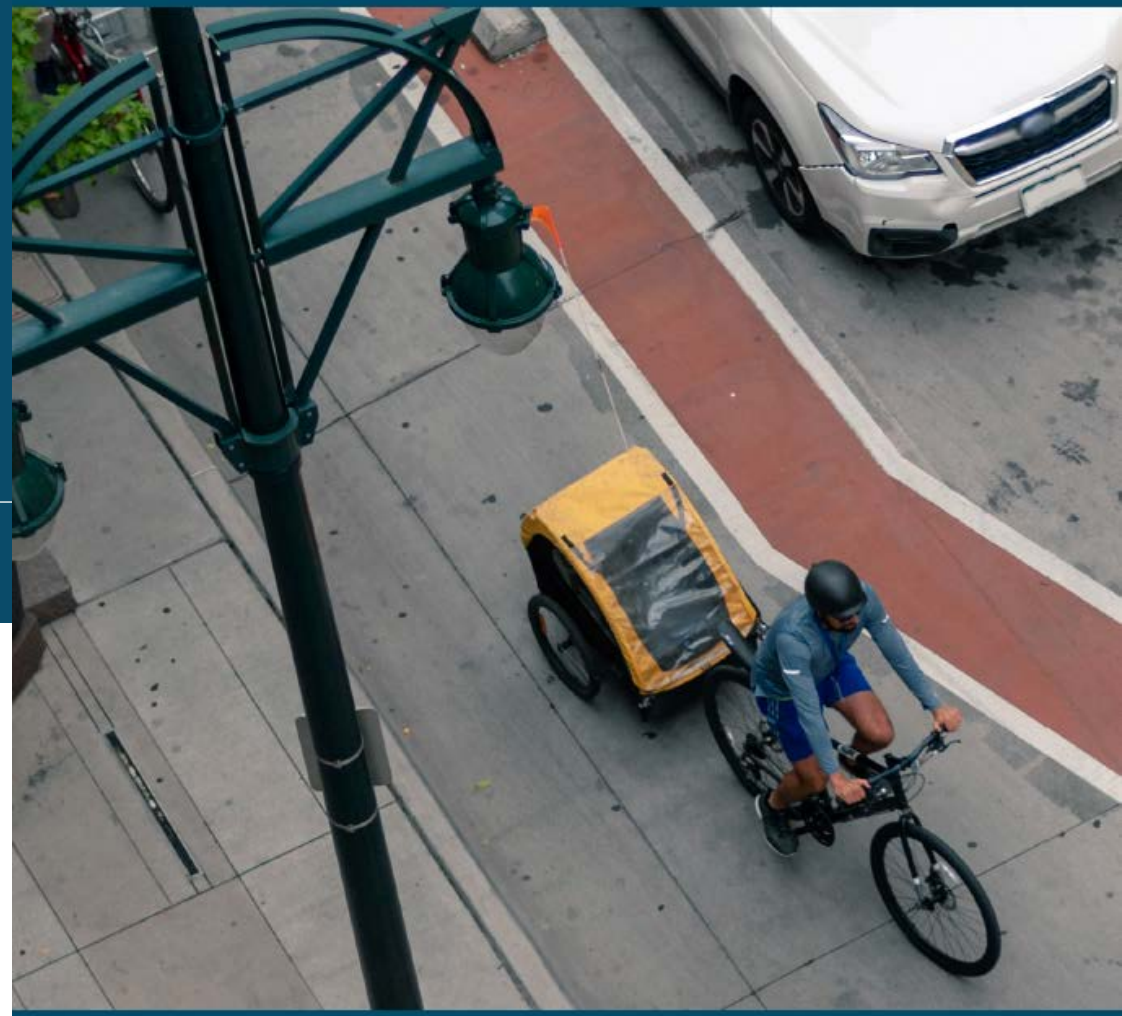
My Text for Today is...

U.S. Department of Transportation
Federal Highway Administration

BIKEWAY SELECTION GUIDE



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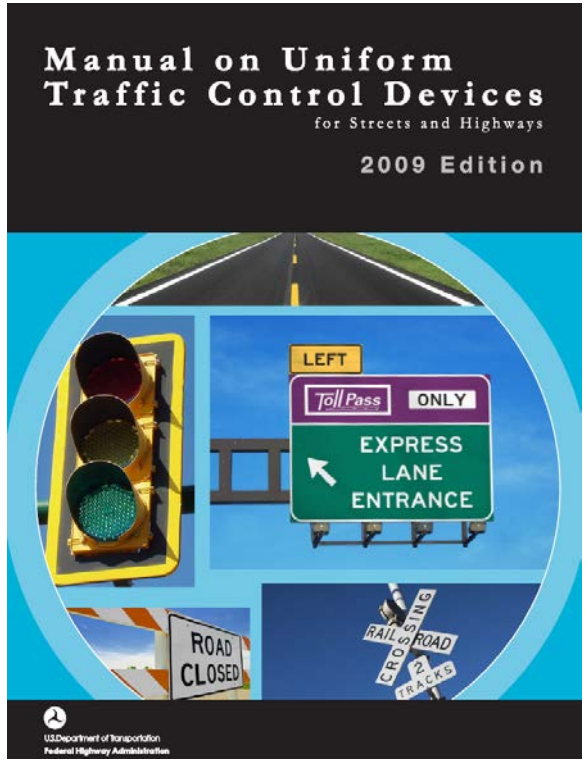
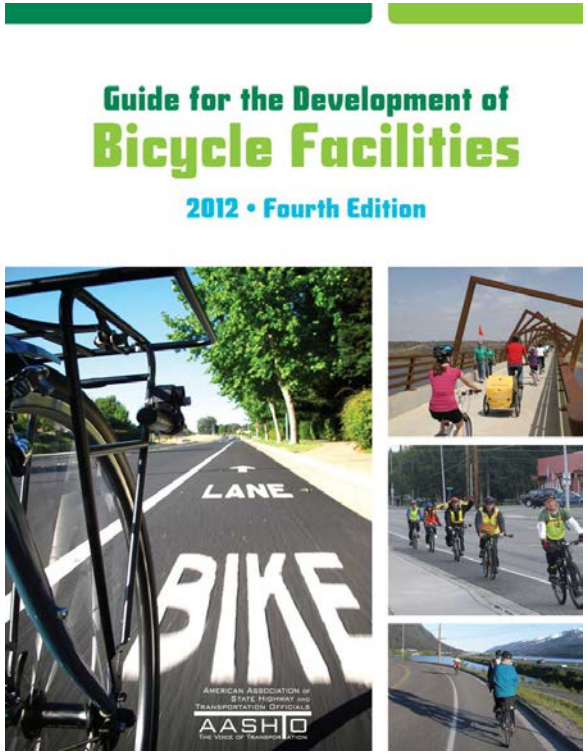
FEBRUARY 2019

