



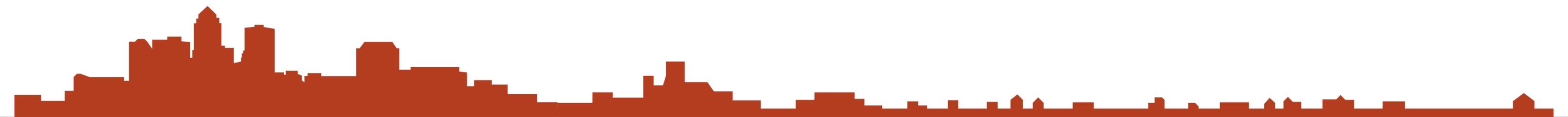
# Protected Bike Lanes

Introduction and  
Best Practices Primer

# Defining Protected Bike Lanes

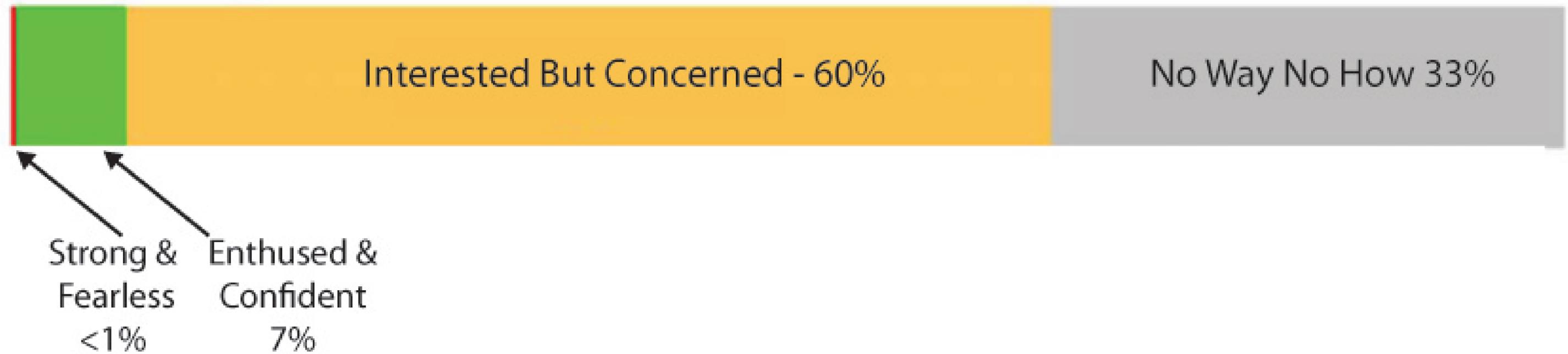
Sometimes goes by different names, but they are defined by 3 features:

1. Physical separation from mixed travel lanes
2. Exclusively for people on bikes
3. On or adjacent to the roadway

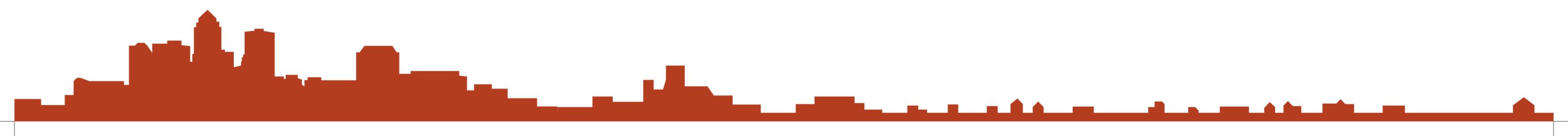


Who's it for?

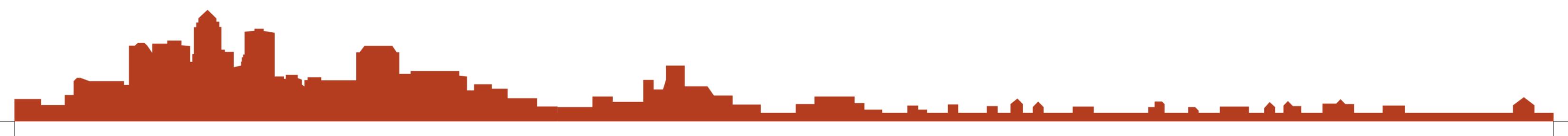
## Four Types of Cyclists By Proportion of Population



