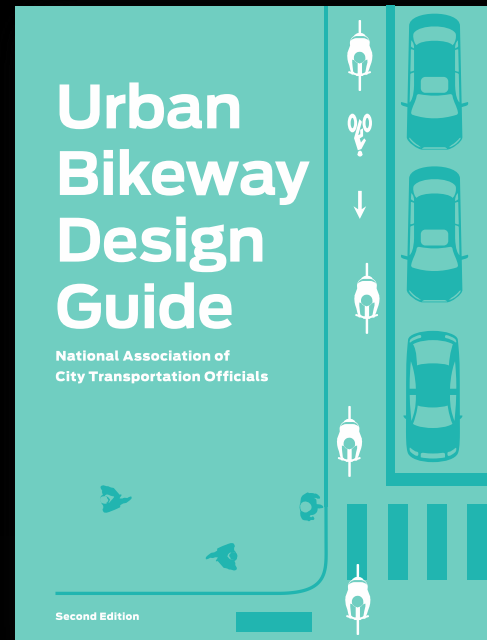
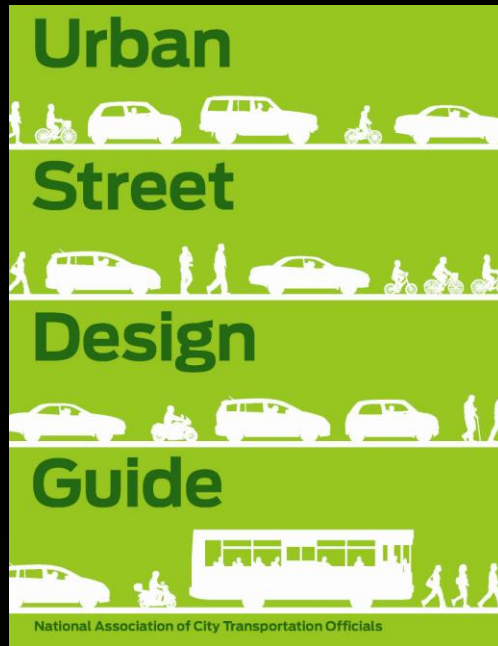


# Introducing the NACTO Urban Design Guidelines



## What Is NACTO?

- Founded 1996
- Peer Network of Large Central Cities (32)
- Advancing Sustainable Transportation and Street Design
- Focus on Local Innovation and Expertise
- City Counterpart to AASHTO



## San Mateo Training Overview

- MAY 13 Training for local policymakers and elected officials
- MAY 14 Training for Public Works and Engineering
- MAY 20 On-site street design charrette at Middlefield Road

# May 13 Agenda Overview

9:00 – 9:15	Opening Remarks
9:15 – 10:30	<i>Presentations: Design Policies &amp; Assumptions</i>
10:30 - 10:40	Break
10:40 – 11:30	<i>Presentations: Streets &amp; Measurement</i>
11:30 – 12:45	Interactive Design Exercise & Lunch
12:45 – 2:00	<i>Presentations &amp; Discussion: Bikeway Design &amp; Safe Intersection Design</i>

*May 7, 2014: Tacoma vows to prosecute rogue crosswalk painters*



“City Crosswalks must comply with federal guidelines...We look at sight distance, we look at traffic volumes, we look at street width...”

*-Kurtis Kingsolver, City of Tacoma Director of Public Works*



WATT & BOND  
**BLACKSTONE**  
MILD 10¢ CIGAR

HUDSON'S

Kelly  
Springfield  
TIRES

MESA HOUSE

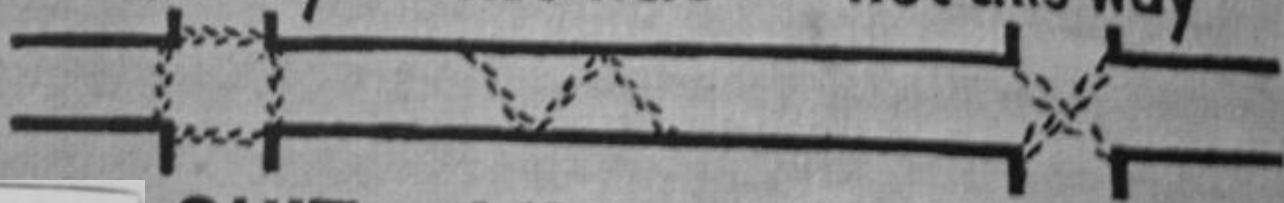
CAWROTT'S

GOLDE  
CLOTHES  
\$15

**FOR SAFETY'S SAKE**

**— CROSS —**

This way — not here — not this way



**QUIT JAY WALKING**



**Obedience may save a life**



*Prepared by the*



**AMERICAN AUTOMOBILE ASSOCIATION**





# THE MALL — KALAMAZOO, MICHIGAN

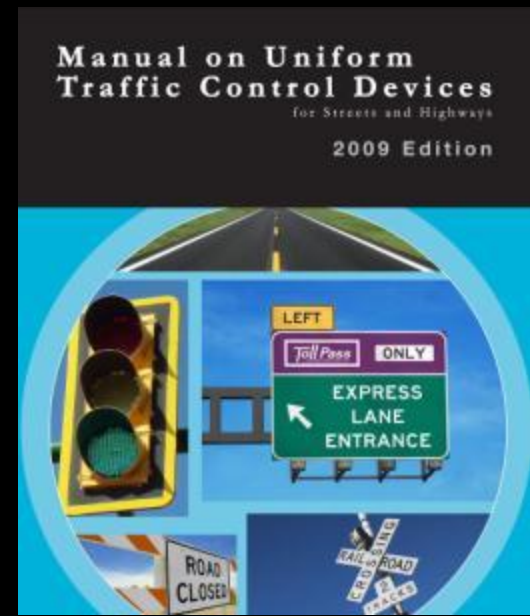
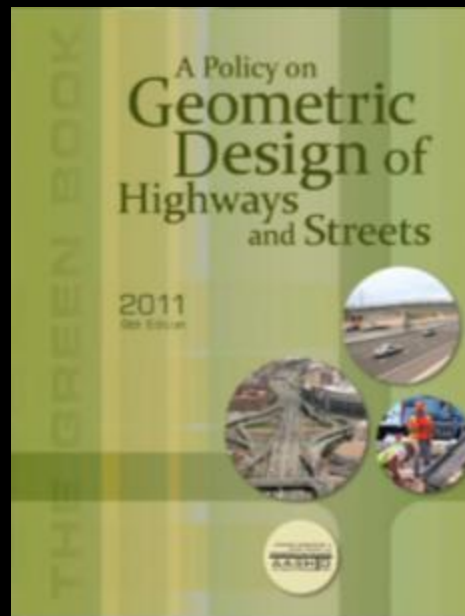
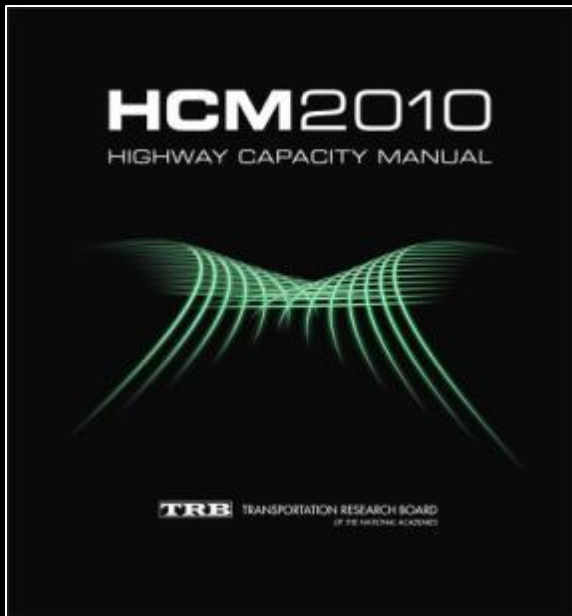