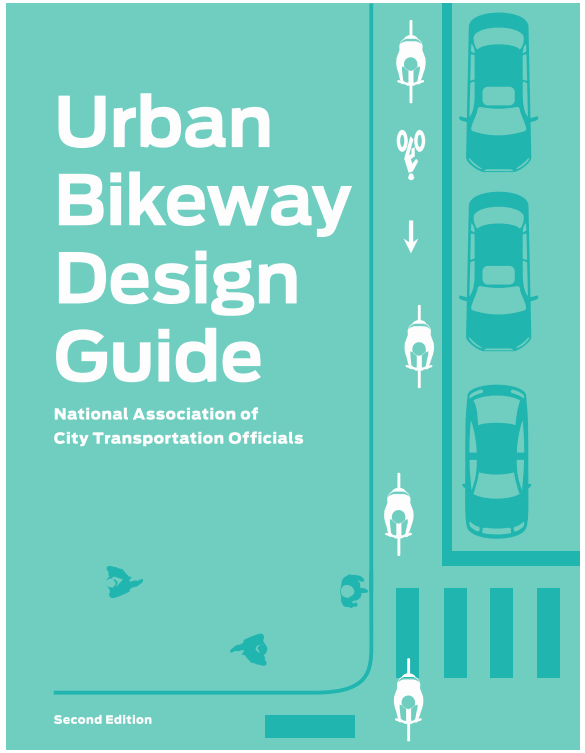
Chapter 1: Introduction
Bikeway Selection Guide Supports



FHWA



AASHTO



NACTO & ITE

America’s First Bikeway Network – Davis, CA, 1967-1972

200
500
1000
2000
BICYCLES

1971 BICYCLE VOLUMES
AM AND PM PEAK PERIODS

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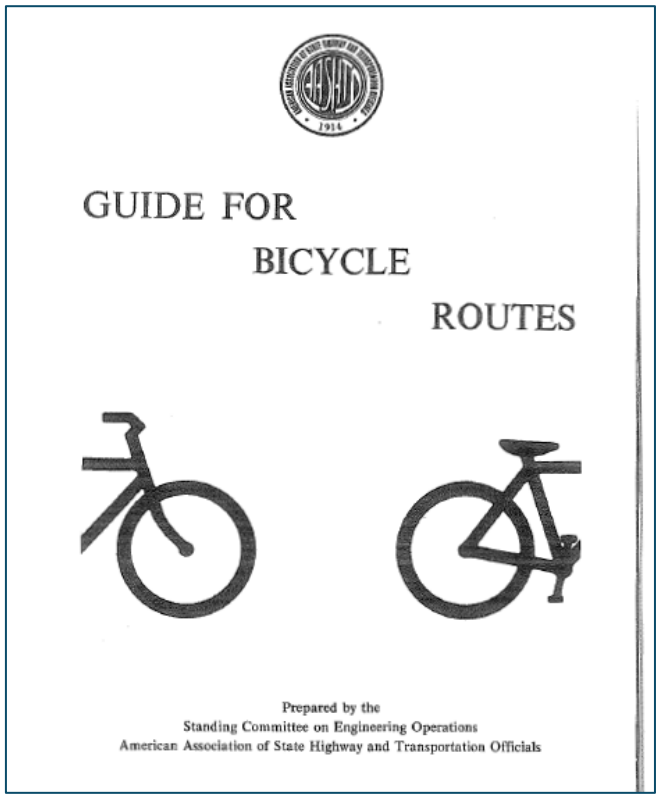
First AASHTO Guide, 1974



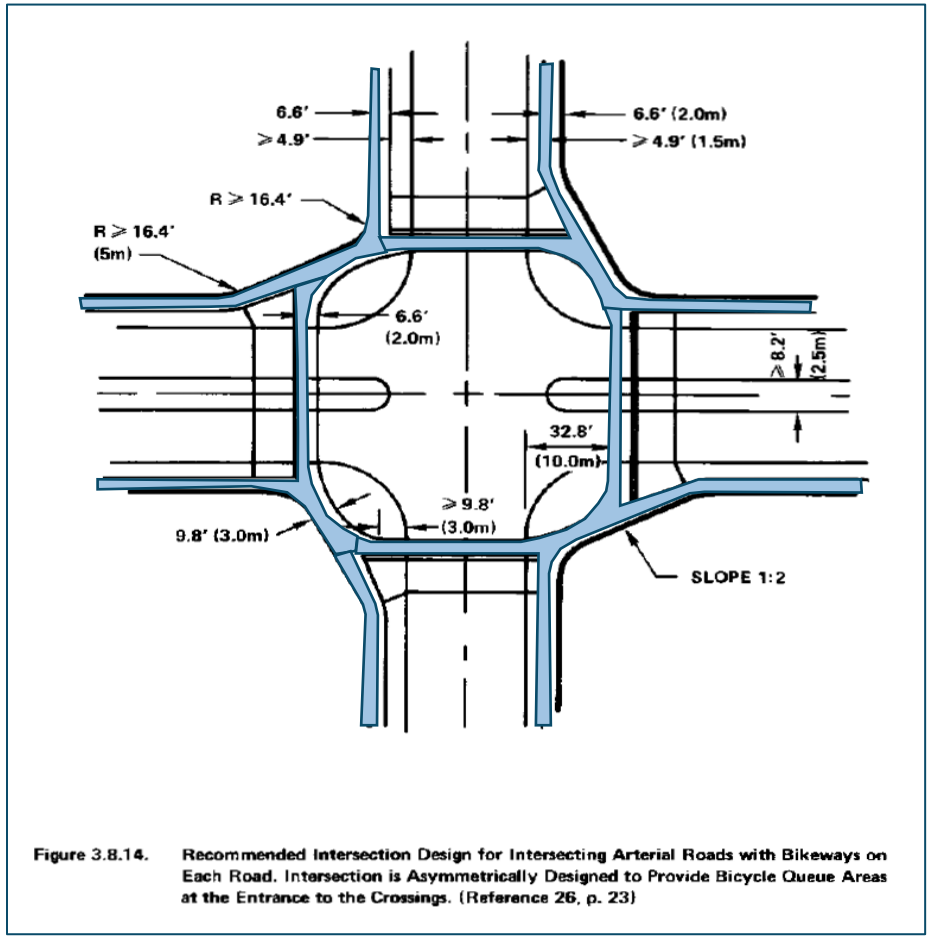


Figure 3.8.14. Recommended Intersection Design for Intersecting Arterial Roads with Bikeways on Each Road. Intersection is Asymmetrically Designed to Provide Bicycle Queue Areas at the Entrance to the Crossings. (Reference 26, p. 23)

