ASSOCIATION OF PEDESTRIAN & BICYCLE PROFESSIONALS

Expertise for Active Transportation

APBP FREE WEBINAR: EXPLORING NACTO'S UPDATED URBAN BIKEWAY DESIGN GUIDE, THIRD EDITION

APRIL 2, 2025

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Expertise for Active Transportation

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apbp Virtual Summit

A Path to Progress

September 23-24, 2025

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September 23-24, 2025

www.apbp.org/2025-virtual-summit

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INFLUENCE	APBP provides a collective voice on governmental issues that affect walking and bicycling.
COLLABORATE	Get a front row seat to the dissection of technical issues to help you work smarter, not harder.
IMPROVE AND IMPACT	Associate with colleagues who recognize the built environment is designed in ways that both reflect and signal racism and are taking action to create change.
LEAD	Take advantage of opportunities to lead chapters and serve on national committees that advance our industry and the association.
LEARN	APBP provides opportunities to share real-life projects, working examples, and lessons learned to increase knowledge.
GUIDE	Get guidance and support from formal policy statements on topics relevant to your work.
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Expertise for Active Transportation

TODAY'S WEBINAR PRESENTERS

- Cary Bearn
  - Senior Manager at the National Association of City Transportation Officials (NACTO)
- Dale Calkins
  - Transportation Planner, City of Calgary
- Peter Trinh
  - Multi-Modal Engineering Supervisor, City of Seattle
- Cortney Geary
  - Active Modes Manager, City of Fort Collins

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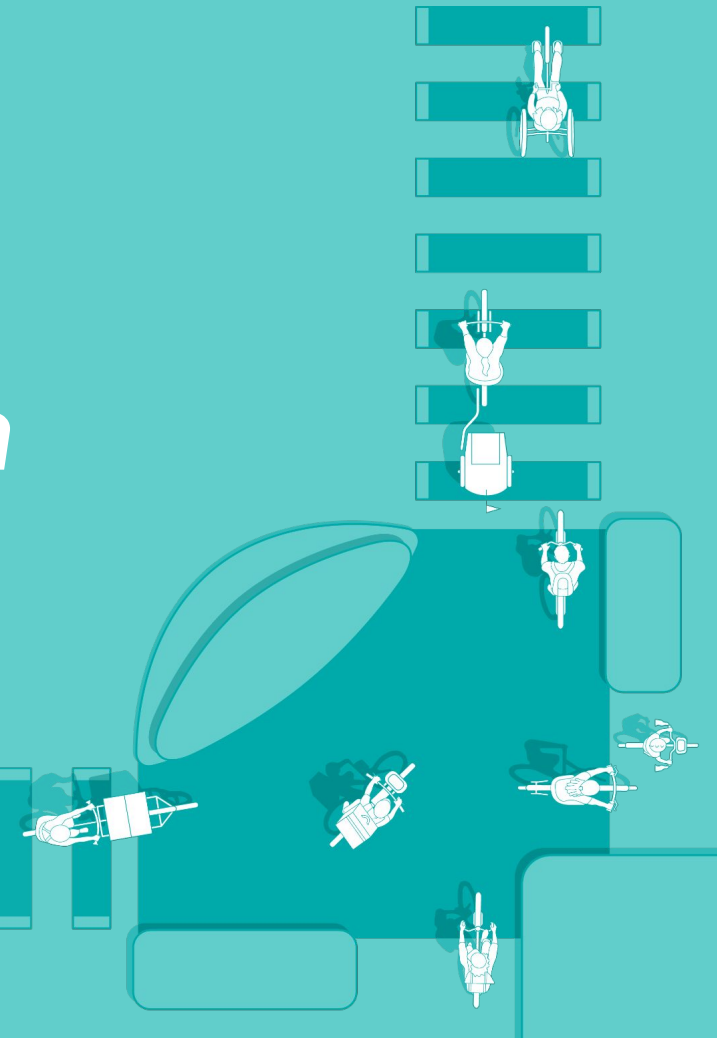
Expertise for Active Transportation

NACTO
Urban Bikeway Design Guide, Third Edition

APBP Webinar | April 2, 2025

3:30 - 4:30 pm Eastern



Agenda

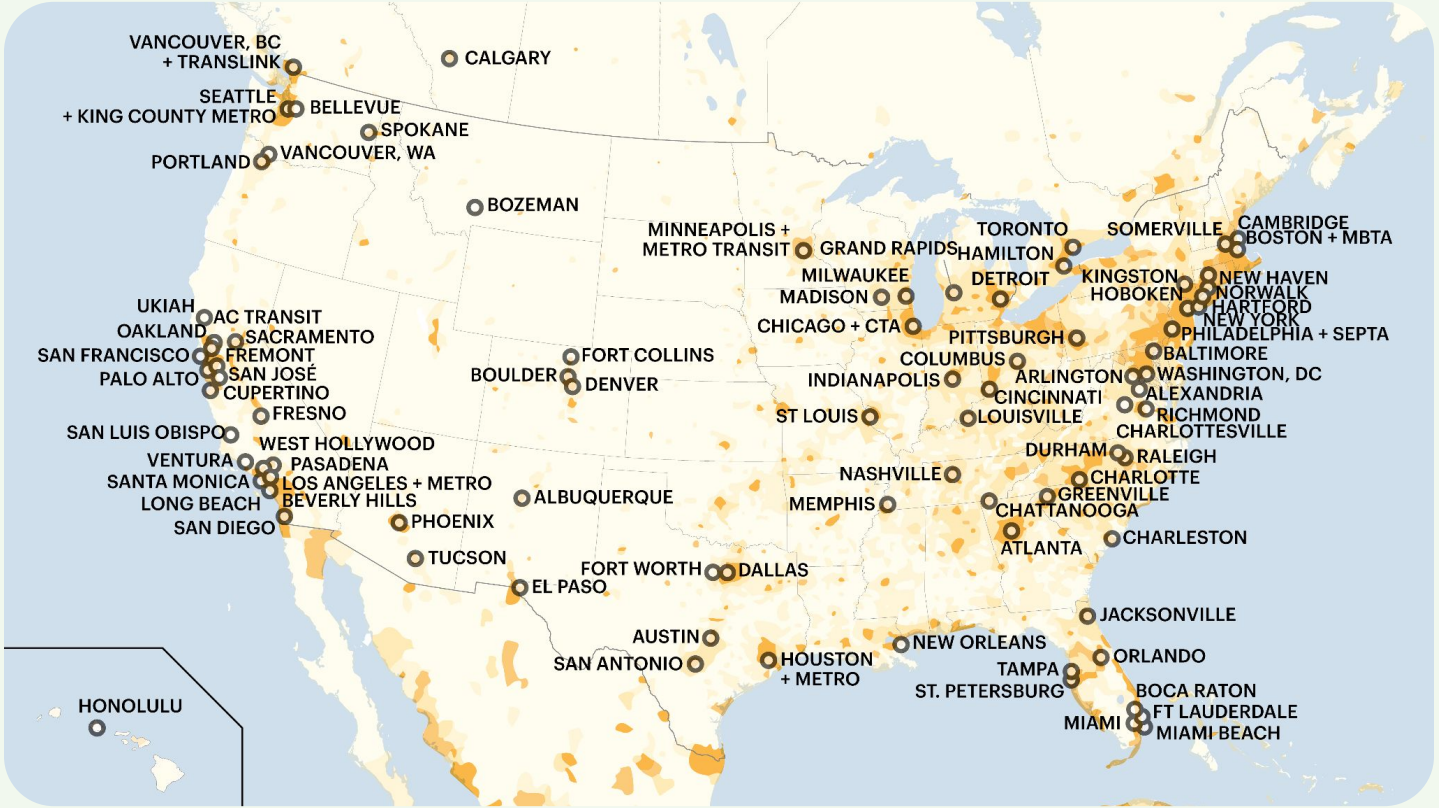
1. About NACTO
2. Urban Bikeway Design Guide Overview
3. City Examples

    Calgary, Dale Calkins
    Seattle, Peter Trinh
    Fort Collins, Cortney Geary

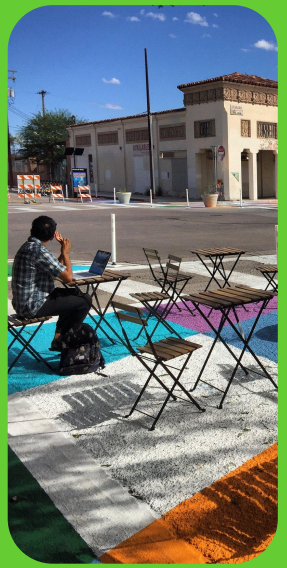
4. NACTO Moderated Q&A, Jenny O'Connell

1 About NACTO

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS


VANCOUVER, BC
+ TRANSLINK
CALGARY
SEATTLE
+ KING COUNTY METRO
BELLEVUE
SPOKANE
PORTLAND
VANCOUVER, WA
BOZEMAN
MINNEAPOLIS +
METRO TRANSIT
GRAND RAPIDS
TORONTO
HAMILTON
SOMERVILLE
CAMBRIDGE
BOSTON + MBTA
MILWAUKEE
DETROIT
KINGSTON
HOBOKEN
NEW HAVEN
NORWALK
HARTFORD
NEW YORK
MADISON
CHICAGO + CTA
PITTSBURGH
PHILADELPHIA + SEPTA
UKIAH
AC TRANSIT
OAKLAND
SACRAMENTO
SAN FRANCISCO
FREMONT
PALO ALTO
SAN JOSÉ
CUPERTINO
FRESNO
FORT COLLINS
BOULDER
DENVER
COLUMBUS
BALTIMORE
INDIANAPOLIS
ARLINGTON
WASHINGTON, DC
CINCINNATI
ALEXANDRIA
ST LOUIS
LOUISVILLE
RICHMOND
CHARLOTTESVILLE
SAN LUIS OBISPO
WEST HOLLYWOOD
DURHAM
RALEIGH
VENTURA
PASADENA
SANTA MONICA
LOS ANGELES + METRO
NASHVILLE
CHARLOTTE
LONG BEACH
BEVERLY HILLS
ALBUQUERQUE
MEMPHIS
GREENVILLE
SAN DIEGO
PHOENIX
CHATTANOOGA
ATLANTA
CHARLESTON
TUCSON
FORT WORTH
DALLAS
EL PASO
JACKSONVILLE
AUSTIN
NEW ORLEANS
SAN ANTONIO
HOUSTON
+ METRO
TAMPA
ORLANDO
ST. PETERSBURG
BOCA RATON
HONOLULU
MIAMI
FT LAUDERDALE
MIAMI BEACH

NACTO works to make cities and transportation networks safe, sustainable, equitable, and accessible.



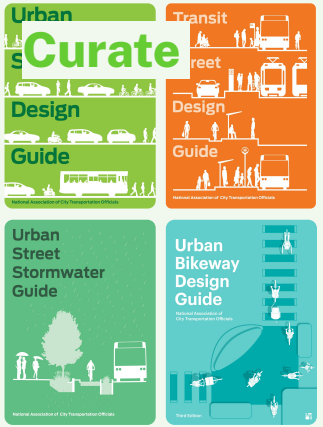
NACTO

Convenes by hosting conferences and workshops

Collaborates by facilitating fellowships and discussion groups

Curates by publishing design guidance and policy papers

Communicates by influencing media narratives with city voices



NEWS

Statement: Local Infrastructure Investment Has Made America Safer, Stronger, and More Prosperous

January 23, 2025

NACTO DESIGNING CITIES 2025

May 28-31 in Washington, D.C.

Register by April 30:
events.bizzabo.com/DesigningCities2025/

NACTO members receive:

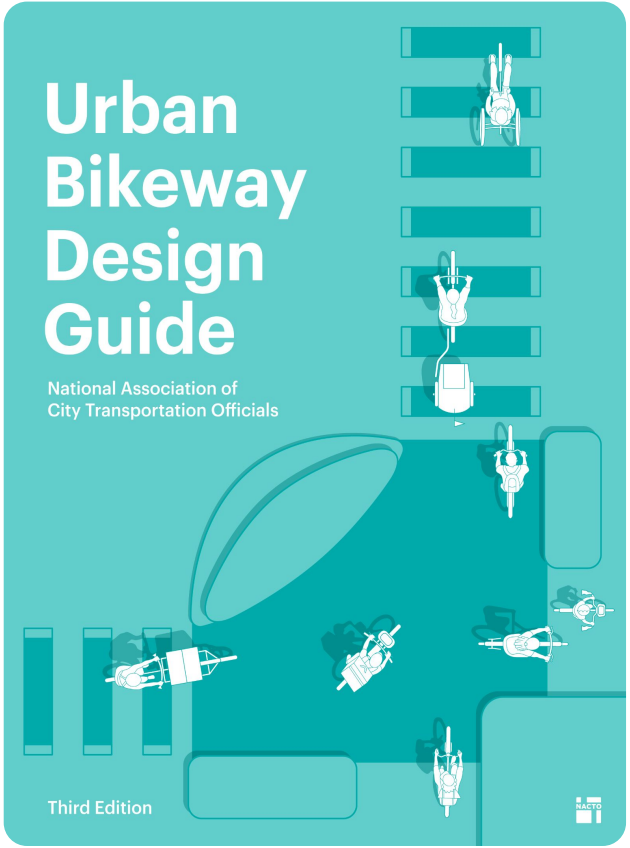
- Complimentary ticket
- Invitation to present at Meet the Cities (due April 18)

2 Urban Bikeway Design Guide Overview

The *Urban Bikeway Design Guide, Third Edition* is fundamental design guidance for safer streets

- Local jurisdictions can adopt NACTO design guides and, in the U.S., even use for projects with federal funding on local streets (IIJA Section 11129)

HOW TO ADOPT A NACTO DESIGN GUIDE



What's new in this edition?

Updated form the *Second Edition*

Updated from *All Ages & Abilities*

Updated from *Don't Give Up At the Intersection*

New material! *(unhighlighted)*

TABLE OF CONTENTS

What's new in this edition?

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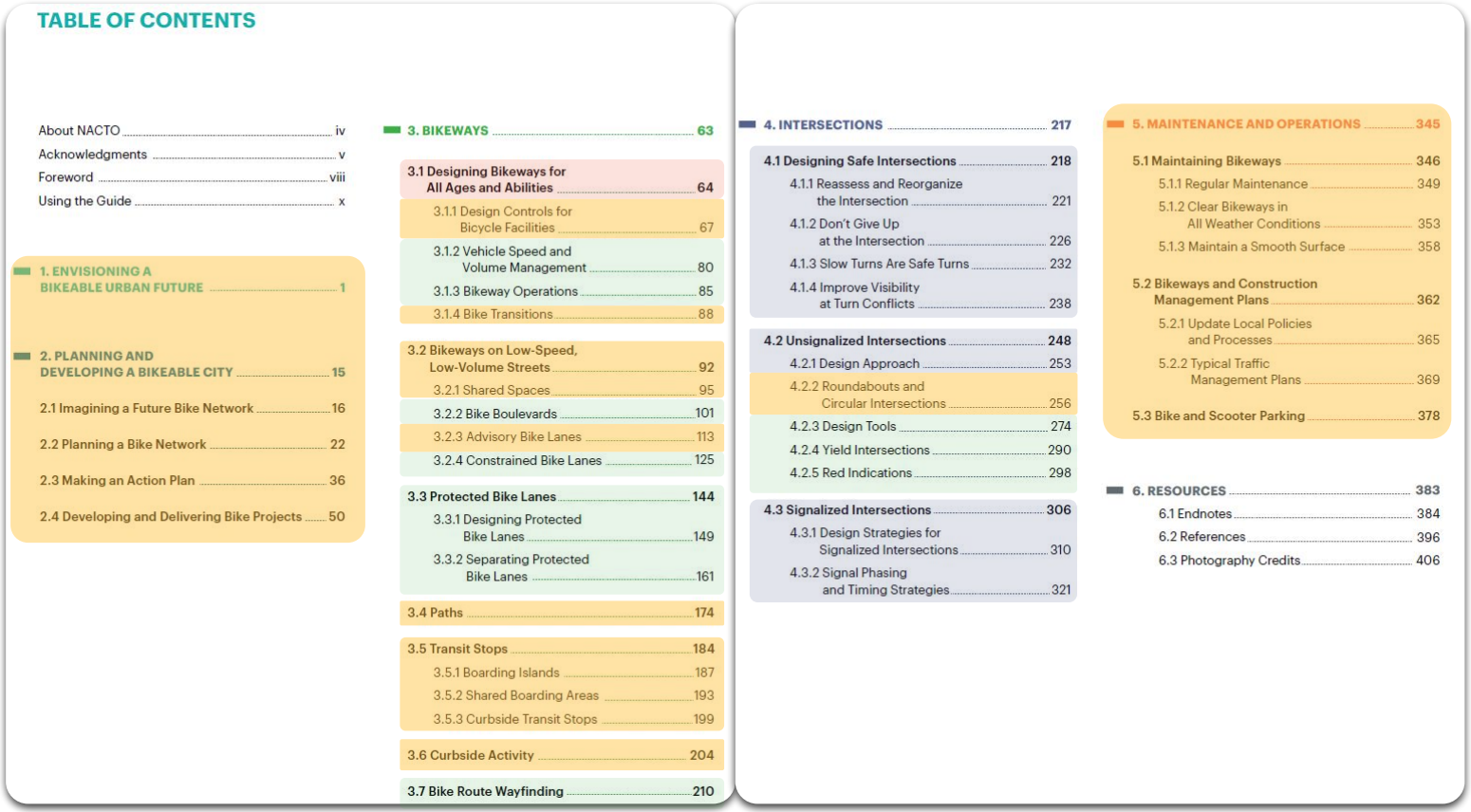
New material!