# Prevailing design guidelines define every **street** as a **highway**





Fixed-object hazards vs. community assets

# The Need for Speed

“The objective in design of any engineered facility used by public is to satisfy the public’s demand for service in an economical manner with efficient traffic operations and with low crash frequency and severity. The facility should, therefore, accommodate nearly all demands with reasonable adequacy and also should not fail under severe or extreme traffic demands. **Therefore, highways should be designed to operate at a speed that satisfies nearly all drivers.**”

*A Policy on Geometric Design of Highways and Streets,  
AASHTO (2-53 (2.3.6))*



**We must align our Policy Goals  
With our Engineering Specs**

# What do we expect of our streets?

THEN

Speed  
Mobility  
Safety

NOW

Multi-Modal Options

Public Health/Safety

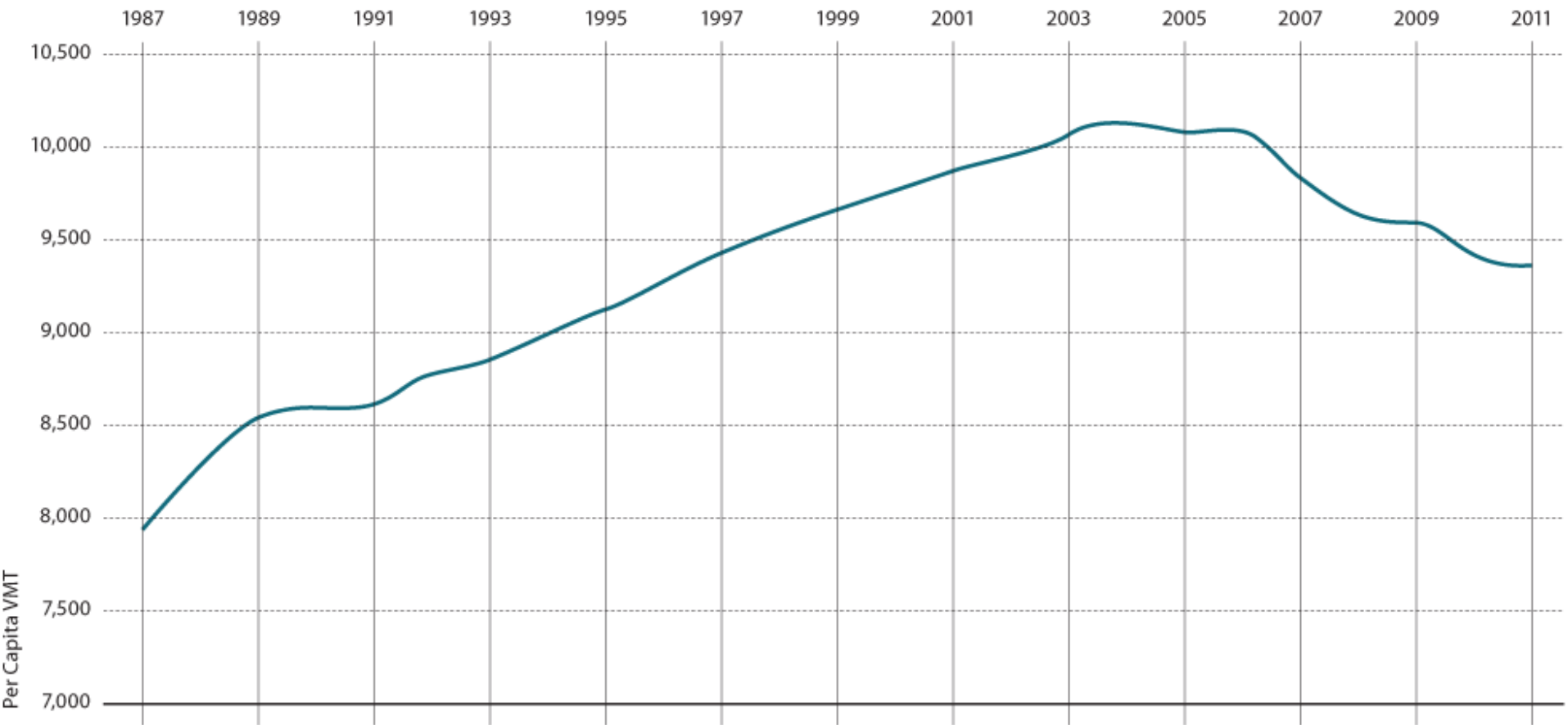
Economic Development

Environmental Quality

Community Building/Livability

Equity