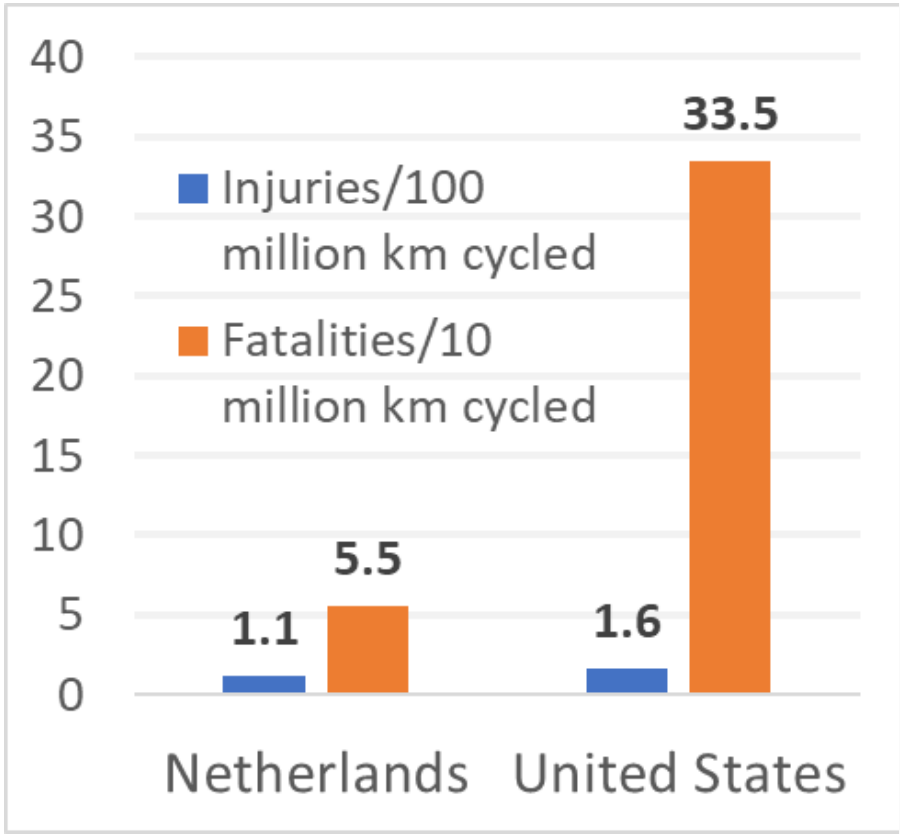
> Vehicular cycling…is faster and more enjoyable, so that the plain joy of cycling overrides the annoyance of even heavy traffic.

- John Forester

1981 AASHTO Bike Guide

Minimum design speed:	**20 mph**
Desirable design speed:	**30 mph**
Bicycle lane criteria:	**loose**
Wide curb lanes:	**preferred if no bike lane**
Separated bike lanes:	**prohibited**
Sidepath intersection:	**avoid designing sidepaths**

2000s
European Evidence Increasingly Important



National mode share: 27% 1%

Seven Principles of Bicycle Network Design

Safety
The frequency and severity of crashes are minimized and conflicts with motor vehicles are limited

Comfort
Conditions do not deter bicycling due to stress, anxiety, or concerns over safety

Connectivity
All destinations can be accessed using the bicycling network and there are no gaps or missing links

Directness
Bicycling distances and trip times are minimized

Cohesion
Distances between parallel and intersecting bike routes are minimized

Attractiveness
Routes direct bicyclists through lively areas and personal safety is prioritized

Unbroken Flow
Stops, such as long waits at traffic lights, are limited and street lighting is consistent

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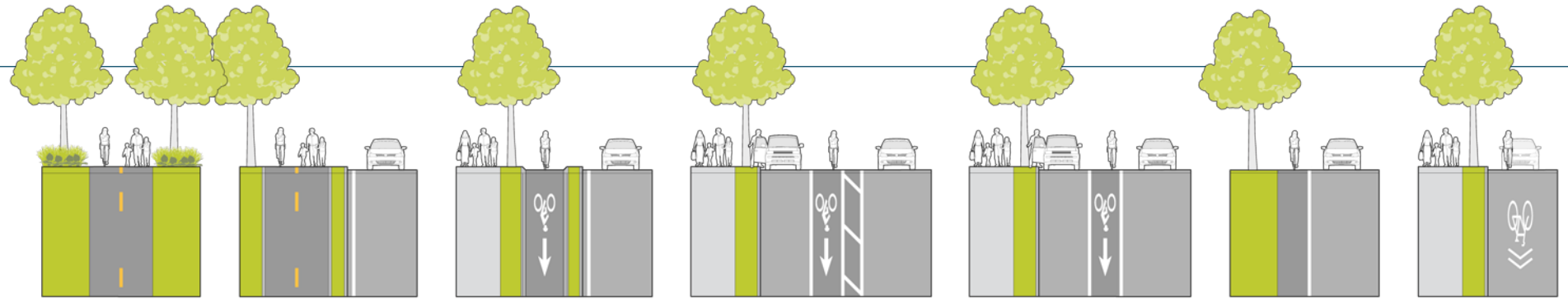

+ SEPARATION FROM TRAFFIC −

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Conventional Bike Lanes (High Speed and Volume Environments)

