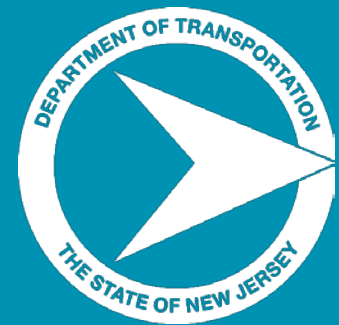




State of New Jersey Complete Streets Design Guide



Outline

- » Overview of Guide
- » Bicycle Facility Selection Guidelines
- » Success Stories
 - Local
 - County
 - Regional



What is it?

NJ Complete Streets Design Guide

This guide provides planning and design guidelines to support policy advancement and implementation of Complete Streets in New Jersey.

What is it?

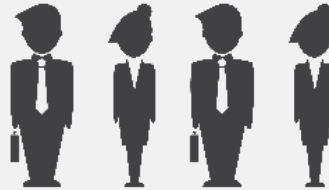
Continuation of NJDOT Complete Streets Resources

- » Making Complete Streets a Reality: A Guide to Policy Development
- » A Guide to Creating a Complete Streets Implementation Plan
- » New Jersey Complete Streets Design Guide

Who is it for?



NJDOT
Staff



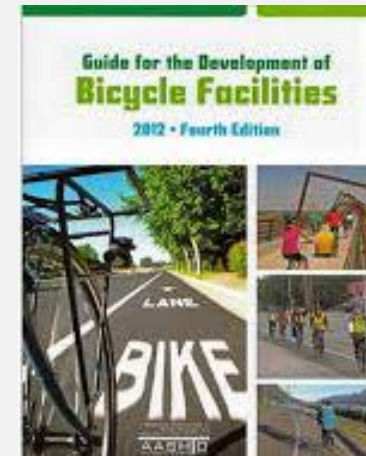
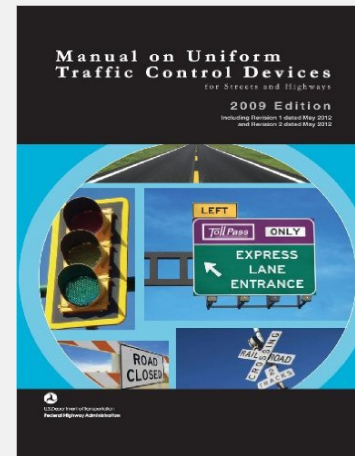
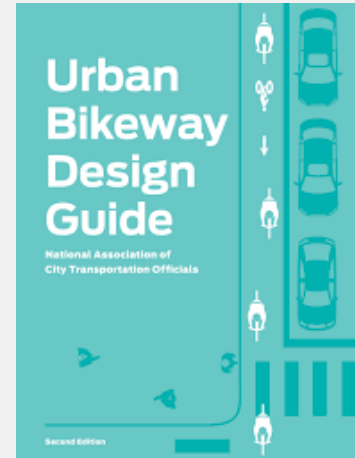
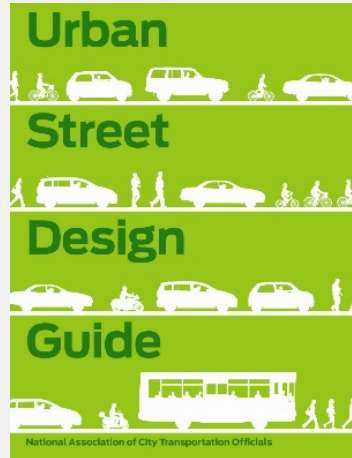
Local Planners,
Engineers,
Developers, Design
Professionals



Community Groups

Compilation of common best practices

- NACTO
- FHWA
- AASHTO
- ITE
- MUTCD
- Other States and Cities



Navigating the Guide



Information Box

Supplemental information relating to the primary topic



Design Standard

In-text call-out for quantitative design standard



Design Guidance

Quantitative and qualitative guidance for Complete Streets designs



ADA Accessibility

Guidance on accessible design standards

Sidewalk Widths

ADA standards specify a minimum 5-foot clear path width to accommodate wheelchair passage and other. In addition to providing a minimum accessible path, the minimum width also creates a more comfortable environment for pedestrians to walk side-by-side and pass each other, and for families with strollers.

The primary objective in designing sidewalks is to provide continuous, safe, and accessible pathways for pedestrians. Sidewalks should be designed to follow as much as possible the natural path of travel. In some cases, it is more desirable to a sidewalk to divert from the path of travel to provide adequate width to a greater degree of separation between the sidewalk and the roadway.

Design Guidance

Intersection Facilities

Intersection facilities for complete streets should be designed to provide a safe and comfortable environment for all users. The design should consider the needs of all users, including pedestrians, bicyclists, and motorists. The design should also consider the needs of vulnerable users, such as children, the elderly, and people with disabilities. The design should be based on the following principles:

- Provide a safe and comfortable environment for all users.
- Provide a clear and unobstructed path for pedestrians.
- Provide a safe and comfortable environment for bicyclists.
- Provide a safe and comfortable environment for motorists.
- Provide a safe and comfortable environment for vulnerable users.

Cost

One of the biggest hurdles to implementing Complete Streets is the cost. There are a variety of ways to address this challenge, including:

- Prioritizing projects that have the highest potential for cost savings.
- Seeking out funding sources, such as grants and bonds.
- Implementing cost-saving measures, such as using local materials and labor.