# People are Driving Less, Biking and Walking More





# Street Design Manual

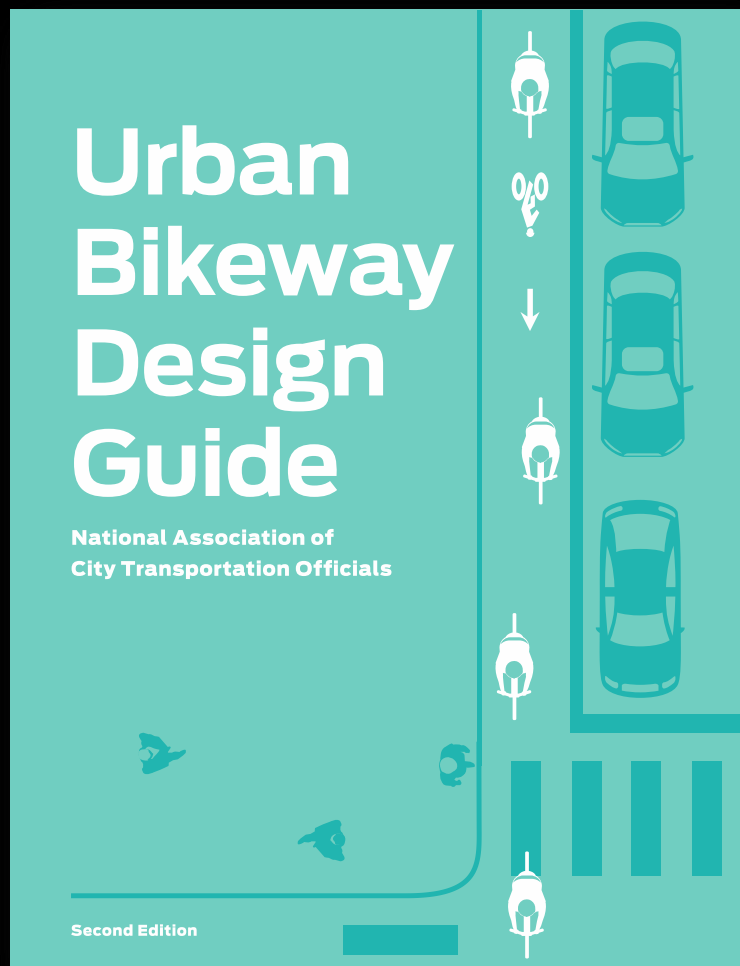


New York City  
Department of Transportation

2013  
Second Edition

Boston Complete Streets Guidelines, 2012

New York City Street  
Design Manual, 2<sup>nd</sup> Ed.  
2013



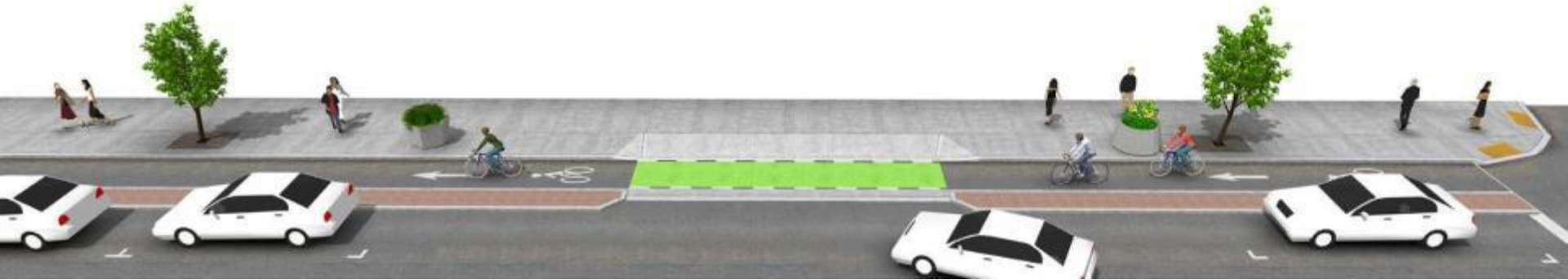
**Published March 2011  
Second Edition Fall 2012**



**Published  
September 2013**



# Urban Bikeway Design Guide 2011-12



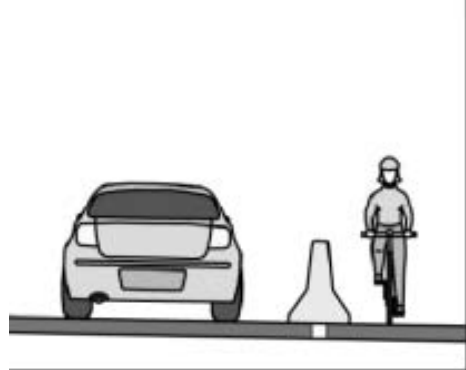




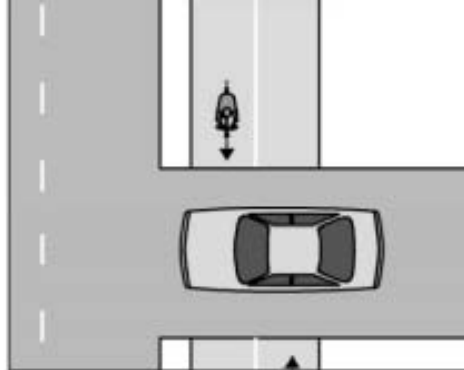
SPEED  
LIMIT  
45

REMPTON  
AUTO SALES  
863-7279

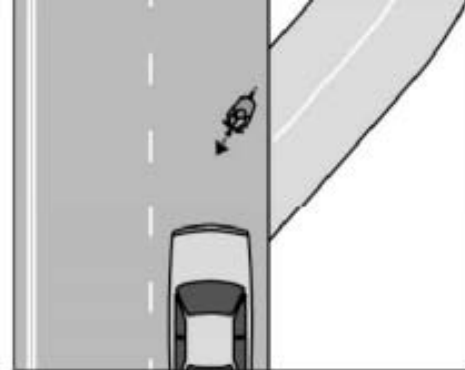




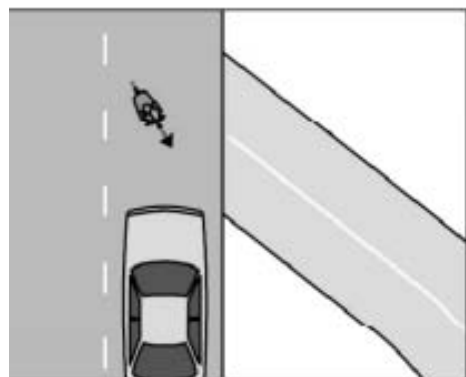
Barriers, while needed in tight spaces, can narrow both roadway and path and create hazards.



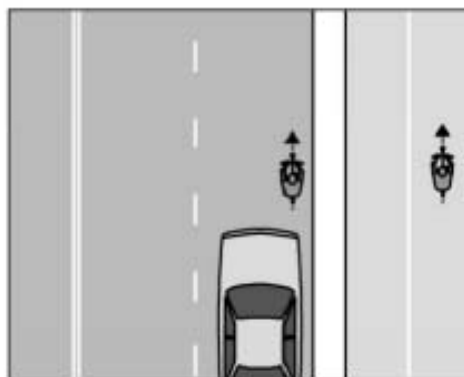
Stopped motor vehicles on side streets or driveways may block the path.



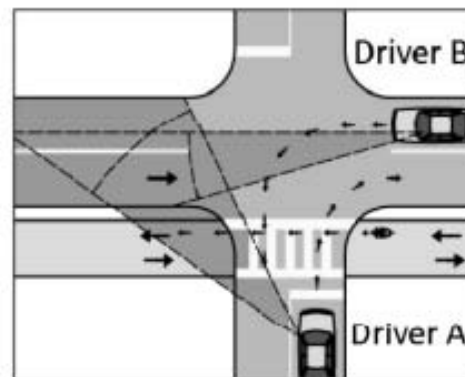
At path's end, bicyclists going against traffic may continue riding the wrong way.



