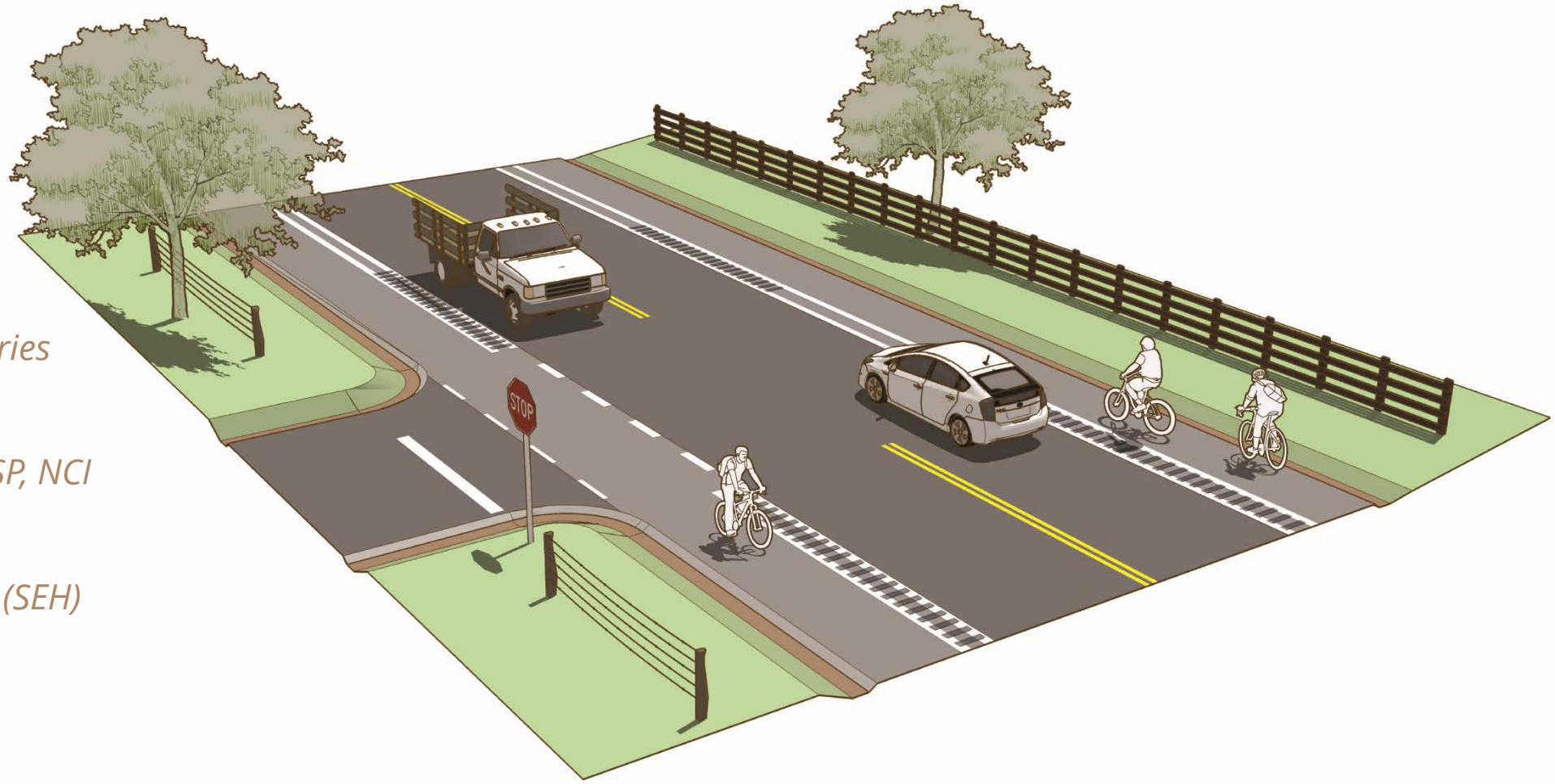
first look

Small Town *and* Rural Multimodal Networks



APA Planning Webcast Series

Tim Gustafson, AICP
Andrew Dane, AICP, ENV SP, NCI

Alta Planning + Design
Short Elliott Hendrickson (SEH)

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SEH

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Today's Presenters

Andrew Dane, AICP, NCI, ENV SP
Senior Planner
adane@sehinc.com
920.585.3593

Tim Gustafson, AICP
Senior Associate
timgustafson@altaplanning.com
312.265.0628

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Funding Partners

BlueCross BlueShield Minnesota

U.S. Department of Transportation
Federal Highway Administration

Project Team

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MONTANA STATE UNIVERSITY
Western Transportation Institute

NACo National Association of Counties

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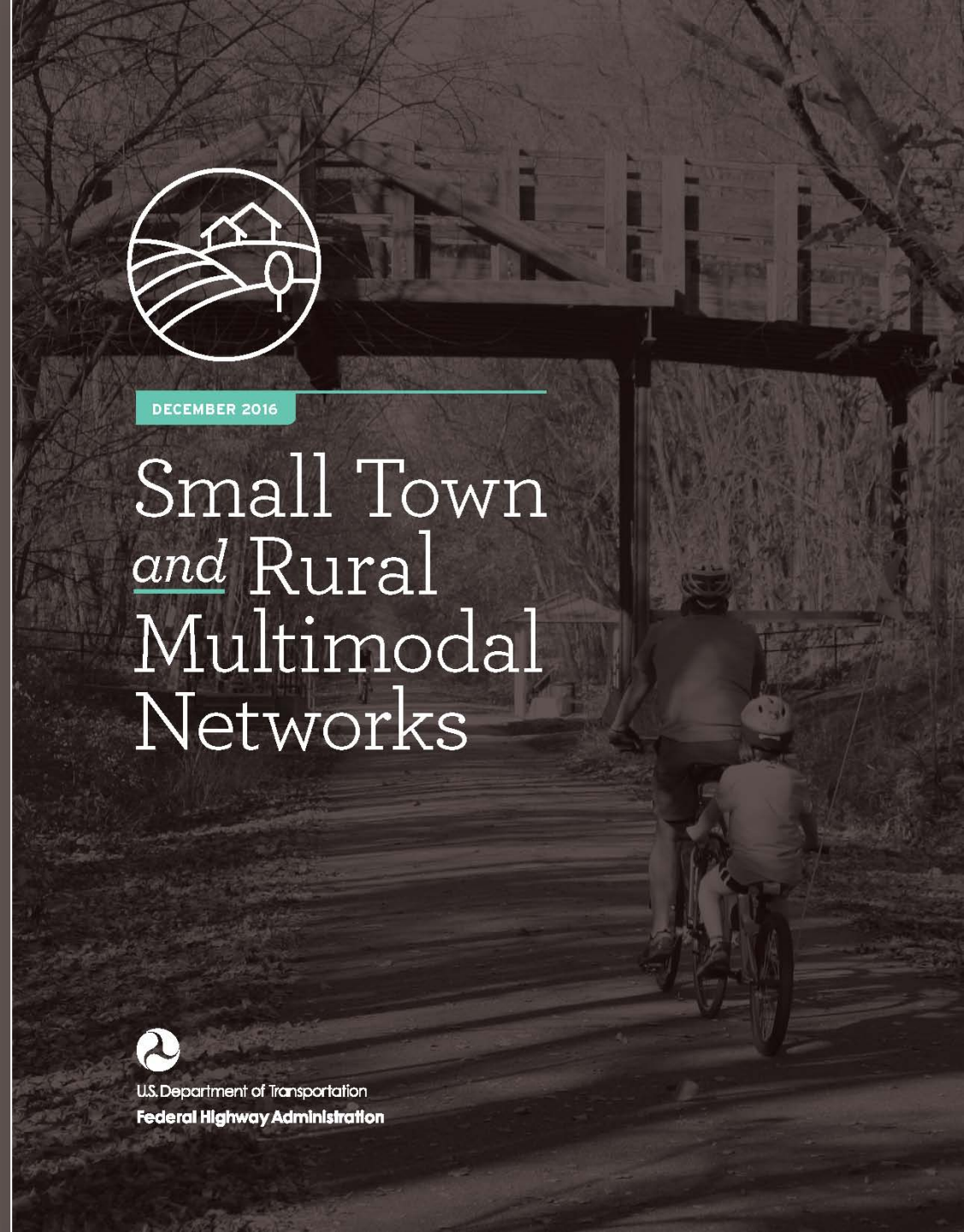
Outline

- Purpose
- Structure
- Sources
- Applications
- Benefits
- Project Examples



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History and Context

Rural Practice and Multimodal Design Guidelines

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Where did the guide come from - Sources

- AASHTO Flexibility Guide 2004
- AASHTO Bike Guide 2012
- AASHTO Pedestrian Guide 2004, 2017
- AASHTO Green Book 2011
- AASHTO Low Volume Roads 2001, 2017
- FHWA Achieving Multimodal Networks 2016
- FHWA Resurfacing Guide 2016
- FHWA MUTCD 2009
- FHWA Separated Bike Lane Guide 2015
- PROWAG 2011, 2013, 2014
- BIKESAFE 2014

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FHWA Policy Statement (2010)

"Walking and bicycling foster safer, more livable, family-friendly communities; promote physical activity and health; and reduce vehicle emissions and fuel use. "

"... DOT encourages transportation agencies to *go beyond the minimum requirements*, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of *all ages and abilities*..."

FHWA. *United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations.* 2010.

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United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations

Signed on March 11, 2010 and announced March 15, 2010

Purpose

The United States Department of Transportation (DOT) is providing this Policy Statement to reflect the Department's support for the development of fully integrated active transportation networks. The establishment of well-connected walking and bicycling networks is an important component for livable communities, and their design should be a part of Federal-aid project developments. Walking and bicycling foster safer, more livable, family-friendly communities; promote physical activity and health; and reduce vehicle emissions and fuel use. Legislation and regulations exist that require inclusion of bicycle and pedestrian policies and projects into transportation plans and project development. Accordingly, transportation agencies should plan, fund, and implement improvements to their walking and bicycling networks, including linkages to transit. In addition, DOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate. Transportation programs and facilities should accommodate people of all ages and abilities, including people too young to drive, people who cannot drive, and people who choose not to drive.

Policy Statement

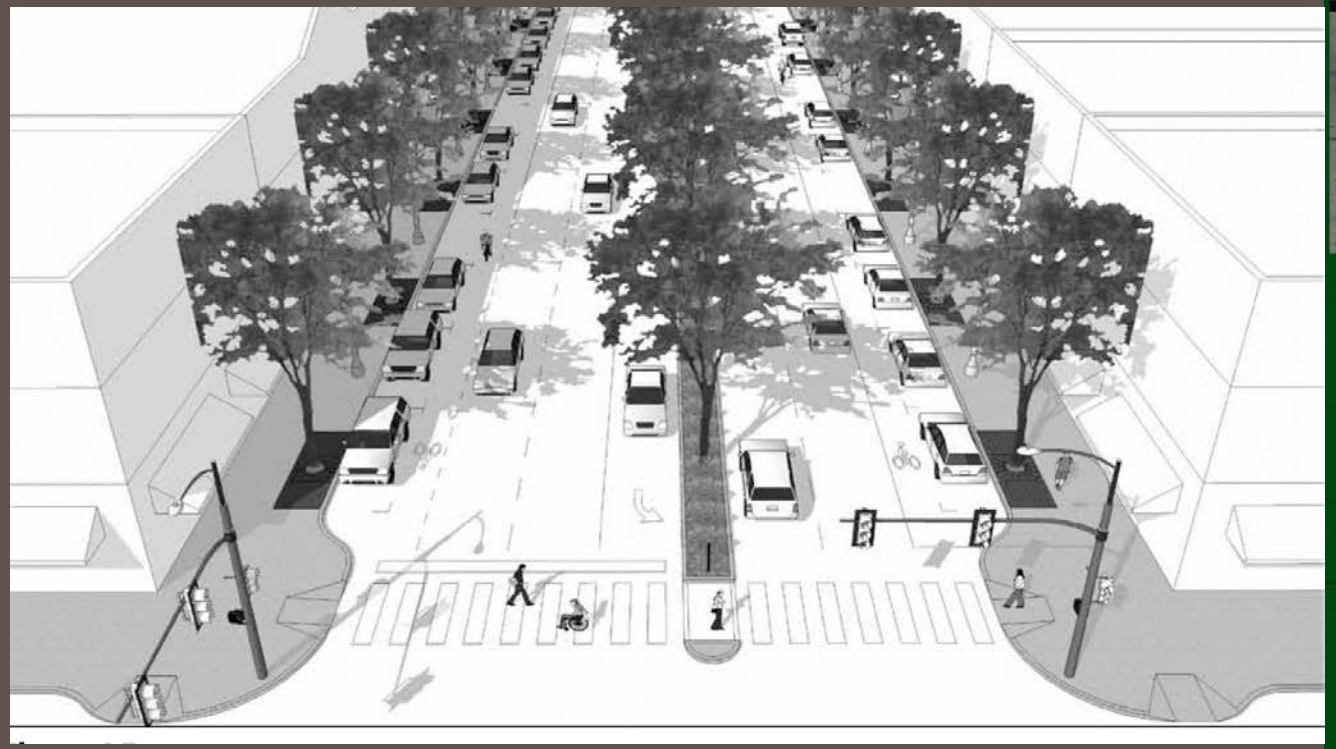
The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

Authority

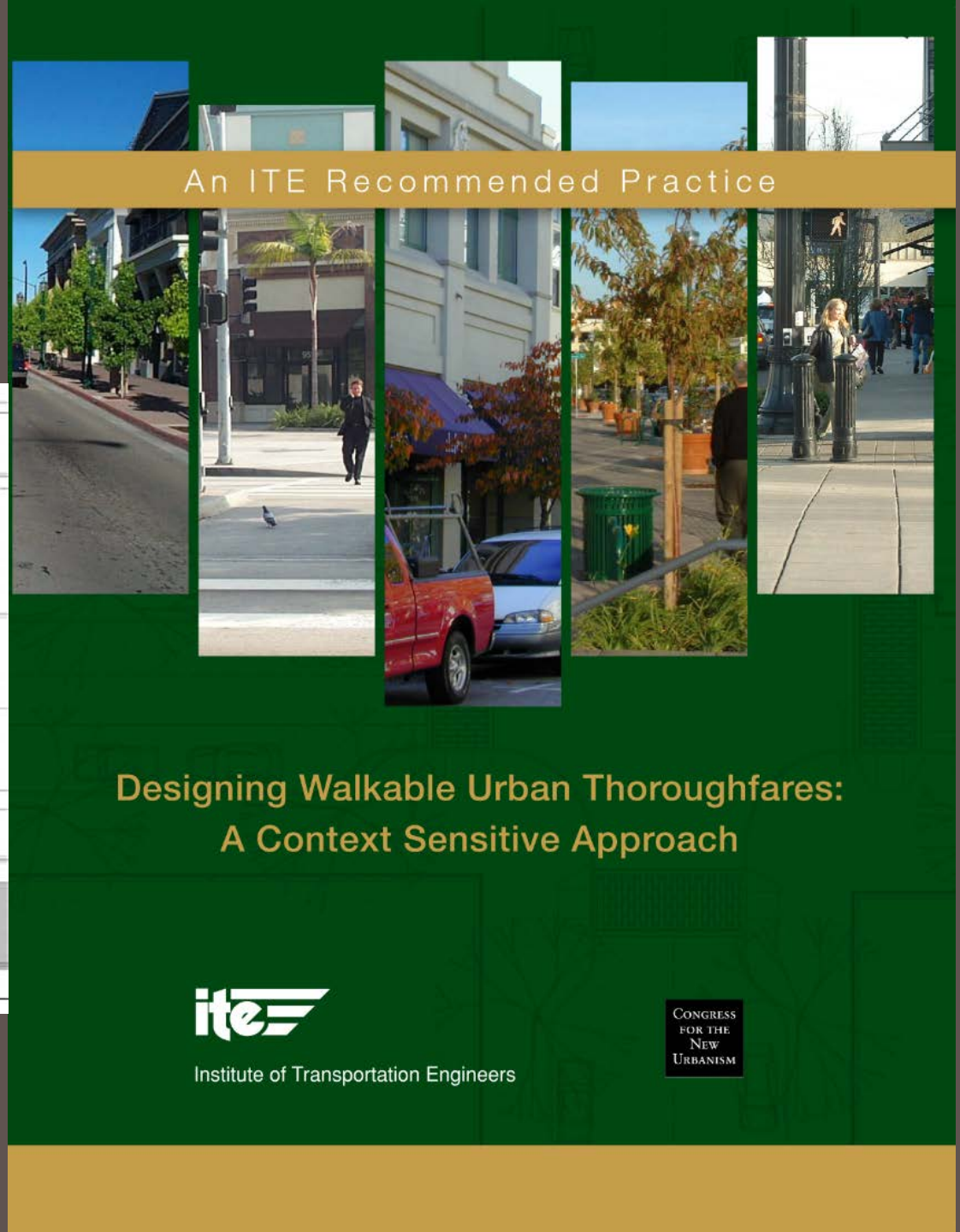
This policy is based on various sections in the United States Code (U.S.C.) and the Code of Federal Regulations (CFR) in Title 23—Highways, Title 49—Transportation, and Title 42—The Public Health and Welfare. These sections, provided in the Appendix, describe how bicyclists and pedestrians of all abilities should be involved throughout the planning process, should not be adversely affected by other transportation projects, and should be able to track annual obligations and expenditures on nonmotorized transportation facilities.

first look

ITE Walkable Thoroughfares (2010)



ITE. *Designing Walkable Urban Thoroughfares: A context Sensitive Approach.* 2010. p. 62



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NACTO Urban Street Design Guide (2013)

NACTO. *Urban Street Design Guide*. 2013.

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NACTO Urban Bikeway Design Guide (2014)

NACTO. *Urban Bikeway Design Guide, 2nd Edition*. 2014.