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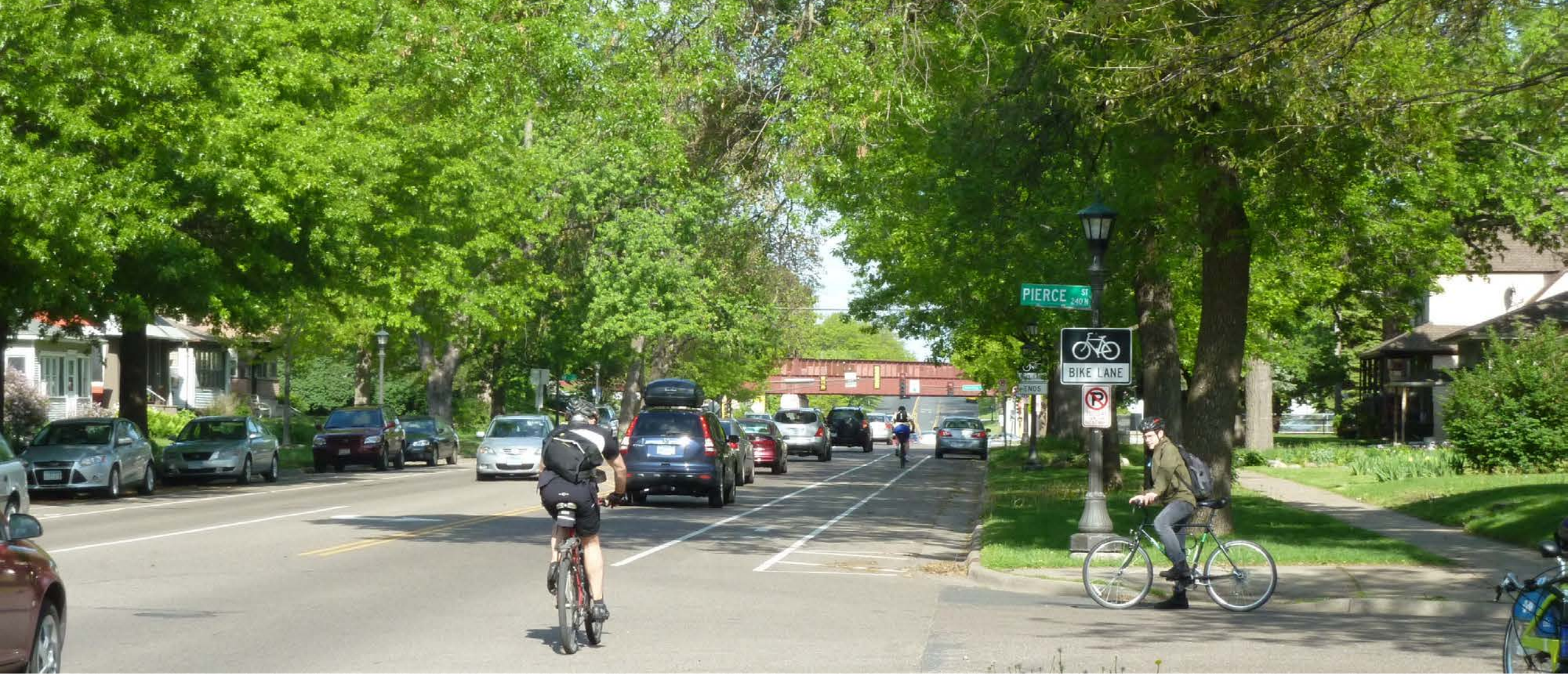

Conventional Bike Lanes (Low Speed Environments)

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Buffered Bike Lanes (High Speed and Volume Environments)

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Separated Bike Lane - Retrofit

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Separated Bike Lane - Reconstruction

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Shared Use Paths

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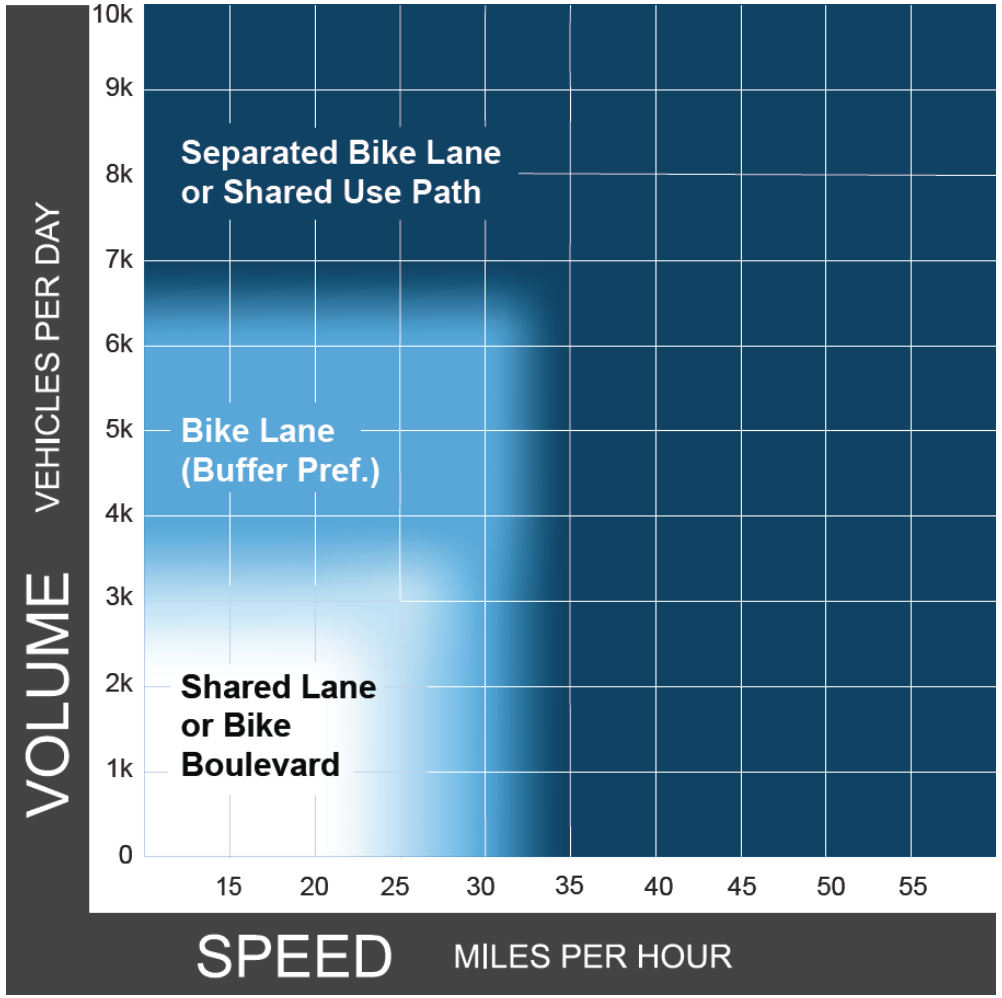
City, Small Town, and Suburban Roadways