# The Protected Bike Lane Spectrum







# Not a New Idea

*Almost all of the international “cyclepath” systems provide separated lanes exclusively reserved for bicycle and, sometimes, moped use. Painted lines or stripes to demark bicycle rights-of-way are generally not recommended owing to the ease of encroachment by motorized traffic. International “cyclepaths” for the most part separate bicycles from motorized traffic by barriers, hedges, physical separation or grade separation.*

*The predominant method of “separation” employed in the United States to date has amounted to symbolic separation. With several notable exceptions the majority of United States “bike routes” currently consist of little more than signs to guide bicyclists along a scenic route and and the same time warn motorists of their presence.*

- California Department of Planning, 1972

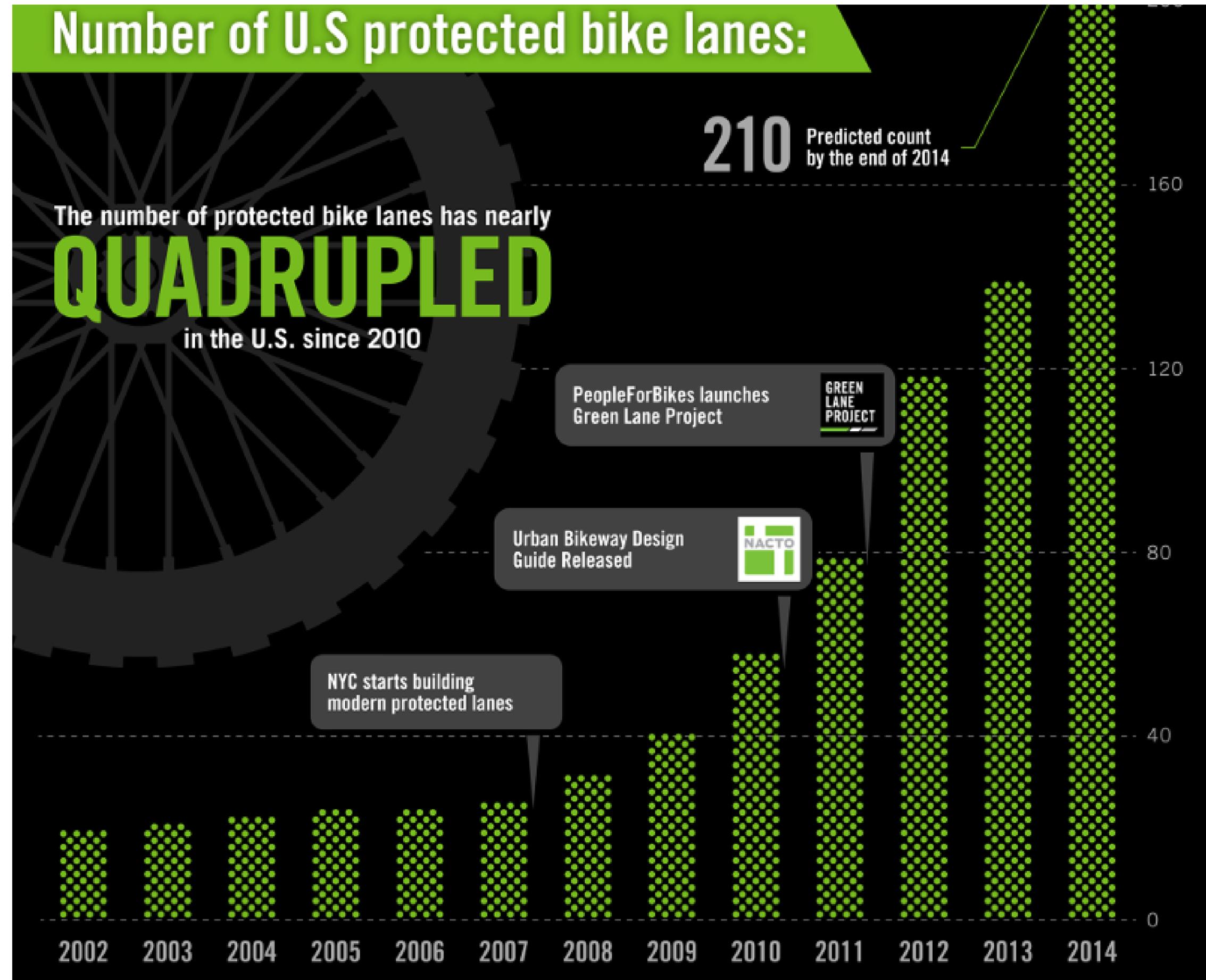


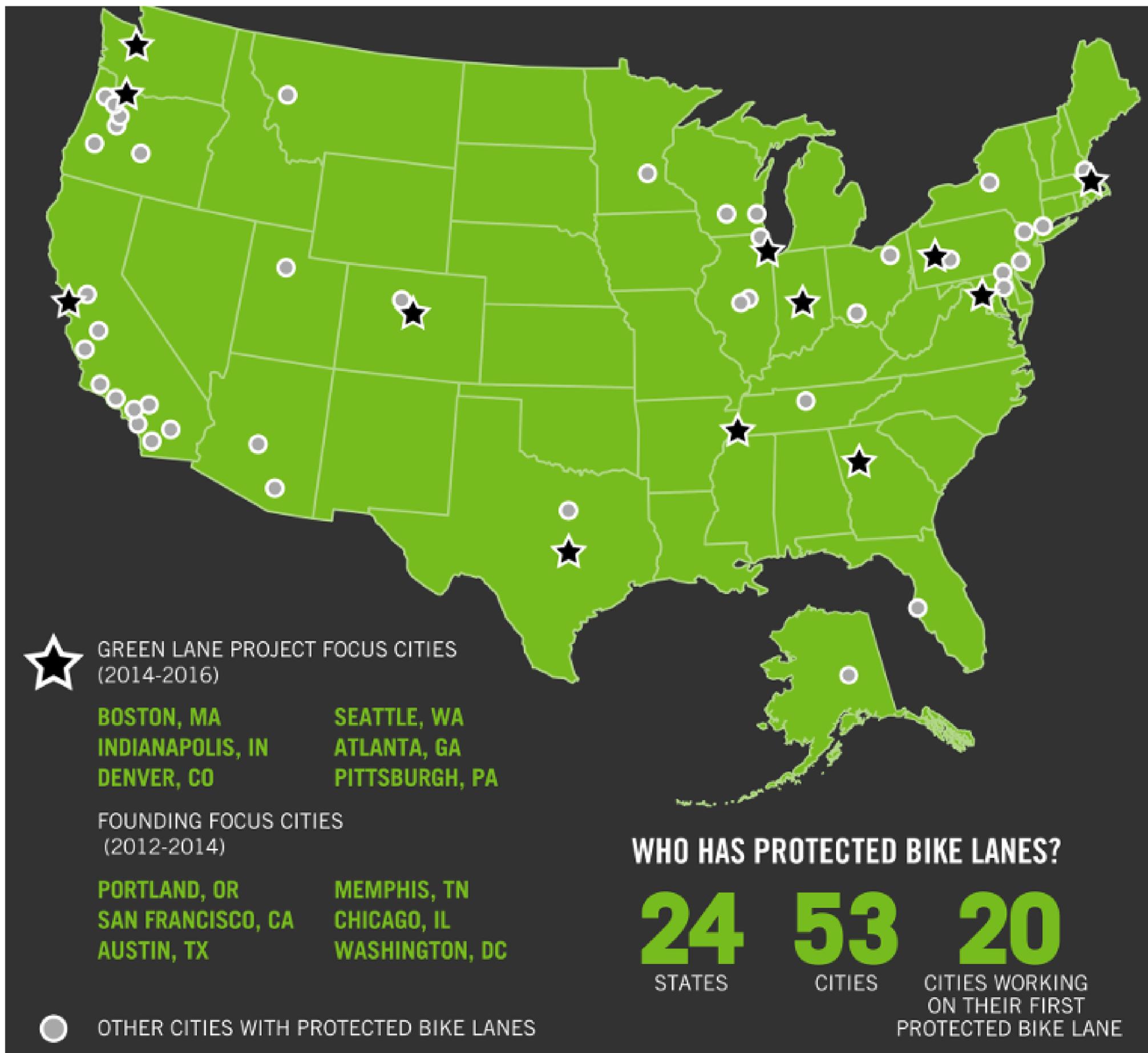
# Why You're Hearing About It

In 2014 there were 192 PBLs

172 more planned or underway

2 sessions at Iowa Bike Summit





★ GREEN LANE PROJECT FOCUS CITIES (2014-2016)