Safety vs. Speed

Many studies have shown that slower vehicle speeds result in fewer and less severe crashes. This is a key factor in determining the appropriate speed limit for a road. The design should be based on the following principles:

- Provide a safe and comfortable environment for all users.
- Provide a clear and unobstructed path for pedestrians.
- Provide a safe and comfortable environment for bicyclists.
- Provide a safe and comfortable environment for motorists.
- Provide a safe and comfortable environment for vulnerable users.

Sample Spread

Bus Stops

Bus stops must be designed with a sign and accessible to all users, including those with limited mobility. Many people with disabilities may prefer to use bus stop facilities, but a small percentage may not. It is important to design bus stops to be accessible to all users, including those with limited mobility. The design should be based on the following principles:

- Provide a safe and comfortable environment for all users.
- Provide a clear and unobstructed path for pedestrians.
- Provide a safe and comfortable environment for bicyclists.
- Provide a safe and comfortable environment for motorists.
- Provide a safe and comfortable environment for vulnerable users.

Further Guidance

- [American Planning Institute \(API\)](#)
- [American Planning Institute \(API\)](#)
- [American Planning Institute \(API\)](#)

Creating a Process for Determining Whether to Do a Road Diet: City of Seattle

The City of Seattle has created a formal process for determining whether a road diet is appropriate for a road. The process is based on the following principles:

- Provide a safe and comfortable environment for all users.
- Provide a clear and unobstructed path for pedestrians.
- Provide a safe and comfortable environment for bicyclists.
- Provide a safe and comfortable environment for motorists.
- Provide a safe and comfortable environment for vulnerable users.



Data

Data supporting Complete Streets approach



Further Guidance

References to relevant guidelines and design manuals



Case Study

Example application of Complete Streets practice

Contents



1 | Complete Streets in NJ

- » What are Complete Streets?
- » Why Complete Streets?

2 | Integrating Complete Streets into the Planning and Design Process

- » Implementing at the State Level
- » Implementing at the Local Level

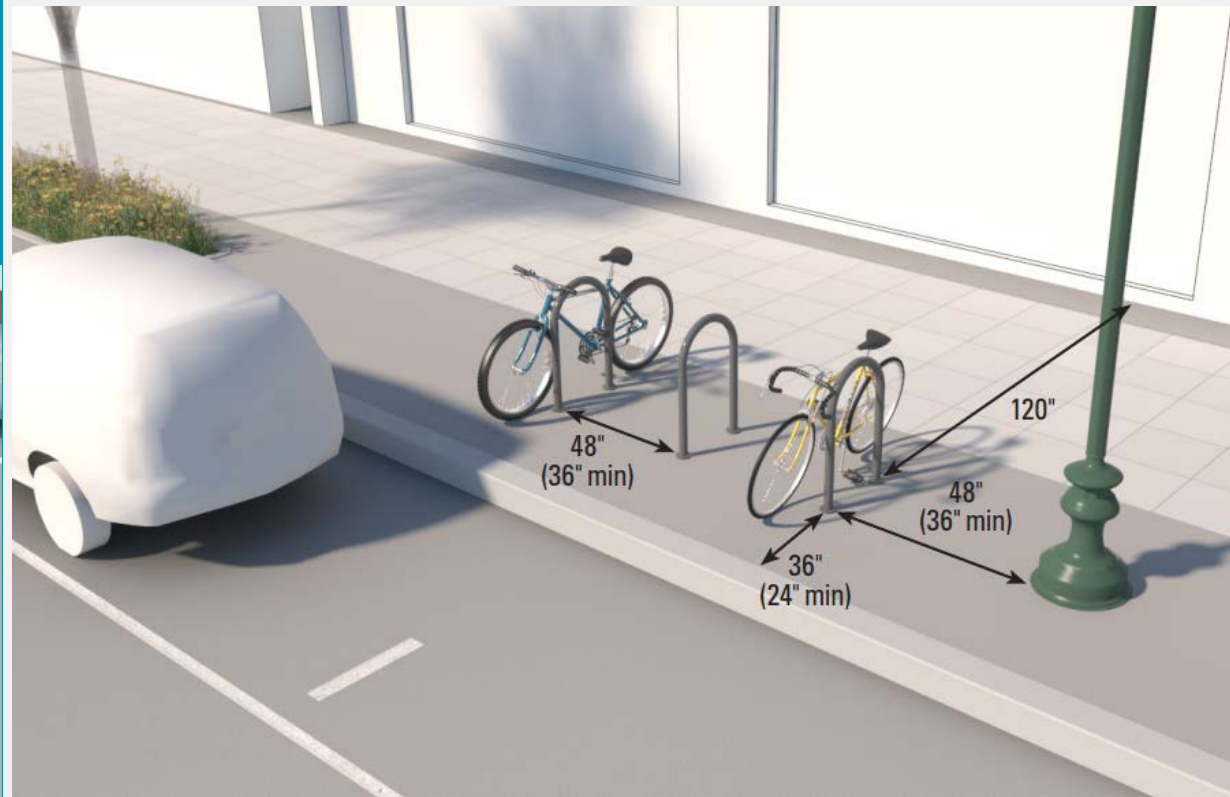
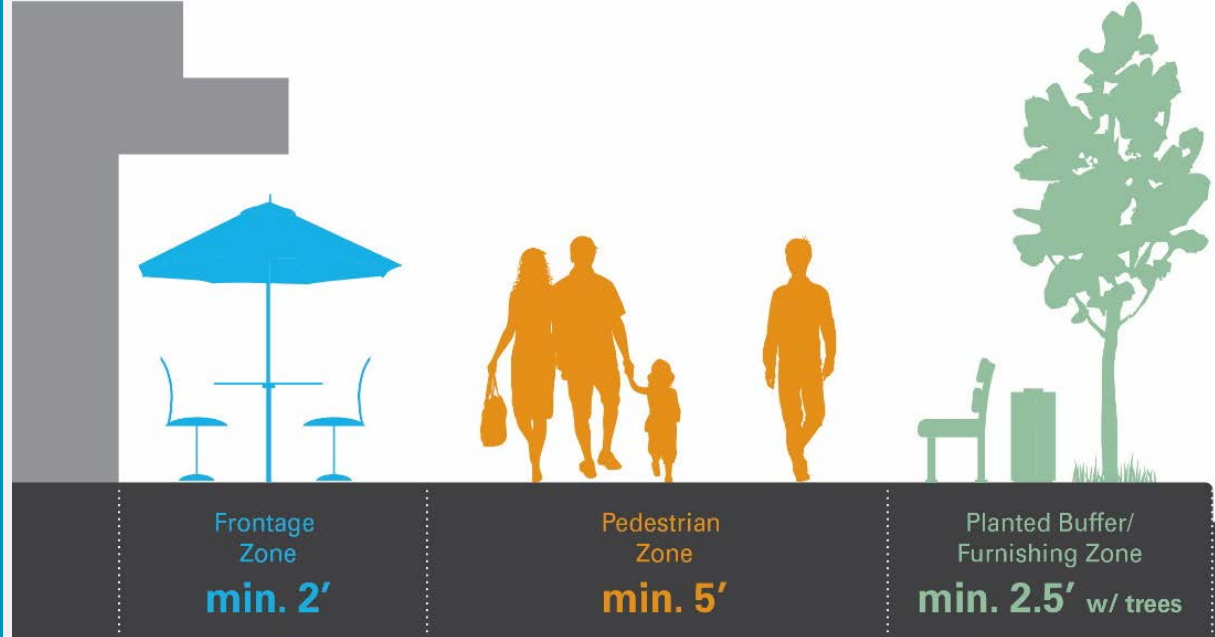
3 | Complete Streets Toolbox