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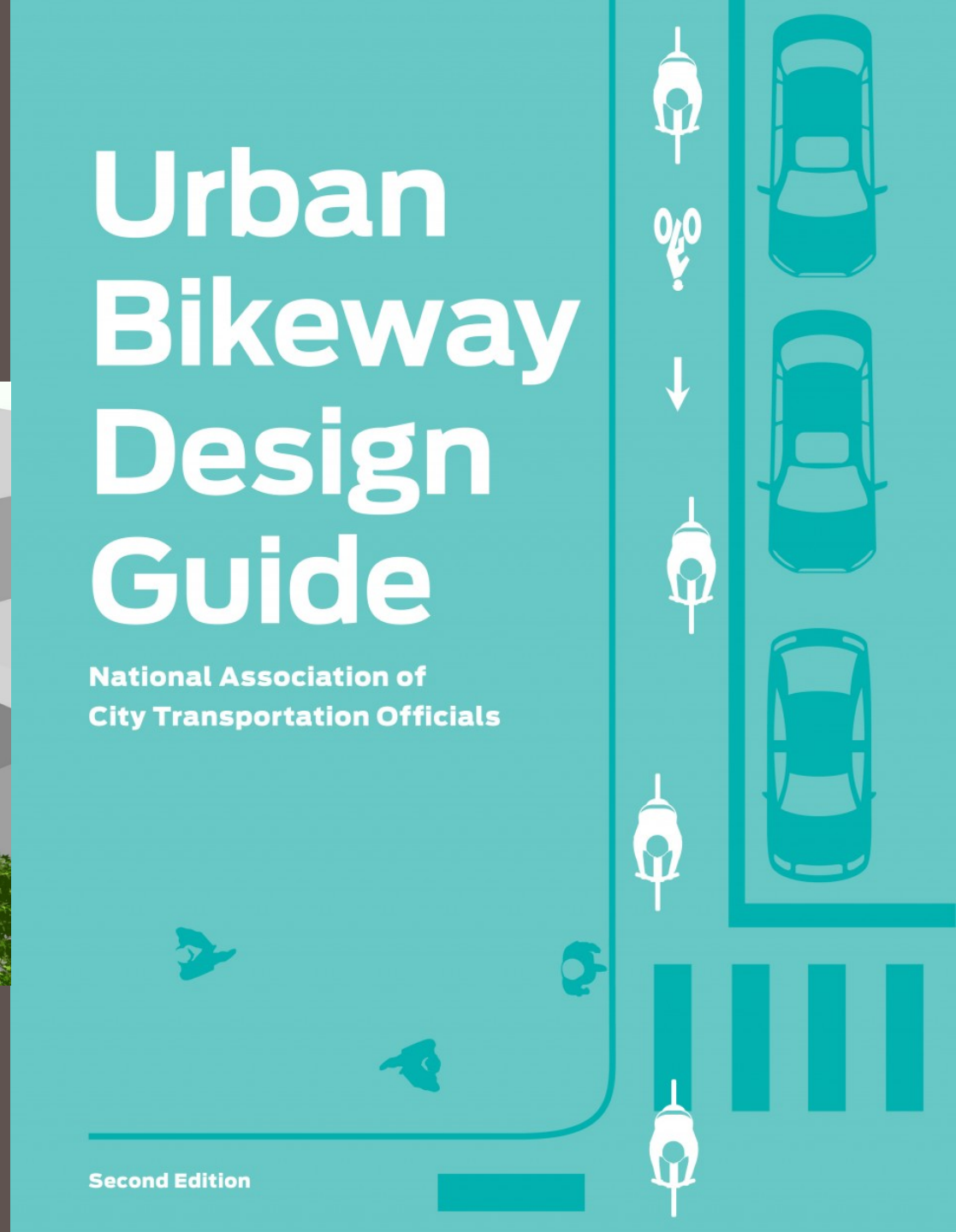

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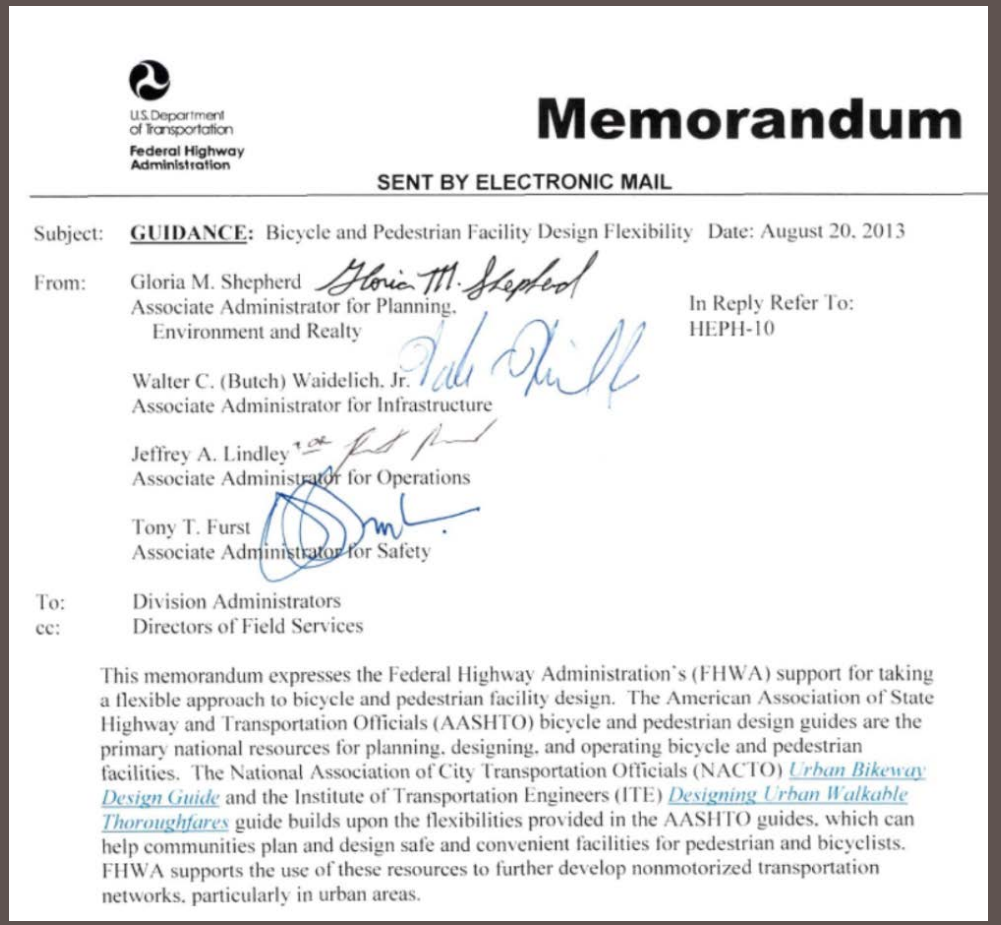
FHWA Design Flexibility Memo (2013)

FHWA supports "taking a flexible approach to bicycle and pedestrian facility design. … The National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, [the Urban Street Design Guide,] and the Institute of Transportation Engineers (ITE) Designing Walkable Urban Thoroughfares guide builds upon the flexibilities provided in the AASHTO guides, which can help communities plan and design safe and convenient facilities for pedestrian and bicyclists. FHWA supports the use of these resources to further develop nonmotorized transportation networks, particularly in urban areas."



U.S. Department of Transportation
Federal Highway Administration

Memorandum

SENT BY ELECTRONIC MAIL

Subject: **GUIDANCE:** Bicycle and Pedestrian Facility Design Flexibility Date: August 20, 2013

From: Gloria M. Shepherd
Associate Administrator for Planning, Environment and Realty

Walter C. (Butch) Waidelich, Jr.
Associate Administrator for Infrastructure

Jeffrey A. Lindley
Associate Administrator for Operations

Tony T. Furst
Associate Administrator for Safety

In Reply Refer To: HEPH-10

To: Division Administrators
cc: Directors of Field Services

This memorandum expresses the Federal Highway Administration's (FHWA) support for taking a flexible approach to bicycle and pedestrian facility design. The American Association of State Highway and Transportation Officials (AASHTO) bicycle and pedestrian design guides are the primary national resources for planning, designing, and operating bicycle and pedestrian facilities. The National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* and the Institute of Transportation Engineers (ITE) *Designing Urban Walkable Thoroughfares* guide builds upon the flexibilities provided in the AASHTO guides, which can help communities plan and design safe and convenient facilities for pedestrian and bicyclists. FHWA supports the use of these resources to further develop nonmotorized transportation networks, particularly in urban areas.

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Why Create a Small Town Guide?

ONE SIZE DOES NOT FIT ALL.

LONGER NON-LOCAL TRIP DISTANCES

HEALTH DISPARITIES

HIGHER CRASH RATES

INCOME DISPARITIES

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Rural Opportunities

2 MILES

Allendale, SC
Population 3,328

2 MILES

Palmer, AK
Population 6,250

1.3 MILES

Rushford, MN
Population 2,102

2.3 MILES

Ukiah, CA
Population 15,956

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Guide Content

Treatments and Design Topics

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Guide Structure

1. Introduction
2. Mixed Transportation Facilities
3. Visually Separated Facilities
4. Physically Separated Facilities
5. Key Network Linkages
6. Planning and Project Development

TABLE OF

Contents

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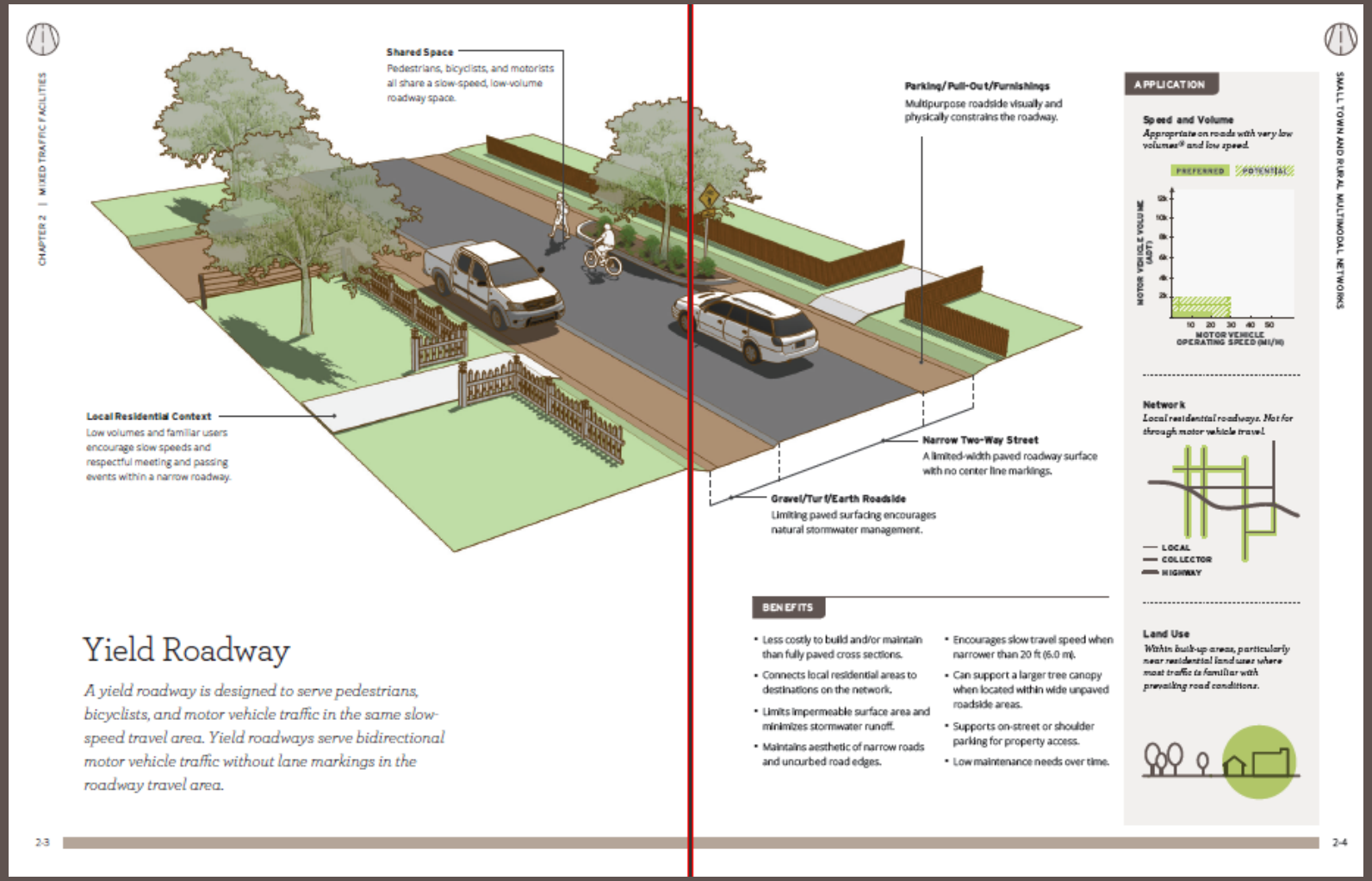
Content Areas

- Application
- Benefits
- Guidance
  - Geometric Design
  - Markings
  - Signs
  - Intersection treatment
  - Implementation
  - Accessibility



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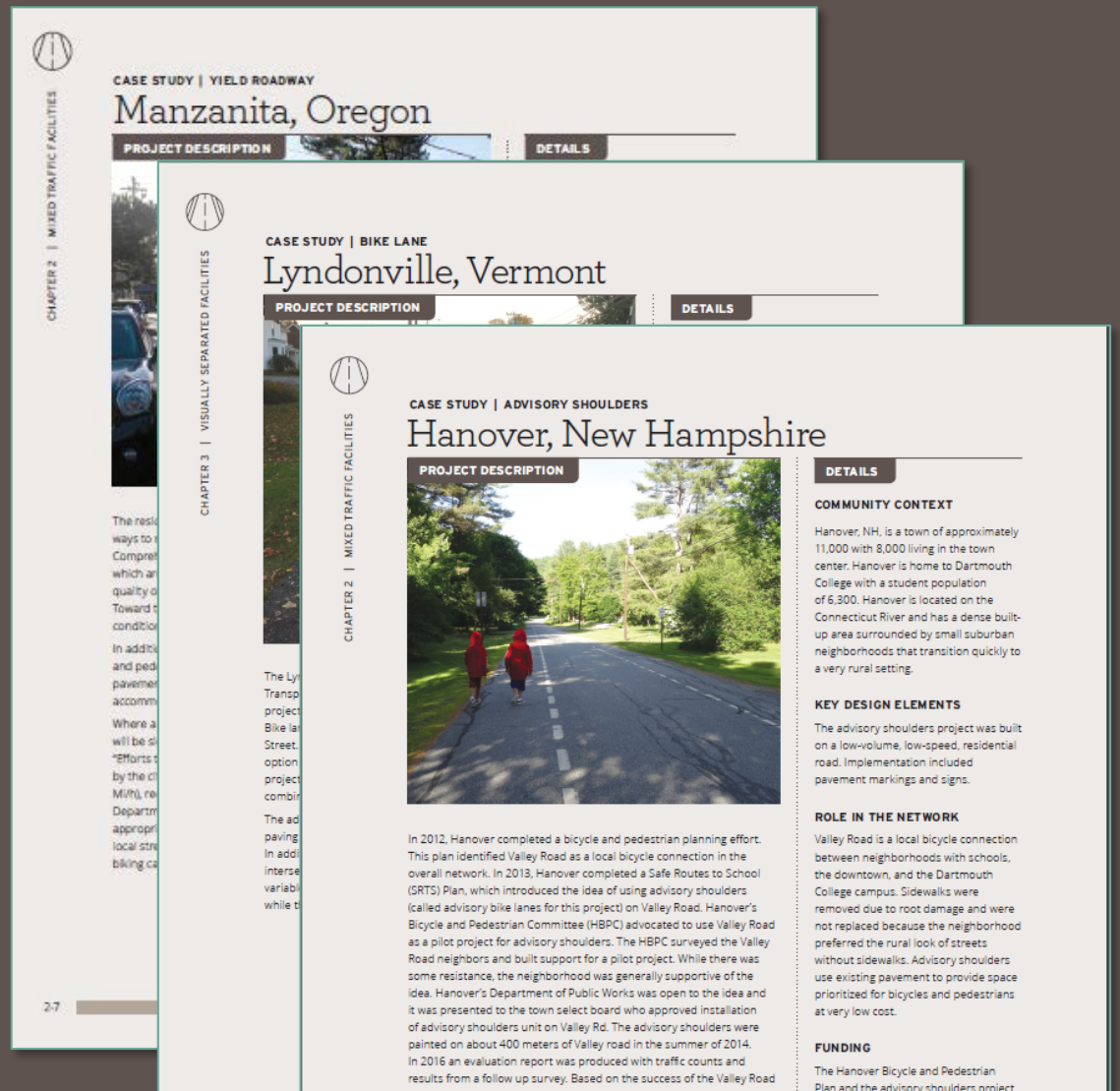
Content Areas - Case Studies

- Community Context
- Key Elements
- Role in the Network
- How Funded



CASE STUDY | YIELD ROADWAY

Manzanita, Oregon

PROJECT DESCRIPTION

DETAILS

CHAPTER 2 | MIXED TRAFFIC FACILITIES

CASE STUDY | BIKE LANE

Lyndonville, Vermont

PROJECT DESCRIPTION

DETAILS

CHAPTER 3 | VISUALLY SEPARATED FACILITIES

CASE STUDY | ADVISORY SHOULDERS

Hanover, New Hampshire

PROJECT DESCRIPTION

DETAILS

CHAPTER 2 | MIXED TRAFFIC FACILITIES

COMMUNITY CONTEXT

Hanover, NH, is a town of approximately 11,000 with 8,000 living in the town center. Hanover is home to Dartmouth College with a student population of 6,300. Hanover is located on the Connecticut River and has a dense built-up area surrounded by small suburban neighborhoods that transition quickly to a very rural setting.

KEY DESIGN ELEMENTS

The advisory shoulders project was built on a low-volume, low-speed, residential road. Implementation included pavement markings and signs.

ROLE IN THE NETWORK

Valley Road is a local bicycle connection between neighborhoods with schools, the downtown, and the Dartmouth College campus. Sidewalks were removed due to root damage and were not replaced because the neighborhood preferred the rural look of streets without sidewalks. Advisory shoulders use existing pavement to provide space prioritized for bicycles and pedestrians at very low cost.