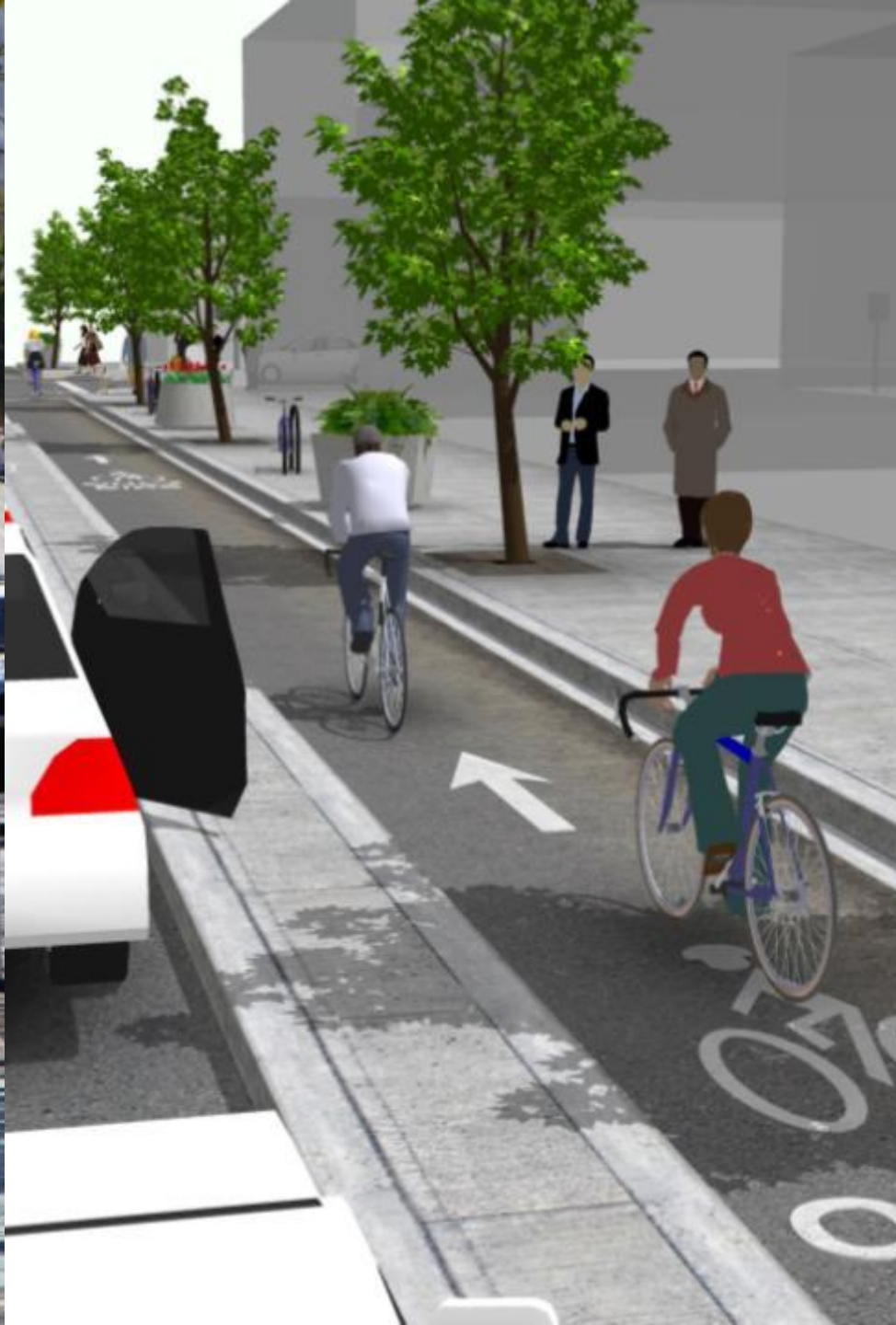
To get to a path entrance, bicyclists may ride against traffic or make unanticipated crossings.



Some bicyclists may find the road cleaner, safer, and more convenient, frustrating some motorists.



Right turning Driver A is looking for traffic on the left; Left turning driver B is looking for traffic ahead; In both cases, a wrong-way bicyclist is not in the drivers' main field of vision.



**8** The height of the island should be curb level, 6 inches high. When used as an exclusive bicycle facility it may be desirable to keep the refuge area at street level.<sup>78</sup>

**9** An angled cut-through (45 degrees) should be provided to position bicyclists to face oncoming traffic. If the cut-through is to be shared with pedestrians, the 45-degree angle of the curb should transition back to being perpendicular to the street to provide proper directional cues for the blind.

**10** The refuge area should be wide enough to accommodate two-way bicycle traffic.

#### Optional Features

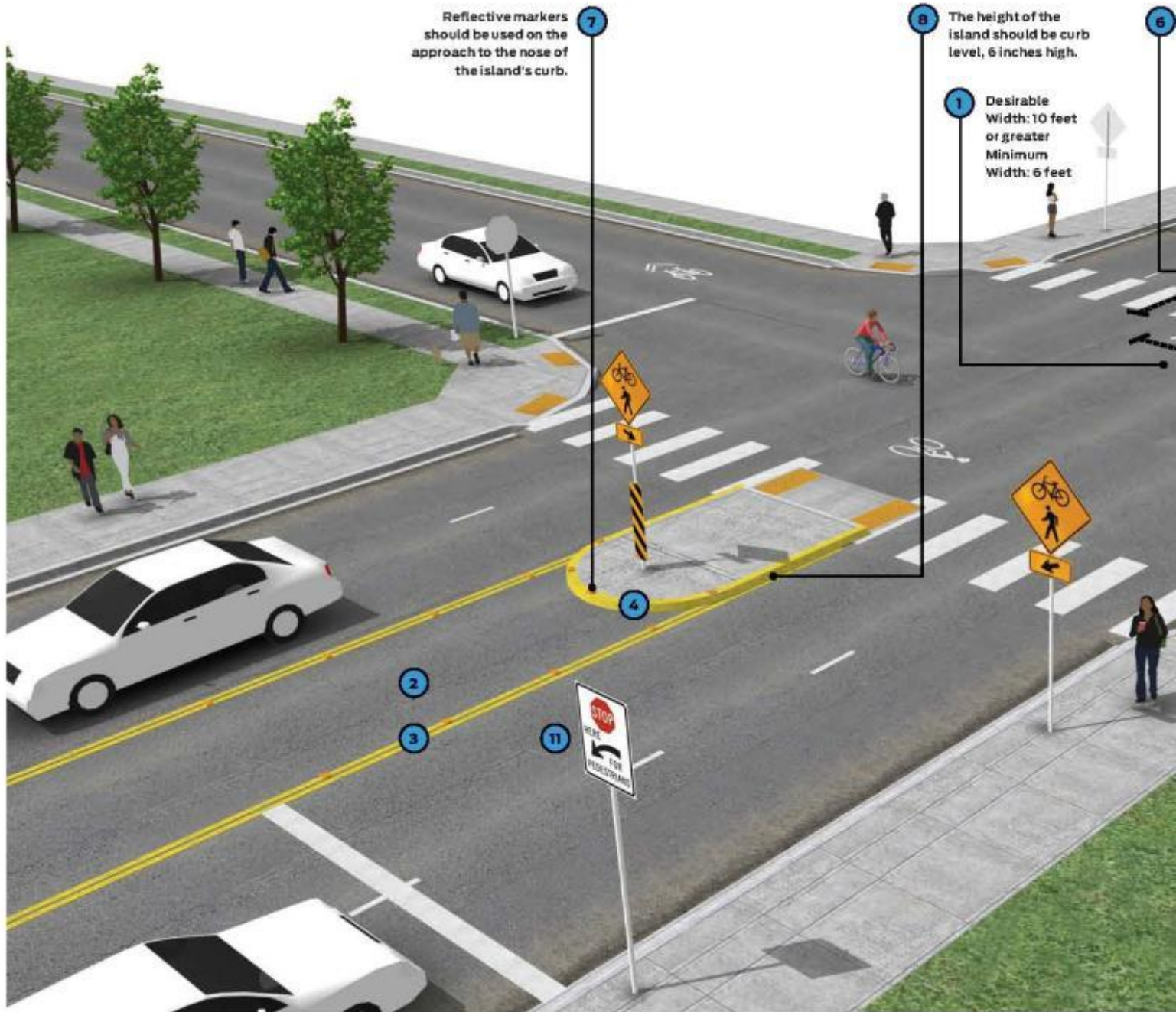
**11** "Advanced Stop" signs and markings for motorists may be included.<sup>78</sup>