- » Sidewalks
- » Roadways
- » Intersections

4 | Street Typologies

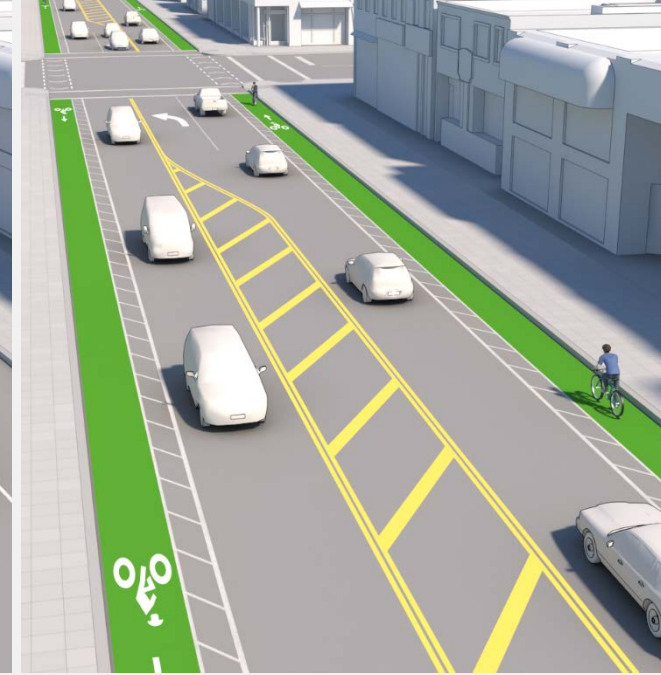
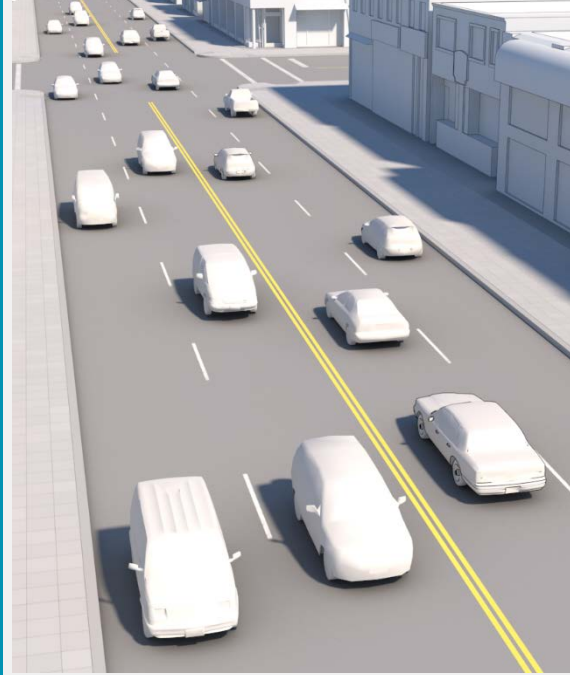
Sidewalks

- *Sidewalk widths*
- *Sidewalk zones*
- Driveways
- Street trees
- *Street furniture*
- Bus shelters
- Street lights
- Stormwater management
- *Parklets*