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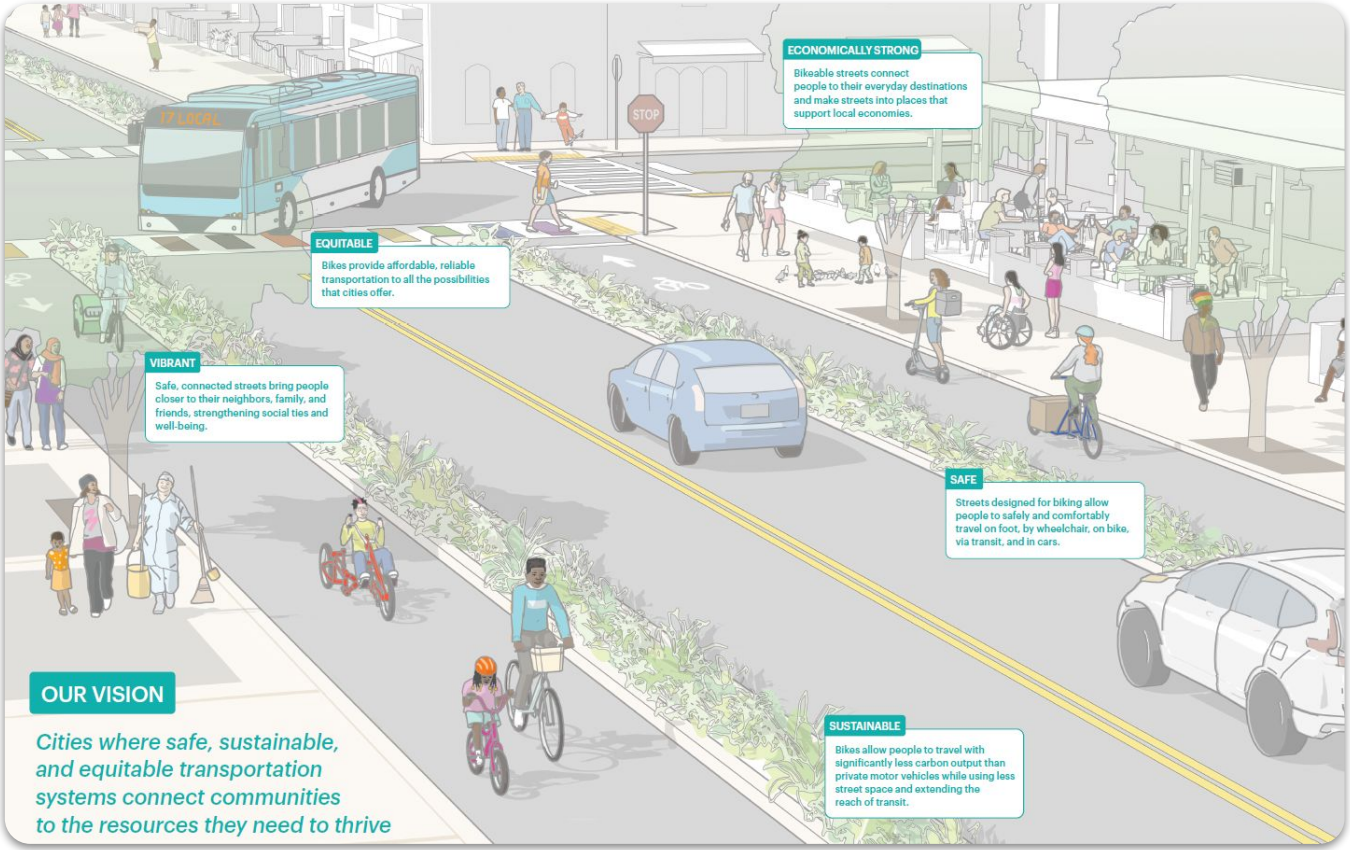
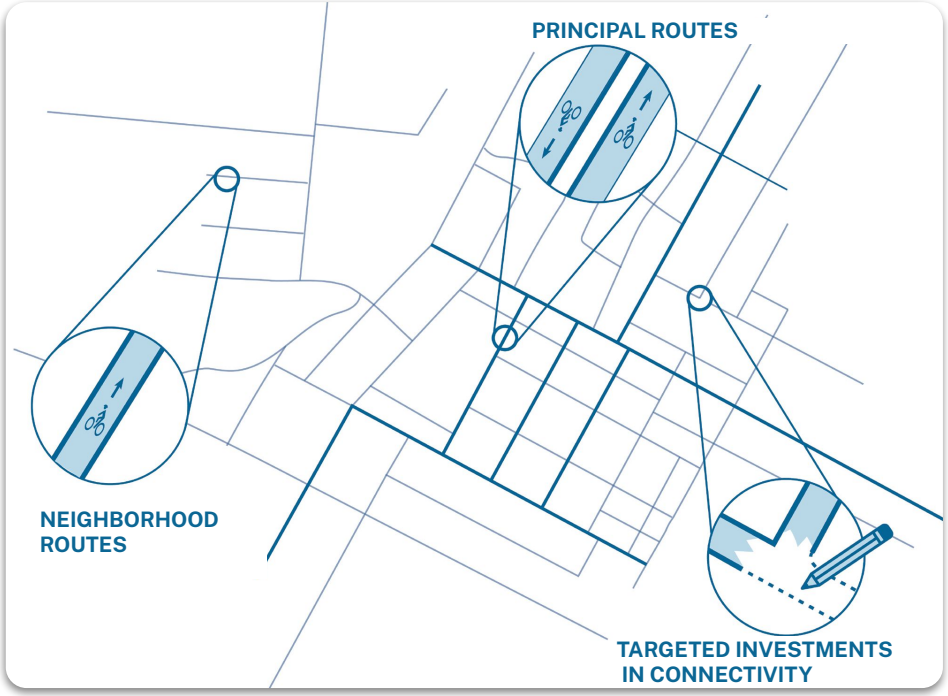
Chapter 1: Invest in a bold vision



Chapter 2: Build a Bikeable City

Plan–and implement–a connected, all ages and abilities network



Chapter 2: Build a Bikeable City

Expand organizational capacity

	People	Policy	Engagement	Planning	Design and Delivery	Evaluation
LEVEL 1	STAFF UP	SHARED UNDERSTANDING AND VALUES	TRANSPARENT PROJECT INFORMATION	PROJECT INVENTORY TO IDENTIFY EASY OPPORTUNITIES	ON-CALL CONTRACTS	COLLECT DATA
LEVEL 2	INTERNAL SUPPORT ALIGNS PRIORITIES	ADOPT SUPPORTIVE POLICIES	WORK WITH TRUSTED PARTNERS	INCREMENTAL NETWORK ACTION	STANDARDS AND SPECS	ANNUAL REPORTING
LEVEL 3	POLITICAL LEADERSHIP AND RELIABLE FUNDING	NEW PROTOCOLS ACROSS AGENCIES	EXPAND CAPACITY WITH LOCAL EXPERTS	THINK BIGGER	PIPELINE OF NETWORK DELIVERY	STORYTELLING TO SHOW IMPACTS

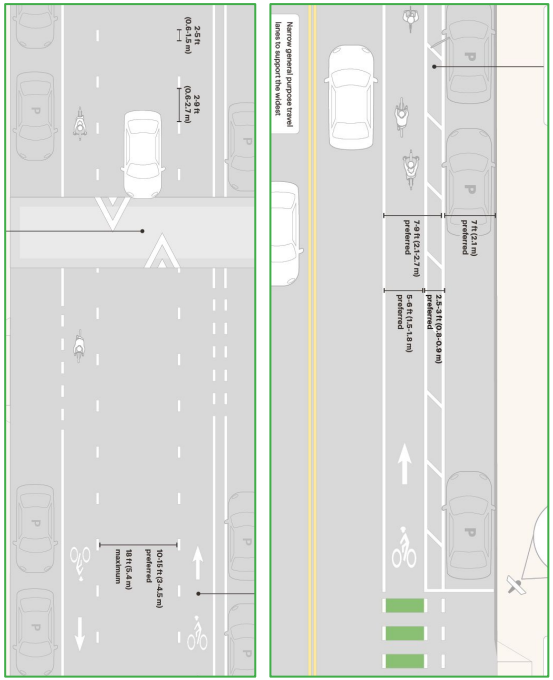
Chapter 3: Design bikeways for all ages and abilities

- ➔ *Design for growth in biking*
- ➔ *Build for comfort, not speed*
- ➔ *Invest in lasting infrastructure*

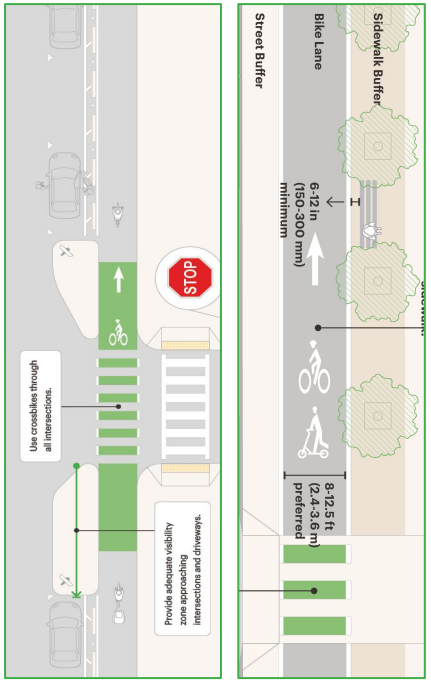
Montreal, QC

Chapter 3: Design bikeways for all ages and abilities

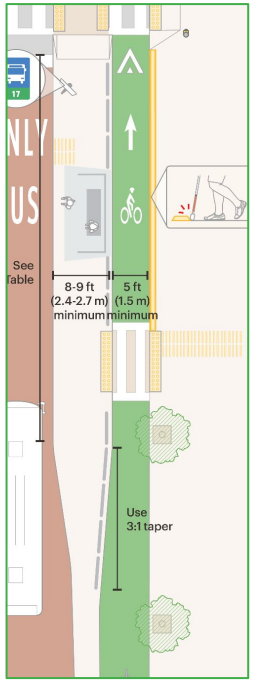
BIKEWAYS FOR LOW-SPEED, LOW-VOLUME STREETS



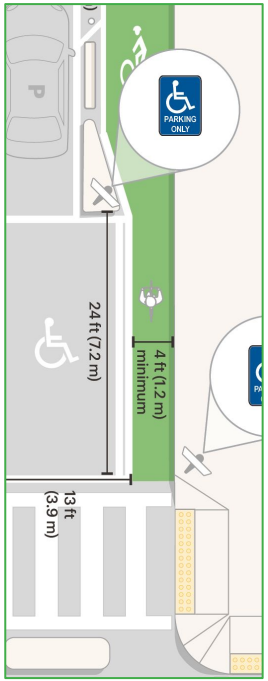
PROTECTED BIKE LANES



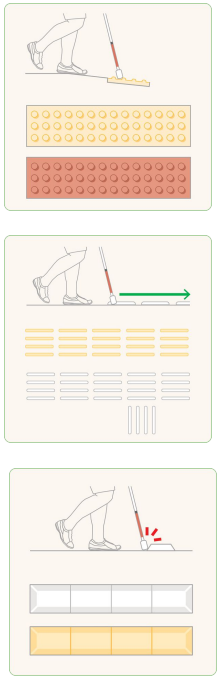
BIKEWAYS AT BUS STOPS



BIKEWAYS AND CURBSIDE ACTIVITY



DETECTABLE SURFACES

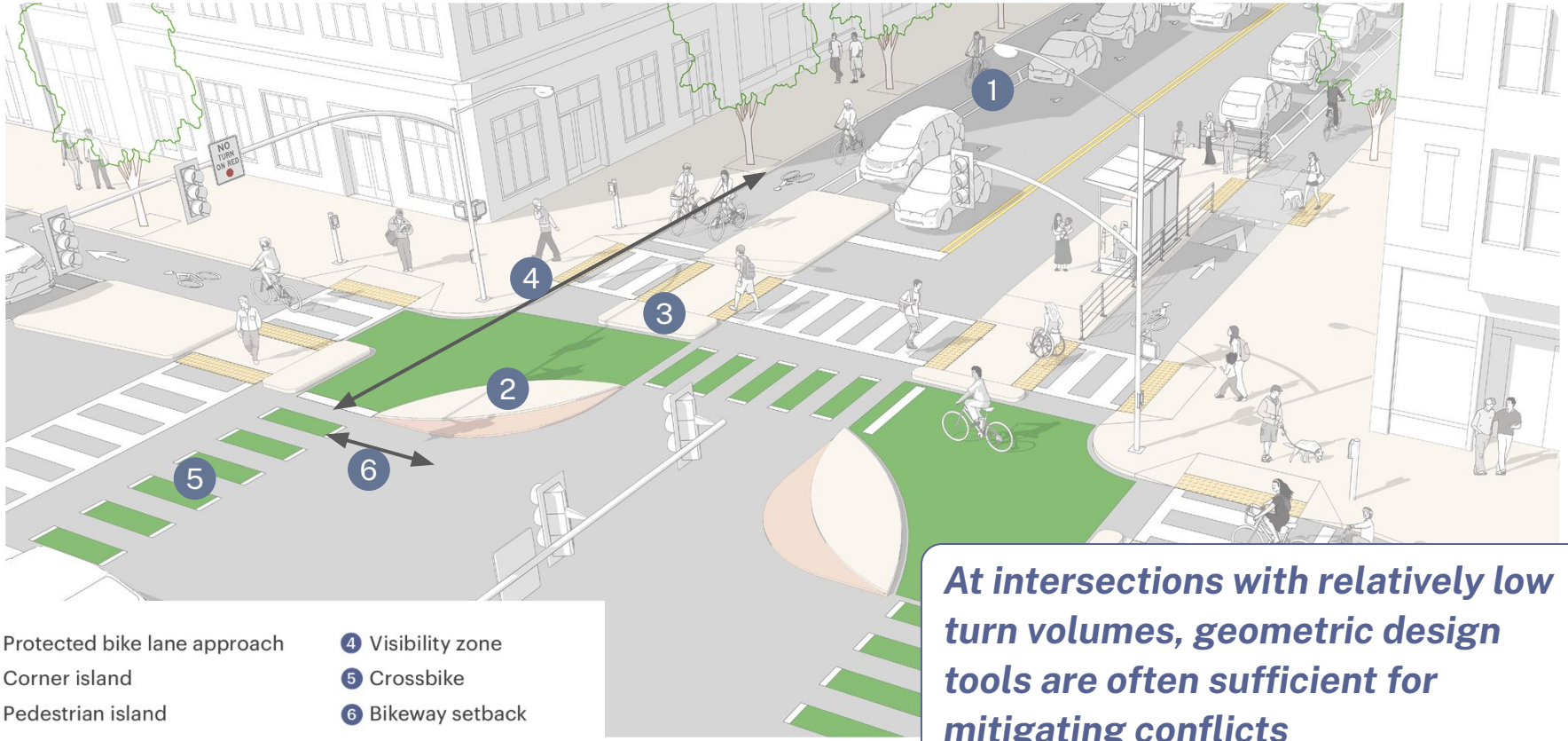


Chapter 4: Design Bikeable Intersections

- ➔ *Reassess priorities*
- ➔ *Provide distinct paths of travel*
- ➔ *Slow turns*
- ➔ *Improve visibility*