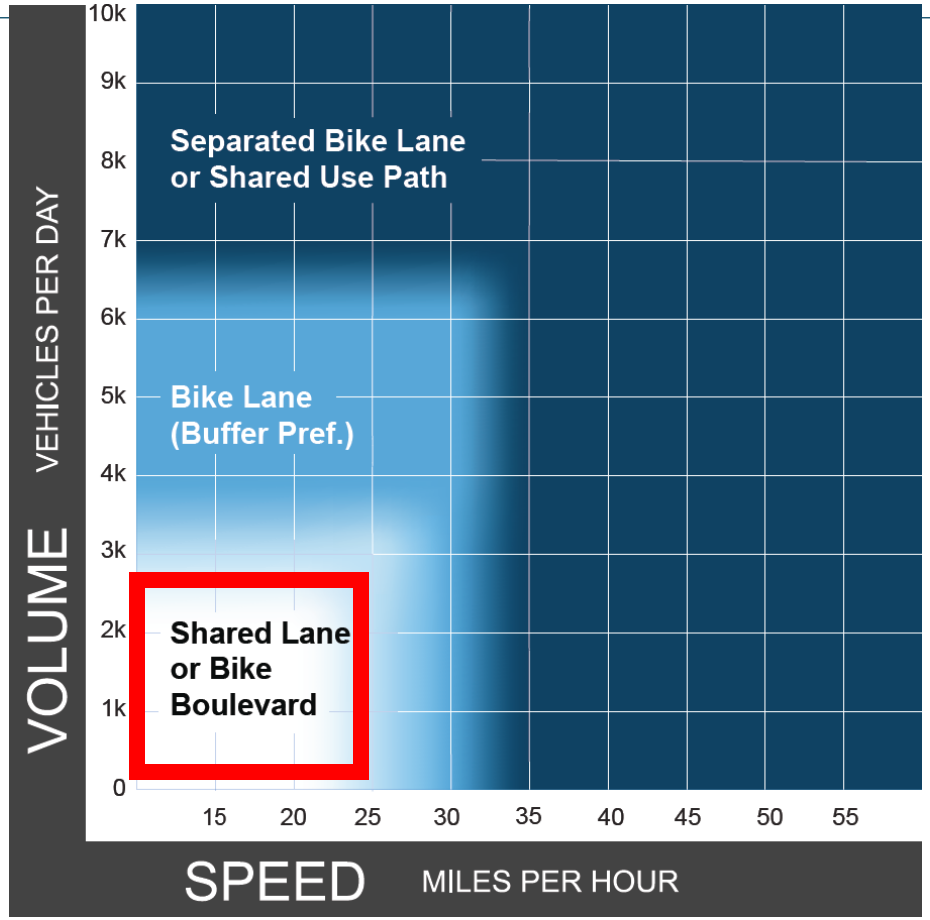


Identifies the **preferred** bikeway type.

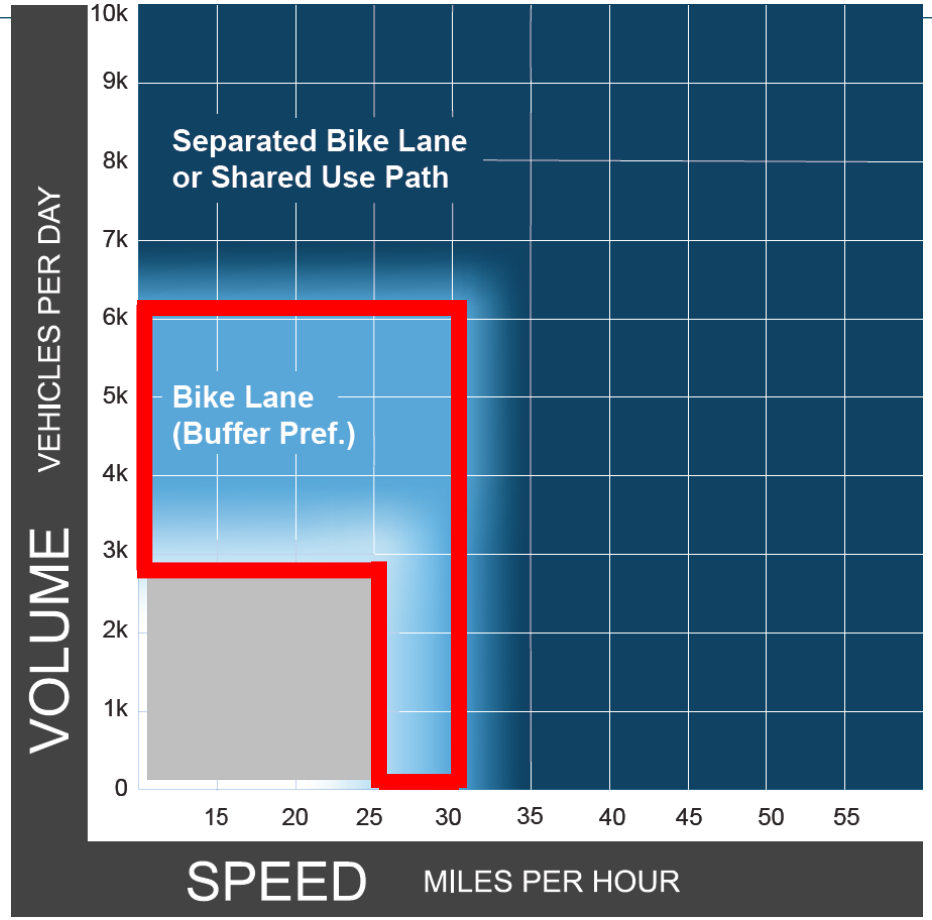
Design User Assumption:
Interested but concerned cyclist

Analysis:

Bicycle Level of Traffic Stress


VOLUME VEHICLES PER DAY
10k
9k
8k
7k
6k
5k
4k
3k
2k
1k
0
Separated Bike Lane
or Shared Use Path
Bike Lane
(Buffer Pref.)
Shared Lane
or Bike
Boulevard
15
20
25
30
35
40
45
50
55
SPEED MILES PER HOUR