**12** Landscaping may be provided in the median, but it should not compromise visibility.<sup>80</sup>

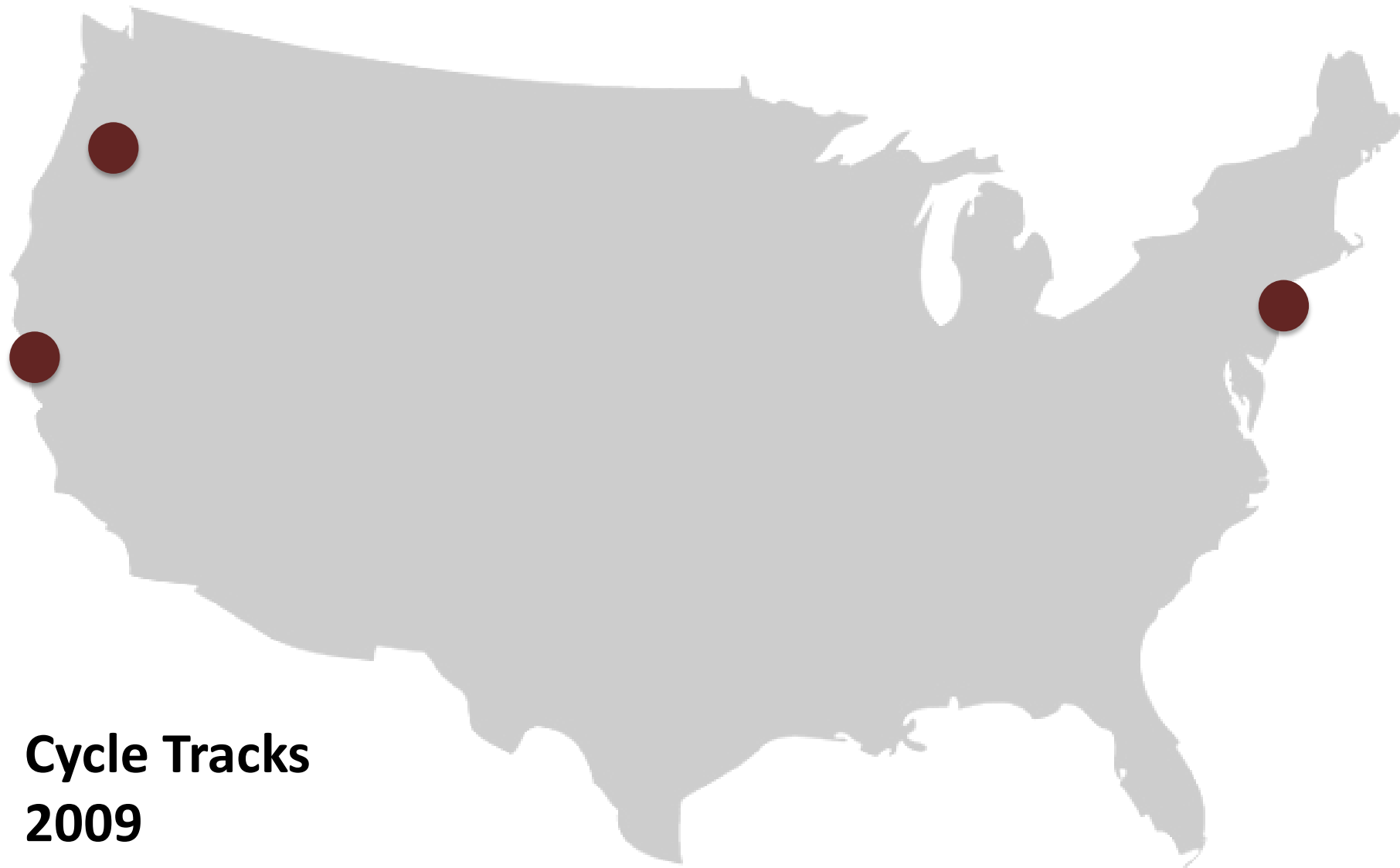
**13** Lighting may be installed for improving visibility of the facility at night.

**14** At signalized intersections, push buttons or other detection methods may be provided to actuate the signal head.

**15** The median refuge can be carried across the entire cross street approach to act as a diverter to prevent cut-through traffic on a bicycle route.