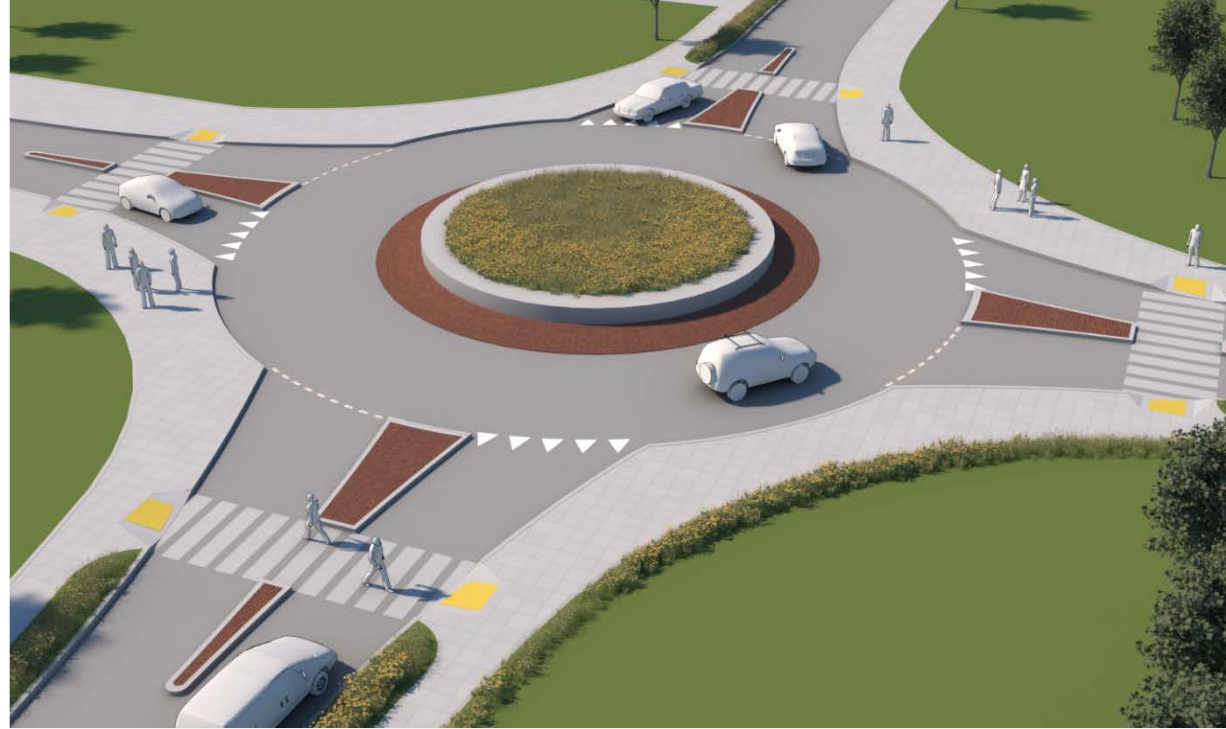
Roadways

- Design speed
- *Traffic calming features*
- Travel lanes
- *Allocating use of space*
- On-street parking
- Design vehicle
- Design hour
- Design year
- Transit
- Quality of transit service
- *Bicycle facilities*
- Wayfinding



Intersections

- Placemaking at intersections
- Gateways
- Corners and curb radii
- Curb ramps
- Curb extensions
- *Crossing islands*
- Splitter islands
- Raised crossings
- *Roundabouts*
- Channelized right-turn lane
- Diverters
- Crosswalk design
- Signalized intersections
- Bicycle facilities
- RRFBs
- Pedestrian hybrid beacons
- Metrics



Street Typologies

Illustrative examples of applying the toolbox elements based on local context

- » Downtown Urban Core
- » Main Street
- » Commercial Strip Corridor
- » Low Density State/County Highway
- » Urban Residential
- » Suburban/Rural Residential
(high volumes)
- » Suburban/Rural Residential
(low volumes)
- » Office/Light Industrial Center