Do not expect to eliminate all conflicts

Austin, TX



1. Protected bike lane approach
2. Corner island
3. Pedestrian island
4. Visibility zone
5. Crossbike
6. Bikeway setback

At intersections with relatively low turn volumes, geometric design tools are often sufficient for mitigating conflicts

At busy intersections, signal timing can separate turning vehicles from people biking, rolling, and walking

Montreal, QC

Contextual guidance for when to use phase separation along bikeways

HOURLY RIGHT TURN VOLUME ACROSS UNIDIRECTIONAL BIKEWAY													
		25	50	75	100	125	150	175	200	225	250	275	300
Cycle Length (Seconds)	50	0.3	0.7	1	1.4	1.7	2.1	2.4	2.8	3.1	3.5	3.8	4.2
	60	0.4	0.8	1.3	1.7	2.1	2.5	2.9	3.3	3.8	4.2	4.6	5
	70	0.5	1	1.5	1.9	2.4	2.9	3.4	3.9	4.4	4.9	5.3	5.8
	80	0.6	1.1	1.7	2.2	2.8	3.3	3.9	4.4	5	5.6	6.1	6.7
	90	0.6	1.3	1.9	2.5	3.1	3.8	4.4	5	5.6	6.3	6.9	7.5
	100	0.7	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	6.9	7.6	8.3
	110	0.8	1.5	2.3	3.1	3.8	4.6	5.3	6.1	6.9	7.6	8.4	9.2
	120	0.8	1.7	2.5	3.3	4.2	5	5.8	6.7	7.5	7.5	9.2	10

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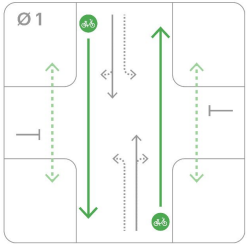

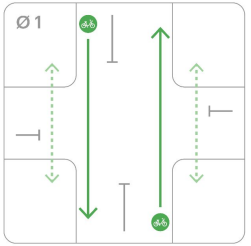

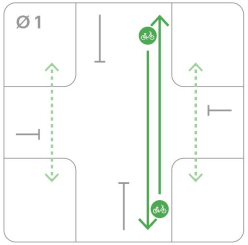

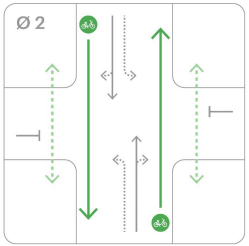

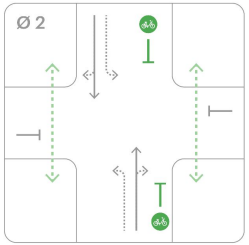

Contextual guidance for when to use phase separation along bikeways

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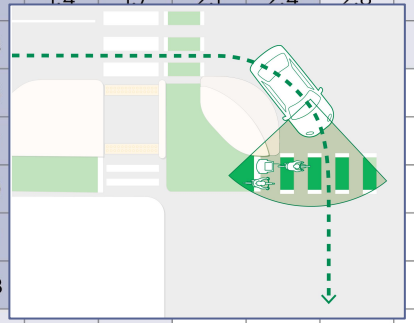

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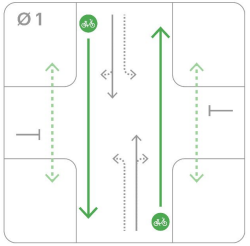
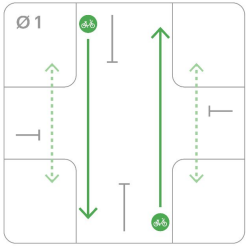
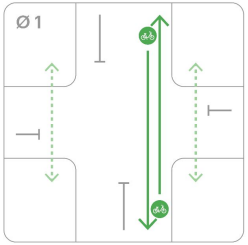
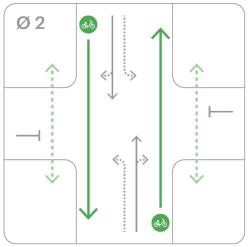
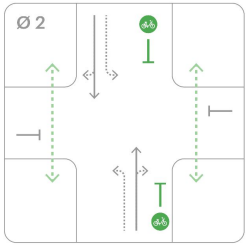


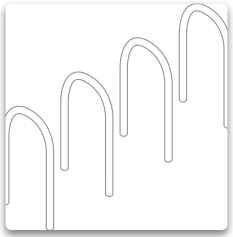


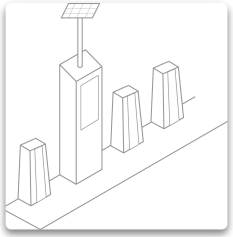


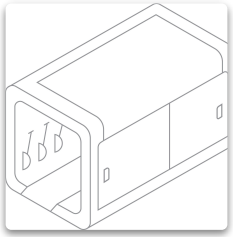


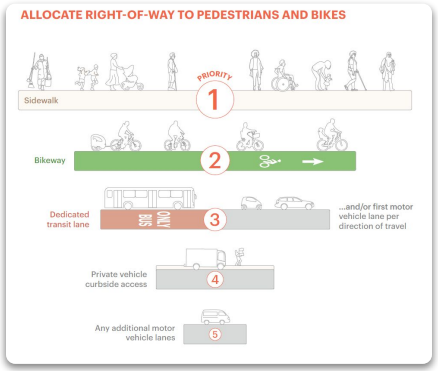


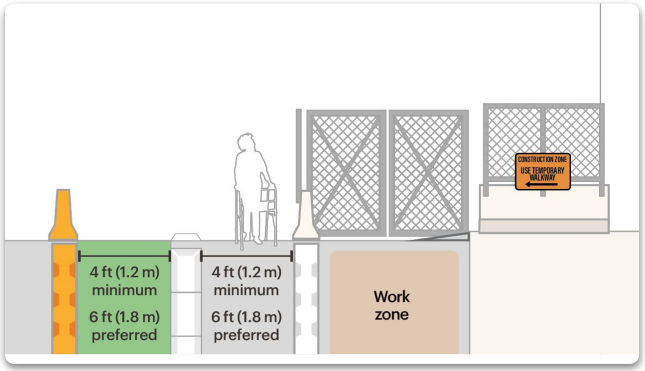
Chapter 5: Keep bikeways operational











Urban Bikeway Design Guide,
Third Edition

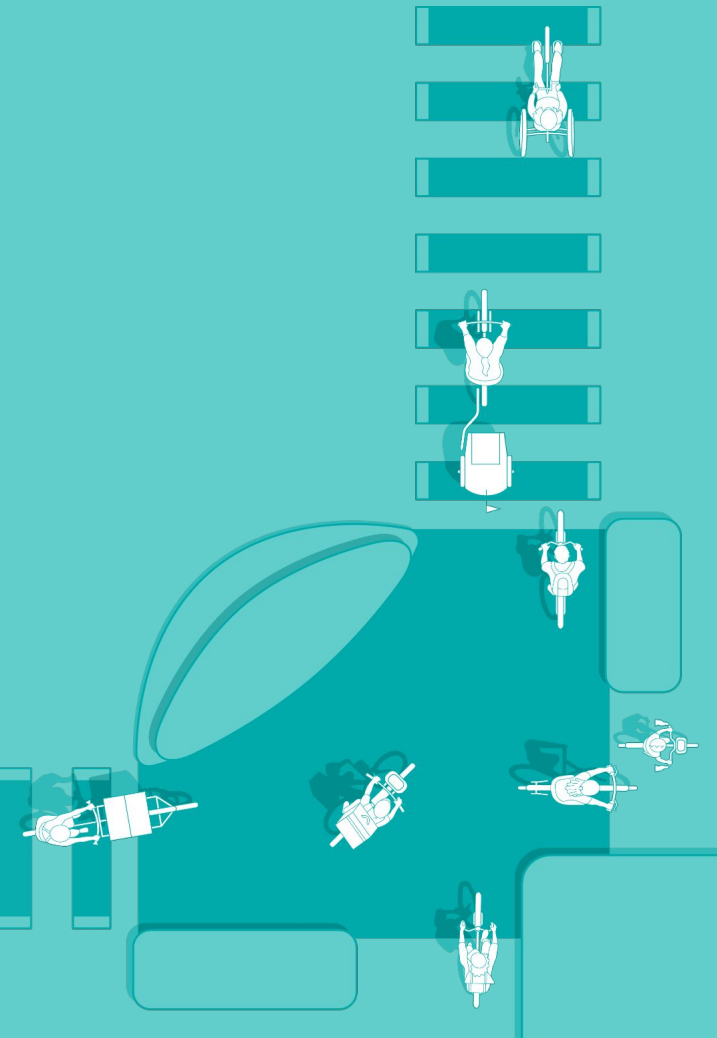
Purchase books:

nacto.org/bike-guide

Use code WEBINAR for 30% off

CARY BEARN
Senior Manager,
Multimodal Design and Programs

CARY @ NACTO . ORG



Cycling Facility Selection and Design Controls

Association of Pedestrian and Bicycle Professionals Webinar, 2025 April 2

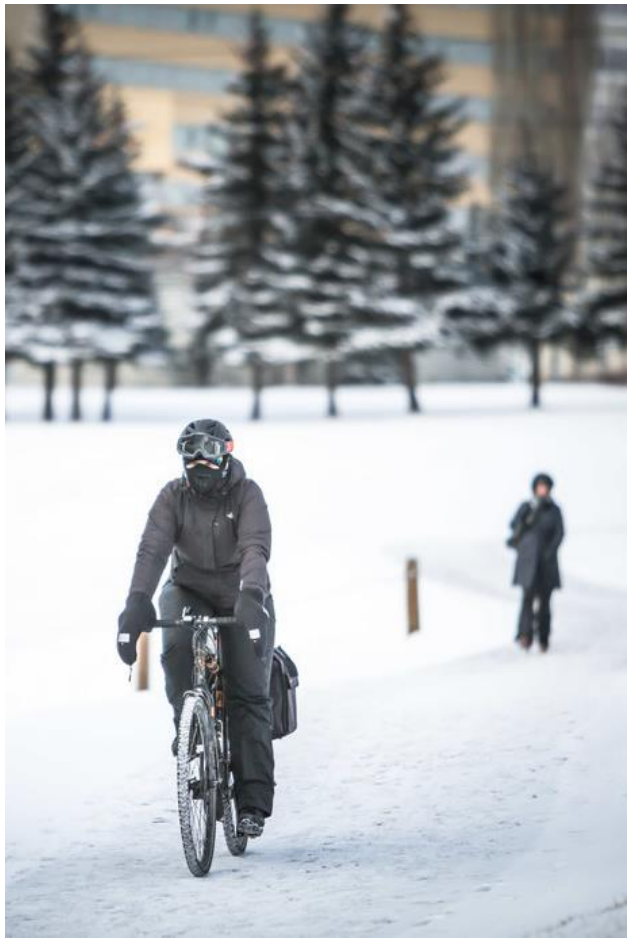
Dale Calkins, Transportation Planner, Public Space & Mobility Policy, The City of Calgary

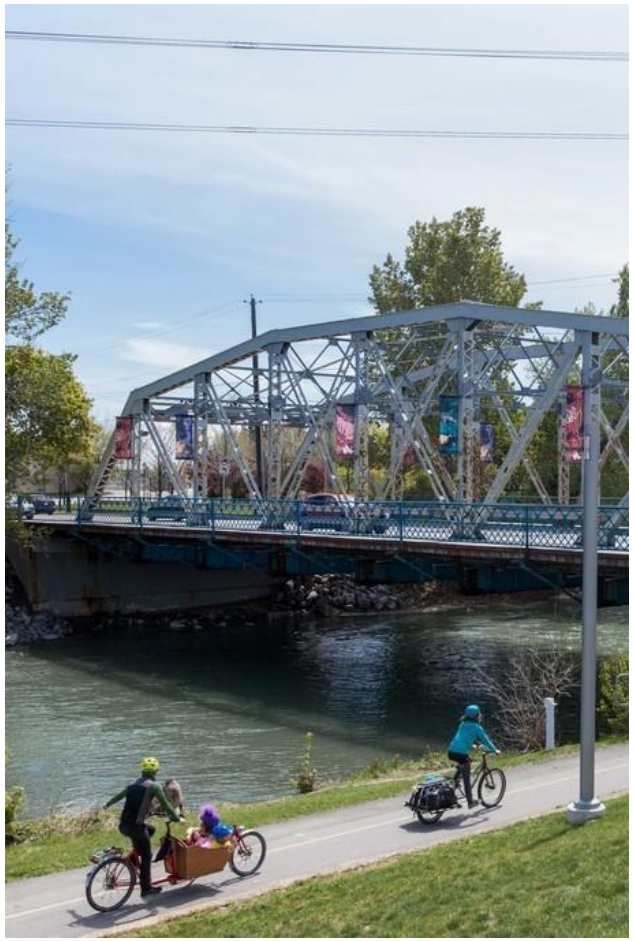
Land acknowledgement

Calgary?

- 1.5 million people
- Growing by 69,000 people a year
- 825 square kilometres
- 17,000 lane kilometres of roadway
- 60 kilometres of LRT
- 4,500 kilometres of bus routes
- 1,000 kilometres of multi-use pathway
- 74 kilometres of bicycle lanes
- 5th most livable city in the world

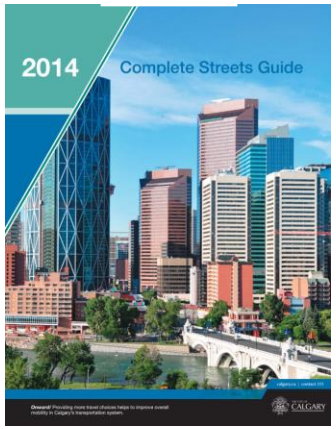
Cycling facilities in Calgary – Off-street



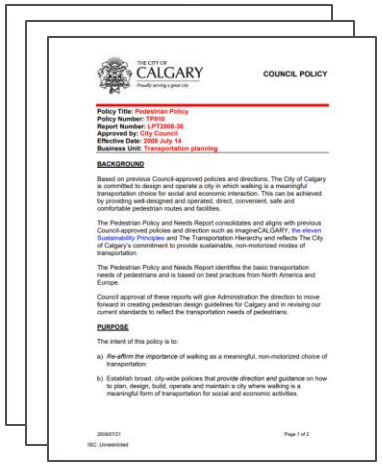


Cycling facilities in Calgary – On-street

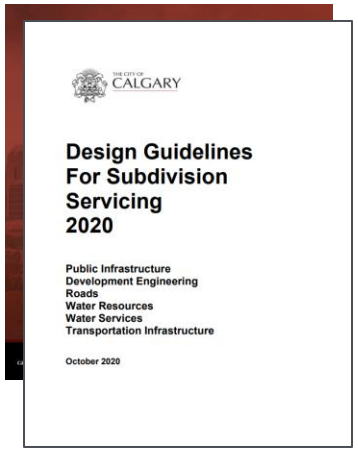
Calgary street design



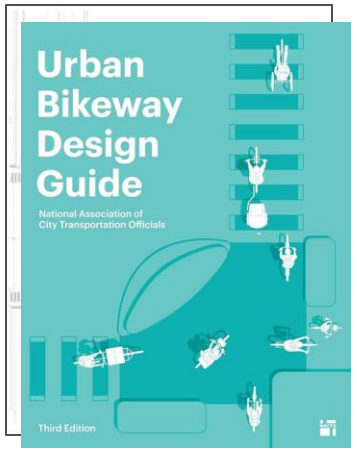
Complete Streets



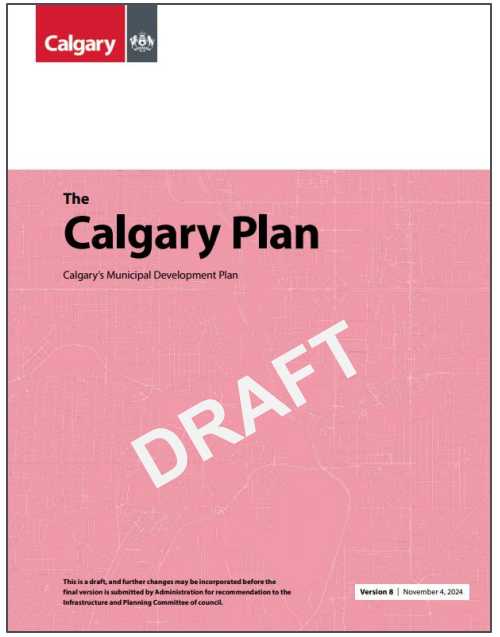
Various Policies

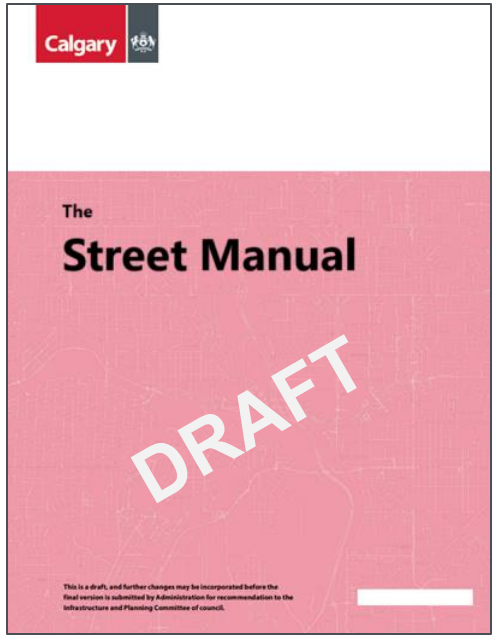


Calgary Guidelines



Other Guidelines





Where do the bikes go?