FUNDING

The Hanover Bicycle and Pedestrian

In 2012, Hanover completed a bicycle and pedestrian planning effort. This plan identified Valley Road as a local bicycle connection in the overall network. In 2013, Hanover completed a Safe Routes to School (SRTS) Plan, which introduced the idea of using advisory shoulders (called advisory bike lanes for this project) on Valley Road. Hanover's Bicycle and Pedestrian Committee (HBPC) advocated to use Valley Road as a pilot project for advisory shoulders. The HBPC surveyed the Valley Road neighbors and built support for a pilot project. While there was some resistance, the neighborhood was generally supportive of the idea. Hanover's Department of Public Works was open to the idea and it was presented to the town select board who approved installation of advisory shoulders unit on Valley Rd. The advisory shoulders were painted on about 400 meters of Valley road in the summer of 2014. In 2016 an evaluation report was produced with traffic counts and results from a follow up survey. Based on the success of the Valley Road

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Applications

Mixed Traffic

Visually Separated

Physically Separated

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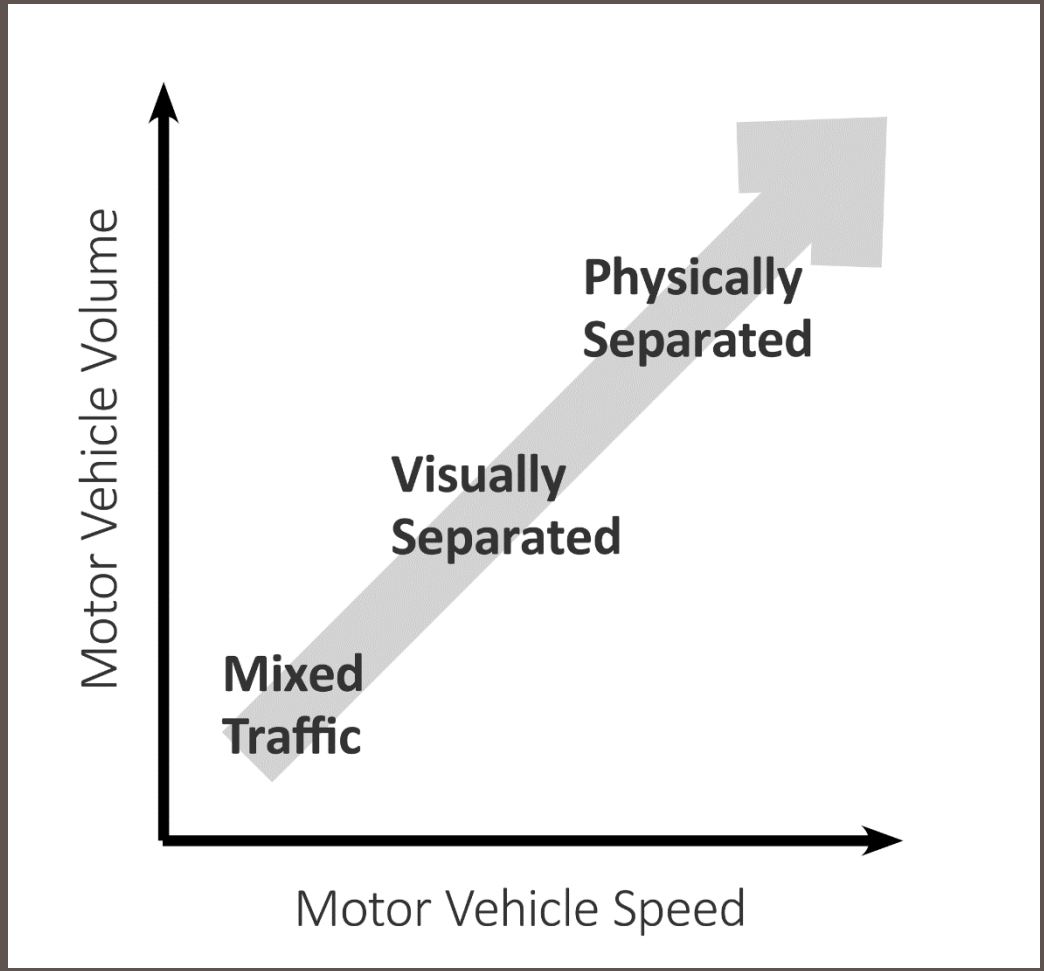
Focus on Complete Networks of Facilities

Networks are interconnected pedestrian and/or bicycle transportation facilities that allow people of all ages and abilities to safely and conveniently get where they want to go.

Facility Categories:

- Mixed Traffic
- Visually Separated
- Physically Separated



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Varying Context and User Needs

Unimproved

Agricultural

Recreational

Downtown

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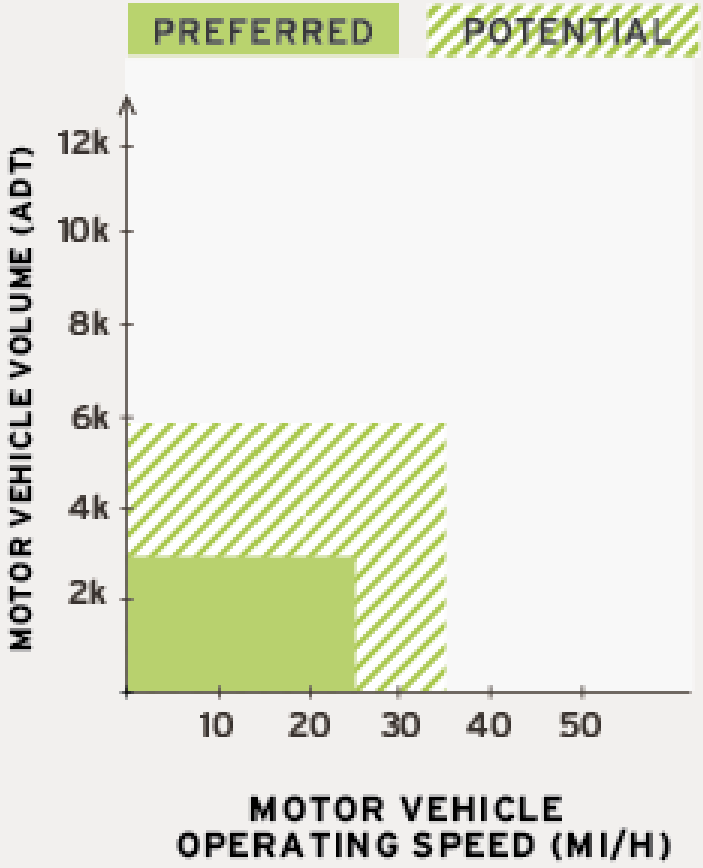
Photo: Modified from Dylan Passmore, Flickr

EXAMPLE APPLICATION

Speed and Volume

Most appropriate on streets with low to moderate volumes and moderate speed motor vehicles.



Network

Applies to constrained connections between built-up areas.

Land Use

For use outside, between and within built-up areas with bicycle and pedestrian demand and limited available paved roadway surface.

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Mixed Traffic

- Yield Roadway
- Bicycle Boulevard
- Advisory Shoulder

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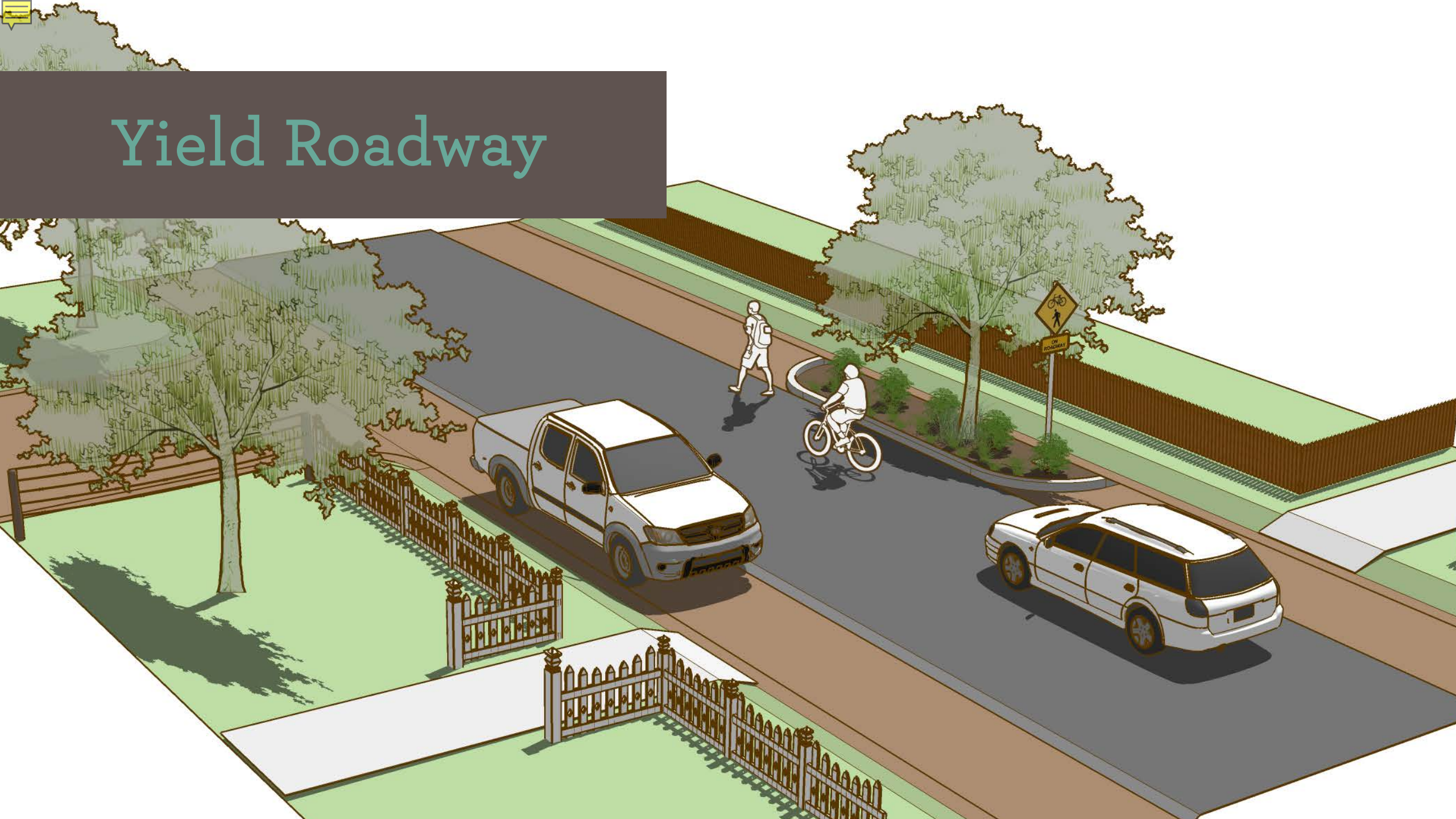
Yield Roadway



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Facilities

Mixed Traffic

- Yield Roadway
- Bicycle Boulevard
- Advisory Shoulder

Visually Separated

- Paved Shoulder
- Bike Lane

Physically Separated

- Shared Use Path
- Sidepath
- Sidewalk
- Separated Bike Lane

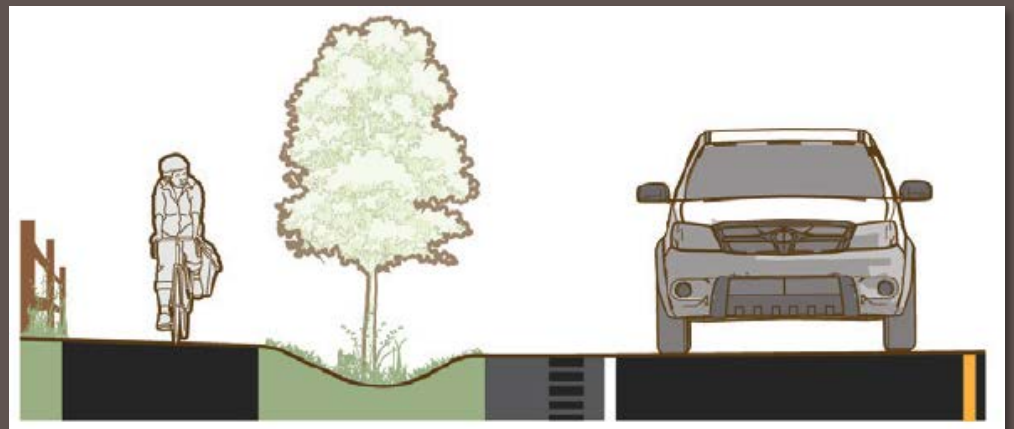


Figure 4-18. Separated bike lanes may be separated by an unpaved roadway separation, and a vertical element. When configured as directional facilities, separated bike lanes should be provided on both sides of the roadway.

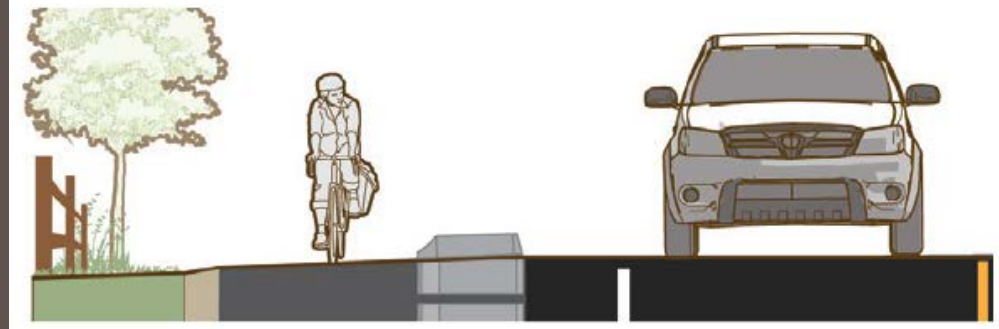
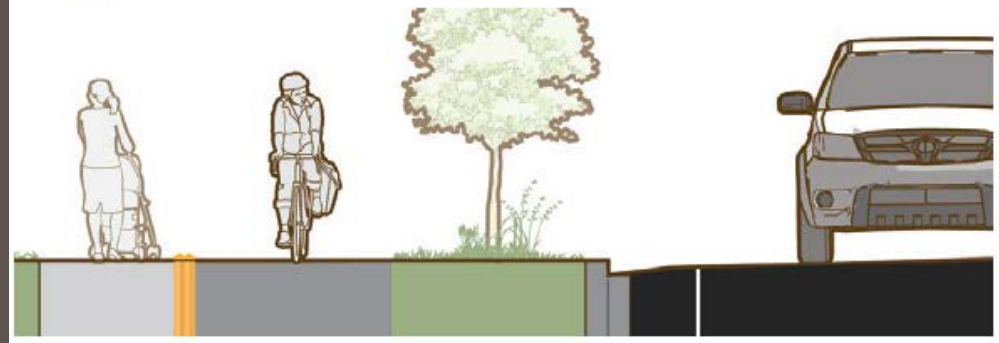
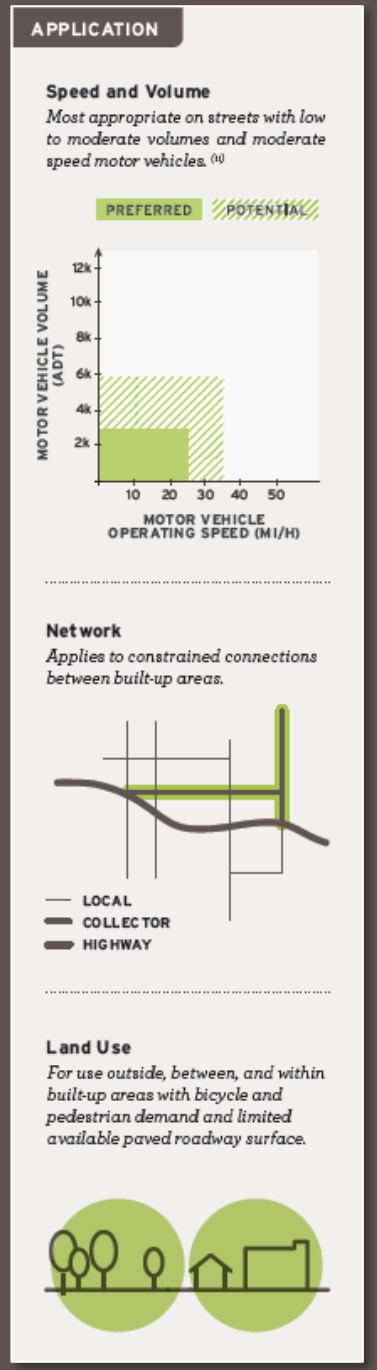


Figure 4-19. Separated bike lanes may be configured on an existing roadway surface by using a physical barrier such as a curb or median to separate the bikeway from the roadway.