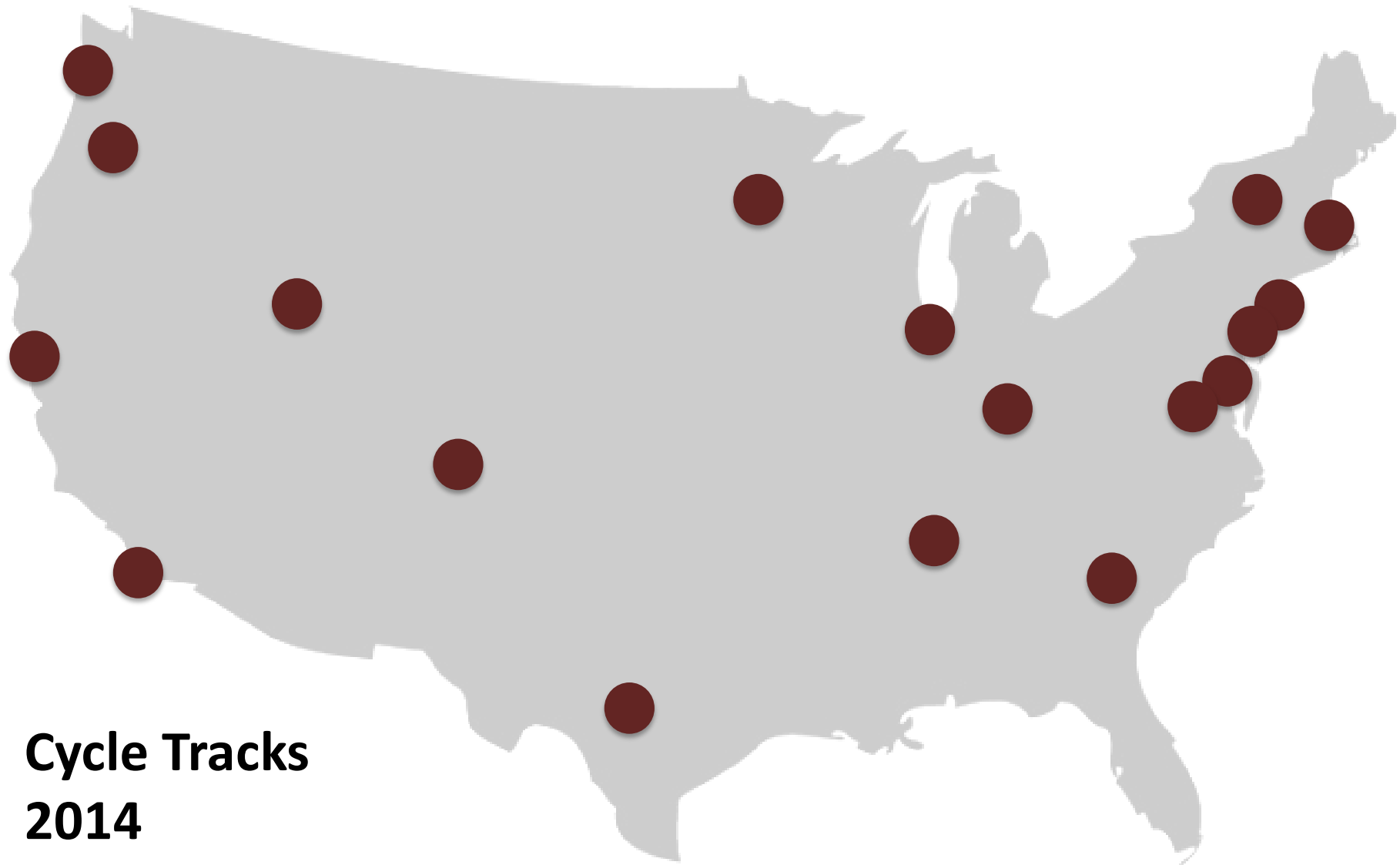






**Cycle Tracks  
2009  
Pre-NACTO Guide**

\*NACTO Members only



**Cycle Tracks  
2014  
Post-NACTO Guide**

\*NACTO Members only

ION STATION

Design  
Guidance

NACTO

and Cycle Track  
Parking Buffer

ay  
n

Urban  
Bikeway  
Design  
Guide



# The Urban Street Design Guide









# STREETS



Downtown 1-Way Street  
Downtown 2-Way Street  
Downtown Thoroughfare  
Neighborhood Main Street  
Neighborhood Street  
Yield Street  
Boulevard

Residential Boulevard  
Transit Corridor  
Green Alley  
Commercial Alley  
Residential Shared Street  
Commercial Shared Street

# STREET DESIGN ELEMENTS



Lane Width

Sidewalks

Curb Extensions

Gateway

Pinchpoint

Chicane

Bus Bulbs

Vertical Speed

Control Elements

Speed Hump

Speed Table

Speed Cushion

Transit Streets

Dedicated Curbside/Offset Bus Lanes

Dedicated Median Bus Lanes

Contra-Flow Bus Lanes

Bus Stops

Stormwater Management

Bioswales

Flow-Through Planters

Pervious Strips

Pervious Pavement

# INTERIM DESIGN STRATEGIES



Moving the curb

Parklets

Temporary Street Closures

Interim Public Plazas

# INTERSECTIONS



Principles

Major Intersections

Intersections of Major  
and Minor Streets

Raised Intersections

Mini Roundabout

Complex Intersections

# INTERSECTION DESIGN ELEMENTS



## Crosswalks and Crossings

- Crosswalks

- Conventional Crosswalks

- Midblock Crosswalks

- Pedestrian Safety Islands

## Corner Radii

## Visibility/Sight Distance

## Traffic Signals

- Signalization Principles

- Leading Pedestrian Interval

- Split-Phasing

- Signal Cycle Lengths

- Fixed vs. Actuated Signalization

- Coordinated Signal Timing

# DESIGN CONTROLS



Design Speed  
Design Vehicle  
Design Hour

Design Year  
Performance Measures  
Functional Classification



## Raised Intersections

Raised intersections create a safe, slow-speed crossing and public space at minor intersections. Similar to speed humps and other vertical speed control elements, they reinforce slow speeds and encourage motorists to yield to pedestrians at the crosswalk.



### RECOMMENDATIONS

**1** Raised intersections are flush with the sidewalk and ensure that drivers traverse the crossing slowly. Crosswalks do not need to be marked unless they are not at grade with the sidewalk. ADA-compliant ramps and

**2** Raised intersections (and mini roundabouts) with yield control are preferred to signals on low-speed (<20 mph) and low-volume (<3,000 ADT) streets, as well as some moderate-volume streets in 30 mph zones. STOP signs should be used instead of YIELD signs if there are concerns that drivers might ignore the pedestrian's

**4** Where two 1-way streets intersect, there will be two corners around which no drivers turn. This can be designed with the smallest constructible radius (approximately 2 feet) as long as a 40-foot fire truck can make the turn without encroaching upon the sidewalk.

# [NACTO.ORG/USDG](http://NACTO.ORG/USDG)



## Urban Street Design Guide

[USDG Home](#)

[About The Guide](#)

[Master Reference Matrix](#)

[Purchase](#)

[Chapters](#)

[Next »](#)

### URBAN STREET DESIGN GUIDE

#### STREETS



#### INTERSECTIONS



#### STREET DESIGN ELEMENTS



#### INTERSECTION DESIGN ELEMENTS



#### INTERIM DESIGN STRATEGIES



#### DESIGN CONTROLS



A commercial shared street environment should be considered in places where pedestrian activity is high and vehicle volumes are either low or discouraged.



## EXISTING

The downtown street in the rendering above is a common sight in many older cities where downtown commercial streets may predate wider grid streets. In newer cities, a retail district with heavy parking utilization and narrow, congested sidewalks may have similar conditions or opportunities.

1 Sidewalk congestion creates unsafe conditions, as crowding forces some pedestrians to walk in the street to avoid crowds.

Vehicles in search of on-street parking create traffic congestion.

2 Loading and unloading trucks obstruct pedestrian and vehicle traffic. Truck drivers park on the sidewalk to preserve vehicle flow while unloading, forcing pedestrians to mix with motorists.