On-street

Multi-use path

Off-street

Shared space

Bike boulevard

Bike path

Post protected Lane

Protected lane

Buffered lane

Sharrows

Painted lane

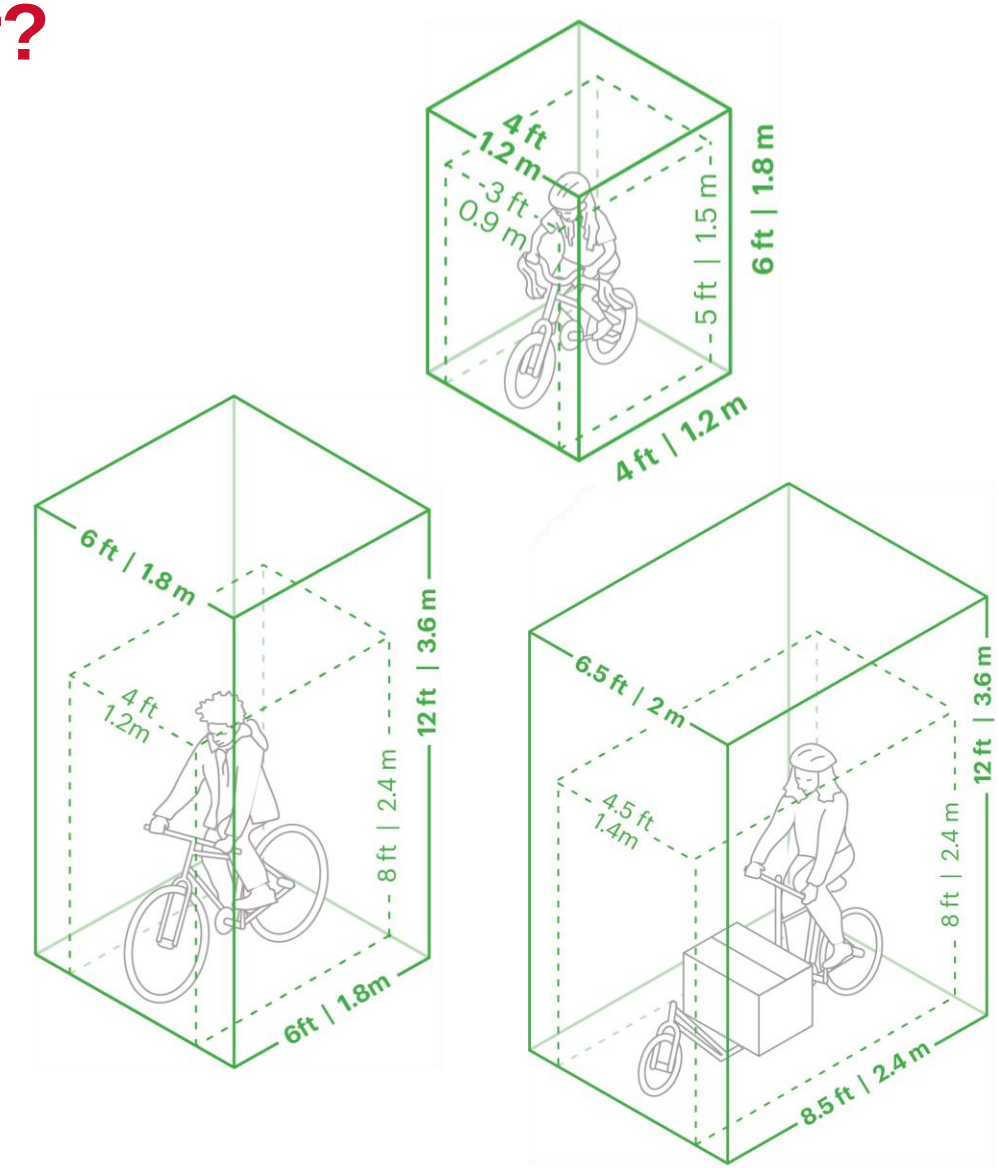
Advisory bike lane

Raised lane

Curb protected lane

Who are we designing for?

- Enable greater ridership
- Appeal to all ages and abilities (AA&A)
- Consider the diversity of devices
  - Conventional and electric bicycles
  - Tricycles, recumbents, hand cycles, etc
  - Cargo and work bicycles
  - Children's bicycles
  - Conventional and electric scooters
- All of these should be expected in any bikeway



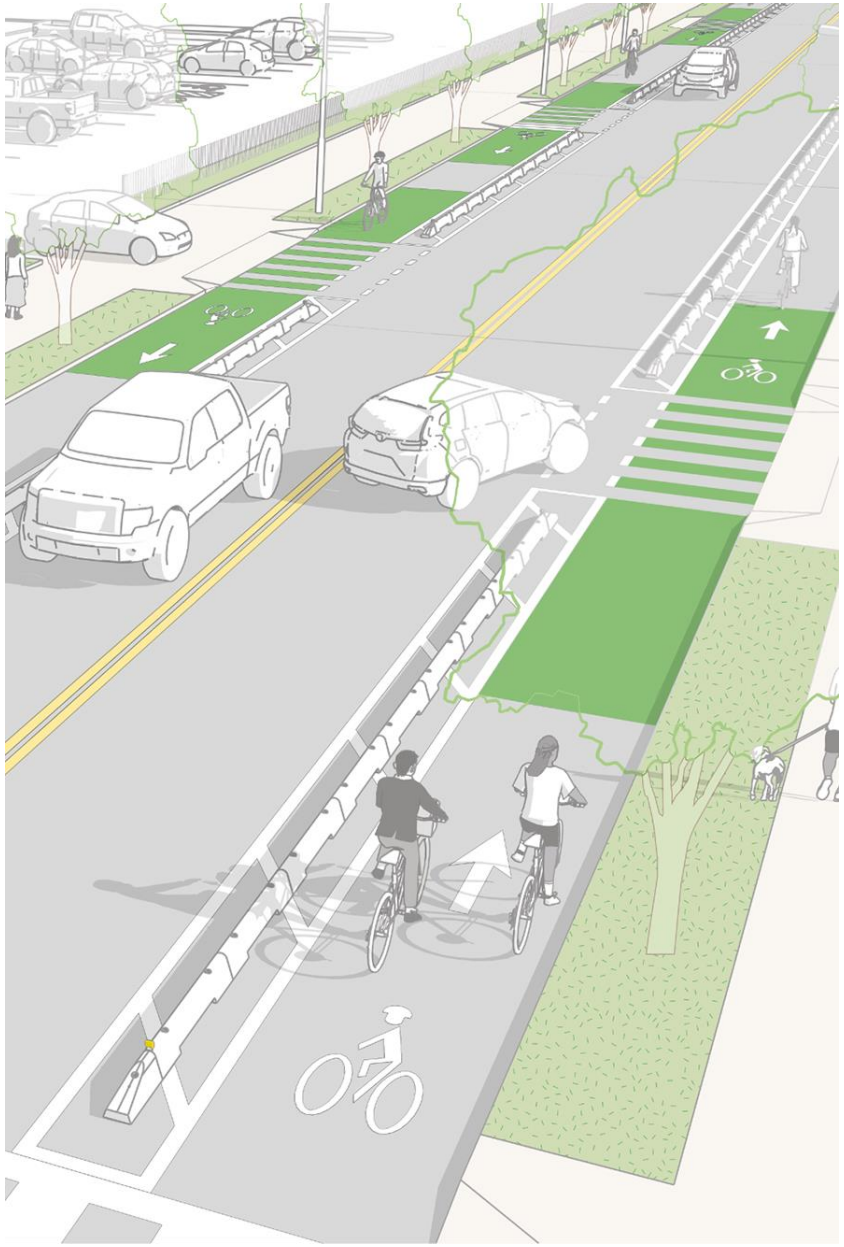
Who are we designing for?

MINIMUM AND PREFERRED RIDEABLE WIDTHS								
Control Device	**One-Way Bike Lane**				**Two-Way Bike Lane**			
	Minimum Recommended*		**Preferred**		**Minimum Recommended***		**Preferred**	
Mini Device Widths cannot be less than a typical bike	6 ft	1.8 m	7-8 ft	2.1-2.4 m	8-10 ft	2.4-3 m	11-13 ft	3.3-3.9 m
Typical Bike Device width up to 2.5 ft (0.8 m)	6 ft	1.8 m	7-8 ft	2.1-2.4 m	8-10 ft	2.4-3 m	11-13 ft	3.3-3.9 m
Cargo Bike Device width up to 3 ft (0.9 m)	6.5 ft	2 m	8-9 ft	2.5-2.8 m	9-11 ft	2.7-3.3 m	12-14 ft	3.7-4.3 m
Extra-Large Bike Device width up to 4.5 ft (1.4 m)	7 ft	2.1 m	11.5-12.5 ft	3.5-3.8 m	12-14 ft	3.6-4.2 m	15-17 ft	4.7-5.3 m

*Platooning, side-by-side riding, and passing are not accommodated in minimum widths.

Where are we designing?

- Consider the context:
  - Motor vehicle speeds
  - Motor vehicle volumes
  - Transit and heavy vehicle frequency
  - Curbside activity
  - Adjacent land use
- Higher activity requires more protection



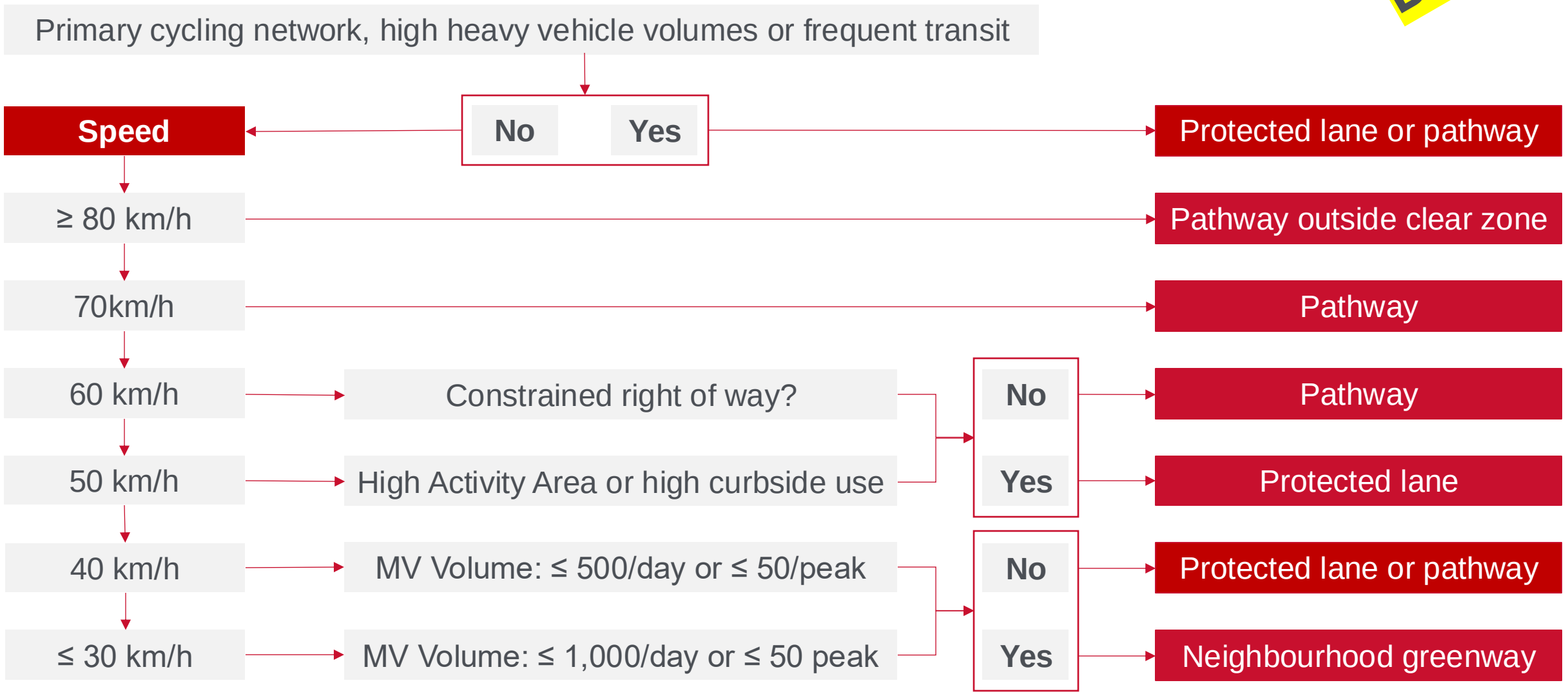
Where are we designing?

GUIDANCE FOR SELECTING ALL AGES & ABILITIES BIKEWAYS

Bikeway	Target Motor Vehicle Speed	Motor Vehicle Volume per day	Motor Vehicle Volume Peak Hour in Peak Direction
Protected Bike Lane	Any	Any	Any
Shared Spaces	≤10 mph ≤15 km/h	≤ 1,000	≤60
Bicycle Boulevard	≤ 20 mph ≤ 30 km/h	≤ 500 - 2,000	<50-150
Advisory Bike Lane	≤ 20 mph ≤ 30 km/h	≤ 500-2,000	<50-150
Constrained Bike Lanes	≤ 20 mph ≤ 30 km/h	≤ 1,500-3,000	≤ 300
Constrained Bike Lane *with Buffer*	≤ 25 mph ≤ 40 km/h	≤ 6,000	≤ 600