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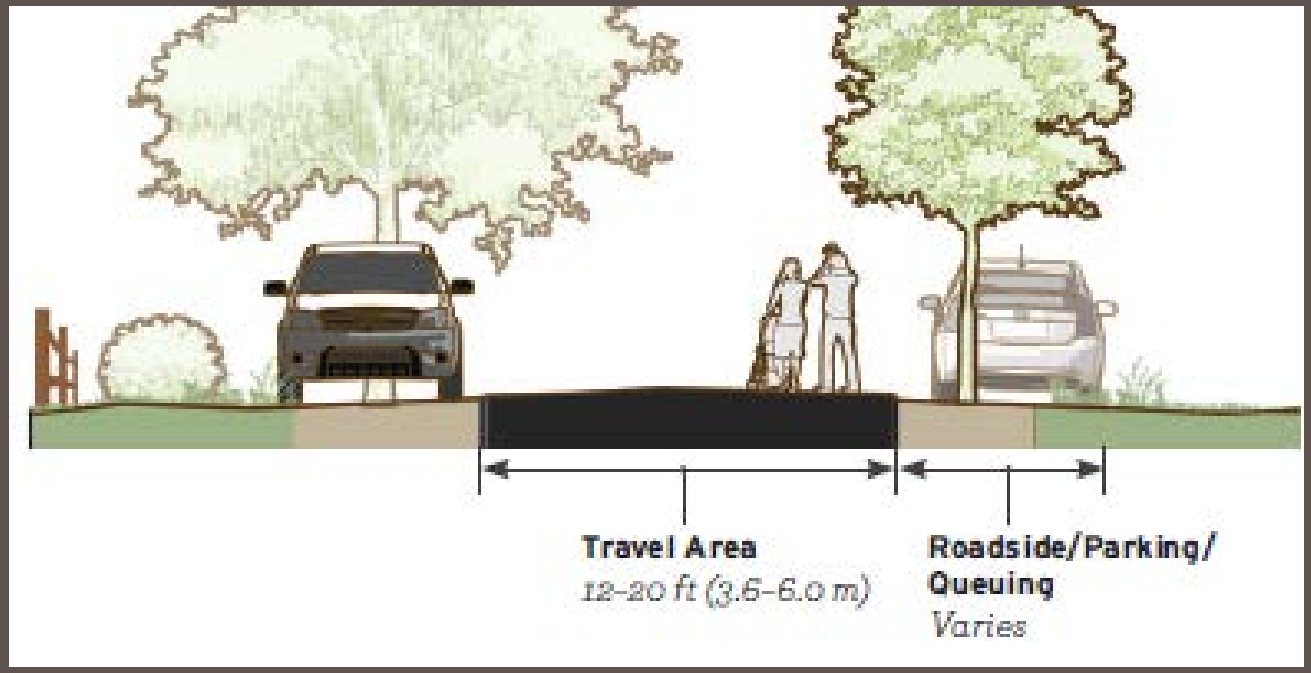
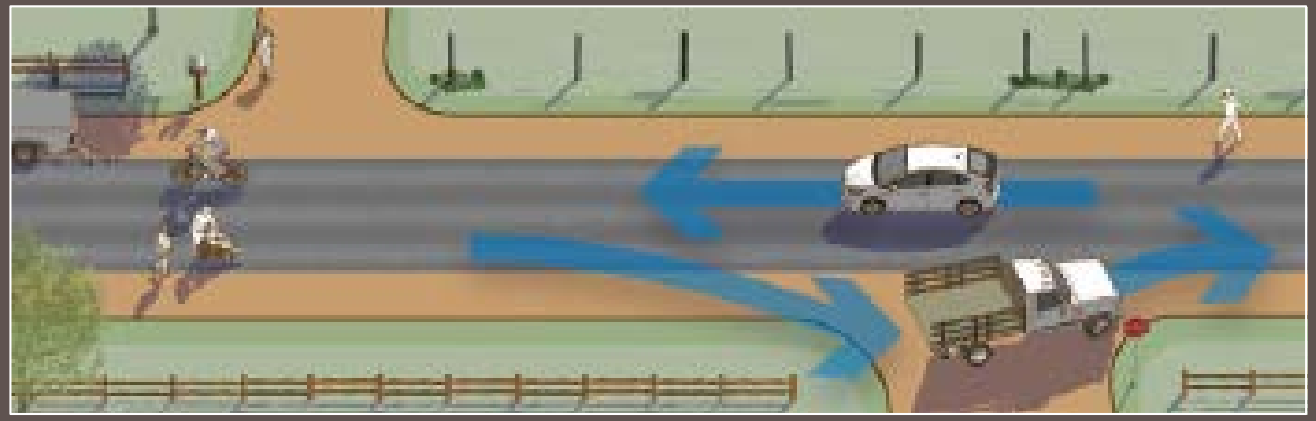
Yield Roadway

- *Designed to serve pedestrians, bicyclists, and motorists in a shared, slow-speed traveled way.*
- *Bi-directional, no lane markings.*





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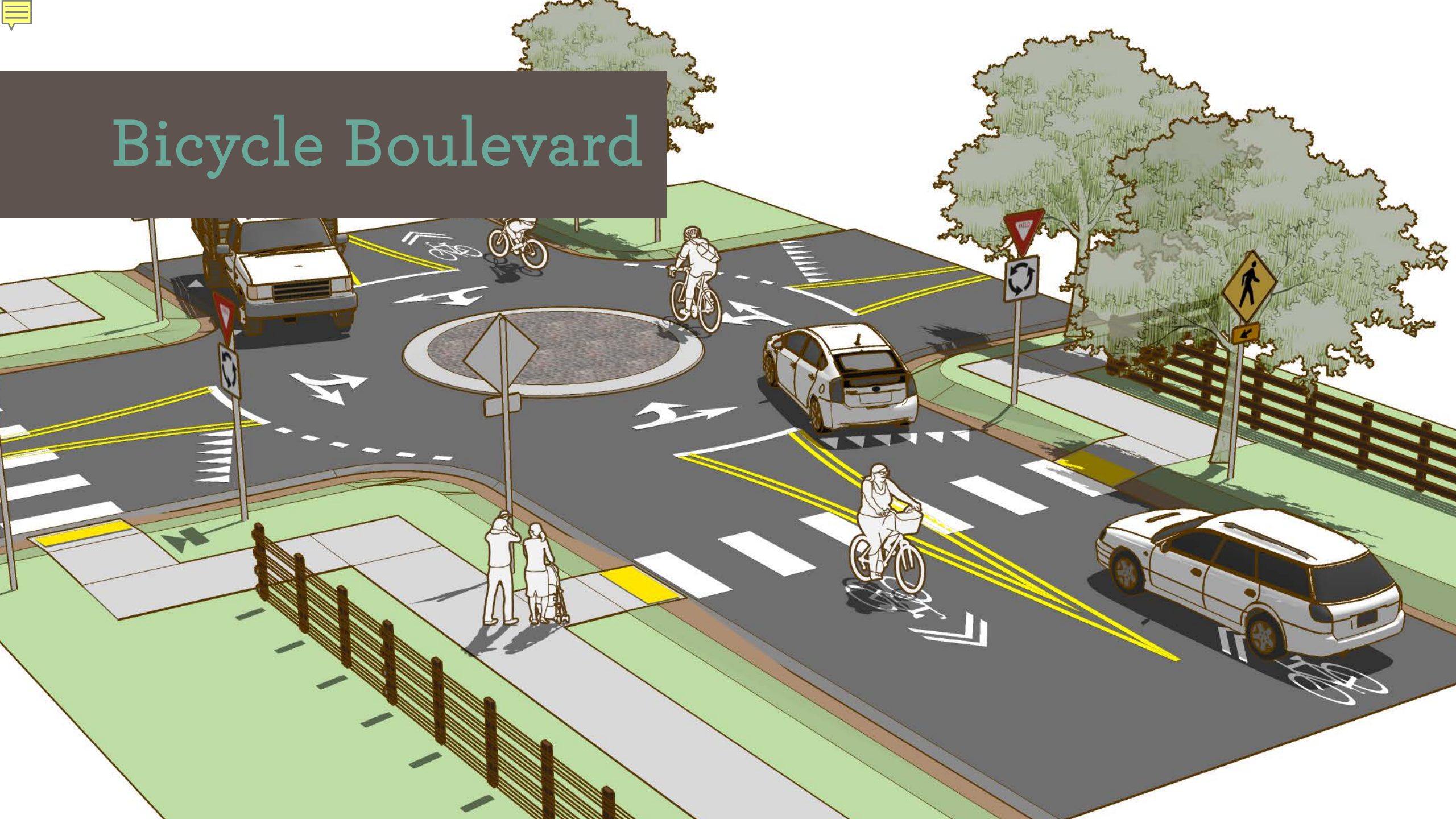
North Richland Hills, TX

Population 67,000

Bicycle Boulevard



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Bicycle Boulevard

- *Low-stress shared roadway bicycle facility, designed to offer priority movement for bicyclists*
- *Combine pavement markings, traffic calming measures, and crossing improvements to enhance bicyclist comfort*

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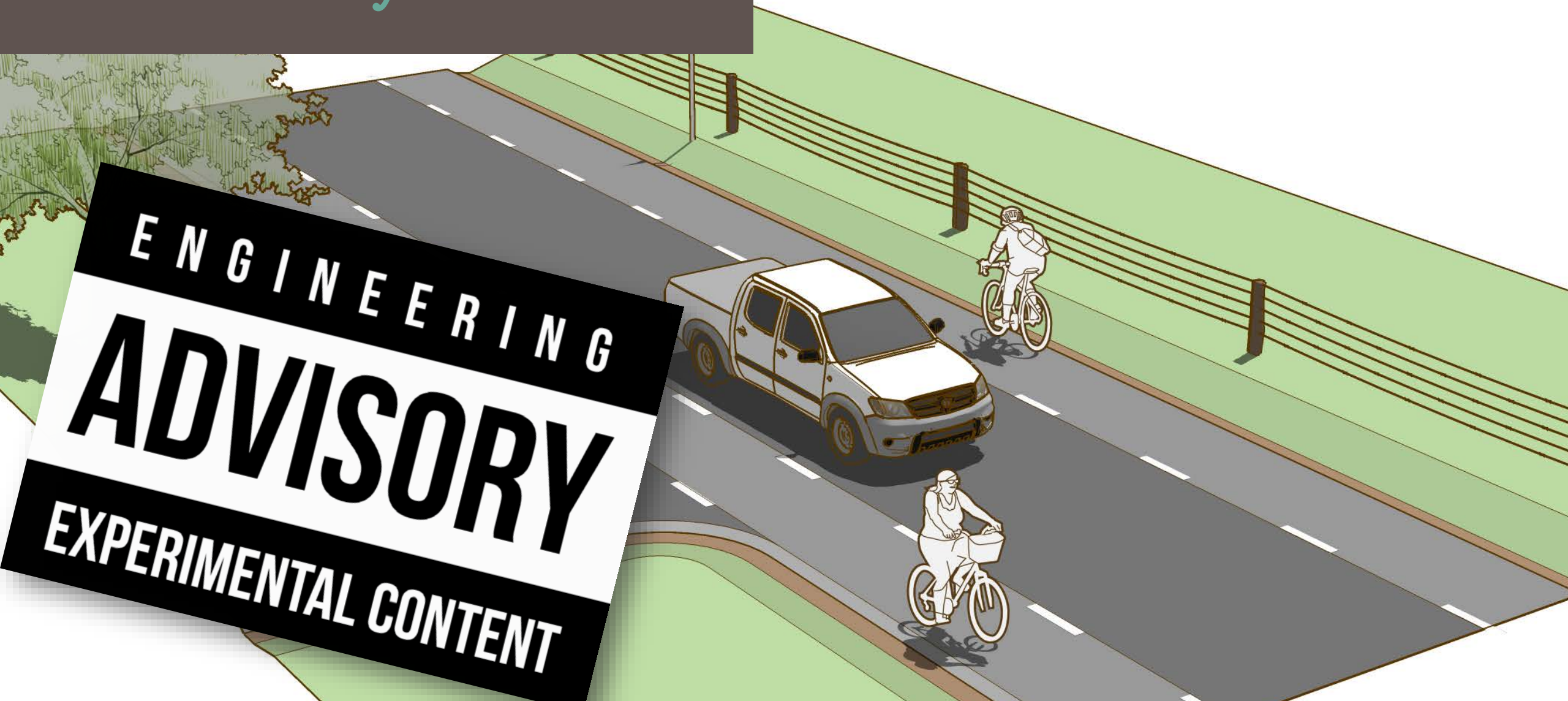
Wildwood, MO

Population 35,000

Advisory Shoulder



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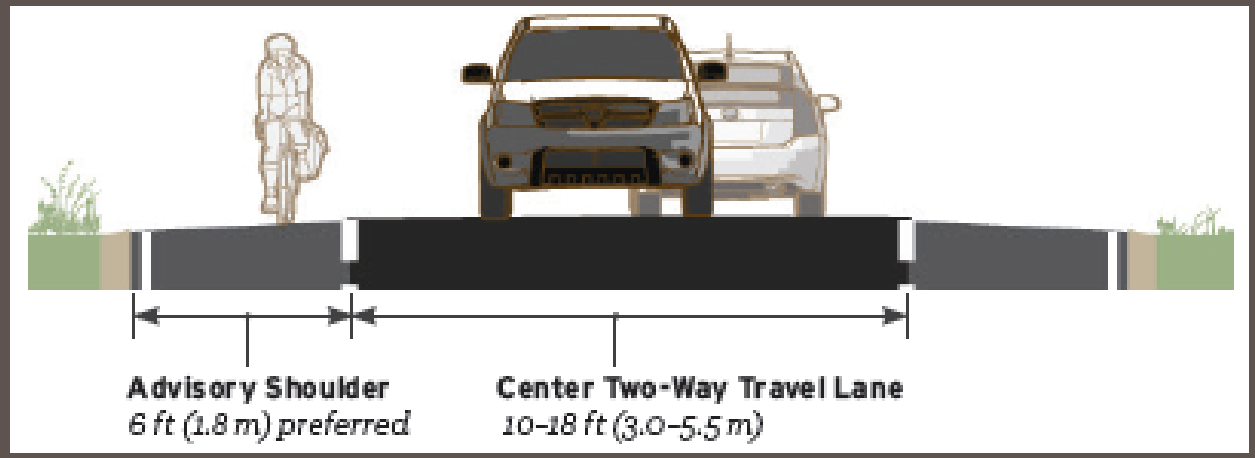
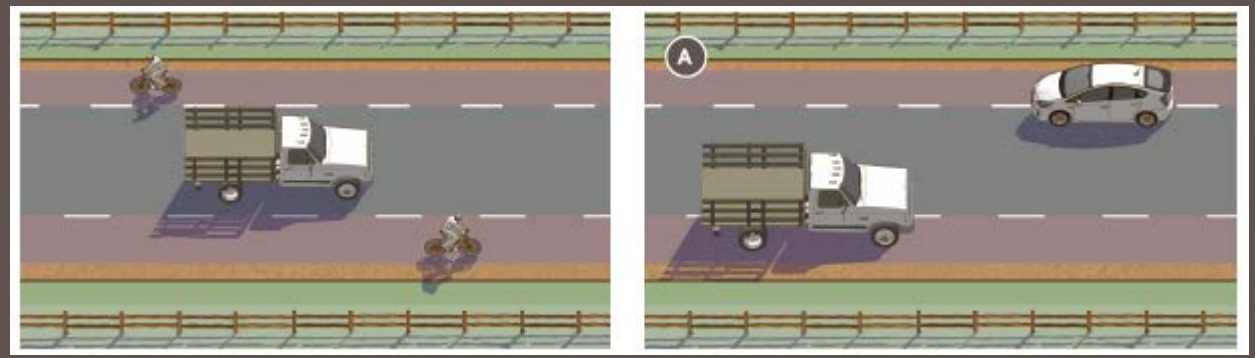
Advisory Shoulder

- *Establishes a shoulder on an otherwise too narrow road*
- *Delineated by pavement markings*
- *Colored pavement optional*
- *Must exit shoulder to overtake bicyclists*
- *Must enter shoulder when yielding to oncoming traffic*





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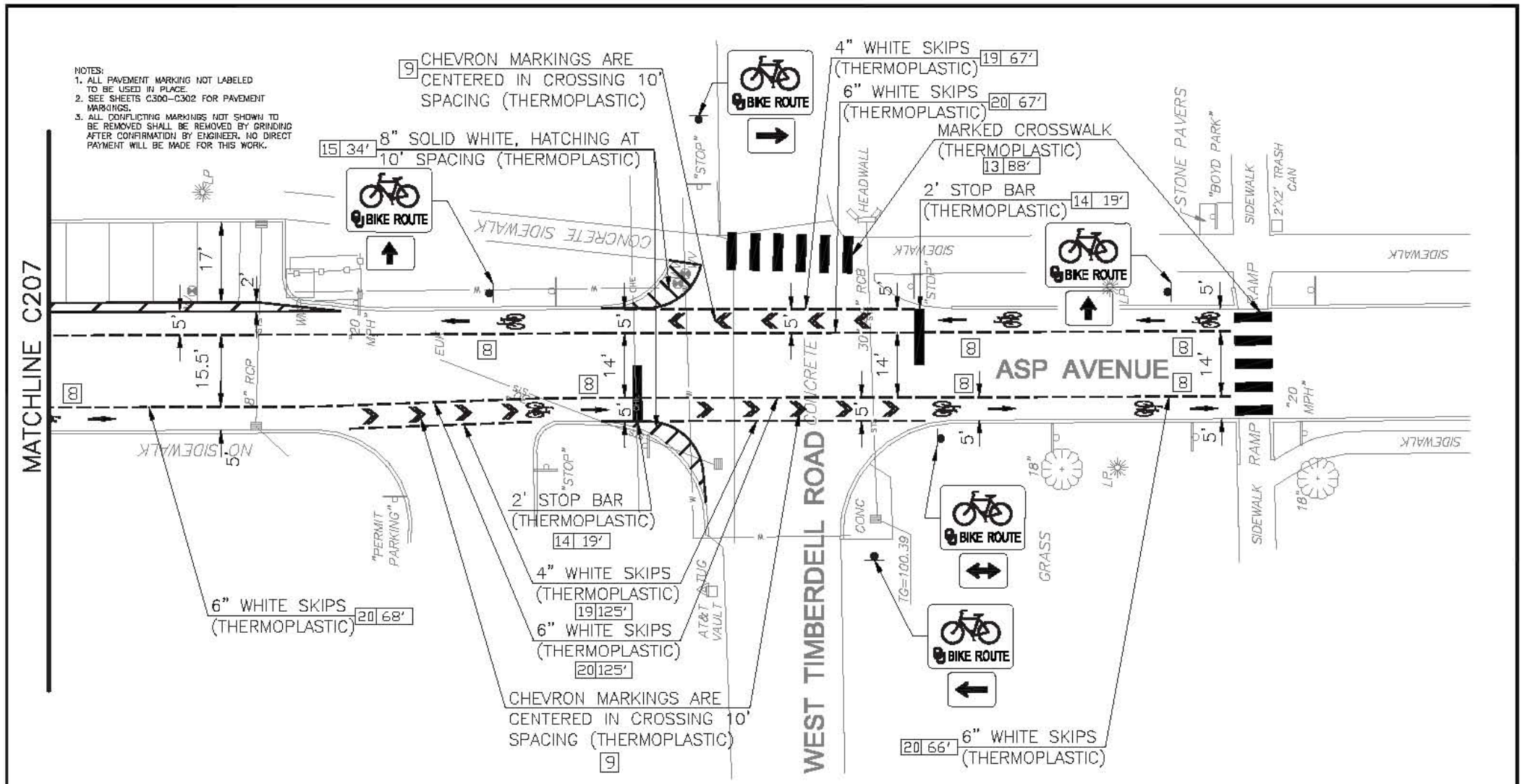
Norman, OK Pop. 118,000



1 PAVEMENT MARKING PLAN

PLAN

0' 10' 20' 40'