## RECOMMENDATIONS

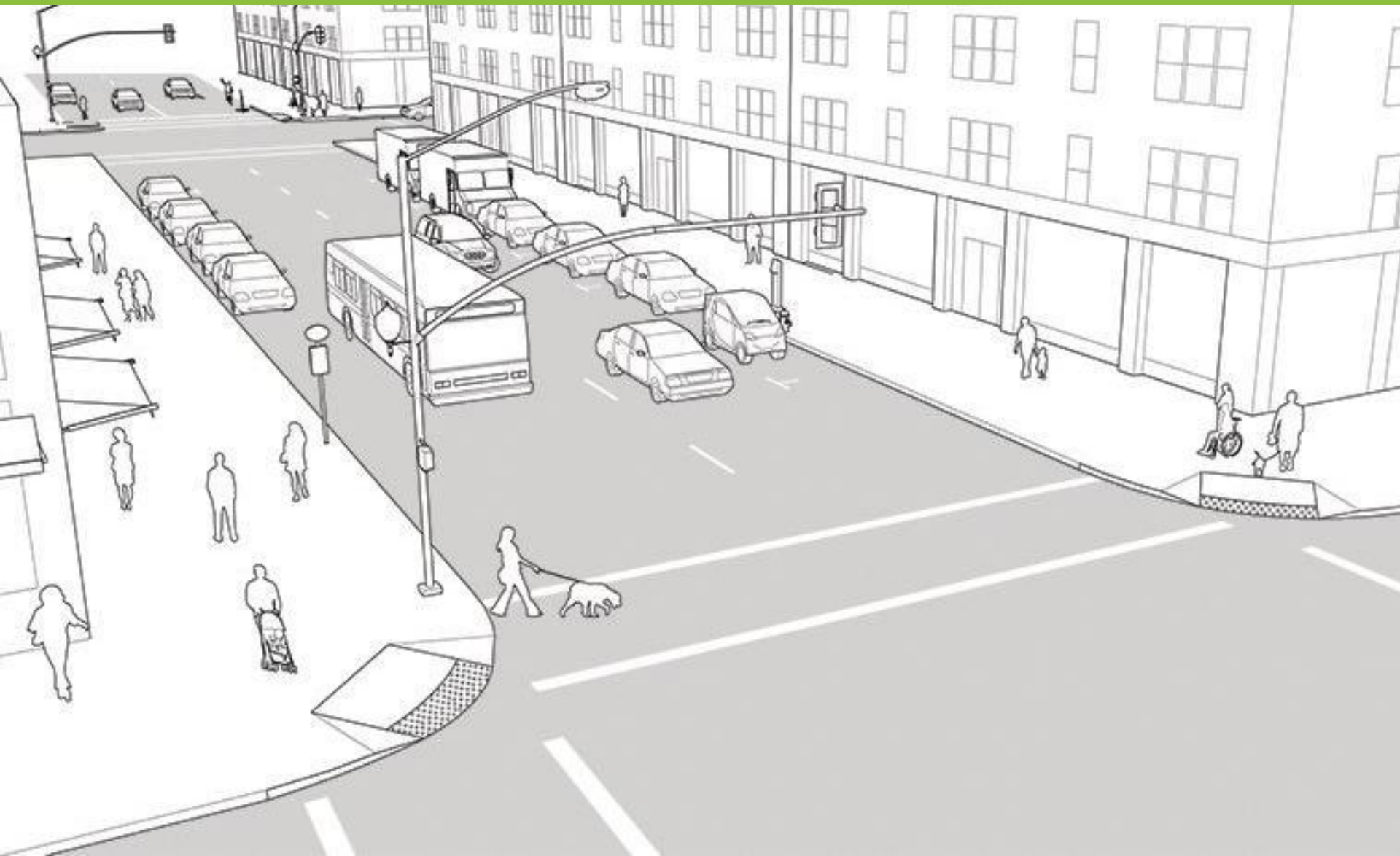
3 Textured or pervious pavements that are flush with the curb reinforce the pedestrian-priority operation of the street and delineate a non-linear path of travel or narrow carriageway. Special pavements, especially

4 Commercial shared streets should be accessible by single-unit trucks making deliveries. Where commercial alleys are non-existent, it may be advantageous to design a shared street to accommodate large trucks

Provide tactile warning strips at the entrance to all shared spaces. Warning strips should span the entire intersection crossing.