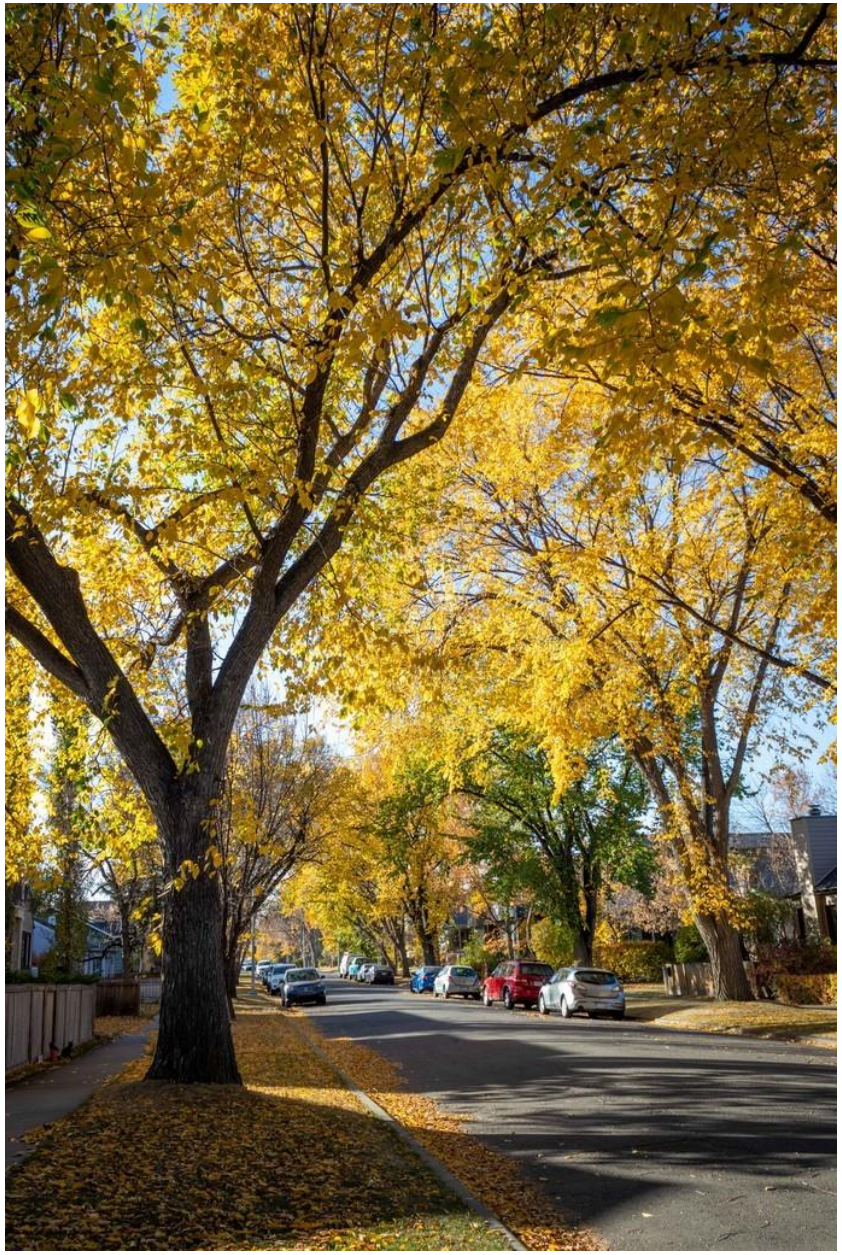
Street Manual selection matrix

DRAFT

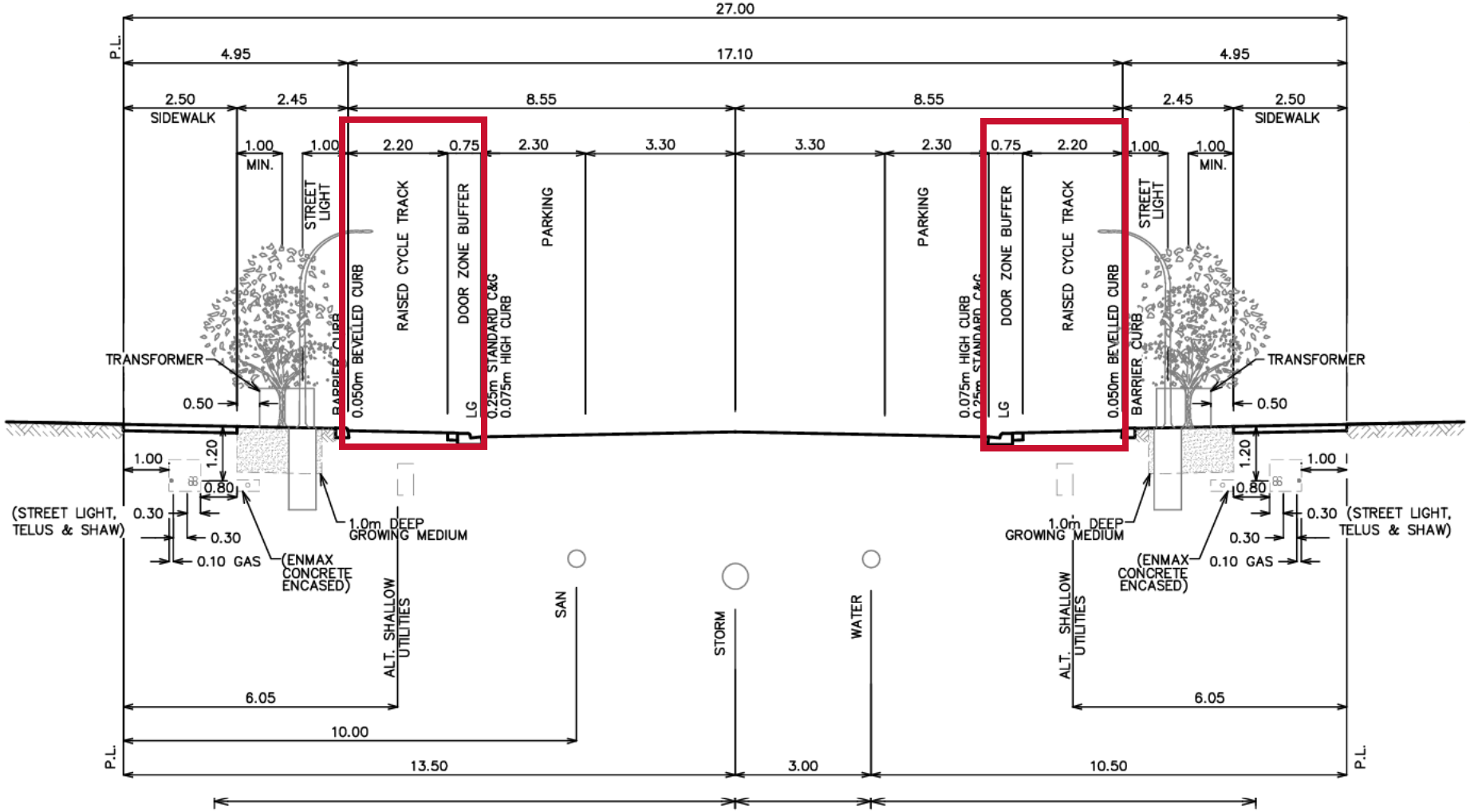


New cross sections

- Build off past experience
- Shift away from painted lanes
- Reduce carriageway width
- Reapportion right of way
- Benefits:
  - Safer streets
  - Less asphalt
  - Better space for trees
  - More cost-effective streets



Collector: 40 km/h, parking on both sides, high activity



Thank you

Dale Calkins
Transportation Planner, Public Space & Mobility Policy, The City of Calgary
Dale.Calkins@Calgary.ca

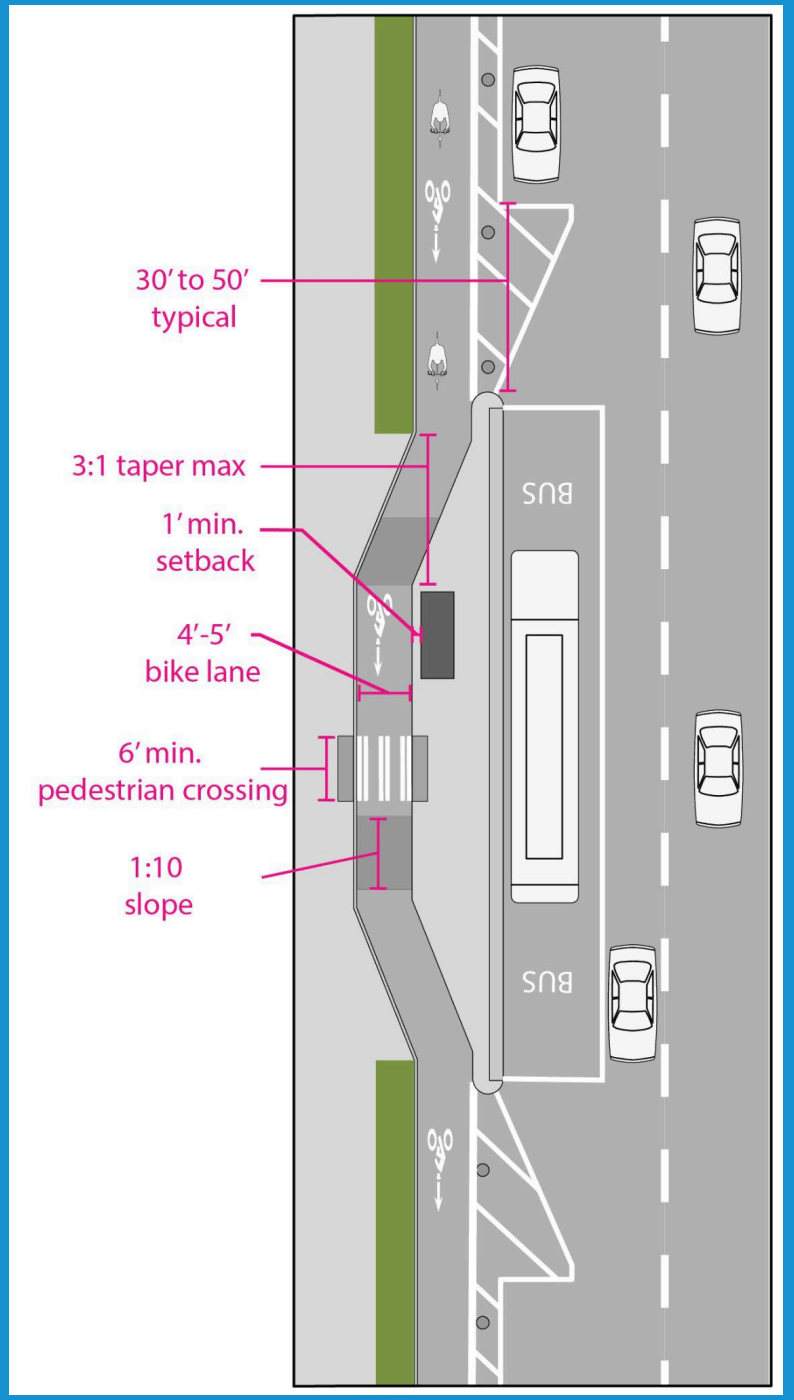
Seattle's Bike Lanes and Transit Stops

Seattle Department of Transportation

Outline

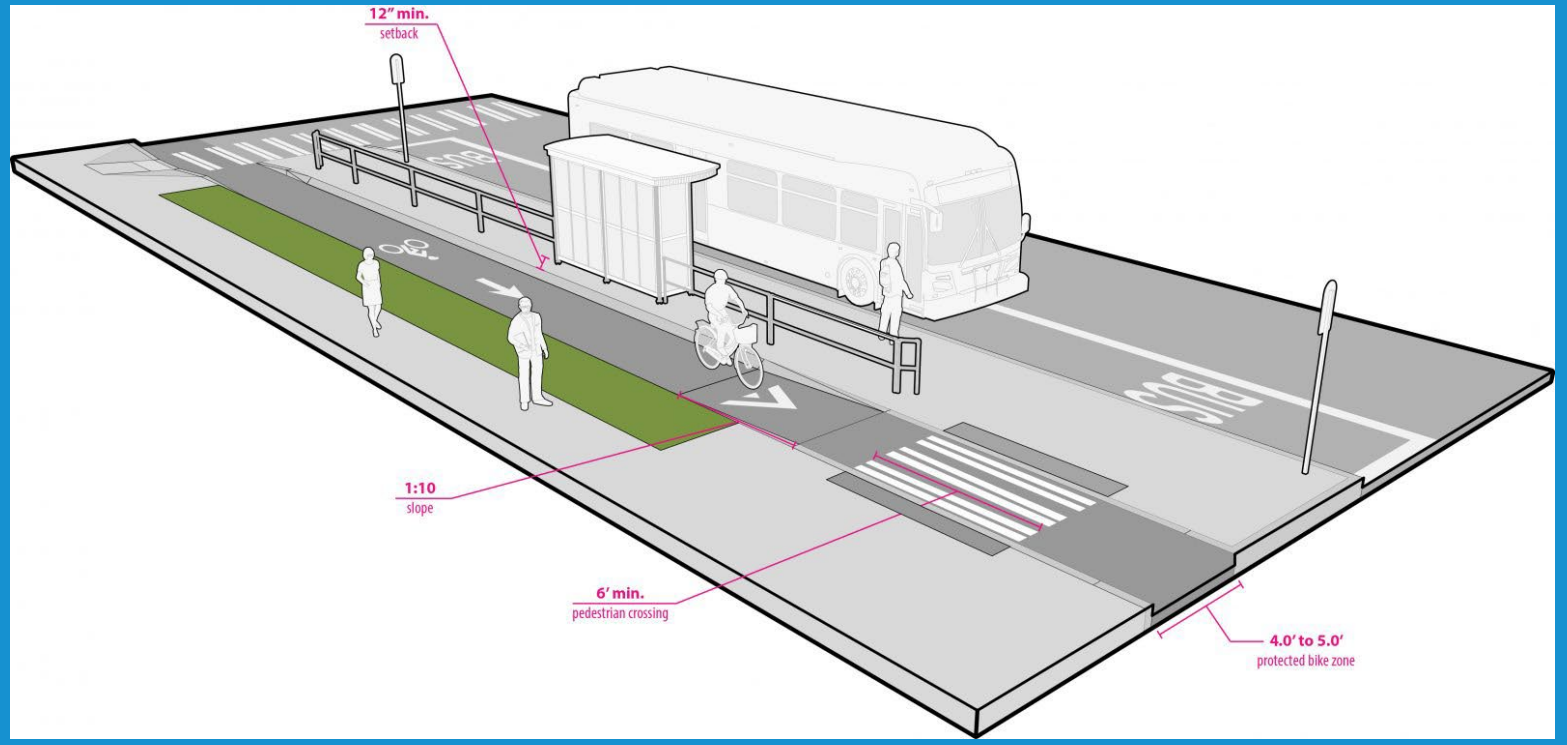
- Seattle's Design Practices
- Processes for Design
- How we use the NACTO UBDG

Seattle Department of Transportation



Seattle Design Best Practices

If only every street was perfect...



Seattle Department of Transportation

Seattle Design "Best Fit"

Because the world is not perfect…

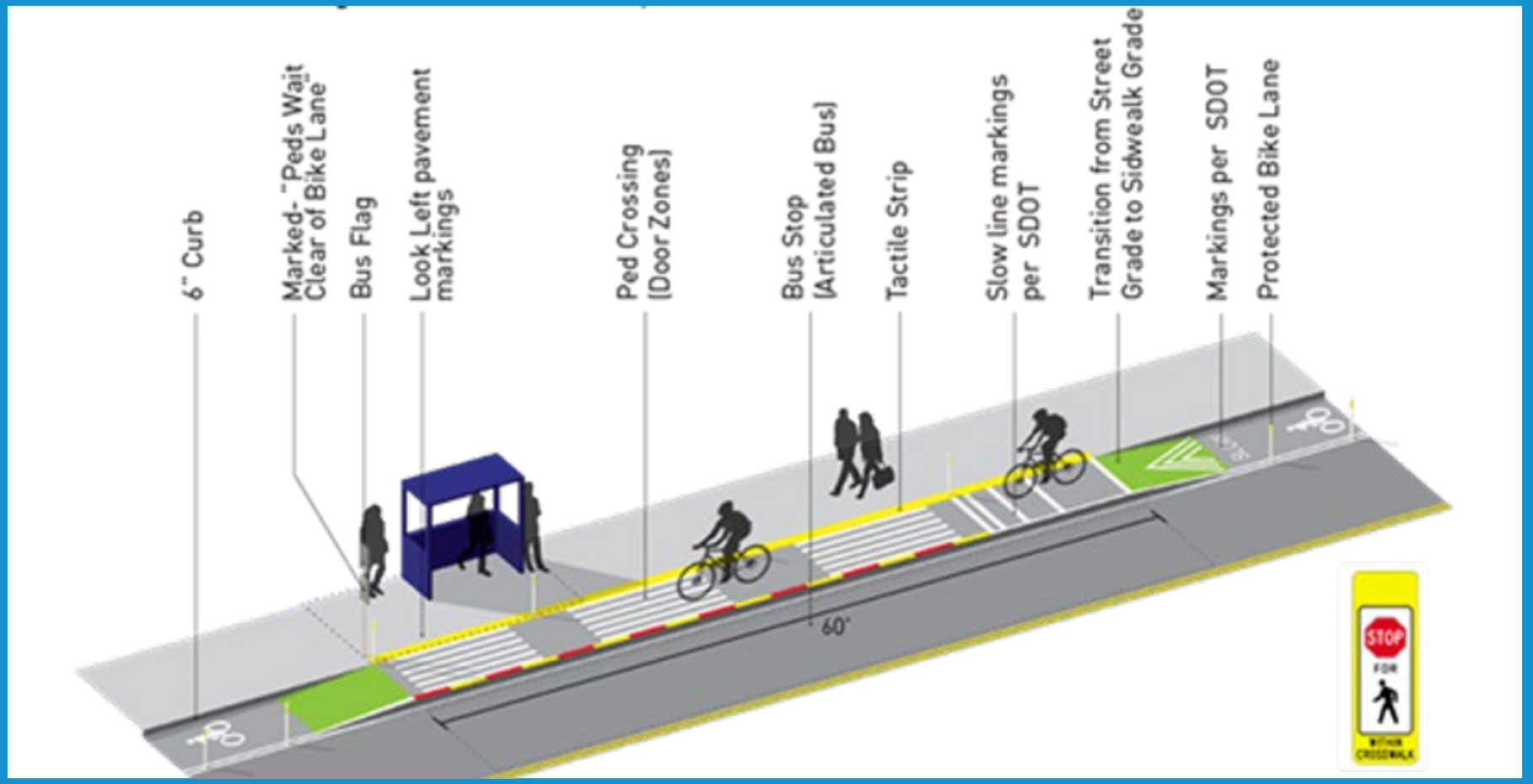
Seattle Department of Transportation

Seattle Design “Best Fit”

- Cross section space
- Grade
- Adjacent land uses
- Ridership volumes/bus frequency/number of buses
- Not a standard design and requires a Design Deviation with SDOT

Seattle Department of Transportation

Seattle Design “Best Fit”



Seattle Department of Transportation

Seattle Design "Best Fit"

Seattle Department of Transportation

NE 65TH STREET REDESIGN

Shared transit stops, protected bike lanes, and rechanne

Bike Lanes and Transit Stops

Where bike lanes are located along the same side of the street as transit, conflicts between
should be minimized in order to improve bicyclist safety and transit efficiency.