DES'GNED PW DRAWN JH
REVIEWED AZ
SCALE AS SHOWN
2014-106 PROJECT NO XXX DATE
2014-106 ASP OWG FILE

REVISIONS
NO DATE ITEM

alta PLANNING + DESIGN
9141 Swingley Ridge Parkway Suite 300 Chesterfield, MO 63017 p 314 962 8870
www.altaplanning.com

LICENSED PROFESSIONAL ENGINEER Alicia M. Zimmerman 27131 7/16/14

OU BIKEWAY
ASP AVENUE
NORMAN, OKLAHOMA

BID DRAWINGS

SHEET NO
C208
9 OF 9

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Norman, OK Pop. 118,000

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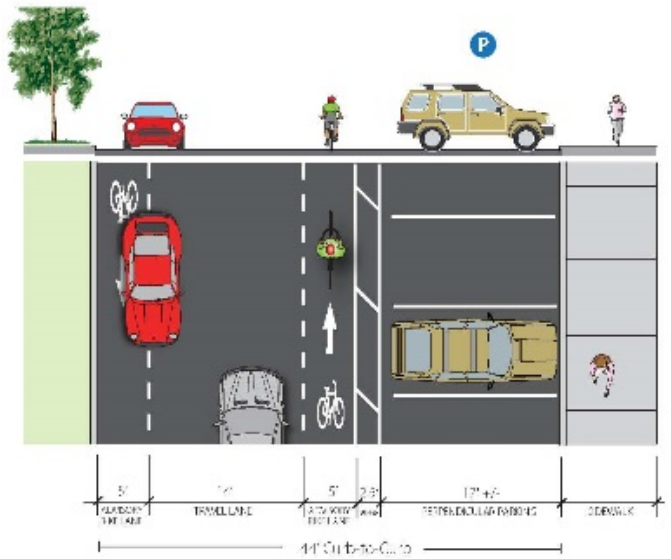

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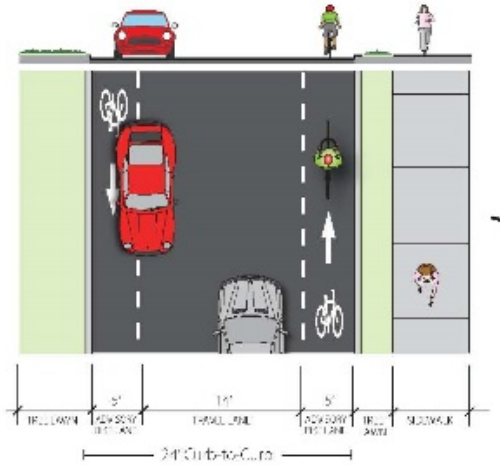
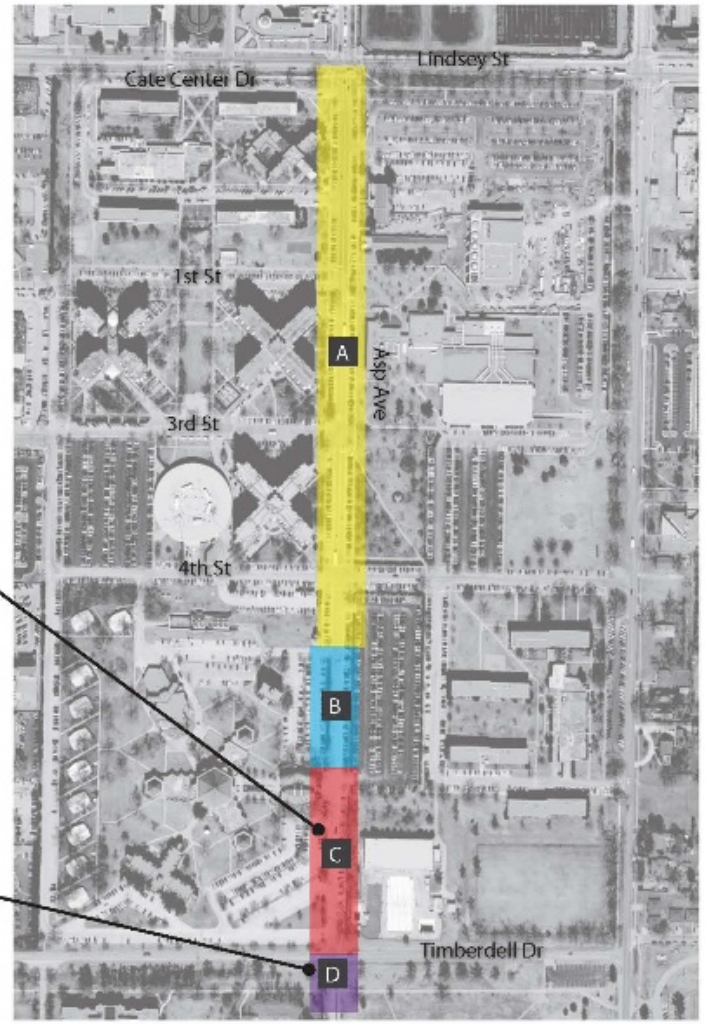


PROJECT LOCATION



ASP AVENUE: PROPOSED CROSS SECTIONS (2 of 2)

University of Oklahoma BMP Bikeway Implementation Phase I
Date: November 2012
Author: DM, Alta Planning + Design

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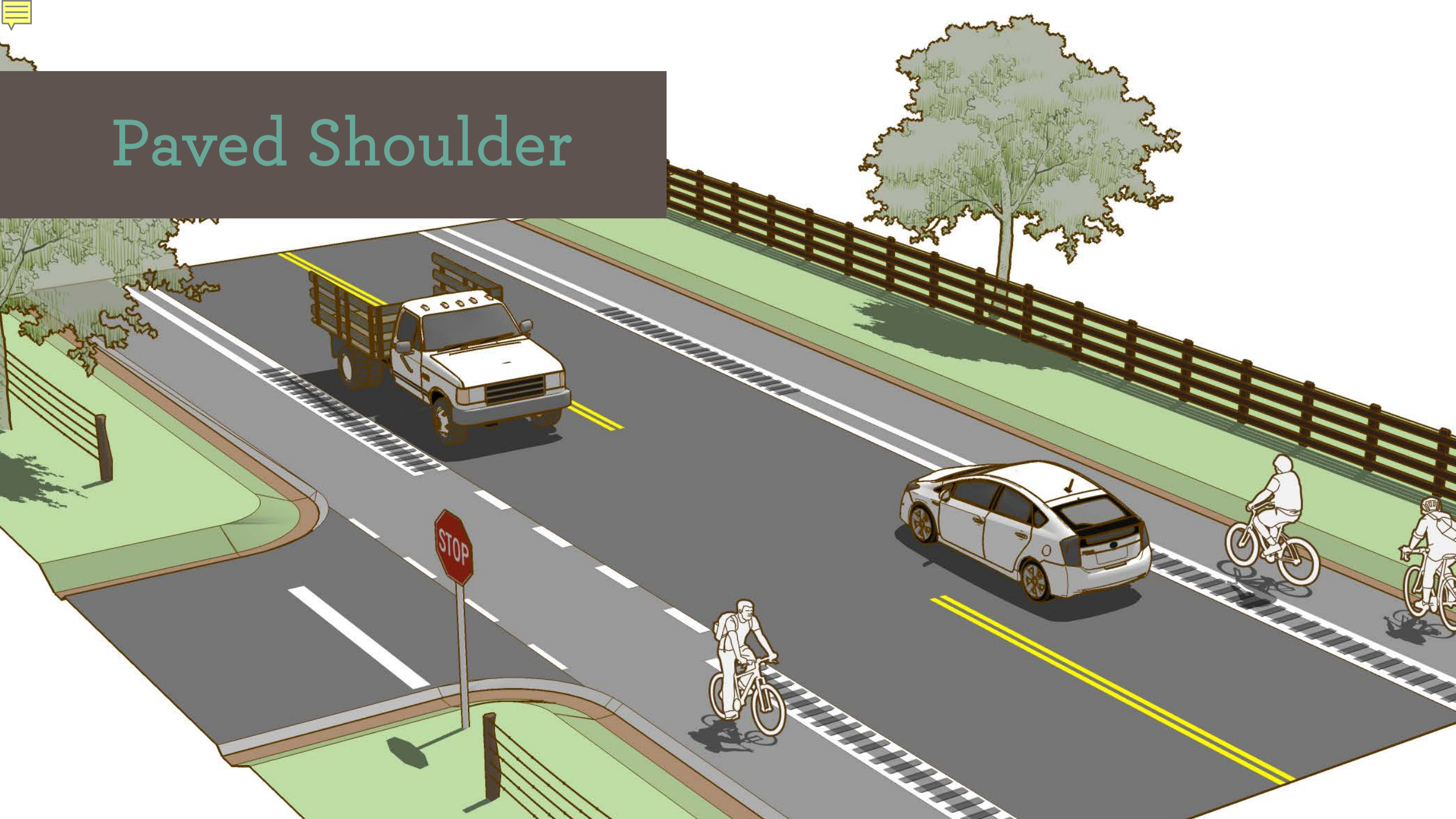
Norman, OK
Population 110,925
Google

Bloomington, IN

Population 82,575


Edina, MN
Population: 49,300

Paved Shoulder



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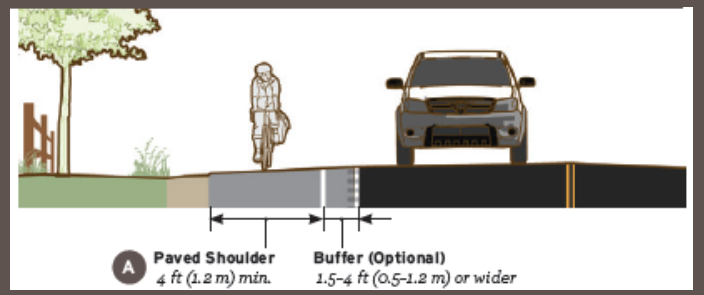
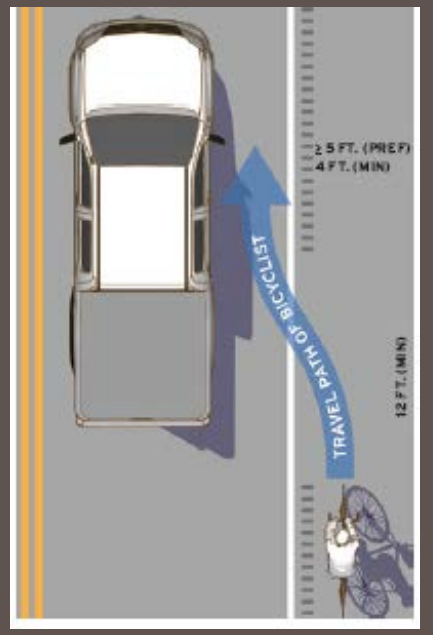
Paved Shoulder

Paved shoulders on the edge of roadways can be enhanced to serve as a functional space for bicyclists and pedestrians to travel in the absence of other facilities with more separation.

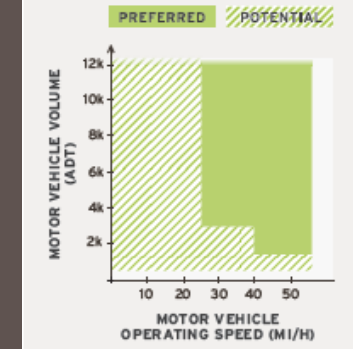




APPLICATION

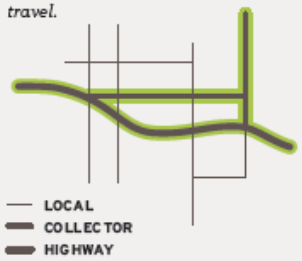
Speed and Volume

Appropriate on roads with moderate to high volumes and speeds and on roadways with a large amount of truck traffic. May function on multilane roads with heavy traffic but fails to provide a low-stress experience in this condition.



Network

Serves long-distance and regional travel.



Land Use

Appropriate outside and within built-up areas, near school zones and transit locations, and where there is expected pedestrian and bicycle activity. Walkable shoulders should be provided along both sides of county roads and highways routinely used by pedestrians.

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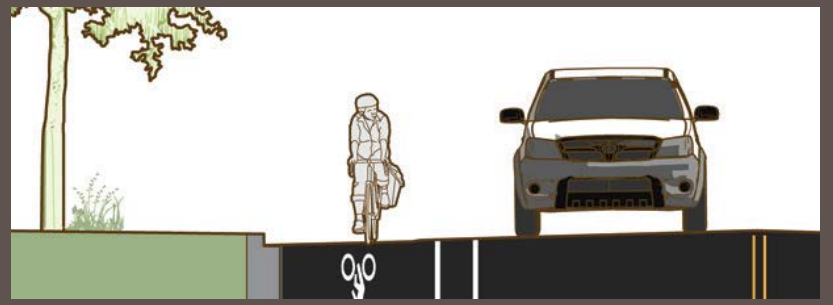
Lake St. Louis, MO Pop. 14,831

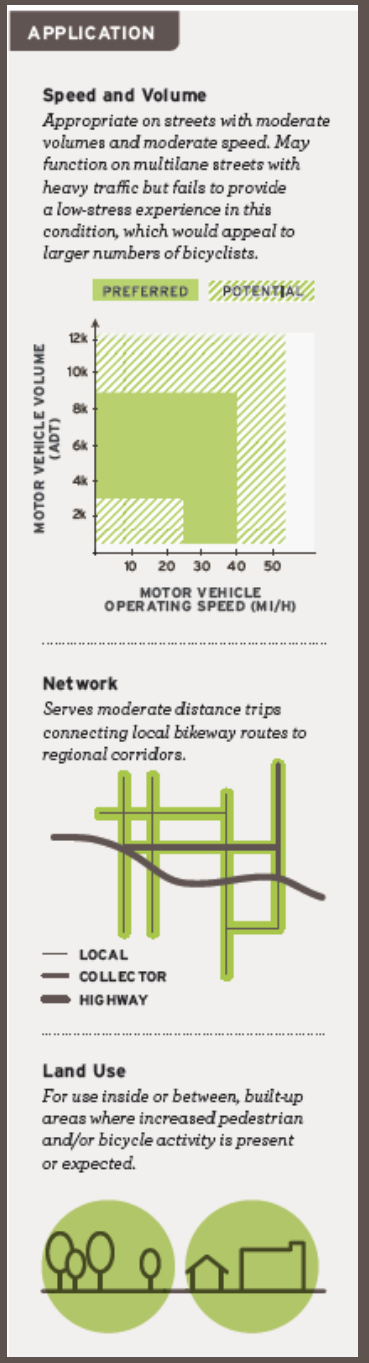
Rte. 100 - Wildwood, MO – Pop. 35,000

first look

Bike Lane

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and optional signs. A bike lane is located directly adjacent to motor vehicle travel lanes and follows the same direction as motor vehicle traffic.





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Old Rte. 66 in Wildwood, MO

Population: 35,000

first look

Fish Creek, WI

- Busy, seasonal STH corridor links most popular State Park to Downtown shopping district
- Previous study identifies potential for converting parking to on-street bike path

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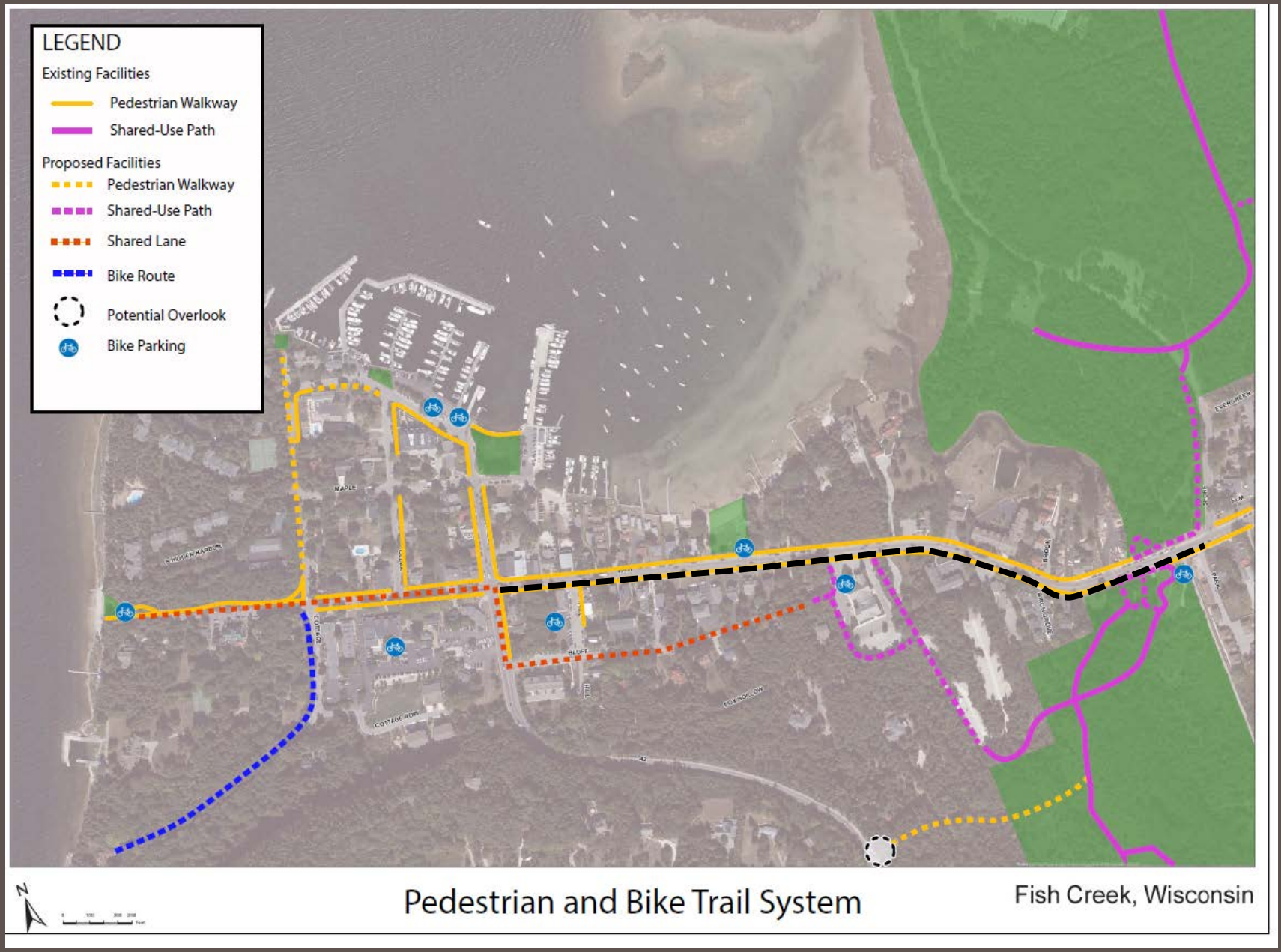
first look