Main Street

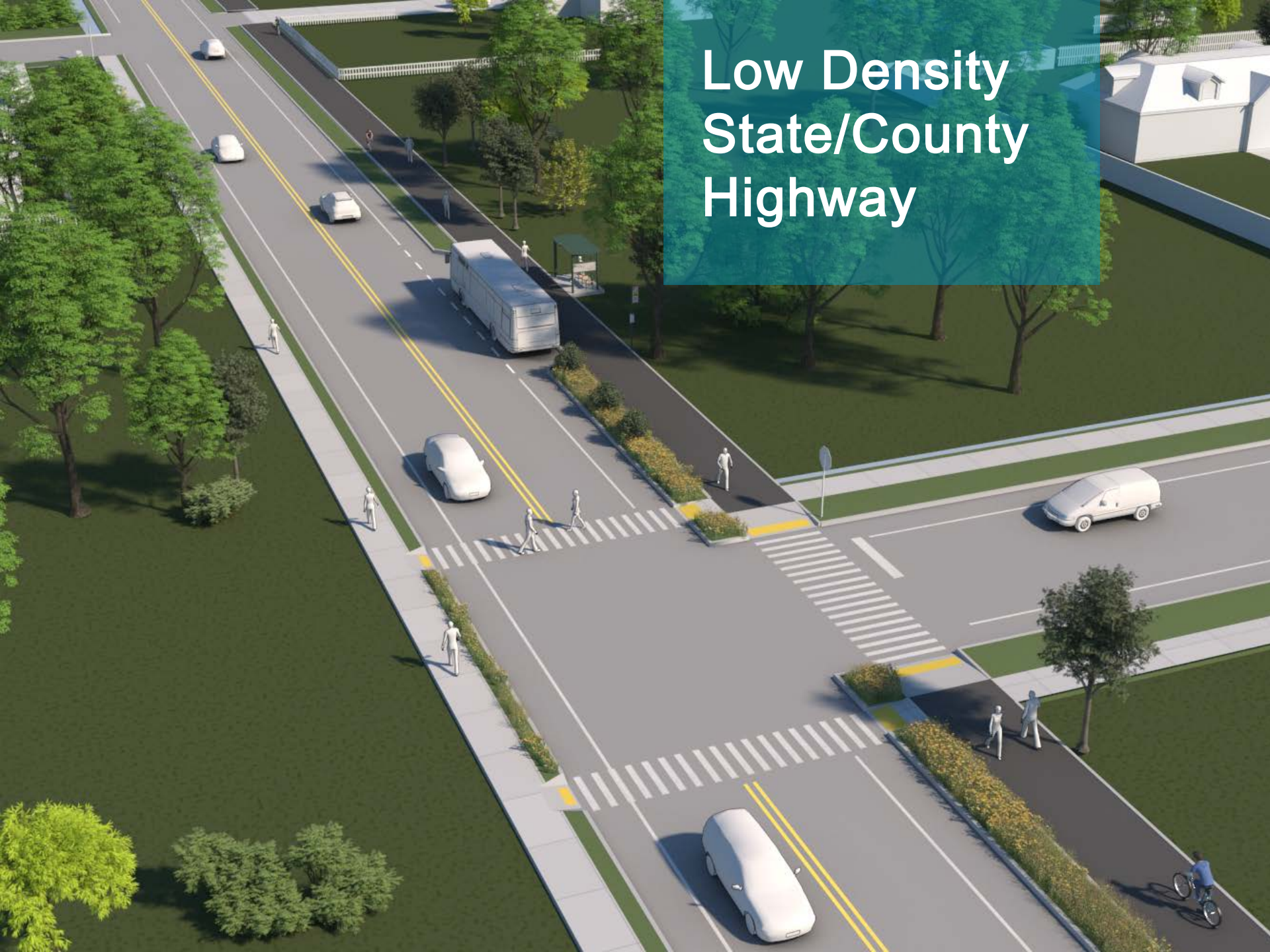


Main Street

An aerial perspective of a highway intersection. A two-lane road with double yellow lines runs diagonally from the top left to the bottom right. It intersects with a two-lane road running horizontally from the right side of the frame. The roads are flanked by green grass and numerous trees. Several vehicles are visible: a white car in the top left, a white car and a white semi-truck in the upper middle, a white car in the lower middle, a white van in the bottom right, and a white van on the horizontal road. A teal semi-transparent rectangle is positioned in the upper right corner, containing white text. The overall scene depicts a rural or low-density suburban environment.

Low Density State/County Highway

Low Density State/County Highway



Bicycle Facility Selection Guidance



Bicycle Compatibility

Compatible for whom?

AADT: 55,000

Speed: 50 mph

Lane Width: 12 ft

Number of Lanes: 4

Shoulder Width: 10 ft



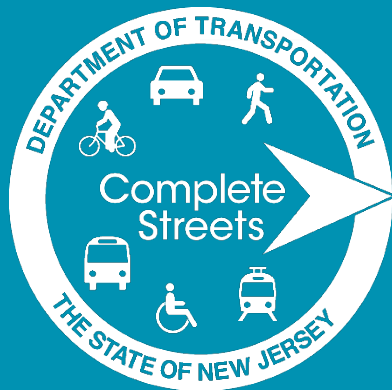
Compatible for whom?

Condition 3: AADT 10,000+

	Urban (w/ parking)	Urban (w/o parking)	Rural
≤ 30 MPH	SL – 14ft	SL – 14ft	SL – 14ft
31 – 40 MPH	SL – 14ft	SH – 4ft	SH – 4ft
41 – 50 MPH	SL – 15ft	SH – 6ft	SH – 6ft
≥ 50 MPH	N/A	SH – 6ft	SH – 6ft