- BOSTON, MA
- INDIANAPOLIS, IN
- DENVER, CO
- SEATTLE, WA
- ATLANTA, GA
- PITTSBURGH, PA

○ FOUNDING FOCUS CITIES (2012-2014)

- PORTLAND, OR
- SAN FRANCISCO, CA
- AUSTIN, TX
- MEMPHIS, TN
- CHICAGO, IL
- WASHINGTON, DC

○ OTHER CITIES WITH PROTECTED BIKE LANES

**WHO HAS PROTECTED BIKE LANES?**

**24 53 20**

STATES CITIES CITIES WORKING ON THEIR FIRST PROTECTED BIKE LANE

# Documented Outcomes of Protected Bike Lanes

## Ridership

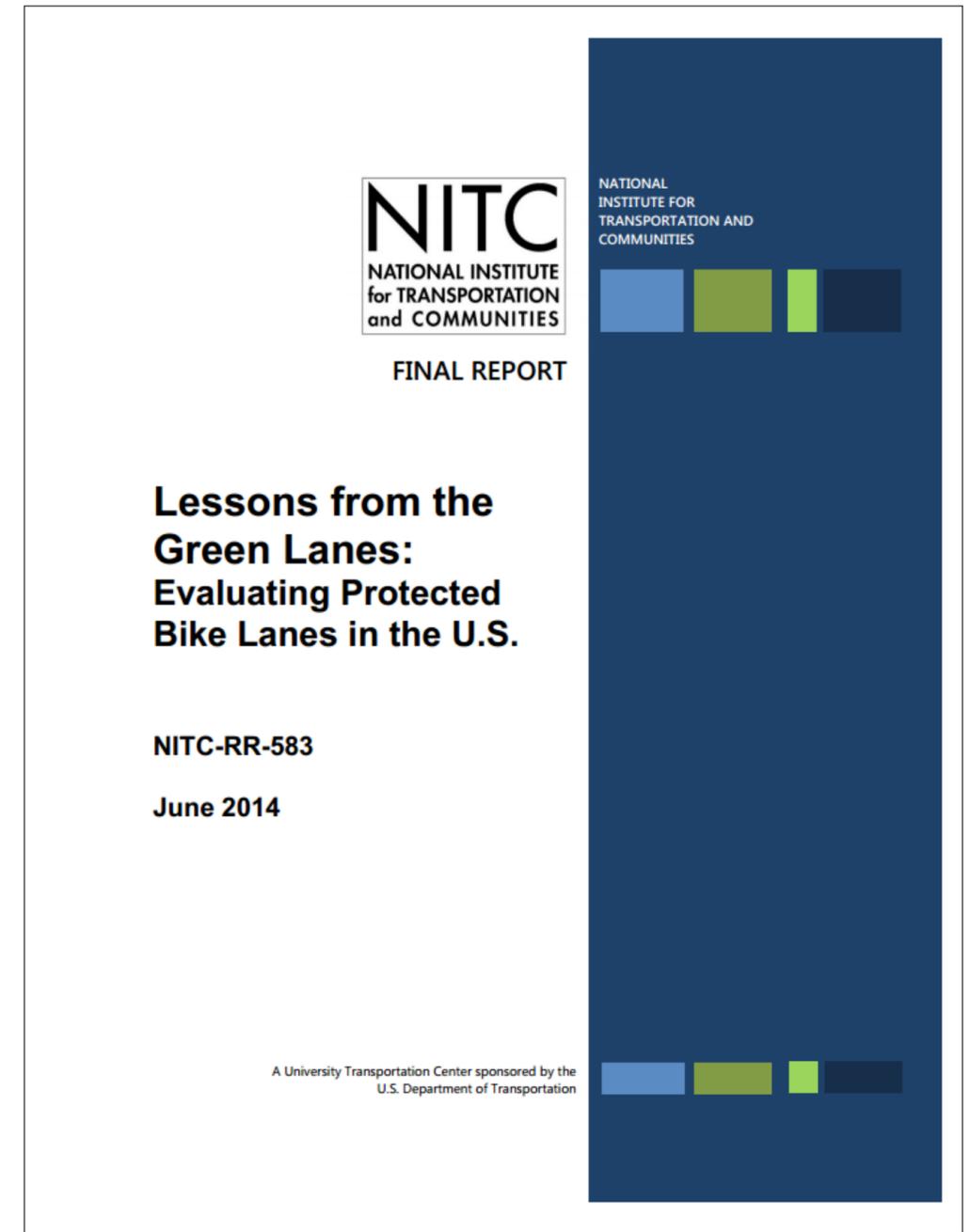
- Up 21-171% (5 city study in 2014)
- 10% of riders switched from other modes
- More than 25% reported riding more in general