Proposed Demonstration:

- Create a mixed facility loop
- Convert 1 parking lane to seasonal on-street bike lane (demonstration)



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Morgan Hill, CA

- 6-month pilot of road diet alternatives
- Temporary pedestrian space & buffered bike lane
- Feedback collected
- Evaluation report

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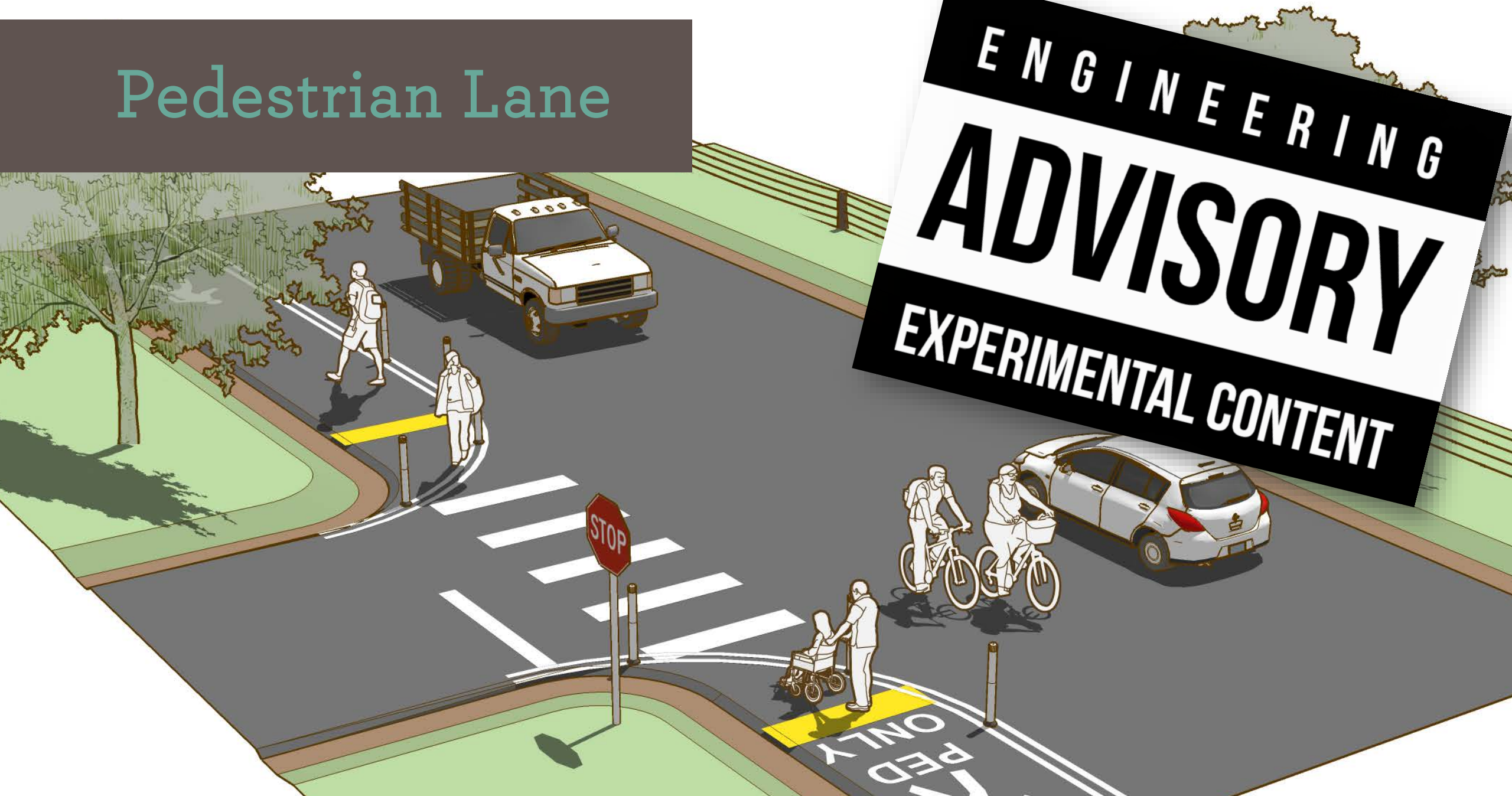
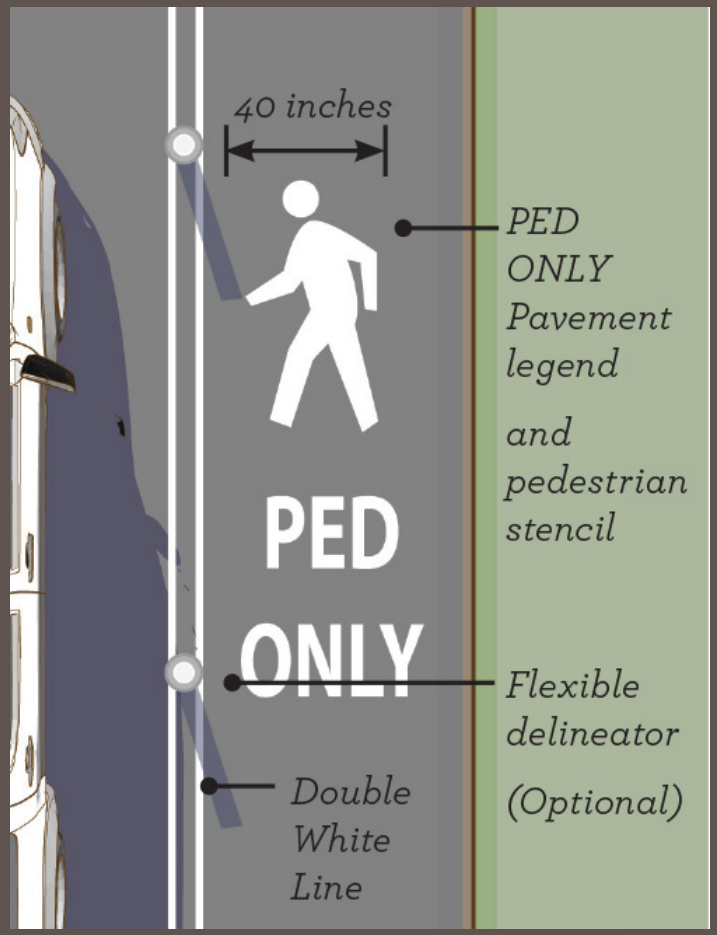
Pedestrian Lane



first look

Pedestrian Lane

*A **pedestrian lane** is an interim or temporary pedestrian facility that may be appropriate on roads with low to moderate speeds and volumes. The lane may be on one or both sides of the roadway and can fill gaps between important destinations in a community.*



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Pedestrian Lane

Pedestrian lanes provide interim or temporary pedestrian accommodation on roadways lacking sidewalks. They are not intended to be an alternative to sidewalks and often will fill short gaps between other higher quality facilities. As part of the planning process, agencies should explore issues and the potential challenges a pedestrian lane may face, including:

- Detectability by people with vision disabilities
- Undesired use by bicyclists
- Accessible cross-slope requirements
- Maintenance strategies, such as sweeping and snow removal

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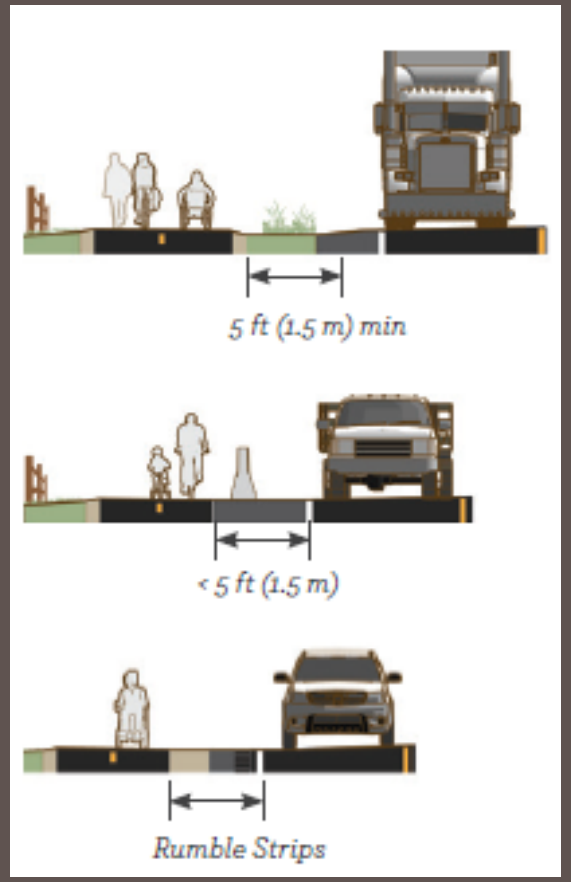
Detroit, OR

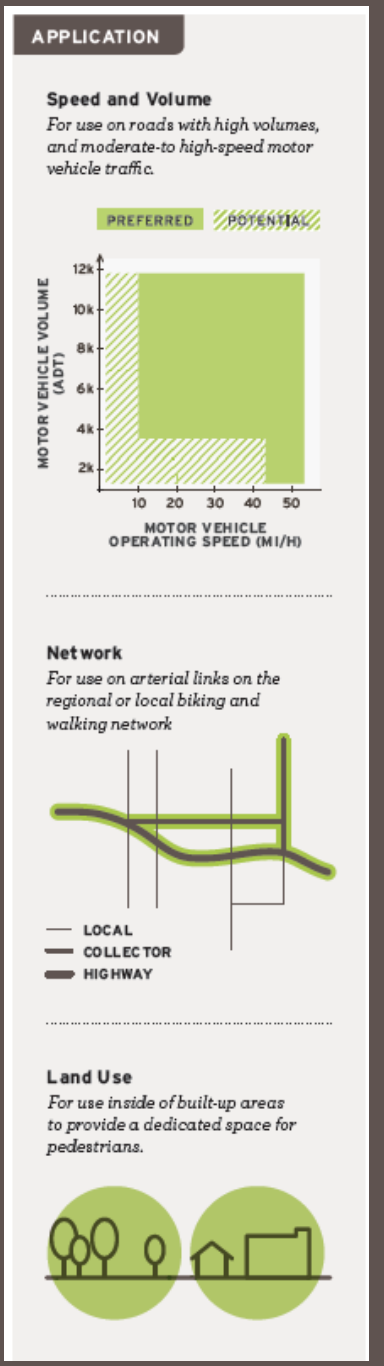
Population: 200

first look

Sidepath

A sidepath is a bidirectional shared use path located immediately adjacent and parallel to a roadway. Sidepaths can offer a high-quality experience for users of all ages and abilities as compared to on-roadway facilities in heavy traffic environments, allow for reduced roadway crossing distances, and maintain rural and small town community character.





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Town and Country, MO
Population: 10,975

South Lake Tahoe, CA

Population: 20,100

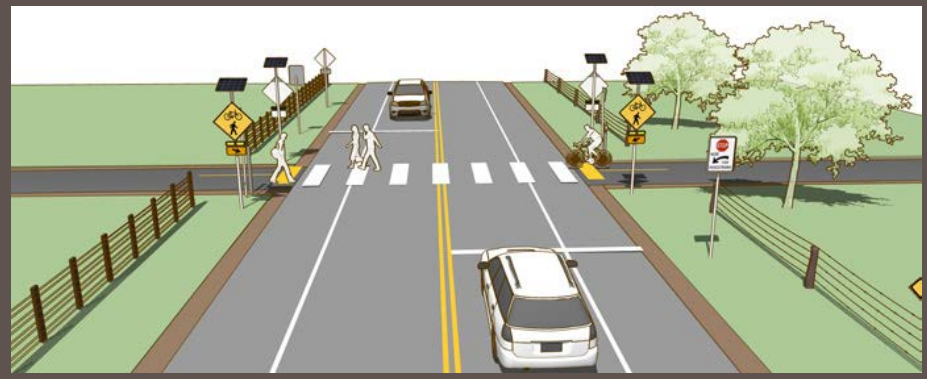
Photo by Tahoe Regional Planning Association (TRPA)

first look

Shared Use Path

A shared use path provides a travel area separate from motorized traffic for bicyclists, pedestrians, skaters, wheelchair users, joggers, and other users. Shared use paths can provide a low-stress experience for a variety of users using the network for transportation or recreation.

Shared Use Path Guidance



Street Crossing Guidance

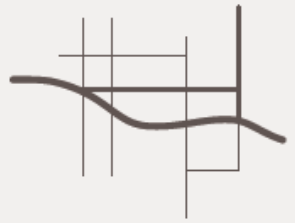
APPLICATION

Speed and Volume

Paths operating in independent corridors are fully separated from traffic. Facility provision is based on opportunity and connectivity rather than roadway context. In some cases, an independent corridor may offer similar connectivity and access to destinations as a nearby roadway.

Network

Serves connections independently of the street network. May function as a network alternative road and highway connections.



Land Use

Generally appropriate outside of built-up areas, and also as a corridor connection within built-up areas.

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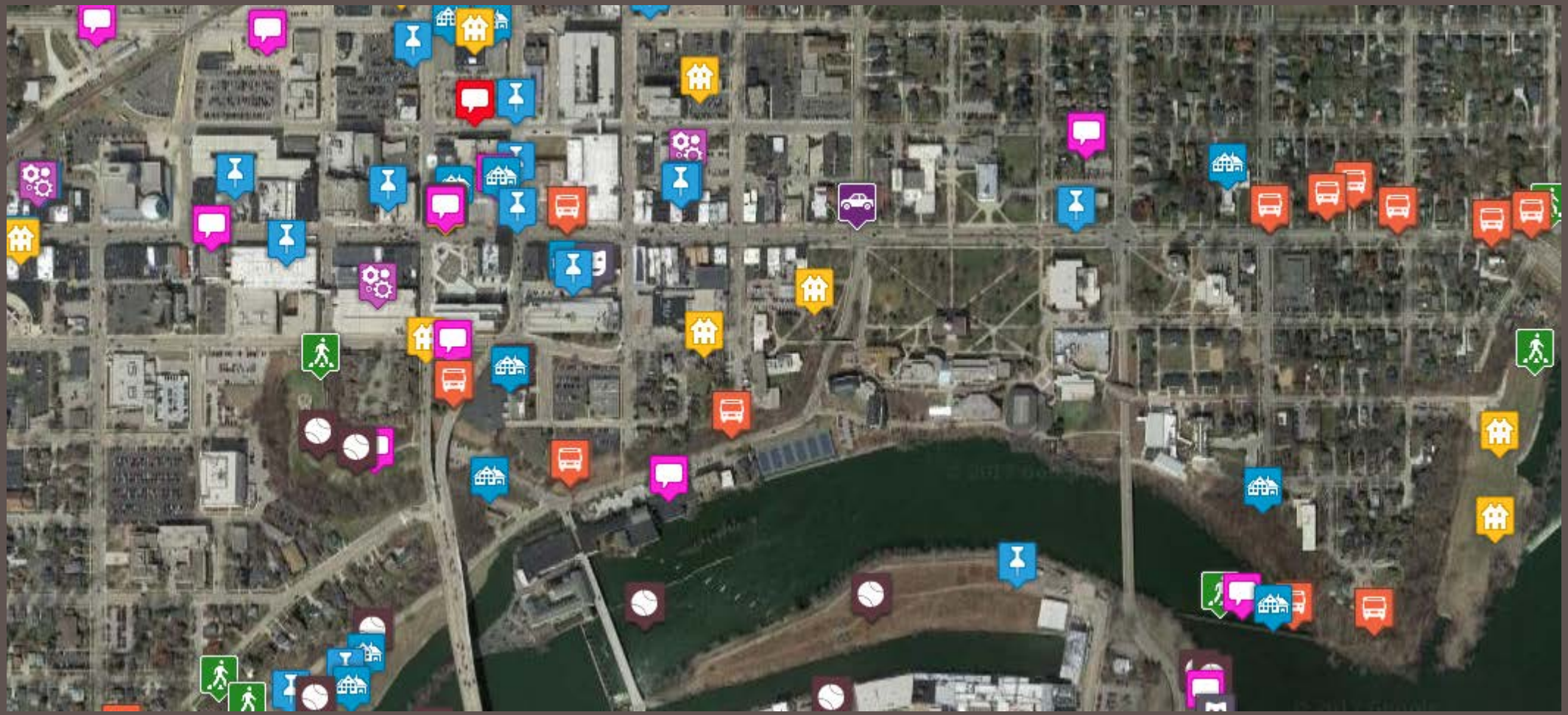
Appleton Trails Master Plan

