Small Town and Rural Multimodal Networks

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Outline

• Brief History of Design Flexibility
• Report Content and Facility Types
• Selected Treatments:
  • Advisory Shoulder
  • Pedestrian Lane
  • Sidepath
“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 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.**”
Recent Design Guides Focused on Urban Areas

- ITE Walkable Thoroughfares (2010)
Small Town and Rural Multimodal Networks (2016)

The multimodal design guidelines for the rest of us.
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

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Multimodal Facilities

- Application
- Benefits
- Case Studies
- Guidance
  - Geometric Design
  - Markings
  - Signs
  - Intersection treatment
  - Implementation
  - Accessibility
Mixed Traffic

Visually Separated

Physically Separated
**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.

![Graph showing motor vehicle volume and operating speed](image)

- Local
- Collector
- Highway

**Legend**
- Preferred
- Potential

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**Motor Vehicle Volume (ADT)**

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**Motor Vehicle Operating Speed (mi/h)**

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Case Studies

Real world examples for all facilities:

- Project background
- Design elements
- Role in the network
- Project funding
Featured Facilities

- Advisory Shoulder
- Pedestrian Lane
- Sidepath*

*While not a new facility, design guidance in this publication addresses the transition to bike lanes.
Advisory Shoulder
Advisory Shoulder

Engineering Advisory Experimental Content
Advisory Shoulders are a new treatment type in the United States and no performance data has yet been collected to compare to a substantial body of international experience.

In order to install advisory shoulders, an approved Request to Experiment is required as detailed in Section 1A.10 of the MUTCD. FHWA is also accepting requests for experimentation with a
Participating in experimentation makes an important contribution to roadway safety for all users.

Advisory Shoulder

- Yield to Bicyclists
- Two-way Center Travel Lane
- Contrasting Paving Materials
- Permissive broken lane line
Advisory Shoulder

- Establishes a shoulder on an otherwise too narrow road
- Delineated by pavement markings
- Colored pavement optional and mostly not done in US
- Driver must exit shoulder to overtake bicyclists
- Driver must enter shoulder to yield to oncoming traffic
*Not a standard MUTCD sign*
Hanover, NH
Population: 11,000
Hanover, NH
Population: 11,000
Bloomington, IN
Population 82,575
Edina, MN
Population: 49,300
Boulder, CO
Population: 108,090
Advisory Shoulder

02 CASE STUDIES

To support this white paper, authors conducted a survey on 12 Advisory Bike Lane installations. Those installations are:

- Alexandria, VA: Wide Bicycle Lanes
- Bloomington, MN: East 7th Street
- Boulder, CO: Pearl Street
- Burlington, VT: Higher Avenue
- Cambridge, MA: Sargent and Scott Avenues
- Cambridge, MA: Leverett Avenue
- Danville, CA: Broad Street
- Farmington, CT: East Main Street
- Glendale, CA: Woodward Avenue
- Haverhill, MA: South Main Street
- Hyannis, MA: East 16th Street
- Someset, OH: Someset Street East
- Sonoma, CA: Vista Street

Authors consulted representatives of the local agency responsible for each facility and interviewed staff about the installation. Areas of interest were public support, implementation, design, and evaluation of the facility.

Advisory Bike Lanes in North America

LESSEONS LEARNED

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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
- Bicyclists may want to use facility
- Accessible cross-slope requirements
- Maintenance strategies, such as sweeping and snow removal
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.
Detroit, OR
Population: 200
Teton Village, WY
Population: 330
Sidepath

Unpaved Separation

Wide Separation at Intersection

High Visibility Crosswalk

Minimized exposure
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.
Sidepath
South Lake Tahoe, CA
Population: 20,100

Photo by Tahoe Regional Planning Association (TRPA)
Guide Availability
For printing and online reference
PDF Download and web access:
Publication No: FHWA-HEP-17-024
www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/
Thank You

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