## Community Response

- 75% of residents would support building more PBLs
- 91% of surveyed residents agreed with statement, "I support separating bikes from cars."

## Safety and Compliance

- Stoplight compliance increased from 31% to 81% (Chicago)
- Sidewalk riding decreased
- Speeding decreased
- 35-58% decrease in injuries to all street users (NYC)



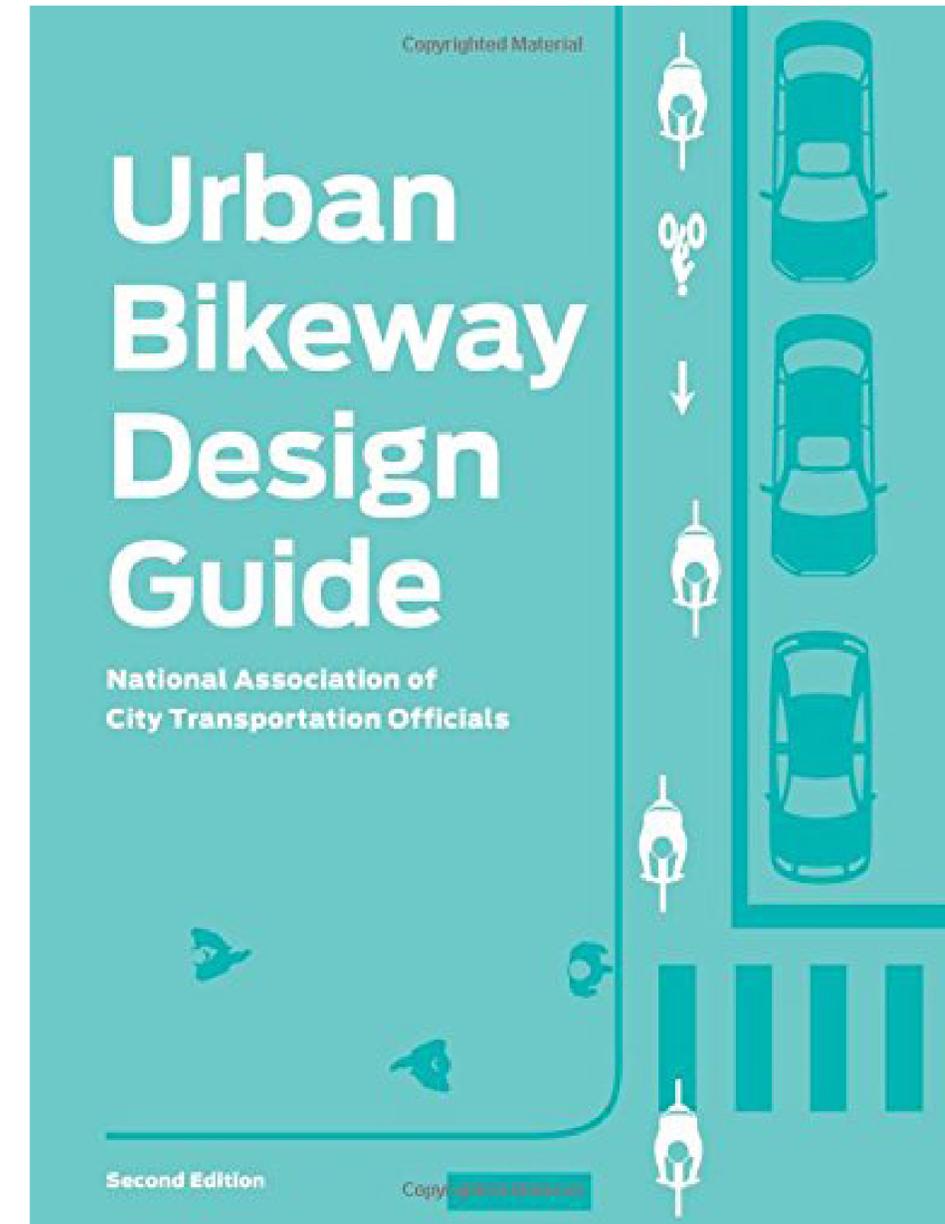
# Design Guidance

## NACTO Urban Bikeway Design Guide

2013 Memorandum from FHWA supporting a flexible approach to bicycle and pedestrian design with a specific endorsement of NACTO Guide and ITE's Separated Bikeways

US DOT to release Design Guide for PBL in 2015

AASHTO fast-tracking its revision for 2018 to include PBL



# Costs



## DELINEATOR POSTS

1.5 ft. additional width; \$15k-\$30k per lane-mile

PROTECTION LEVEL	+ + + + +
INSTALLATION COST	\$ \$ \$ \$ \$
DURABILTY	🔒 🔒 🔒 🔒 🔒
AESTHETICS	👁 👁 👁 👁 👁



## PARKING STOPS

6 in. additional width; \$20k-\$40k per lane-mile

PROTECTION LEVEL	+ + + + +
INSTALLATION COST	\$ \$ \$ \$ \$
DURABILTY	🔒 🔒 🔒 🔒 🔒
AESTHETICS	👁 👁 👁 👁 👁