Outdated Approach

Not reflective of different types of cyclists



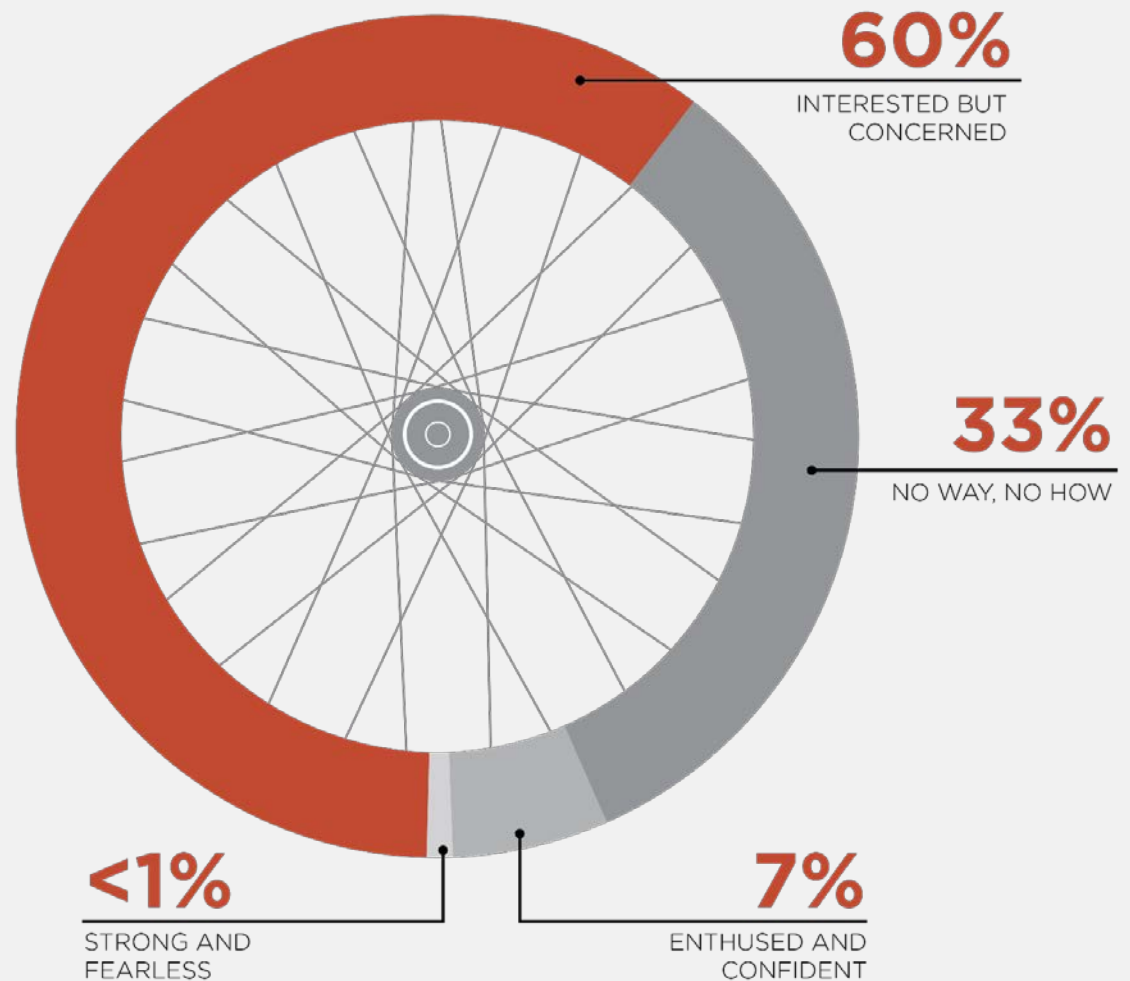
"...all ages and abilities"



Outdated Approach



Who are we designing for?