Design Guidance

- Bike facilities should generally be routed behind the
- Street-level bike lanes should be raised at designat
  order to increase awareness between bicyclists anc
  crossing is raised, 1:10 slope shall be used for ram
- Minimum crosswalk width to transit platform is 6 fee
  boardings dependent on slope of roadway.
- At sidewalk level, the bike lane width may be narrov

Before and After Stu

TABLE 5: WEST SEGMENT SPEEDS COLLECTED WEST OF 15TH AVE NE

Direction	Before (30 mph speed limit)	After (25 mph speed limit)	% Change
85th Percentile Speeds (mph)			
Eastbound	29.5	29.8	+1%
Westbound	31.7	29.3	-8%
Speeders (Driving over 30 mph)			
Eastbound	14%	14%	0%
Westbound	27%	13%	-53%
Top End Speeders (Driving over 40 mph)			
Eastbound	0.4%	0.2%	-48%
Westbound	0.6%	0.4%	-35%

TABLE 6: EAST SEGMENT SPEEDS COLLECTED WEST OF 25TH AVE NE

Direction	Before (30 mph speed limit)	After (25 mph speed limit)	% Change
85th Percentile Speeds (mph)			
Eastbound	28.1	21.6	-23%
Westbound	28.4	25.2	-11%
Speeders (Driving over 30 mph)			
Eastbound	8%	2%	-75%
Westbound	11%	3%	-67%
Top End Speeders (Driving over 40 mph)			
Eastbound	0.2%	0.1%	-42%
Westbound	0.4%	0.1%	-60%

FIGURE 8: WEST SEGMENT EASTBOUND SPEEDS

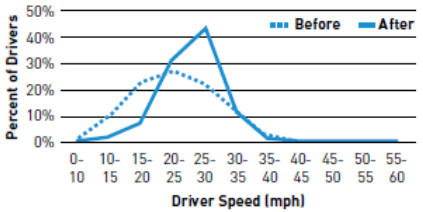


FIGURE 10: EAST SEGMENT WESTBOUND SPEEDS

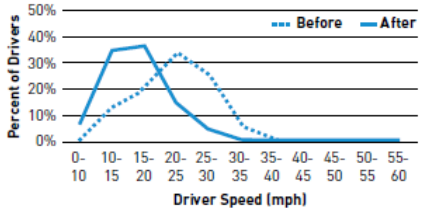


FIGURE 9: WEST SEGMENT WESTBOUND SPEEDS

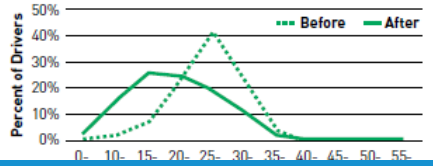


FIGURE 11: EAST SEGMENT WESTBOUND SPEEDS

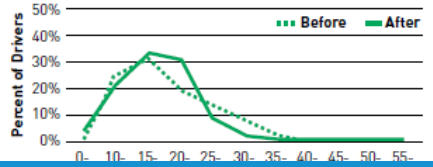


FIGURE 23: EXAMPLES OF BIKES RIDING THROUGH THE SHARED STOP RIGHT AFTER A BUS PULLS AWAY

Deviations and post project studies.

Seattle Department of Transportation

Seattle Design Best Practices

Help is here!

SHARED BOARDING AREAS

At shared boarding areas, the bike lane runs at sidewalk level through the boarding area. People can bike through the boarding area when no transit vehicles are present but must yield to boarding and alighting passengers. Transit passengers wait on the sidewalk and only cross the platform when the transit vehicle arrives. This pattern of operation is similar to marked crosswalks and is similarly designed to ensure yielding behavior.

BENEFITS:

- Where the available right-of-way precludes the construction of boarding islands, shared boarding areas are a retrofit option that provides many benefits to transit operations, transit passengers, and people on bikes.
- Boarding islands allow for in-lane transit stops that improve overall service for transit users, reduce transit delays caused by pulling out and re-entering traffic, and ensure that transit vehicles can reach the curb so transit riders can board and alight from an accessible area.
- Shared boarding areas allow for continuously separated bike facilities at all times and prevent motor vehicle drivers from blocking transit stops.

CONSIDERATIONS:

- Boarding and alighting passengers share the same space as people riding bikes through the transit stop. Because of the potential for conflict between these users, shared boarding islands are most appropriate for one-way bike facilities along transit stops with low to moderate numbers of boardings and alightings.
- People on bikes must not pass stopped transit vehicles to avoid conflict with transit riders. People on bikes may not see alighting passengers and are at risk of crashing into those riders. In addition, if a ramp has been deployed for passengers with mobility issues, the bikeway will be blocked; people on bikes may not see that ramp if they continue riding past stopped transit vehicles.
- Shared boarding areas may not be appropriate where the bikeway is downhill. People biking may be traveling too fast to comfortably stop for passengers boarding or alighting the transit vehicle. At grades over 5%, consider the overall frequency of transit service and the number of people using the specific stop before implementing a shared boarding area. High-frequency service and/or high boarding and alighting volumes may be incompatible with a downhill shared boarding area.

ACCESSING SHARED BOARDING ISLANDS

- Marked crosswalks are optional but recommended to increase awareness of pedestrian activity over the bikeway. Use longitudinal bars or ladder crosswalks.
- Consider using signs or bike-facing pavement markings to indicate that people in the bikeway must stop for pedestrians.
- Differentiate the bike path of travel from the sidewalk with a different material (e.g., bituminous concrete) or a different color (e.g., green high-friction surfacing).
- Provide detectable warning surfaces between the bike lane and sidewalk and between the boarding area and roadway for the length of the transit stop. Add detectable warning surfaces across the tops of the bike ramps at each end of the transit stop.
- Add tactile directional indicators to help pedestrians who are blind or have low vision navigate to and from the front door of the transit vehicle. Install TDI perpendicular to the path of travel. TDI should be 24 in (600 mm) wide and extend across the sidewalk. At the location of the front door, apply a rectangle of TDI that is 24 in (600 mm) wide and at least 36 in (900 mm) long.

BOARDING AREA DIMENSIONS

Shared boarding areas are at least the width of the bikeway, often a minimum of 5-6 ft (1.5-1.8m).

Any available additional width, such as from a buffer area, should be allocated to a step-out zone. Step-out zones are located to the left of bikeways and provide space for transit passengers to alight outside of the bikeway. The total width of the bikeway and step-out area should be no larger than 12 ft (3.6 m). If additional space is available, use a boarding island design.

The cross-slope of boarding islands must be less than 2.1%.[5]

At in-lane stops, shared boarding areas can be sized to the transit vehicle, making them much shorter than stops that also have to accommodate transit merging into and out of traffic.

Shared boarding areas must accommodate boarding and alighting from all doors of transit vehicles.

Shared boarding areas can traverse driveways, as long as driveways are raised to the level of the boarding area and bikeway. Design and construction can be complex due to potential slope issues between driveways and the cross-slopes of boarding islands.

Shared boarding areas should be the same height as sidewalks, typically 3-6 in (75-150 mm).

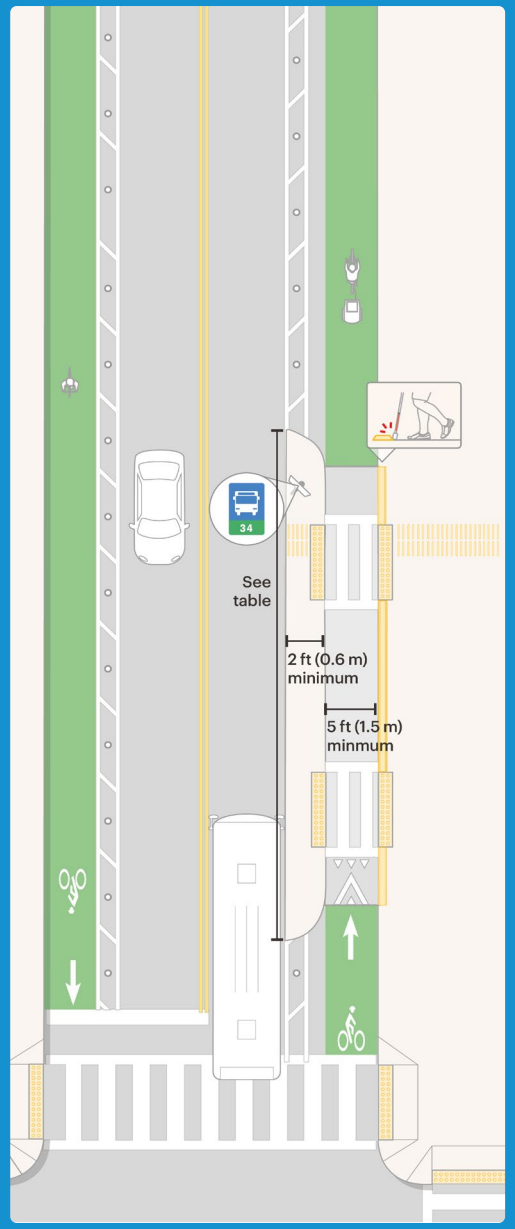
Detectable warning surfaces should be located along the sidewalk curb.

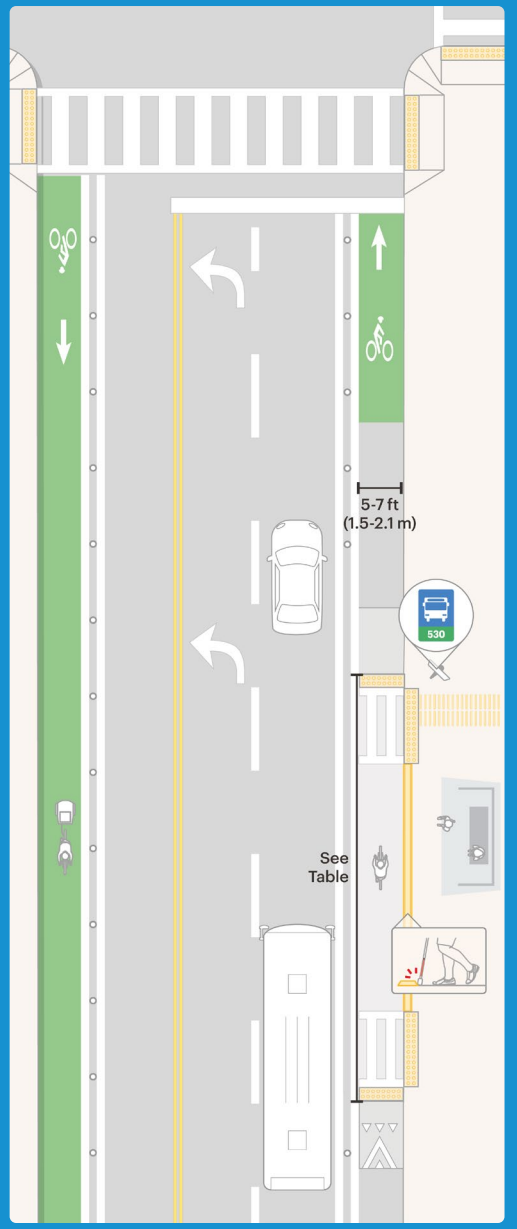
Seattle Department of Transportation

Seattle Design Best Practices

Help is here!

- ✓ Boarding dimensions
- ✓ Longitudinal slope
- ✓ Cross slope
- ✓ Boarding volumes
- ✓ Bike Volumes
- ✓ Markings





Seattle Department of Transportation

Thank you!

Seattle Department of Transportation

City of Fort Collins

4/2/25

Arterial Bikeway Crossings

Exploring NACTO's Updated Urban Bikeway Design Guide, 3rd Edition

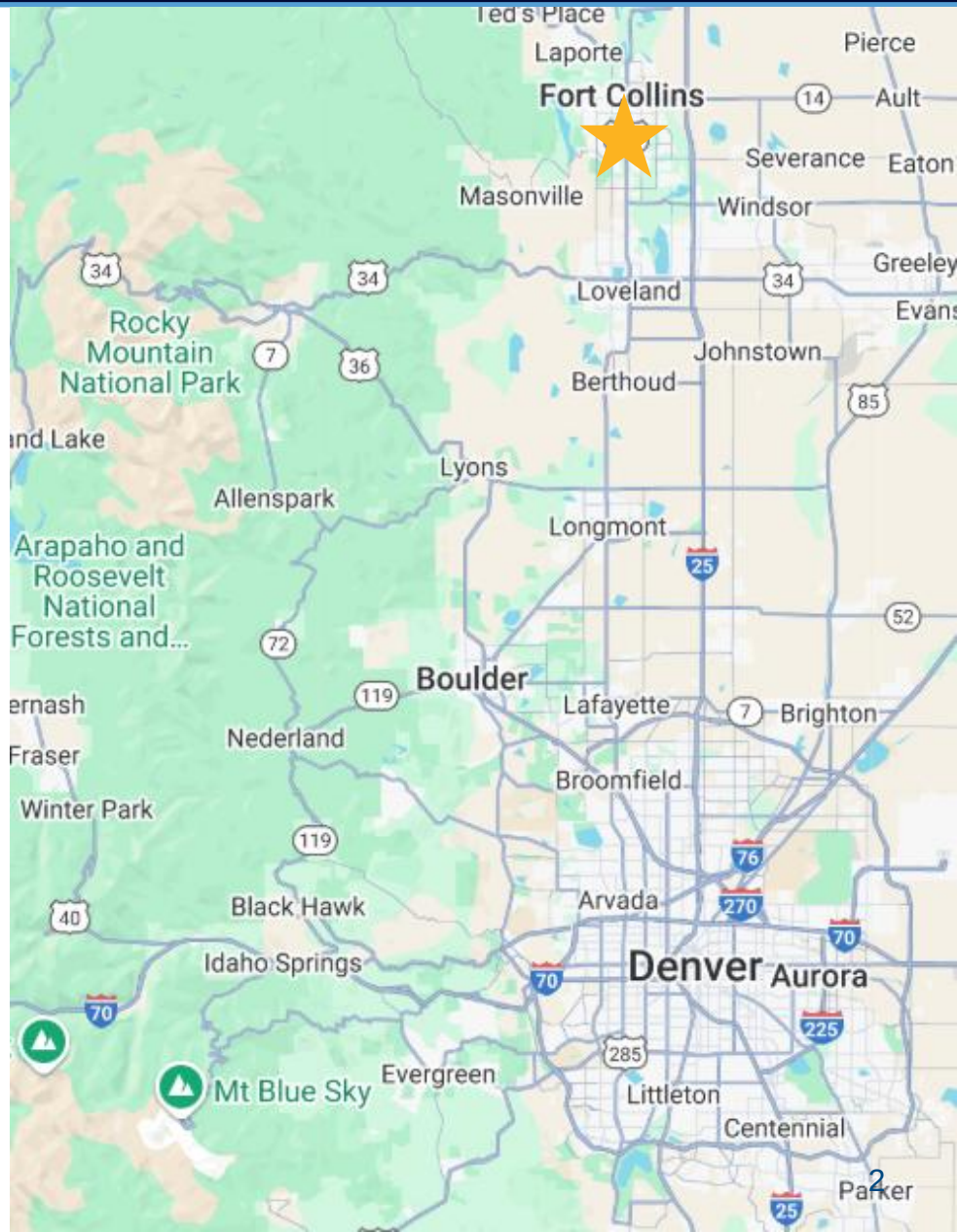
Cortney Geary

Active Modes Manager

Background

- Population ~ 180,000
- 200+ centerline miles of on-street bike facilities
- 100+ miles of paved trails
- 9% of all trips are taken by bike*