WAIT HERE
STOP HERE
ON RED
EXCEPT BICYCLES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10k
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Separated Bike Lane
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Bike Lane
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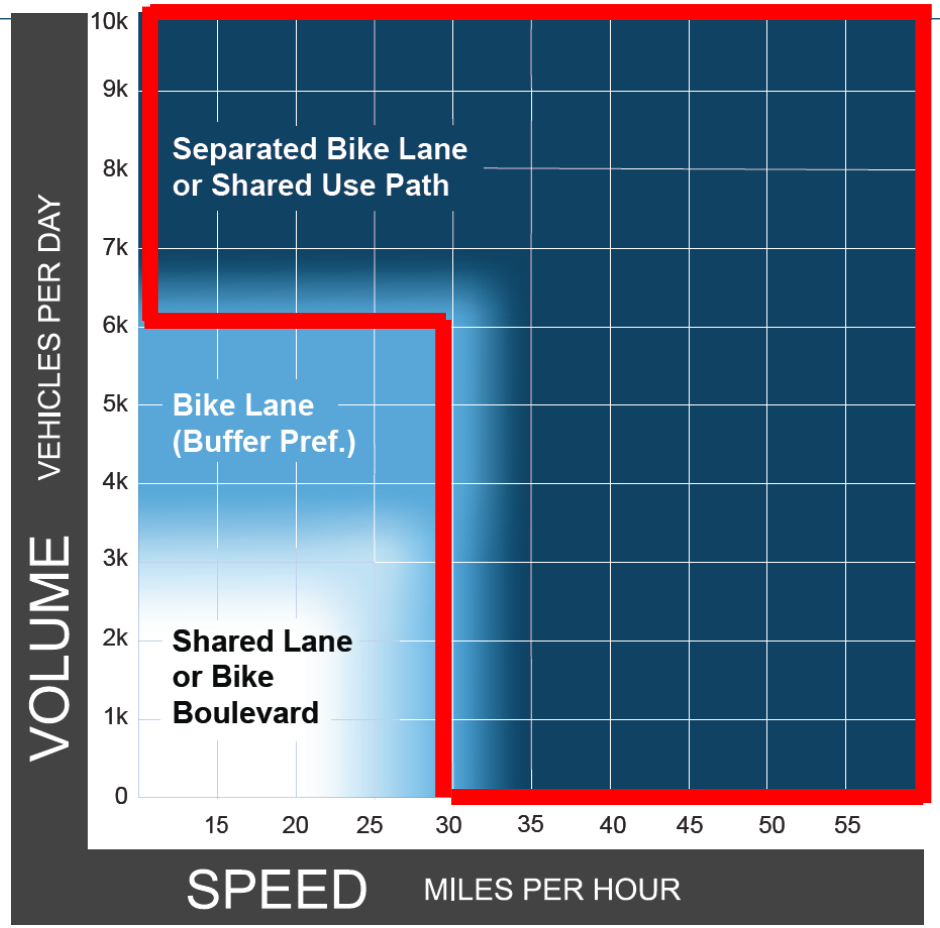
15
20
25
30
35
40
45
50
55
SPEED MILES PER HOUR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Boulevard
15
20
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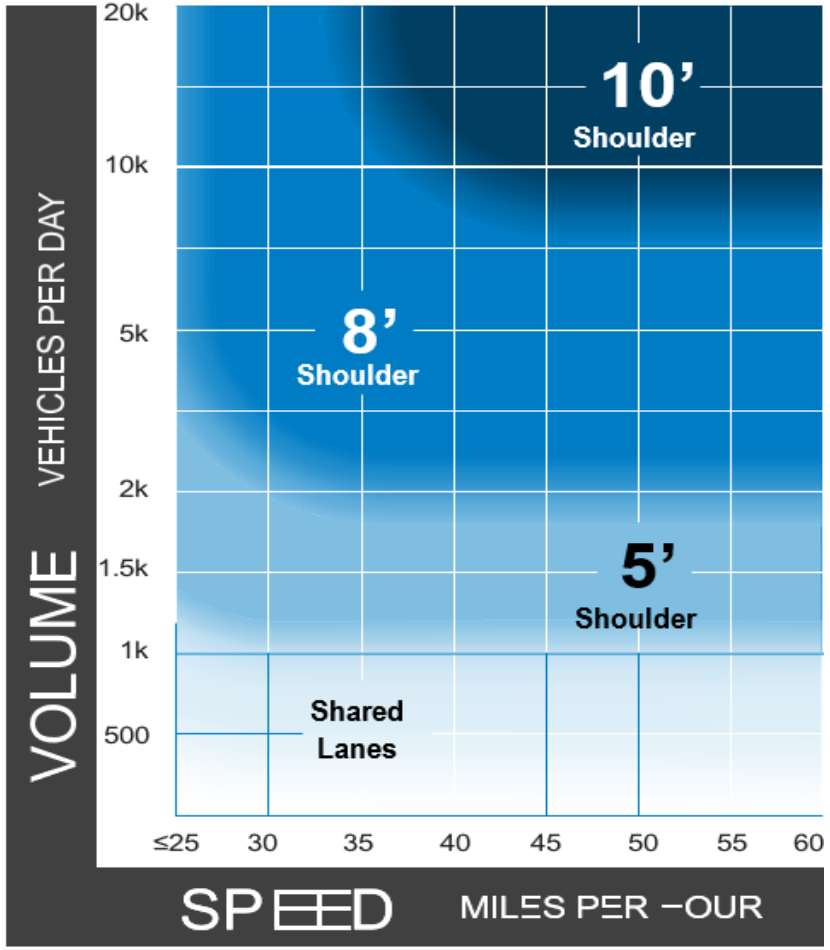
SPEED MILES PER HOUR

Rural Roadways



Identifies the **preferred** shoulder width.

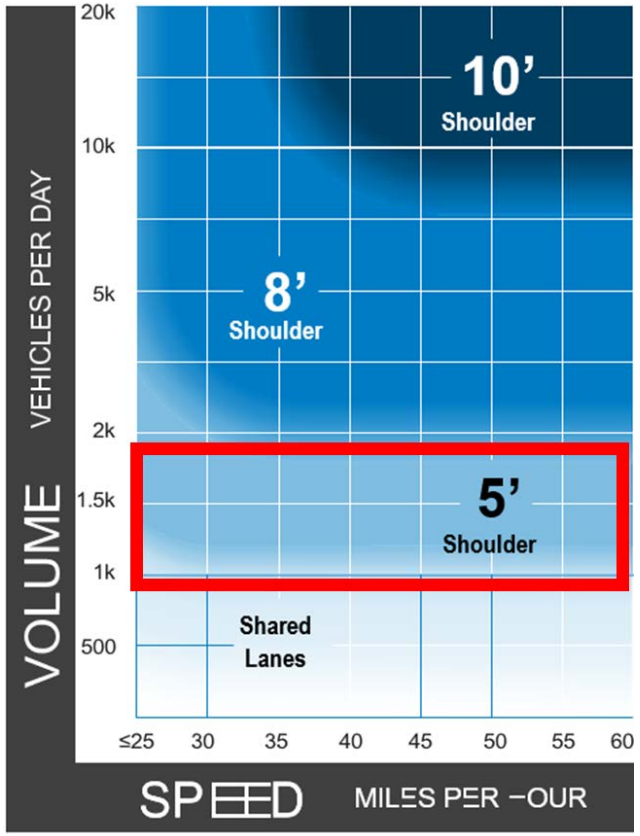
<u>Design User Assumption</u>:

Confident bicyclist

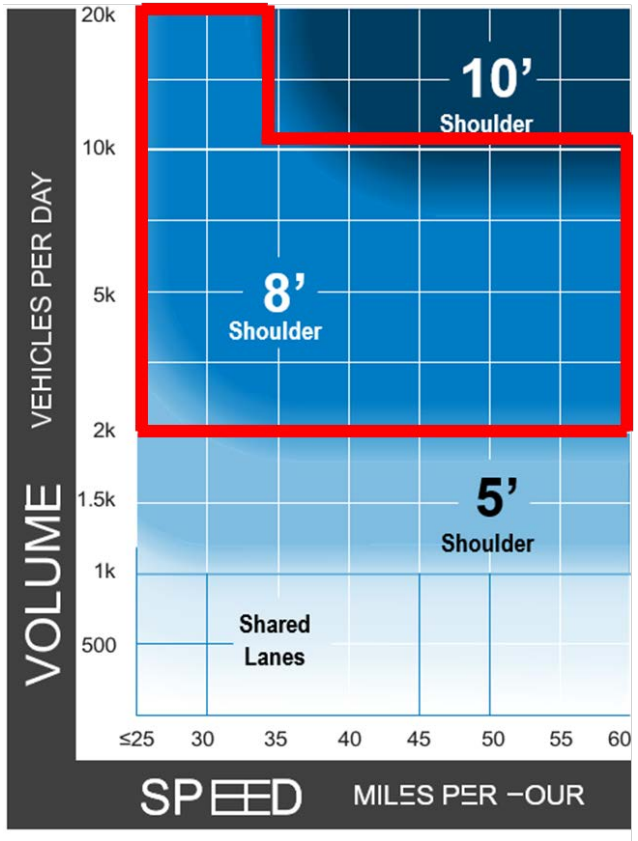
<u>Analysis</u>:

Bicycle Level of Service

Rural Roadways



Rural Roadways



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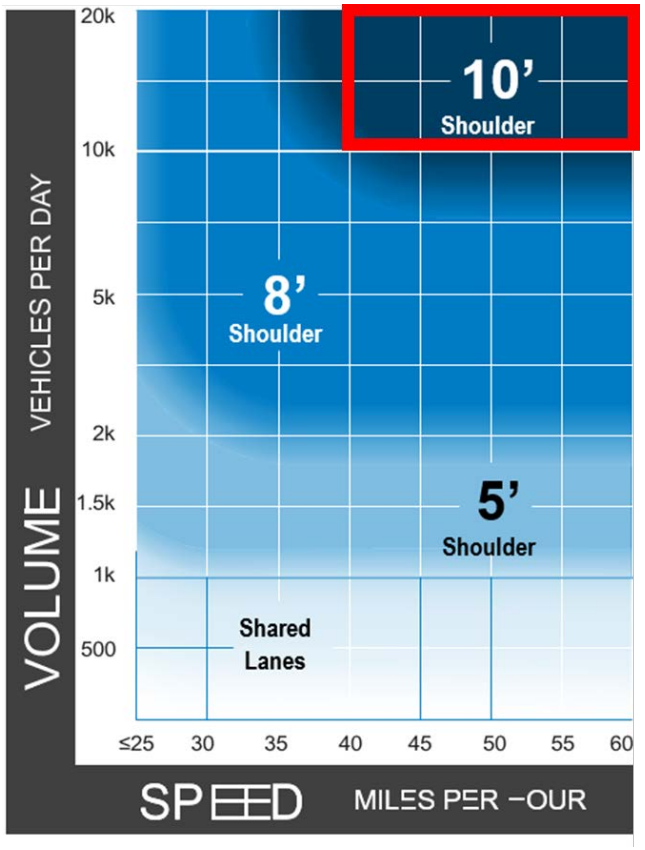
Rural Roadways



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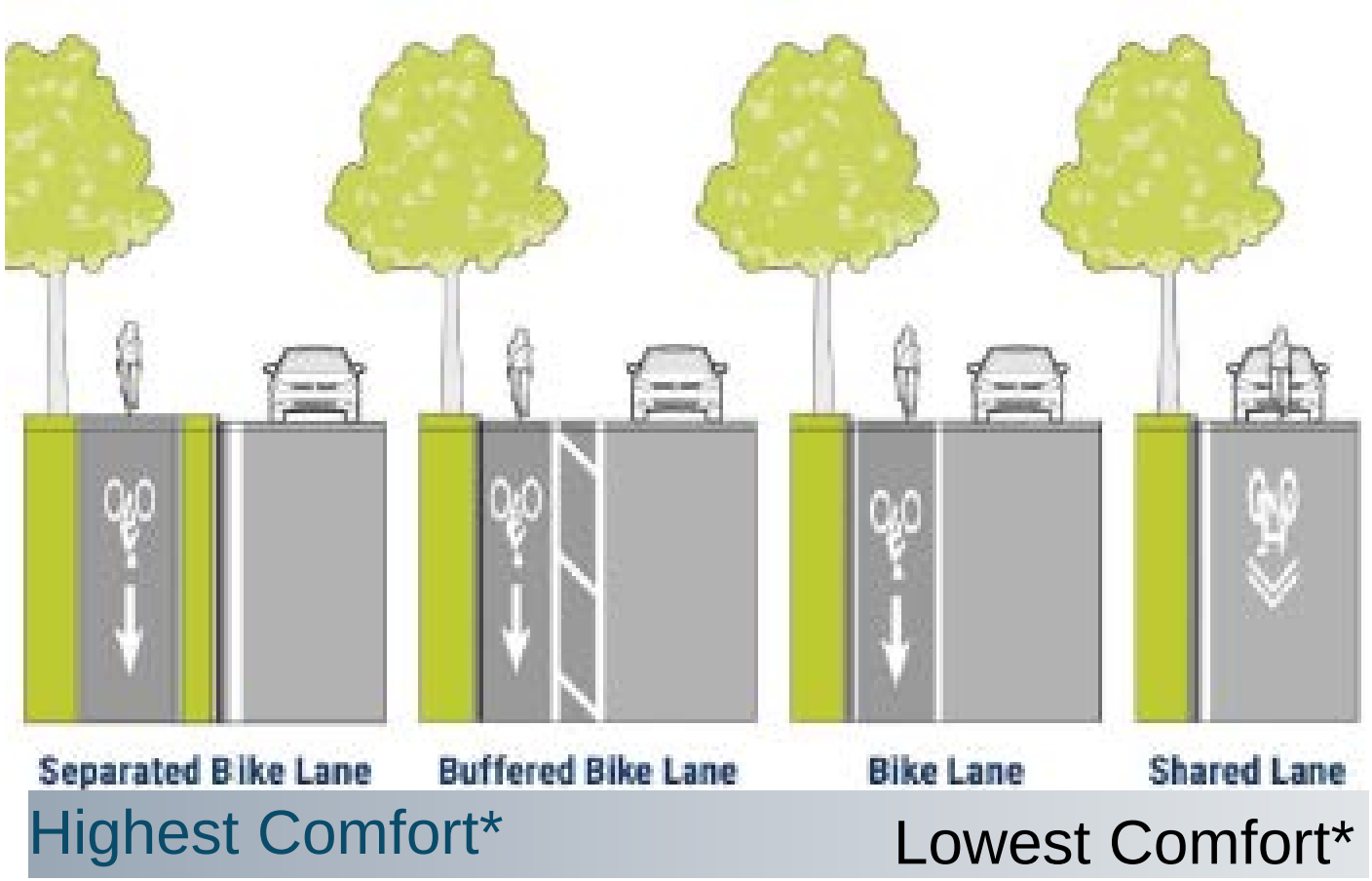
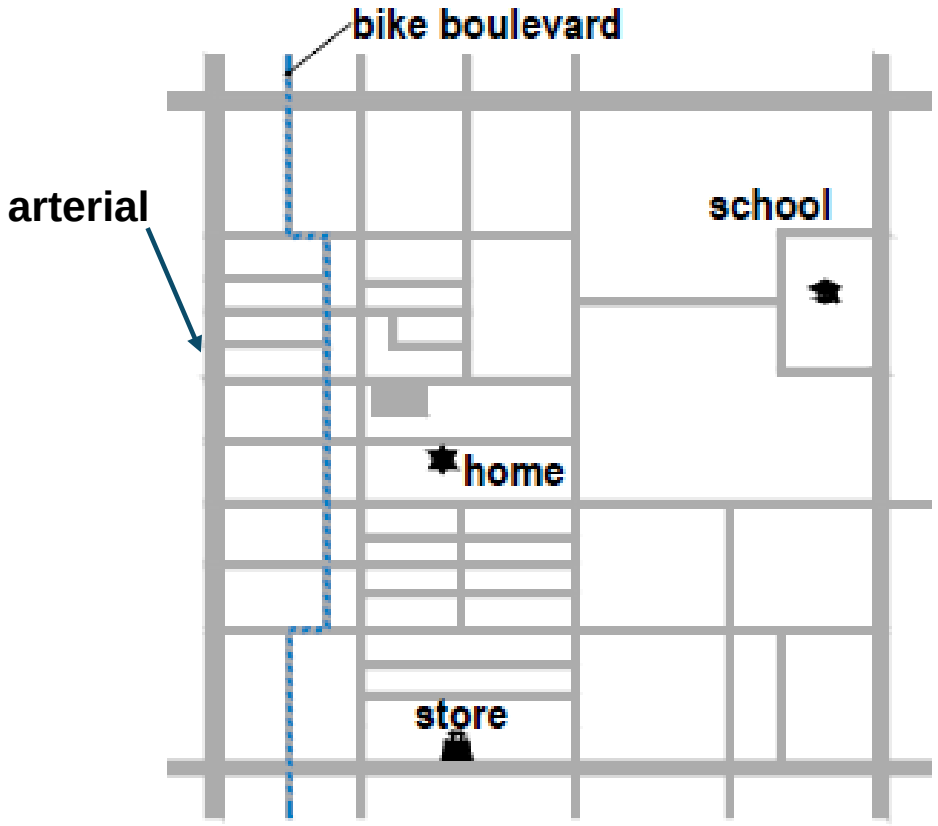
What if…?