Source: City of Portland, 2005

Other Guides, Metrics, Research

NACTO

» *Urban Bikeway Design Guide*

FHWA

» *Small Town and Rural Multimodal Networks*

Bicycle Level of Traffic Stress Methodology

Existing User Survey Data

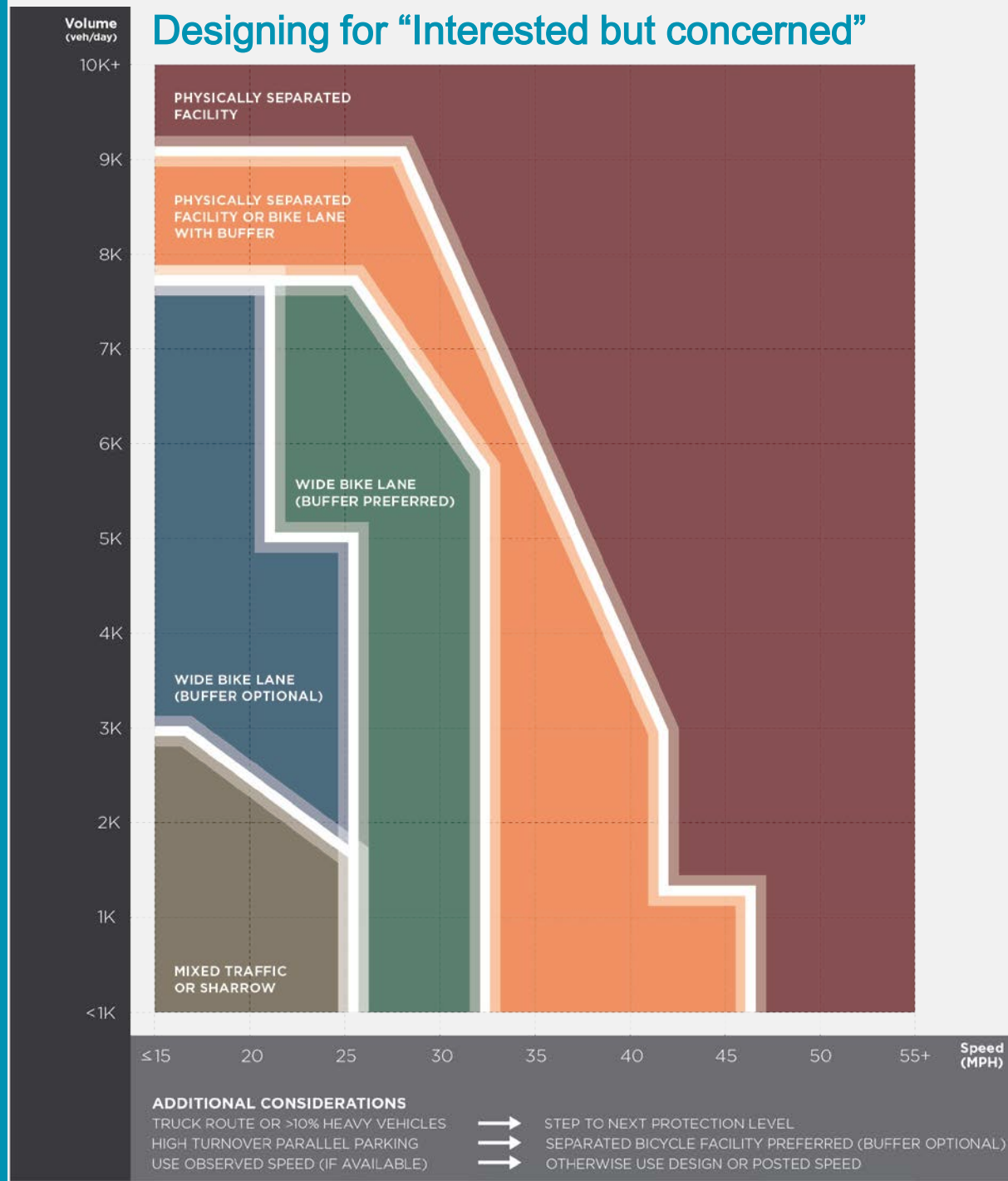
» *NJ State Bike/Ped Plan*

» *National data*

Other Jurisdictions

Example

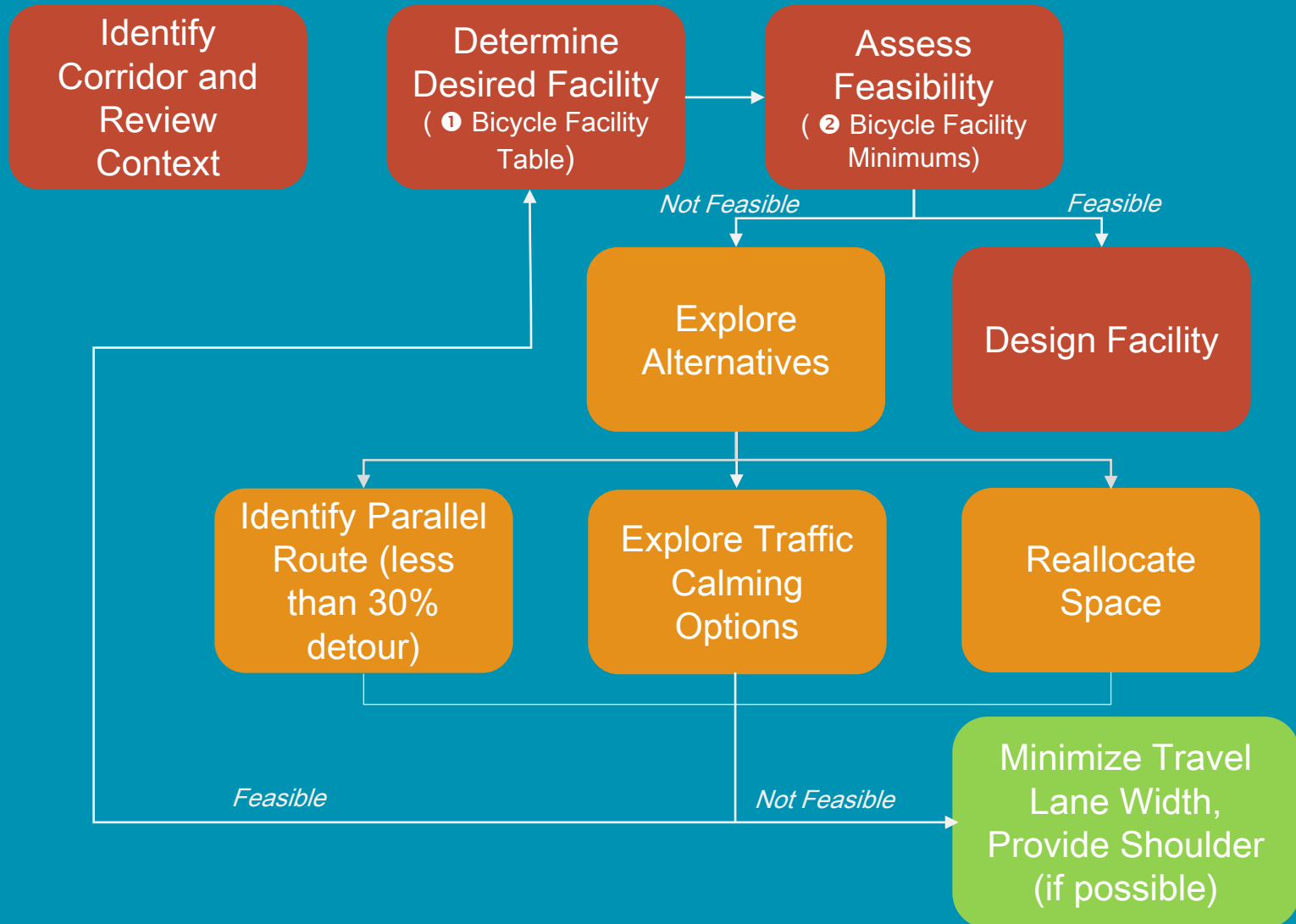
Montgomery County, MD
Bicycle Planning
Guidance



User Needs

- » Comfort – shift towards “all abilities” networks
- » Traffic speed
- » Separation