BICYCLE FRIENDLY COMMUNITY
2021-2025
PLATINUM
THE LEAGUE OF AMERICAN BICYCLISTS



* Fort Collins 2022 Residential Travel Diary Study

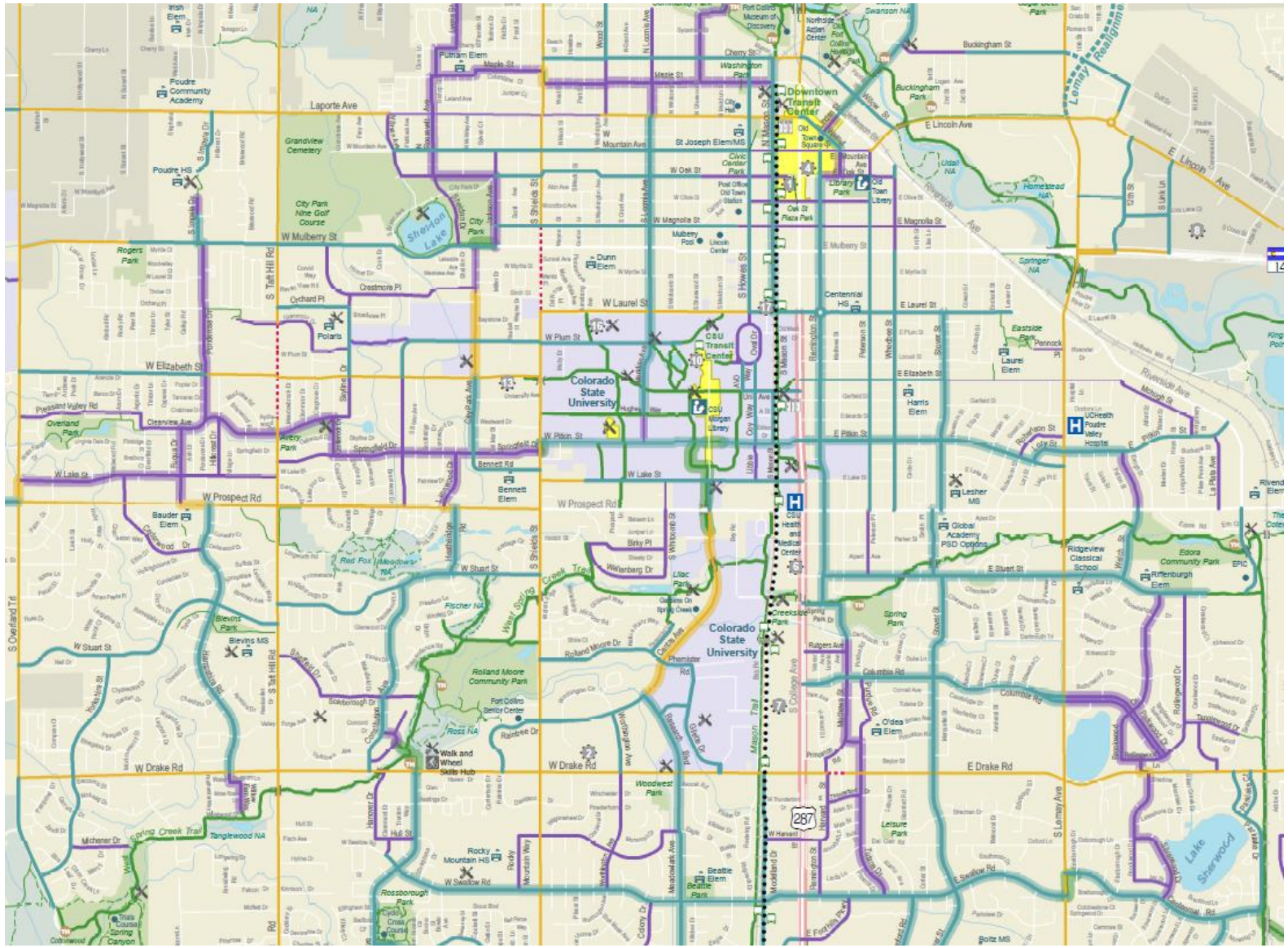
Low-Stress Bicycle Network

<u>Low volume / low speed</u>

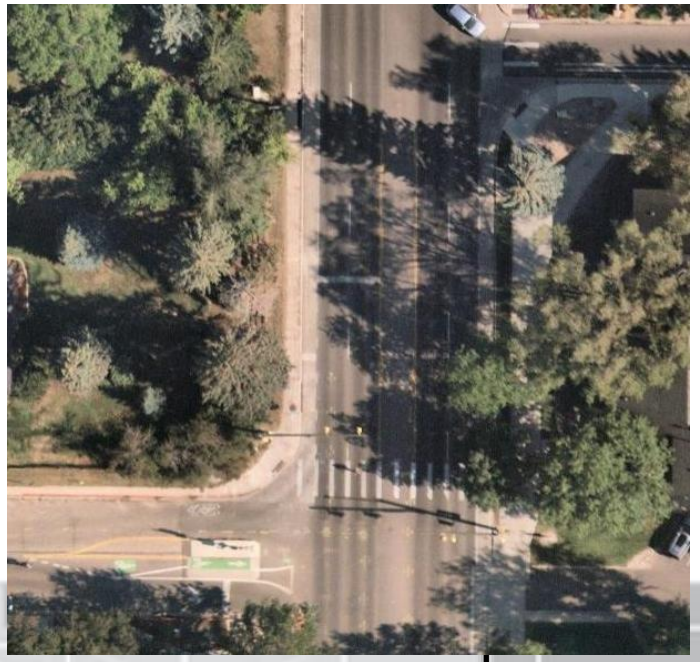
- Bike lane / buffered bike lane
- Shared Roadway

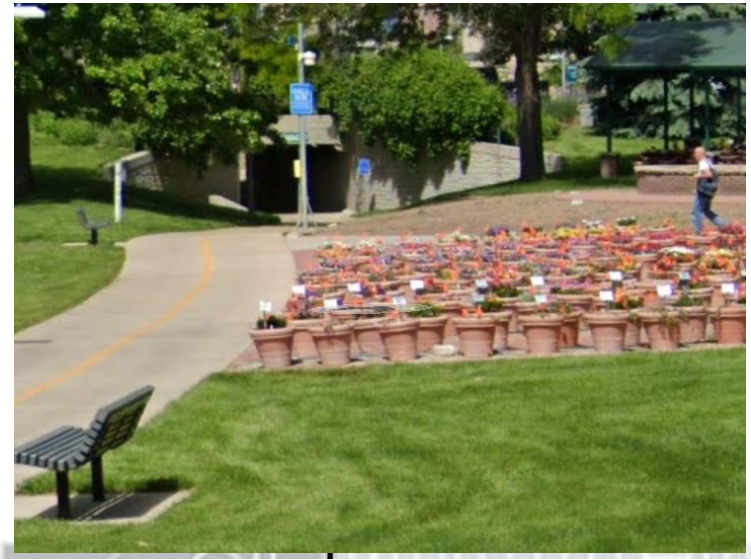
<u>Fully separated from traffic</u>

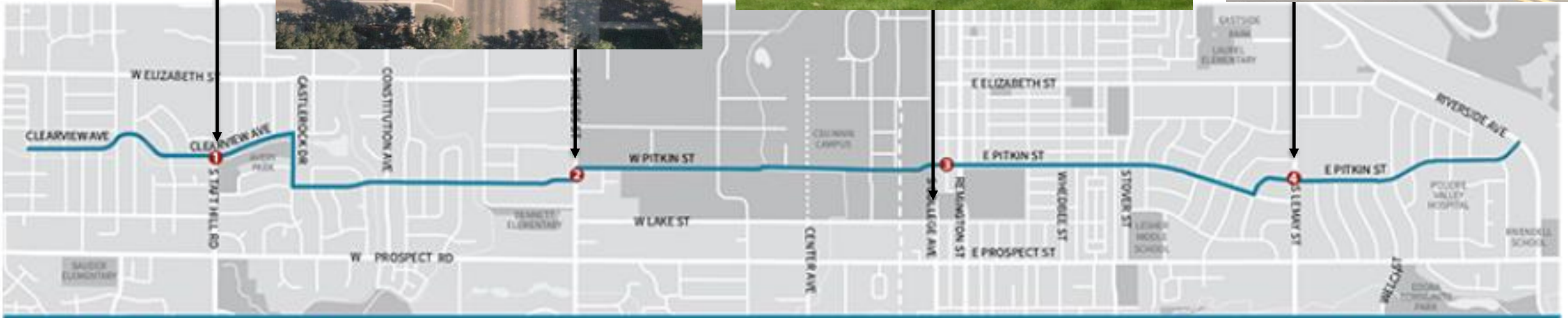
- Paved trail



Pitkin Bikeway



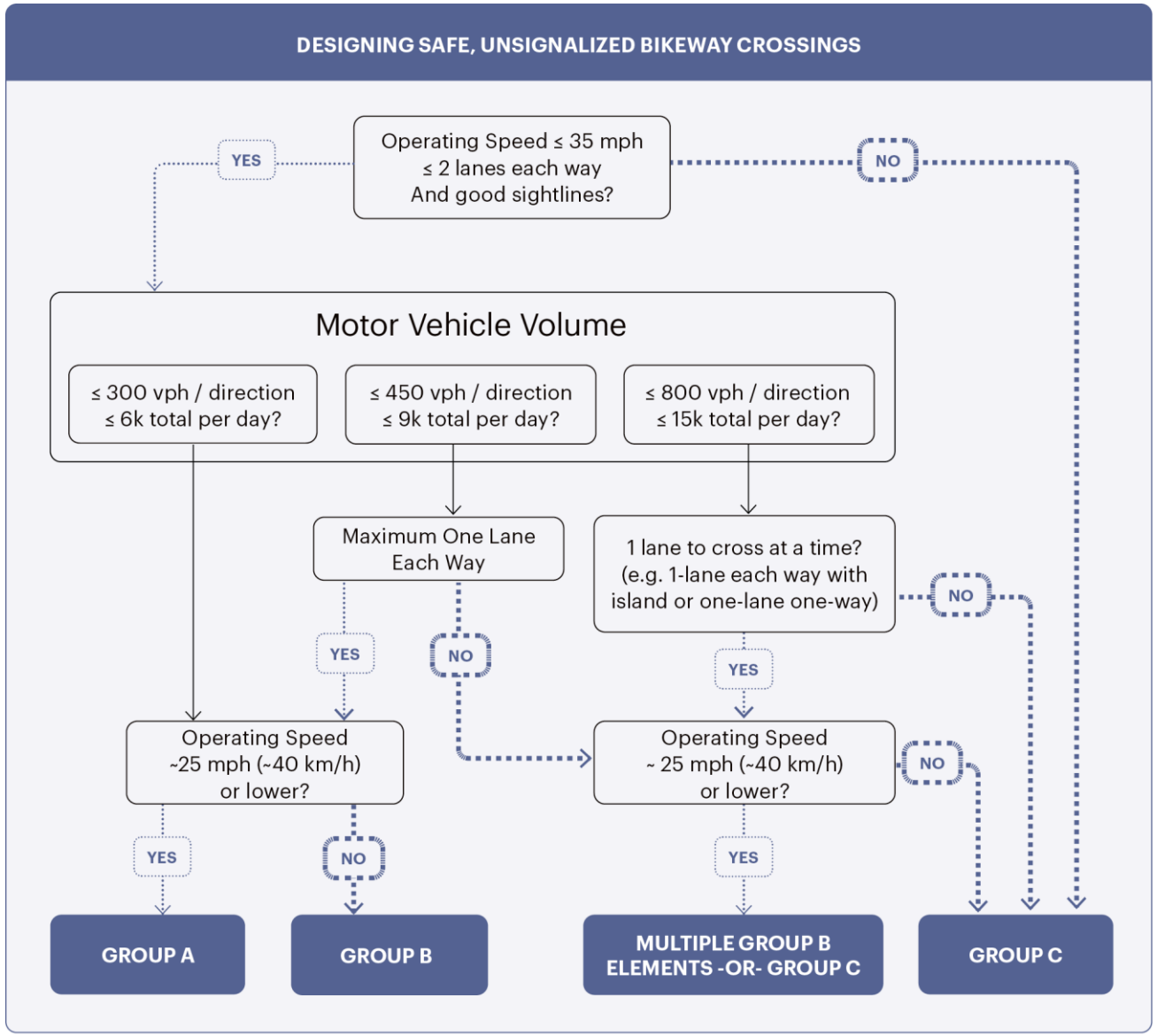




Selecting Crossing Countermeasures

- Operating speed
- Number of travel lanes per direction
- Sightlines
- Traffic volumes

GROUP A	GROUP B	GROUP C
→ Neighborhood traffic circle → Crossbike → Gateway treatment → Diverter	→ Raised crosswalk → Raised intersection → Approach speed hump → Gateway treatment → Hardened centerline / Lane line → Rectangular Rapid Flashing Beacon (RRFB) → Mini-roundabout → Corner island → Curb extension → Sidewalk extension	→ Stop control → Hybrid beacon → Half-signal → Roundabout



Rectangular Rapid Flashing Beacons

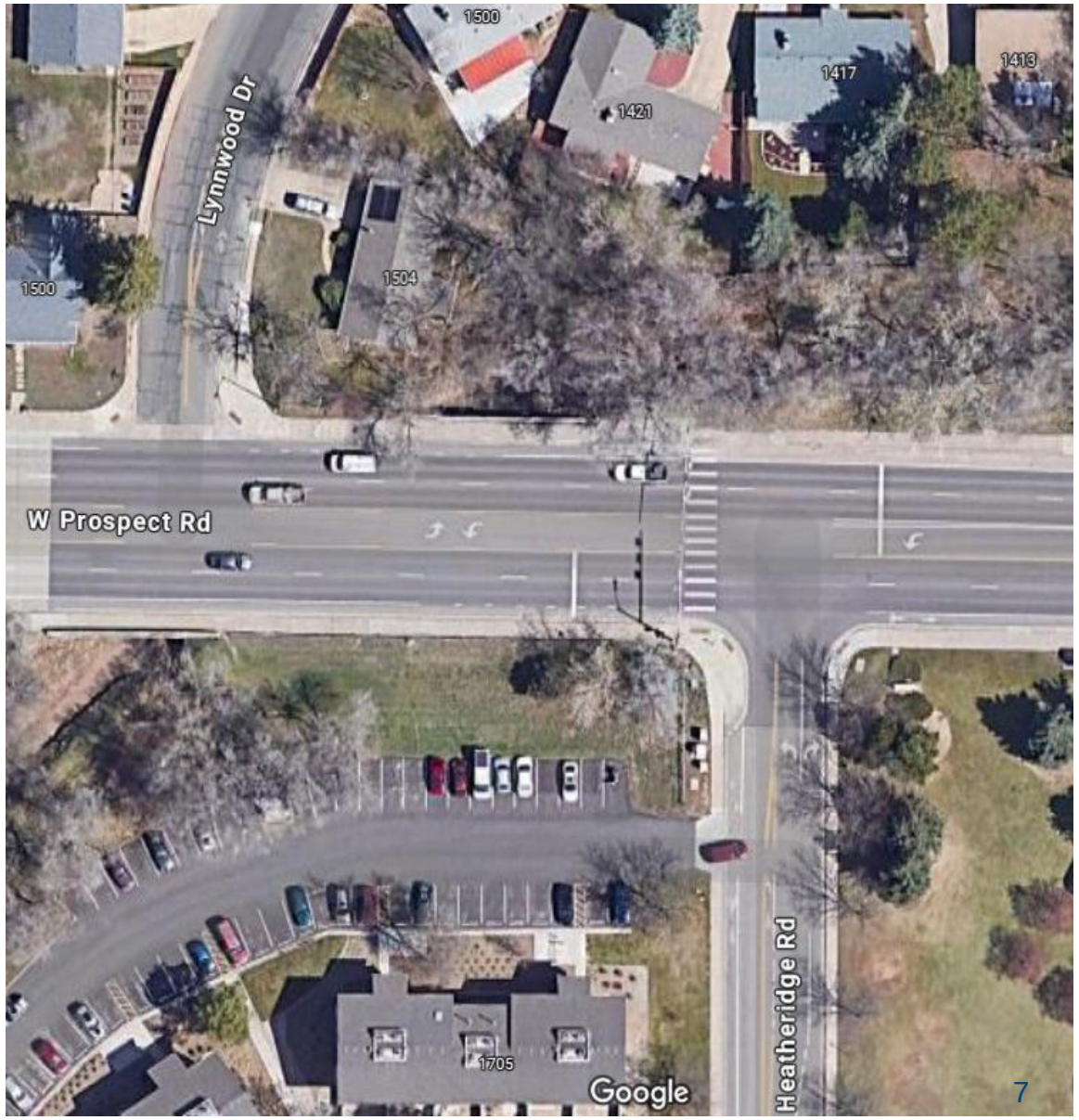
W. Elizabeth St. & Ponderosa Dr.