If the preferred bikeway is infeasible on the main route, select “the next best facility” for it as a short term measure.



*Assumption is high volume roadway with speeds > 30mph with sidepath bicyclists comfort contingent upon pedestrian volume

What About Alternate Routes?



Parallel routes can accommodate the Interested but Concerned if:

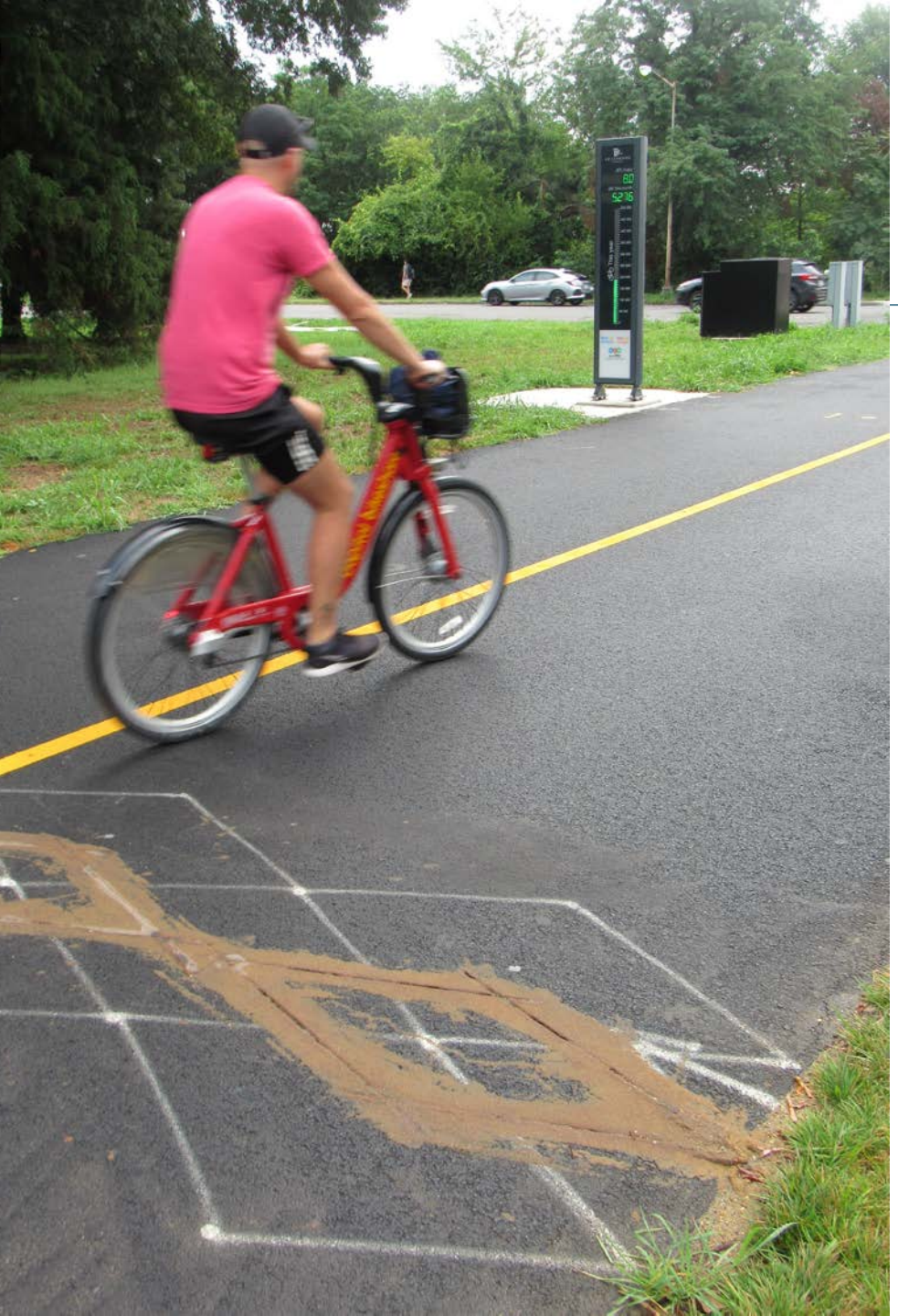
- It is designed for their comfort
- Detour is less than 30% in length*
- Neighborhood bikeways may require assessments of major street crossings

*Broach, J., Dill, J., and J., Gliebe. Where Do Cyclists Ride? A Route Choice Model Developed with Revealed Preference GPS Data. *Transportation Research Part A: Policy and Practice*, Vol. 46, No. 10, 2012, pp. 1730-1740.

Brook Road, Richmond

Ist Street, Richmond

Malvern Ave, Richmond



Thank you

Andy Clarke

Director of Strategy

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