-Lane Marking
Signed Route
Further Study Needed

NEXT STEPS

This resource highlights different approaches and techniques for mapping existing and proposed bicycle networks.

As demonstrated by the best practices highlighted here, there have been significant positive advances in this area in recent years.

To build on this progress, it will be important to institutionalize these techniques so that they become standard practice across jurisdictions and at all scales.

The following next steps are offered to inform the continued development of this national capacity and they will involve partners and stakeholders at all levels.

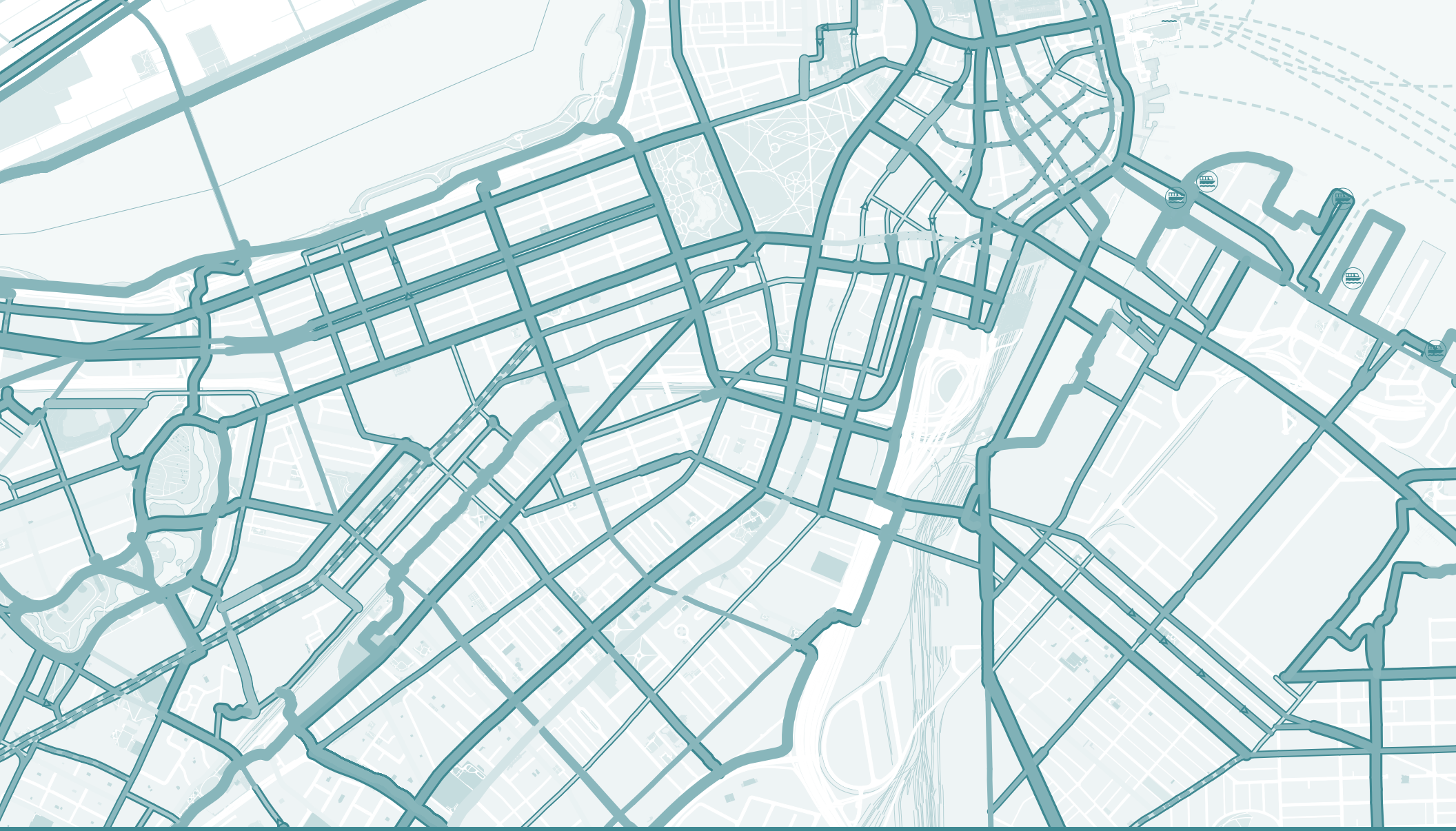
1. **Identify a consistent set of bicycle facility types and community destinations that can serve as a baseline for bicycle network planning efforts across jurisdictions and geographic locations. The tables below are intended to inform this conversation.**
2. **Undertake a significant national push to research, apply, and document methodologies for measuring bicycle network connectivity and tracking change in connectivity over time.**
3. **Examine ways to integrate bicycle network infrastructure data into national infrastructure databases and data management systems.**
4. **Continue to identify and promote strategies for integrating bicycle network planning into ongoing planning processes at the local, MPO, and State level (e.g. resurfacing, TIP and STIP, Highway Safety Improvement Program, project design and development, MPO certification review).**

BICYCLE FACILITY TYPES

- Bike Lane
- Buffered Bike Lane
- Climbing Lane (i.e., bike lane on uphill side only)
- Separated Bike Lane or Protected Bike Lane or Cycle Track
- Bike Boulevard
- Shared Use Path
- Other (such as shared lane marking and paved shoulder)

COMMUNITY DESTINATIONS

- Bike share stations
- Bus stops
- Community centers
- Community colleges
- Community service center
- High density residential
- Major retail and entertainment
- Parks
- Places of worship
- Public libraries
- Retirement homes
- Schools
- Government offices
- Universities or colleges
- Major tourist destinations
- Hospitals and other health care facilities
- Transit centers



U.S.Department of Transportation
Federal Highway Administration

For More Information Visit: http://www.fhwa.dot.gov/environment/bicycle_pedestrian
Publication Number: FHWA-HEP-16-054