- Speed limit = 30 mph
- 1 lane of traffic each direction
- ADT ~13k east, 3.5k west

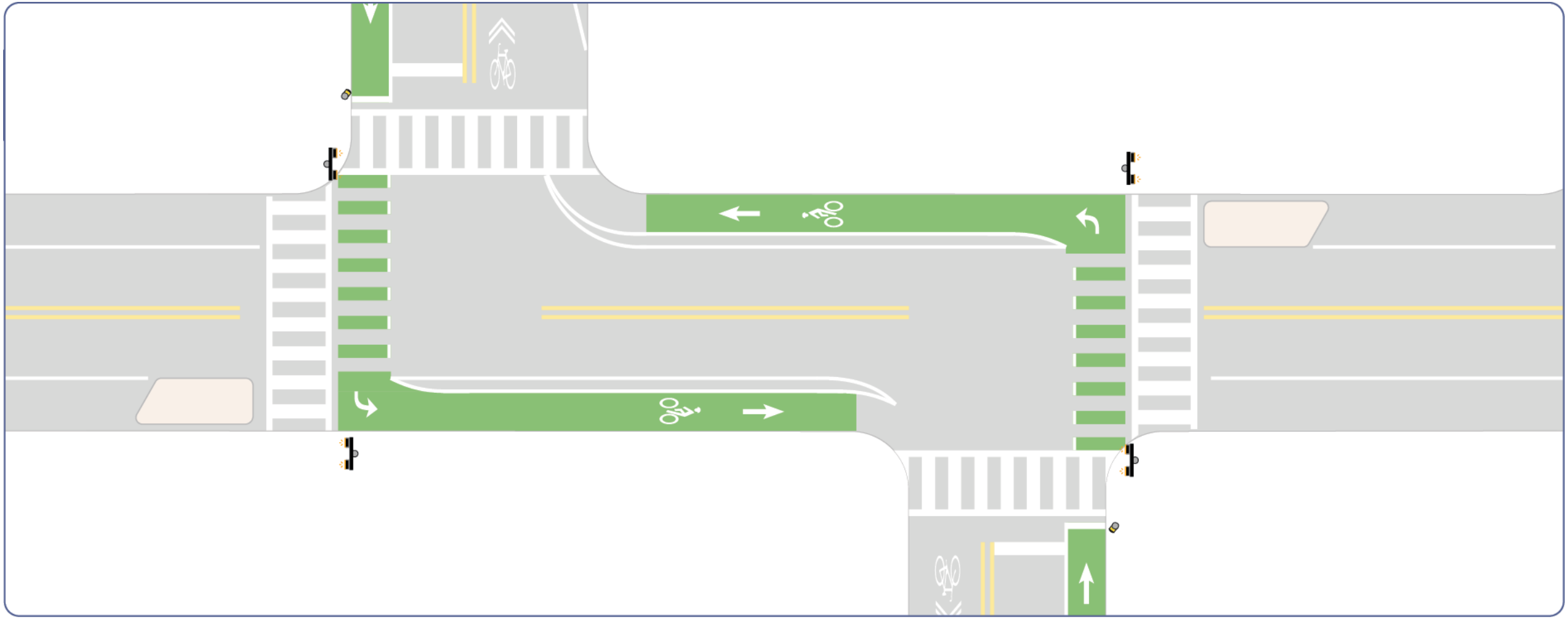
Pedestrian Hybrid Beacon

W. Prospect Rd. & Heatheridge Rd.

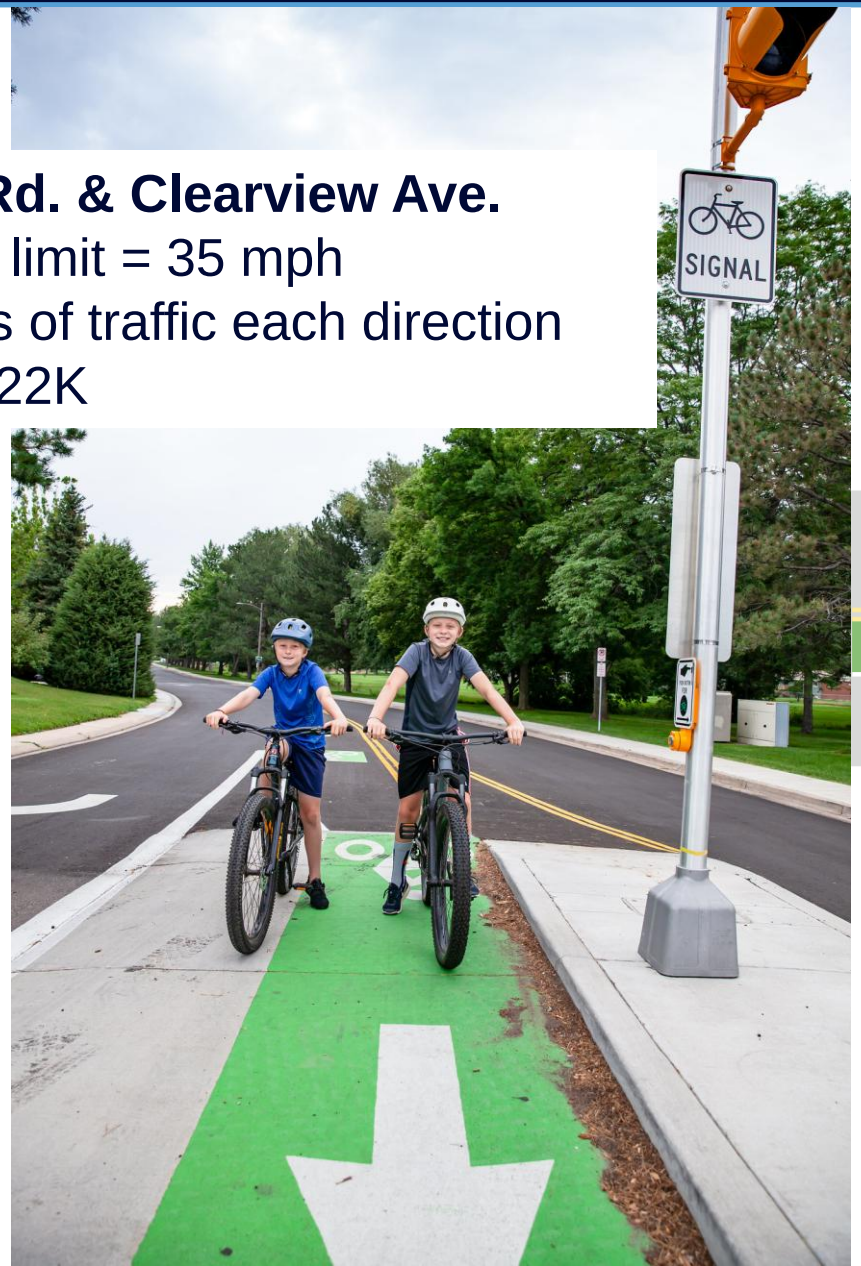
- Speed limit = 40 mph
- 2 lanes of traffic each direction + center turn lane
- ADT ~19k



Misaligned Intersections

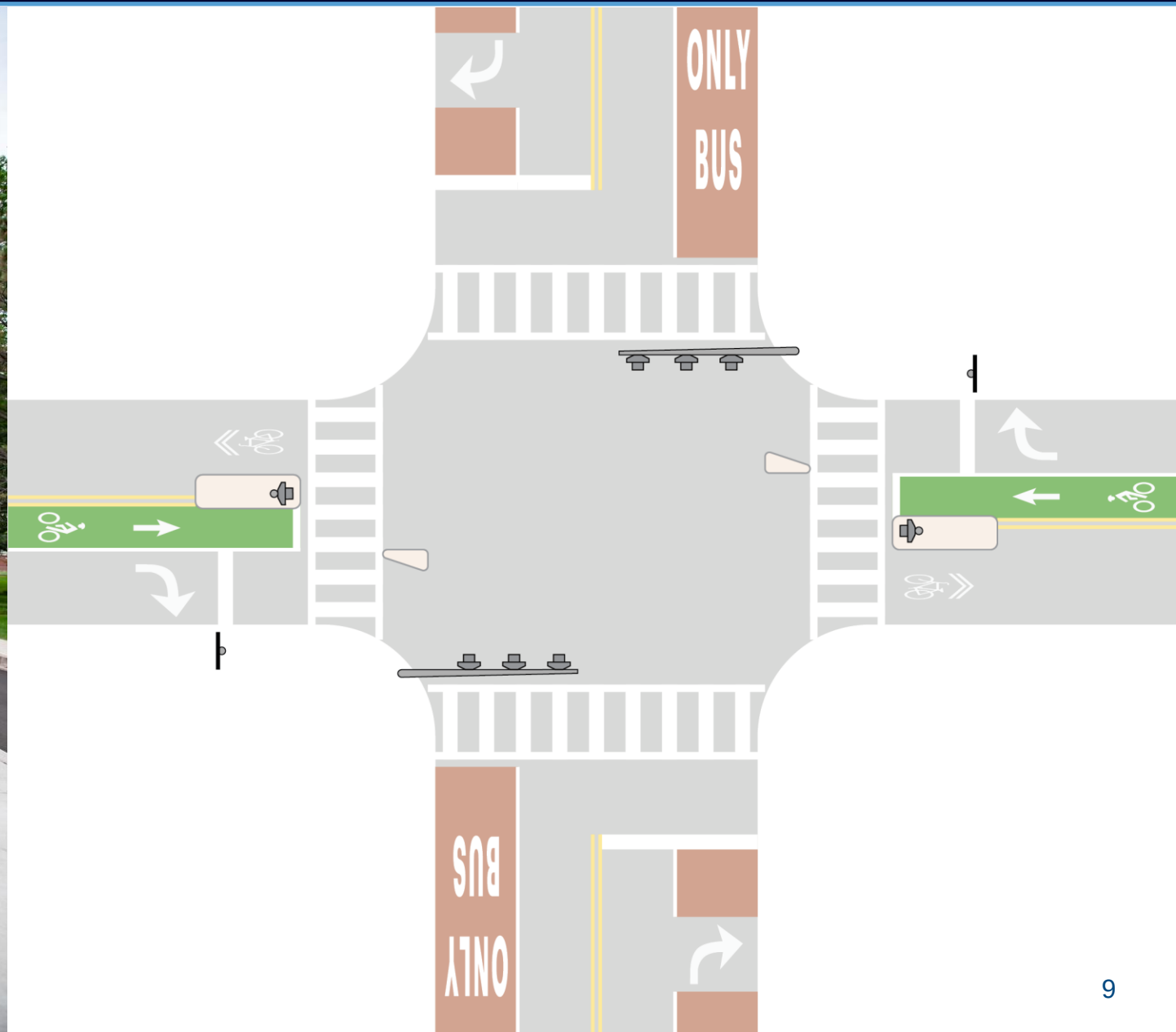


Half Signal with Right Out Only



Taft Hill Rd. & Clearview Ave.

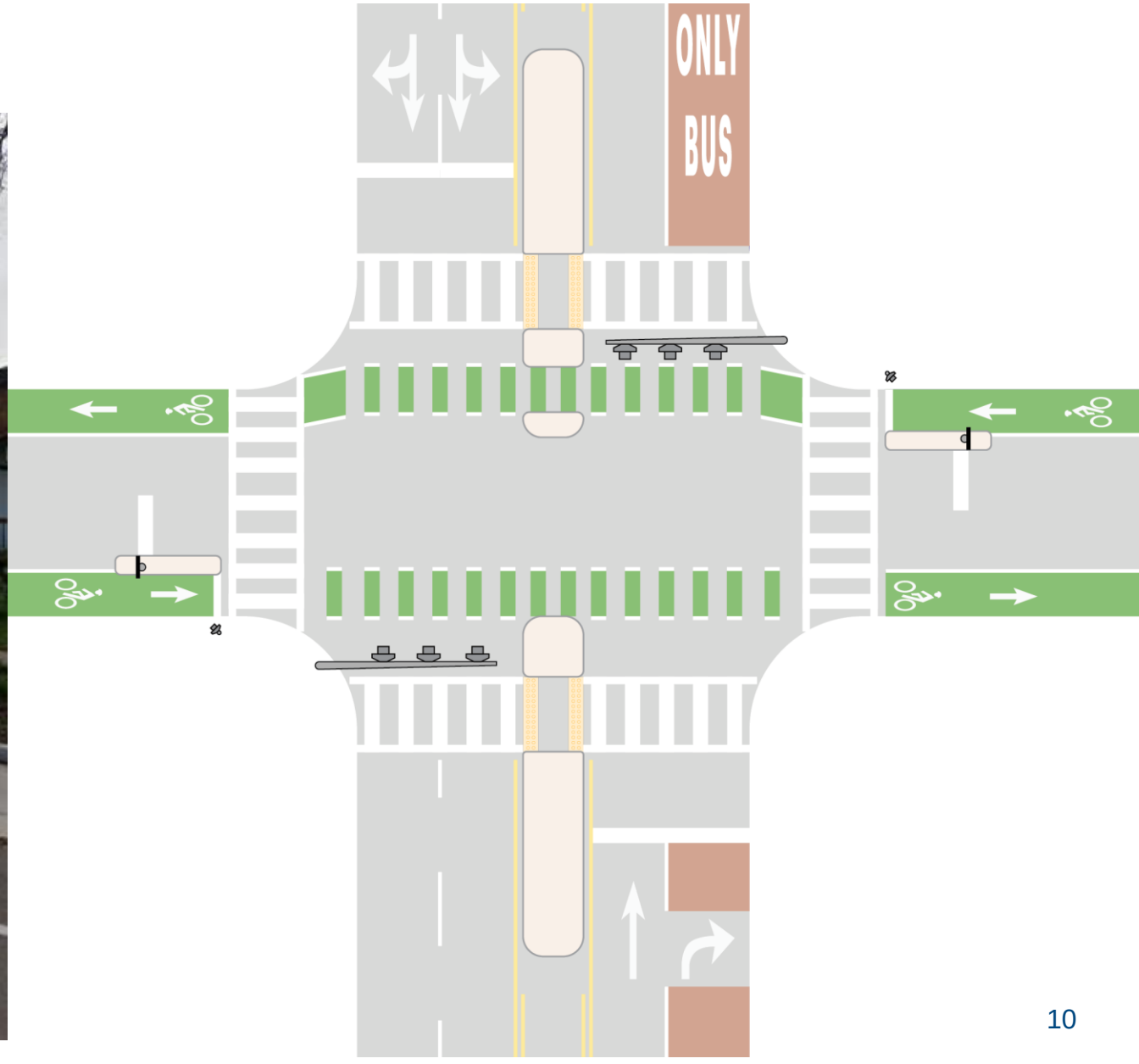
- Speed limit = 35 mph
- 2 lanes of traffic each direction
- ADT ~22K



Half Signal at Typical Intersection

Shields St. & Magnolia St.

- Speed limit = 30 mph
- 2 lanes north, 1 south + center turn lane
- ADT ~16K



City of Fort Collins

Thank you!

Cortney Geary | Active Modes Manager | cgeary@fcgov.com

Photo Credit: Alta Planning & Design, slide 6

THANK YOU FOR ATTENDING

Please complete the brief survey.

A link will also be emailed to you and is available in the APBP Member Education Center for all webinar participants.

Webinar slides and recordings will be posted within one week in the Member Education Center.

apbp ASSOCIATION OF PEDESTRIAN & BICYCLE PROFESSIONALS
Expertise for Active Transportation