## PARKED CARS

11 ft. for parking + buffer; \$8k-\$16k per lane-mile

PROTECTION LEVEL	+ + + + +
INSTALLATION COST	\$ \$ \$ \$ \$
DURABILTY	🔒 🔒 🔒 🔒 🔒
AESTHETICS	👁 👁 👁 👁 👁



## PLANTERS

3 ft. additional width; \$80k-\$400k per lane-mile

PROTECTION LEVEL	+ + + + +
INSTALLATION COST	\$ \$ \$ \$ \$
DURABILTY	🔒 🔒 🔒 🔒 🔒
AESTHETICS	👁 👁 👁 👁 👁



## CAST IN PLACE CURB

12 in. additional width; \$25k-\$80k per lane-mile

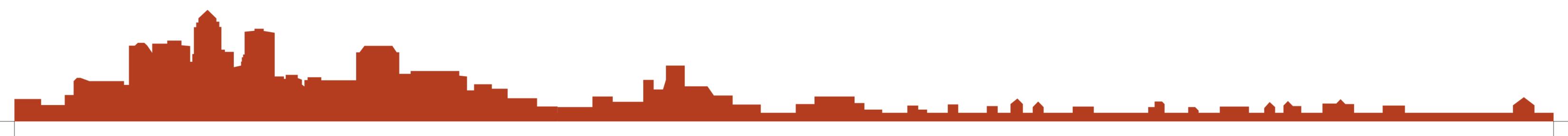
PROTECTION LEVEL	+ + + + +
INSTALLATION COST	\$ \$ \$ \$ \$
DURABILTY	🔒 🔒 🔒 🔒 🔒
AESTHETICS	👁 👁 👁 👁 👁



## 12" PRECAST CURB

1.5 ft. additional width; \$400k-\$600k per lane-mile

PROTECTION LEVEL	+ + + + +
INSTALLATION COST	\$ \$ \$ \$ \$
DURABILTY	🔒 🔒 🔒 🔒 🔒
AESTHETICS	👁 👁 👁 👁 👁



# Maintenance

Design dependent

If there are size constraints, may require separate vehicle

Can contract out or share vehicles across jurisdictions

2014 Alta Review of Best Practices



# Intersection Treatments



# Summary

Protected bike lanes take many forms

Rapidly increasing use

Growing support from top and bottom

One tool in the toolkit