Prior to the application of a shared street

# Existing



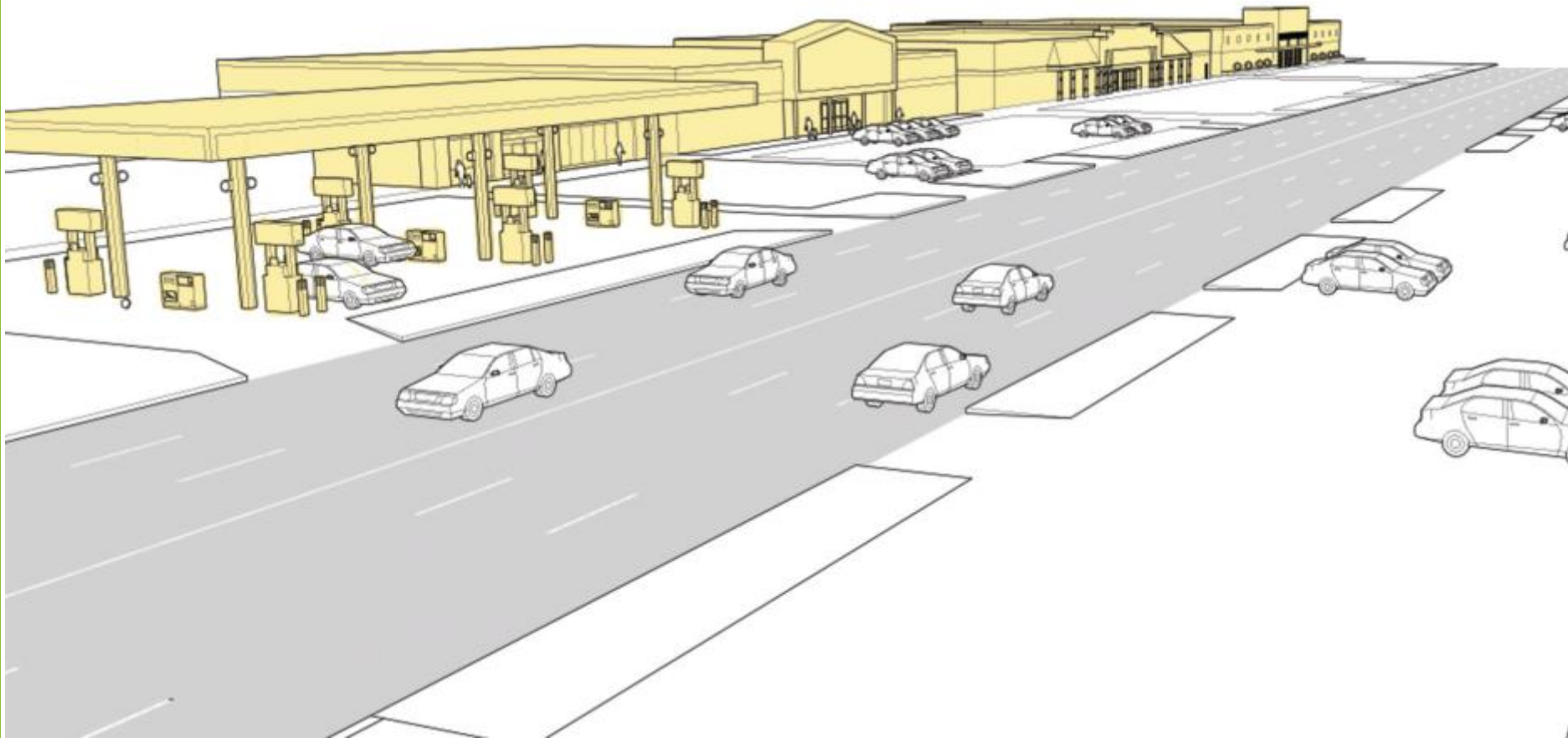
# Interim



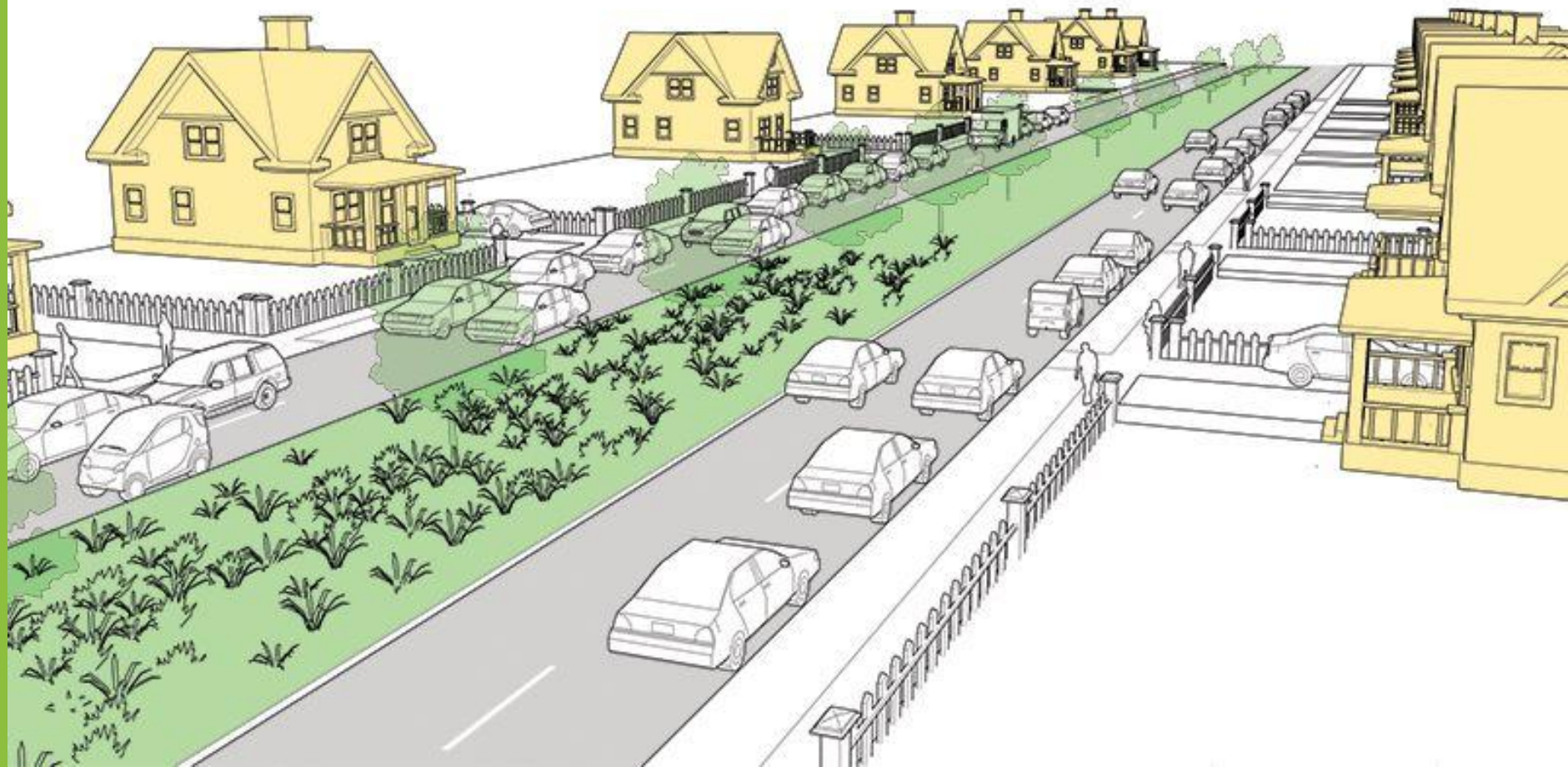
# Reconstruction



# Street Design in Context



# Street Design in Context





# Street Design in Context



## Using the Guide: The Next Steps





DESIGNING CITIES

Leading the World's World Class Streets

NACTO

rudin center

# State DOT Methods of Adoption

Methods of Adoption	Examples
Reference	Washington State DOT
Complete Streets Policy	Georgia DOT (Bike Guide), New Jersey DOT
Deputy Directive	MassDOT Healthy Transportation Policy
Design Memorandum	FHWA, CalTrans
Design Manual Development and/or Update	Virginia DOT (Bike Guide), New York State DOT ATP Guidelines
Endorsement	Washington State DOT, MassDOT, Caltrans, Utah DOT, MNDOT

# Endorsement Campaign: Ending May 31, 2014



**Washington State  
Department of Transportation**

Lynn Peterson  
Secretary of Transportation

Transportation Building  
310 Maple Park Avenue S.E.  
P.O. Box 47300  
Olympia, WA 98504-7300  
360-705-7000  
TTY: 1-800-833-6388  
[www.wsdot.wa.gov](http://www.wsdot.wa.gov)

December 16, 2013

Mr. Ed Reiskin, President  
NACTO  
55 Water Street, 9th Floor  
New York, NY 10041

Dear Mr. Reiskin;

Washington State Department of Transportation (WSDOT) would like to be the first State DOT to officially endorse the National Association of City Transportation Officials' (NACTO) *Urban Street Design Guide*, and are working toward adopting this guide into our policies and procedures. It provides a vision for a new generation of city street design that is consistent with the vision and mission I am developing for the Department. It will also continue to support WSDOT's strategic planning and practical design emphasis and move us toward Governor Inslee's visionary state goals; Results Washington.

We believe that the low-cost innovations, interim solutions, and improvements outlined in the *Guide* can bring many significant benefits to communities across Washington in a short period of time. This is true in even challenging locations where sections of state highway run through cities and must serve as both thoroughfares and local access, maintaining traffic flow and ensuring community livability and safety.

## CalTrans Endorsement, April 10, 2014

Publications such as the National Association of City Transportation Officials (NACTO) **“Urban Street Design Guide”** and **“Urban Bikeway Design Guide,”** and the Institute of Transportation Engineers (ITE) **“Designing Urban Walkable Thoroughfares,”** are resources that Caltrans and local entities can reference when making planning and design decisions on the State highway system and local streets and roads. Caltrans believes that such guidance, coupled with thorough documentation of engineering judgments made in the process, can be of assistance to communities, particularly in urban areas, to support the planning and design of safe and convenient facilities that they own and operate.



*C. Barrett*

*"Good news—I hear the paradigm is shifting."*



**David Vega-Barachowitz**

**Director**

**Designing Cities Initiative**

**NACTO**

**[david@nacto.org](mailto:david@nacto.org)**

**646.628.3337**