Appleton, WI



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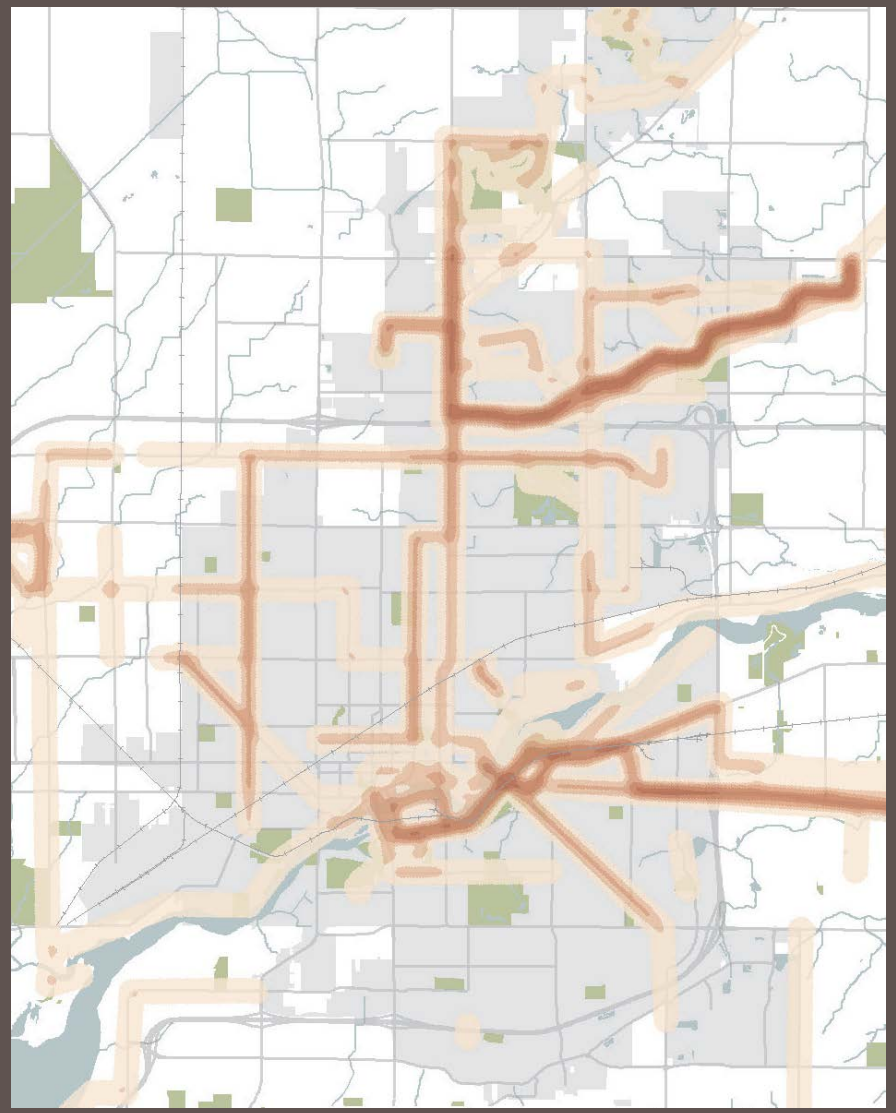
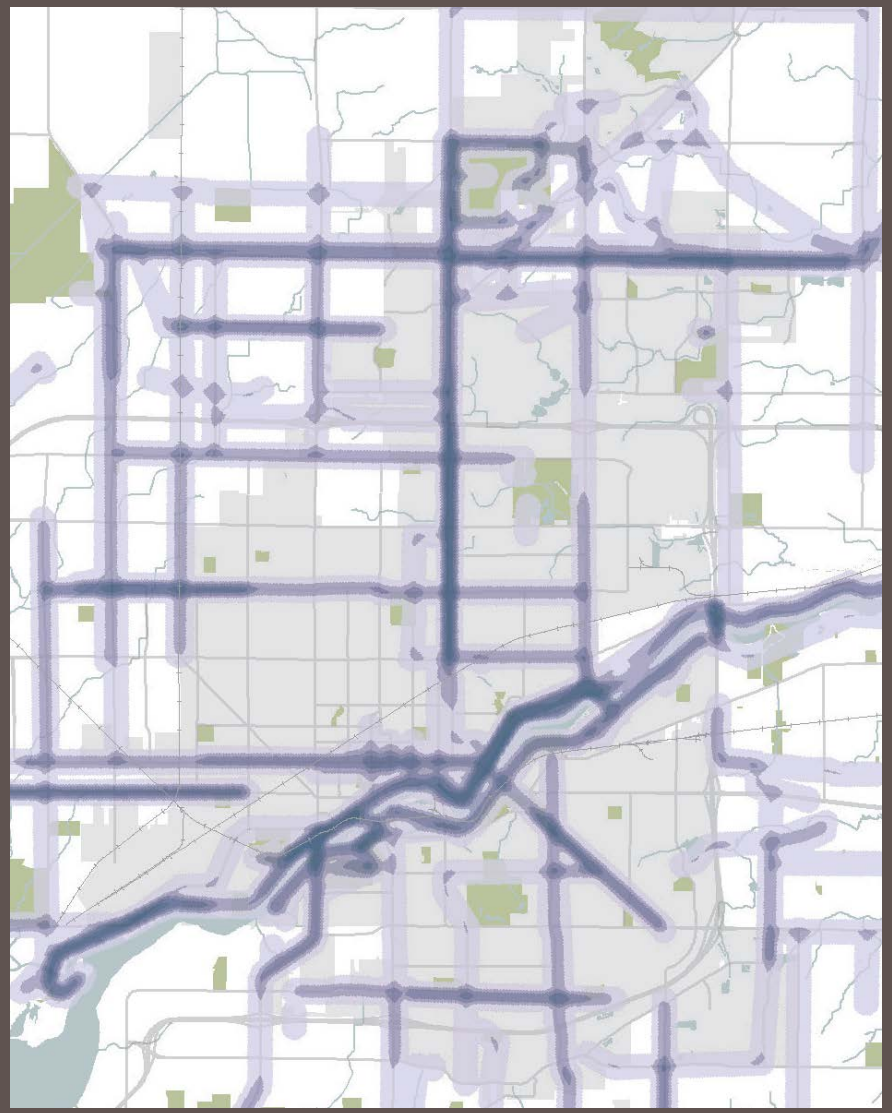
Appleton Trails Master Plan

Appleton, WI





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Appleton Trails Master Plan

Appleton, WI

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Shared Use Path

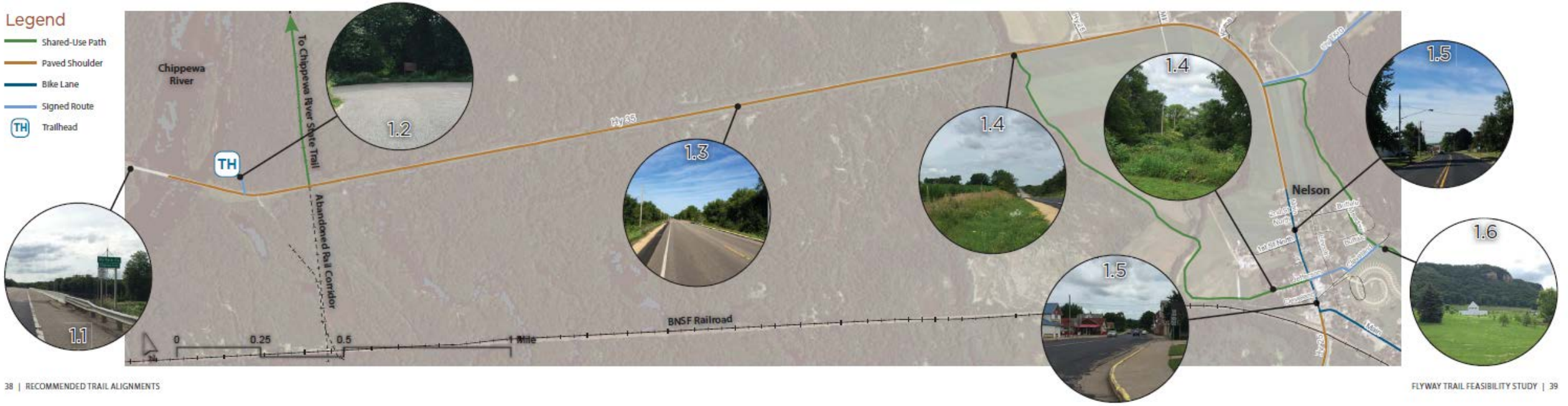
Marion, IA

Population: 36,000

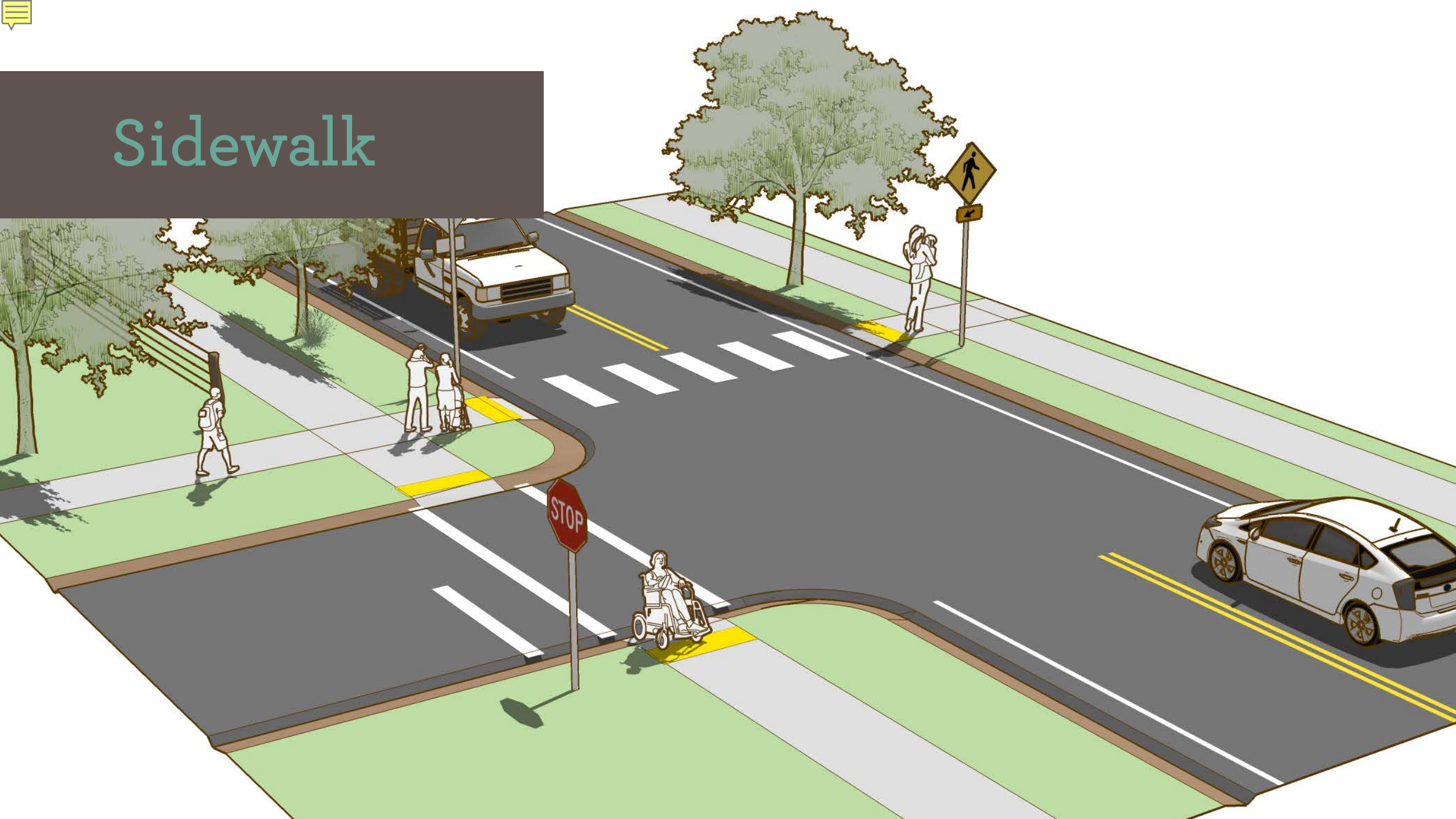
first look

Flyway Trail Feasibility Study
Buffalo County, WI

- Crowdfunded study
- Part of Mississippi River Trail (MRT)
- Currently mostly on-street
- Draft alignment, facility type
- Cost estimates
- Funding and administrative structure for implementation



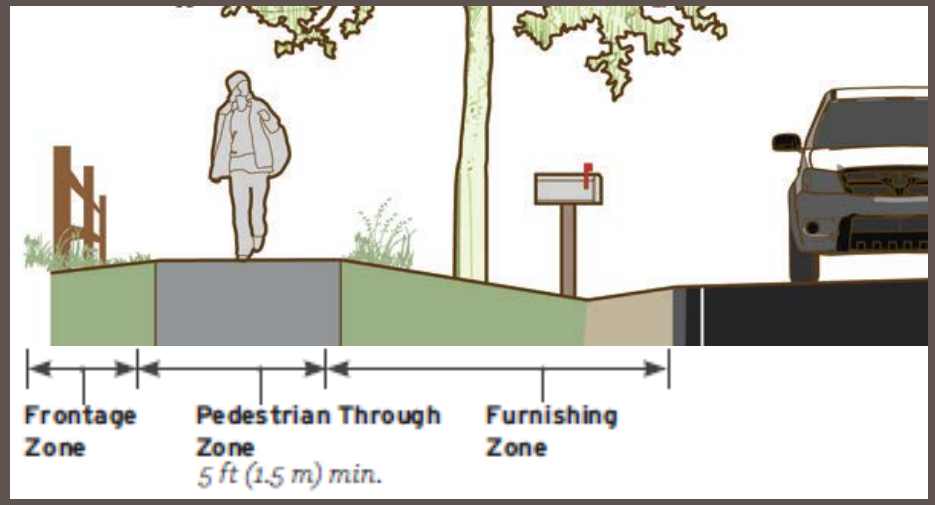
Sidewalk



first look

Sidewalk

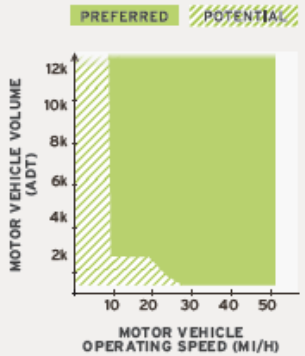
Sidewalks provide dedicated space intended for use by pedestrians that is safe, comfortable, and accessible to all. Sidewalks are physically separated from the roadway by a curb or unpaved buffer space.



APPLICATION

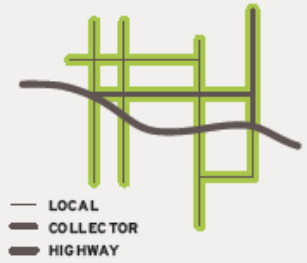
Speed and Volume

Sidewalks are recommended on all but the most low-speed and low-volume roadways.



Network

Sidewalks are appropriate on all types of roadways where pedestrian activity is likely.



Land Use

Appropriate inside of built-up areas. May serve short distance travel between built-up areas, e.g., along or near highways in rural areas near pedestrian-generating development, such as neighborhoods, schools, and businesses.

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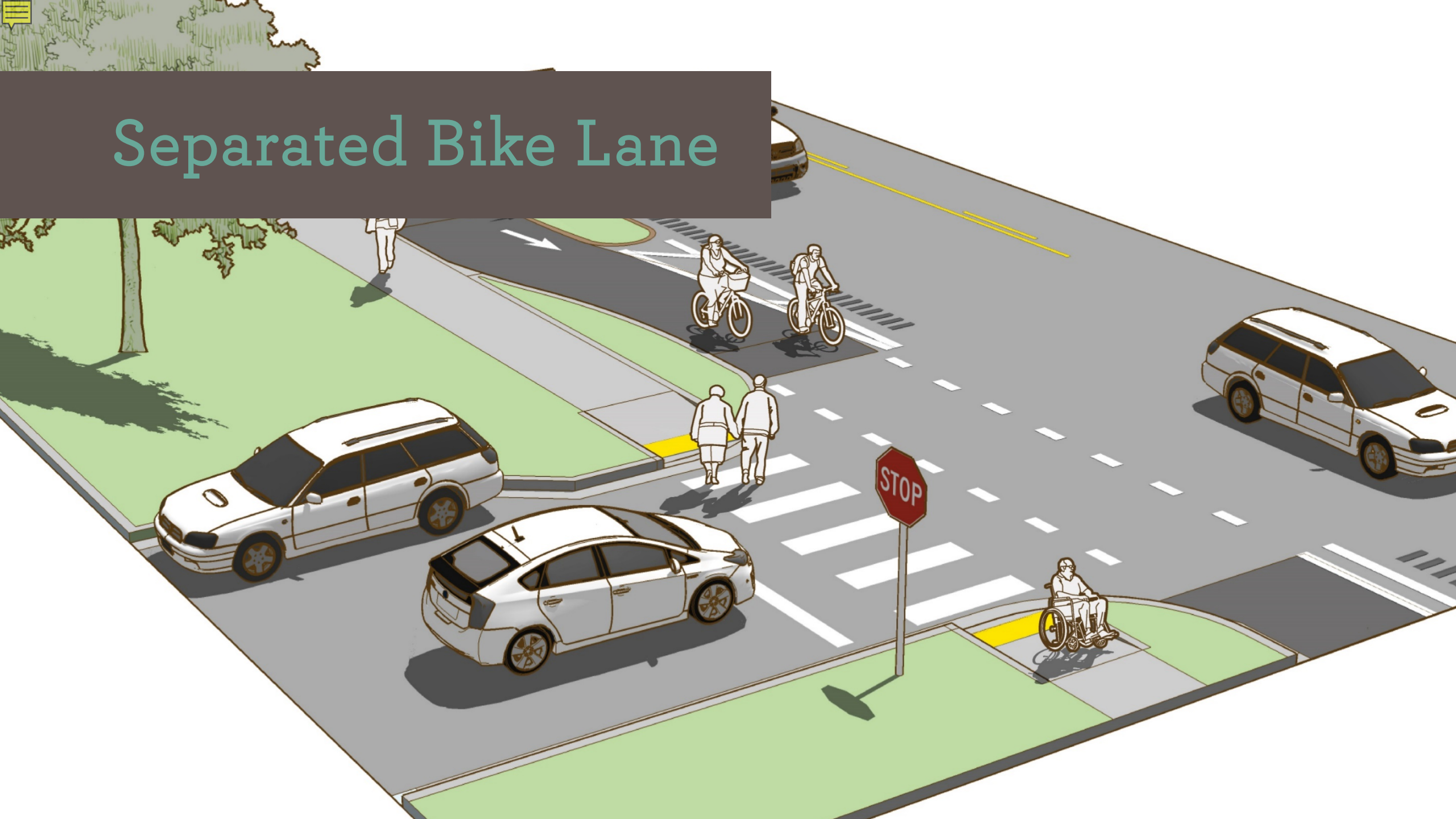
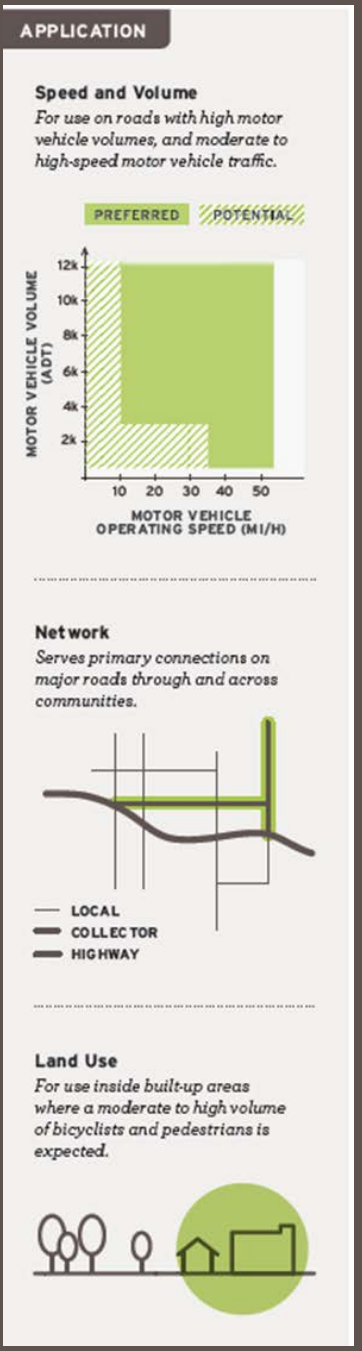
Separated Bike Lane



first look

Separated Bike Lane

A separated bike lane is a facility for exclusive use by bicyclists that is located within or directly adjacent to the roadway and is physically separated from motor vehicle traffic with a vertical element.