Revised Approach to Bicycle Facility Planning



Revised Approach to Bicycle Facility Planning

❶ Bicycle Facilities Table

ADT	85TH PERCENTILE SPEED*						
	≤ 20	25	30	35	40	45	≥50
≤ 2,500	ABCDEF	ABCDEF	CDEF	CDEF	CDEF	DEF	F
2,500-5,000	BCDEF	BCDEF	CDEF	CDEF	DEF	DEF	F
5,000-10,000	B ¹ CDEF	B ¹ CDEF	CDEF	DEF	DEF	EF	F
10,000-15,000	DEF	DEF	DEF	DEF	EF	EF	F
≥15,000	DEF	DEF	DEF	EF	EF	F	F

A: Shared-Street / Bike Boulevard

B: Shared-Lane Markings

C: Bike Lane

D: Buffered Bike Lane

E: Separated Bike Lane

F: Off-Road Path

**use speed limit if unavailable*

¹ Shared-lane markings not preferred treatment with truck percentages >10%

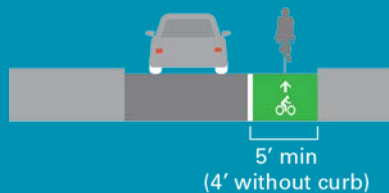
Revised Approach to Bicycle Facility Planning

② Bicycle Facility Minimums

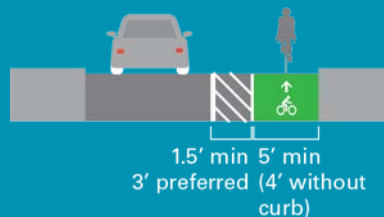
Key Considerations:

- General purpose travel lanes for motor vehicles in most contexts should be 10-11' wide
- Shared-streets have no minimum width requirements
- Shared-lane markings are not appropriate on multi-lane streets

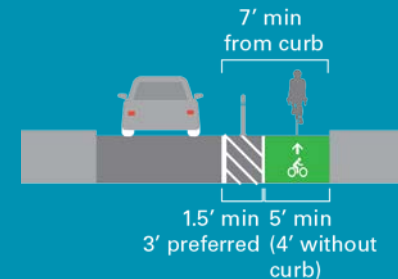
Standard Bike Lane



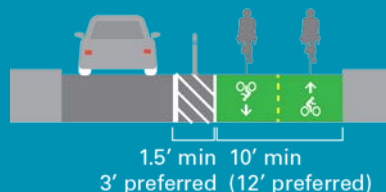
Buffered Bike Lane



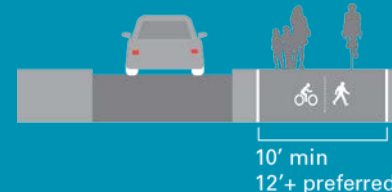
Separated Bike Lane



Two-Way Separated Bike Lane



Off-Road Path



Example 1

Urban Residential Street

Context

Identify
Corridor and
Review Context

- Ironbound neighborhood, Newark, NJ
- Urban residential
- 25mph
~6,000 AADT
<5% trucks
one-way



Determine Facility

Determine
Desired Facility
(① Bicycle Facility
Table)

① Bicycle Facilities Table



ADT	85TH PERCENTILE SPEED*						
	≤ 20	25	30	35	40	45	≥50
≤ 2,500	ABCDEF	ABCDEF	CDEF	CDEF	CDEF	DEF	F
2,500-5,000	BCDEF	BCDEF	CDEF	CDEF	DEF	DEF	F
5,000-10,000	B ¹ CDEF	B ¹ CDEF	CDEF	DEF	DEF	EF	F
10,000-15,000	DEF	DEF	DEF	DEF	EF	EF	F
≥15,000	DEF	DEF	DEF	EF	EF	F	F



A: Shared-Street / Bike Boulevard
B: Shared-Lane Markings
C: Bike Lane

D: Buffered Bike Lane
E: Separated Bike Lane
F: Off-Road Path

**use speed limit if unavailable*

¹ Shared-lane markings not preferred treatment with truck percentages >10%

Assess Feasibility

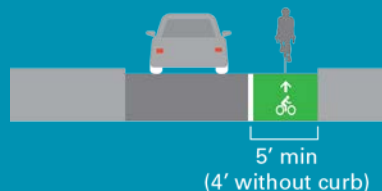
Determine
Desired Facility
(1 Bicycle Facility
Table)

- 35' cartway
- 1 travel lane, on-street parking
- $35' - 10' - 2 \times 8' = \sim 9'$ available

Shared Lane



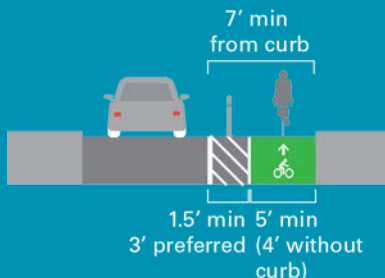
Standard Bike Lane



Buffered Bike Lane



Separated Bike Lane



Two-Way Separated Bike Lane



Off-Road Path



Result

Buffered bicycle lane

Design Facility



Result

Buffered bicycle lane

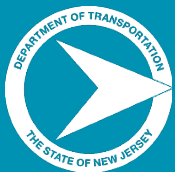
Design Facility



Thank you!

Peter Kremer

peter.kremer@wsp.com



2017 State of New Jersey
Complete Streets
Design Guide