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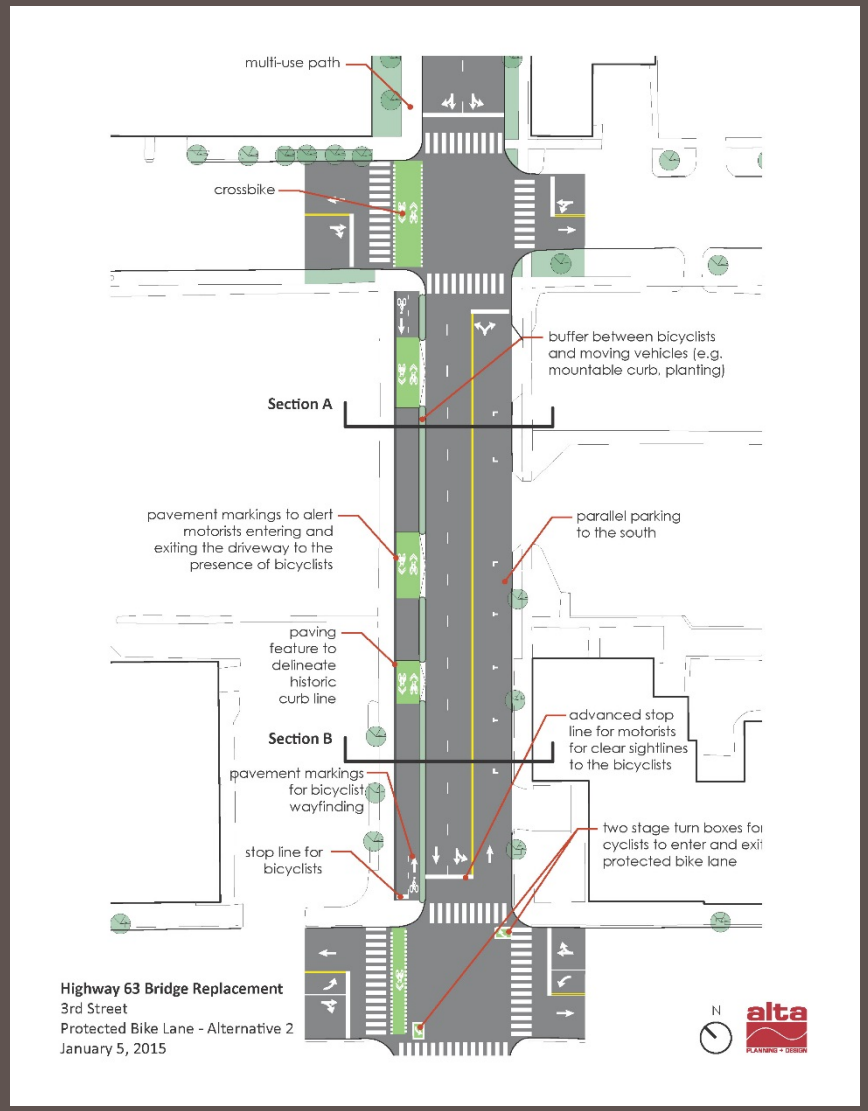
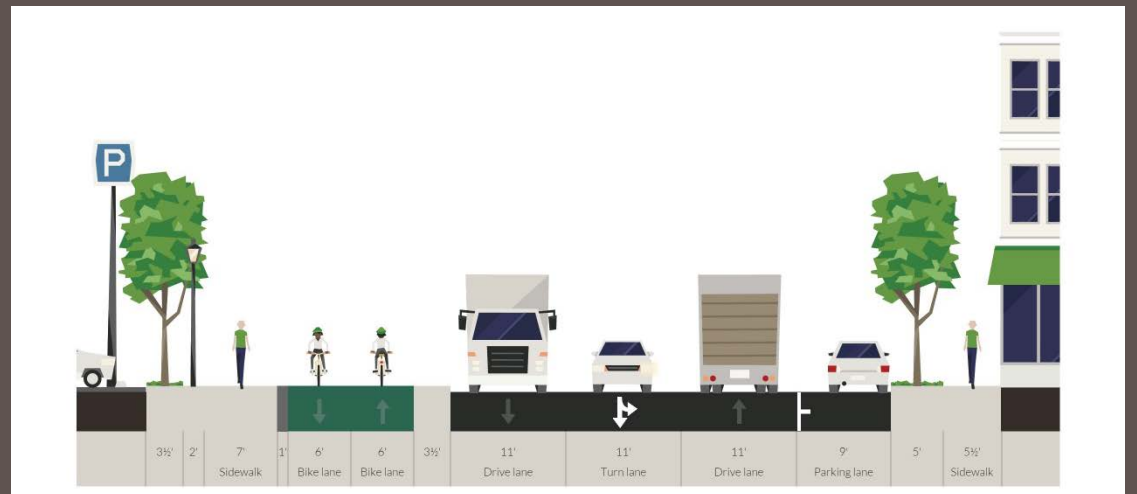
West 3rd Street Protected Bike Lane

Red Wing, MN



Section A



Section B

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West 3rd Street Protected Bike Lane

Red Wing, MN

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Jackson Hole, WY

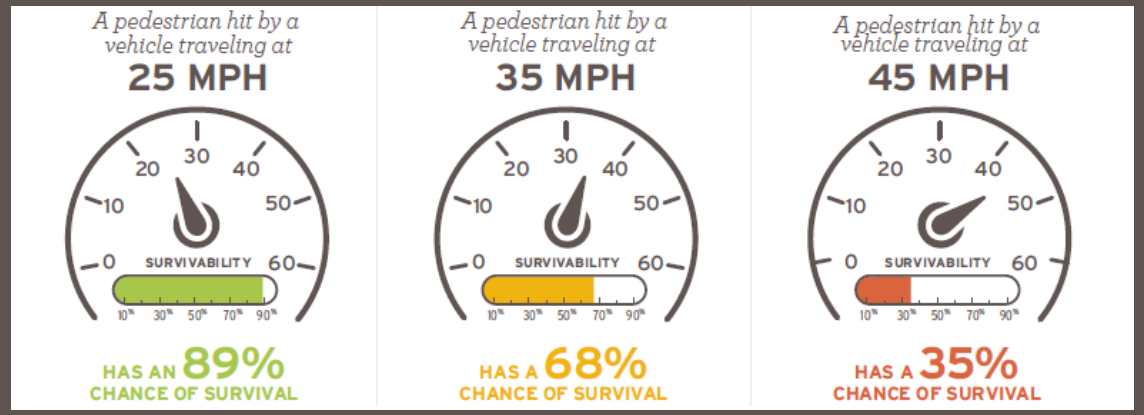
Population: 9,600

Network Opportunities

- Speed Management
- Pedestrian Lane
- School Connections
- Multimodal Main Street
- Bridges
- Access to Public Lands

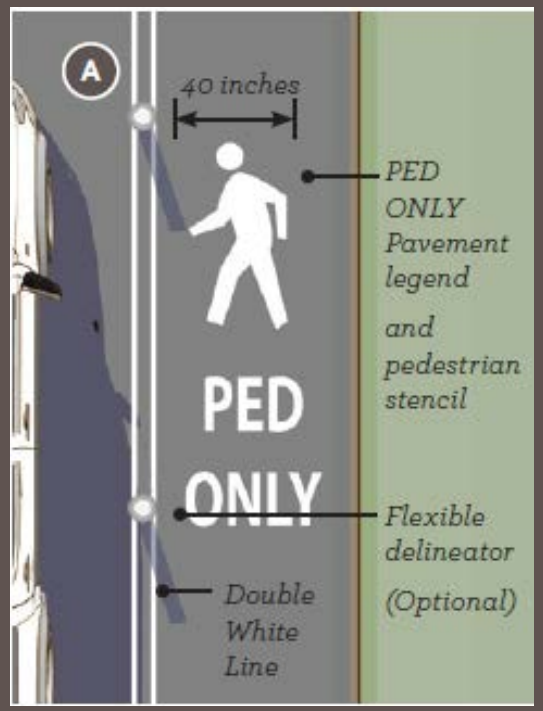
first look

Speed Management



Pedestrian Lanes

- Interim or temporary pedestrian accommodation on roadways lacking sidewalks.
- Not intended to be an alternative to sidewalks and often will fill short gaps between other higher quality facilities.
- Explore issues and the potential challenges a pedestrian lane may face.



Clayton, MO
Pop.13,000

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School Connections

- Schools are key destinations in communities of all sizes.
- This is particularly true in small and rural places, where they often play a prominent role in the community as centers of activity for people of all ages and abilities.
- It is essential to provide separation from motorized traffic, controlled crossings, and wayfinding.

Opportunity for activity

Design for children

Centers of community

Multimodal network

School location

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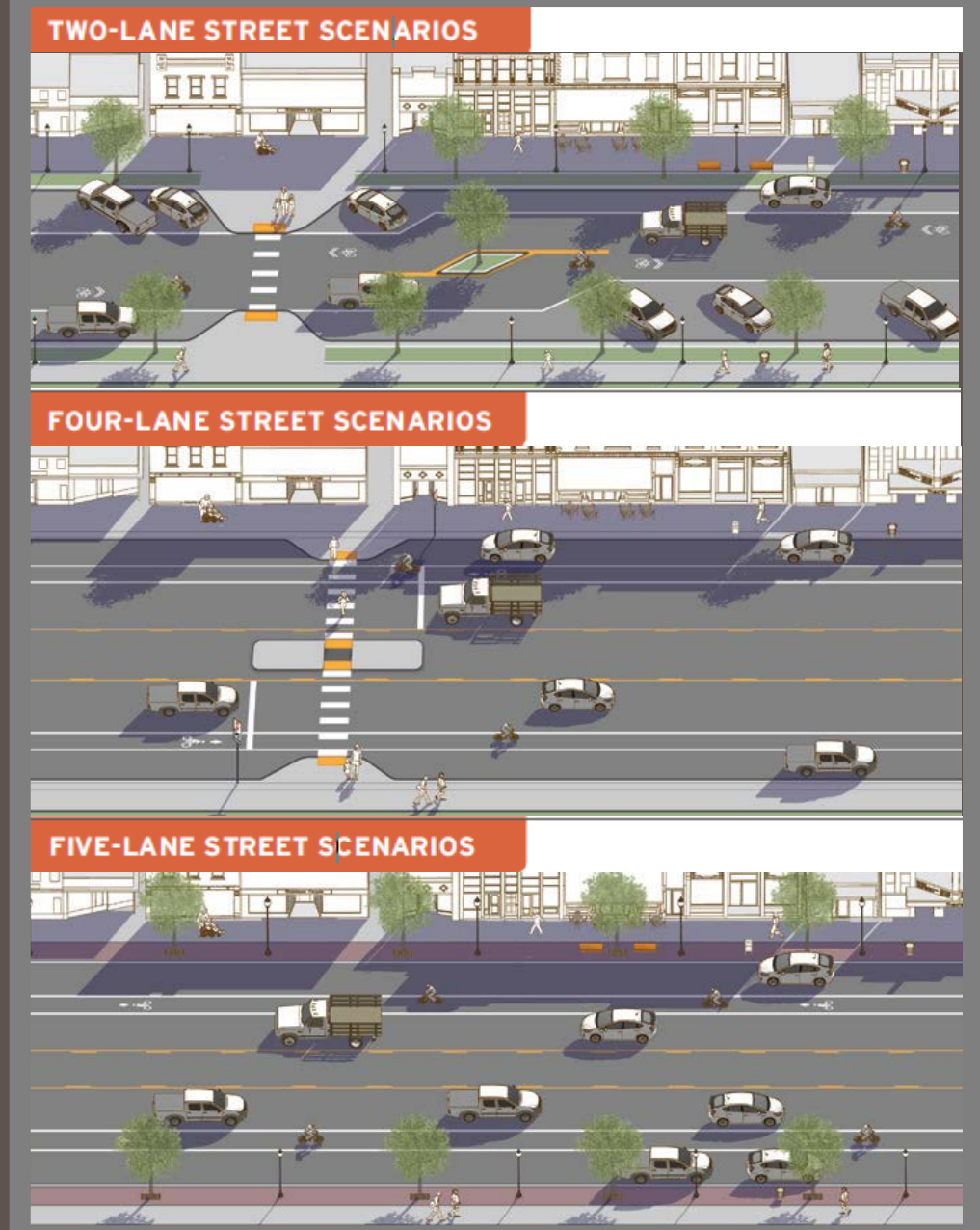
Multimodal Main Streets



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Bridges

- Separation
- Prioritize
- Awareness
- Continuity
- Future Proof
- Flexibility

Decorah, IA
Population: 8,127

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Access to Public Lands

- Scenic places, sometimes unique need for wayfinding
- Opportunities for more diverse funding sources:
  - Federal Lands Transportation Program (FLTP)
  - Federal Lands Access Program (FLAP)

Colorado Riverway Path near Moab, UT

Population: 5,046

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Let's Get Started!

- Read & review it, it's free online
  Share it with your colleagues on LinkedIn
- Share with local elected officials
  Attend or host a training (ask us how!)
- Visit or call municipalities that have done projects recently
- Prepare/update a bicycle and pedestrian plan

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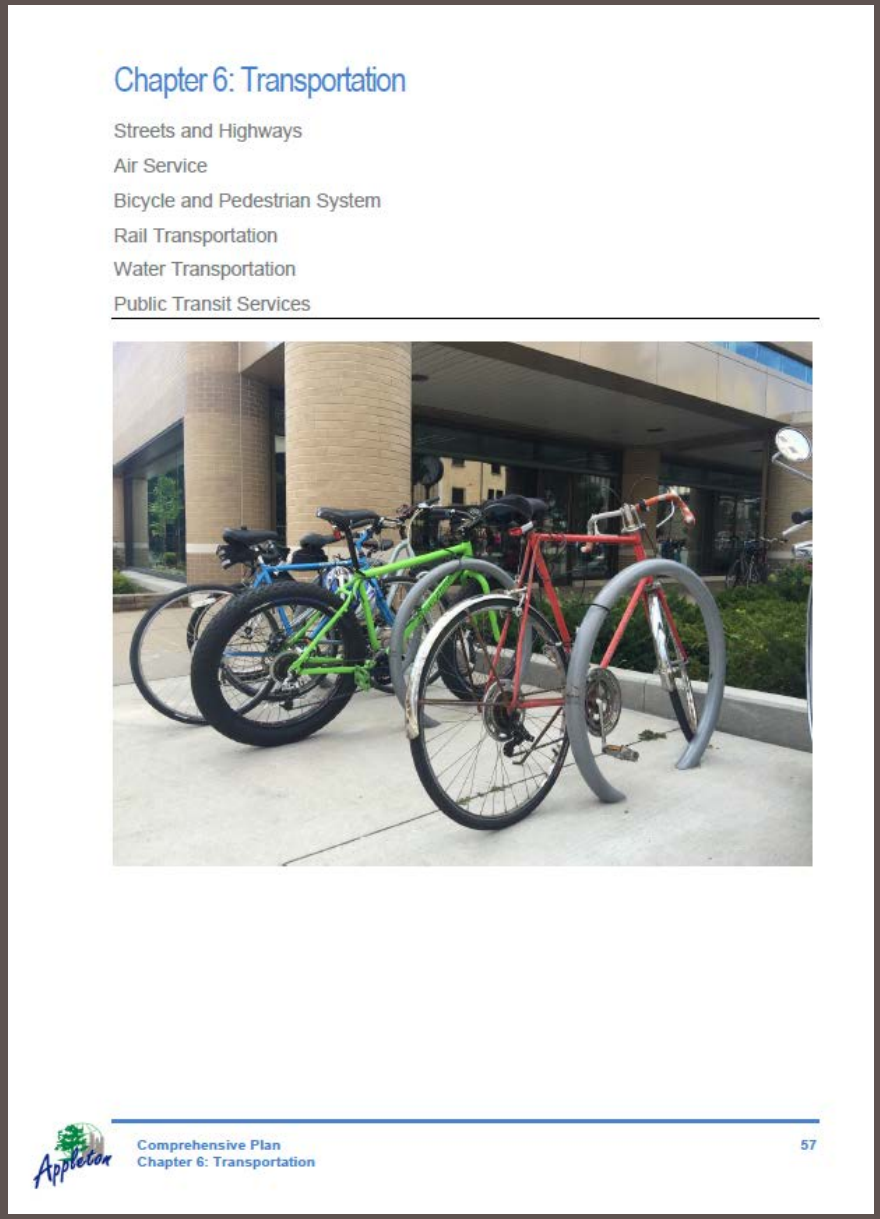
Let's Get Started!

- Organize a demonstration project
- Integrate active transportation planning goals and objectives into your comprehensive plan
- Update, revisit, or develop a Complete Streets policy (Planning Advisory Service Report 559 Complete Streets: Best Policy and Implementation Practices)



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How to Get the Guide

- PDF copy on FHWA publications page
- Hard copies available soon

- Interactive online guide at *ruraldesignguide.com*

- Contact Alta Planning + Design for more information

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Thank you. Questions?

Andrew Dane, AICP, NCI, ENV SP
Senior Planner
adane@sehinc.com
920.585.3593

Tim Gustafson, AICP
Senior Associate
timgustafson@altaplanning.com
312.265.0628

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