City of Spokane

SAFE STREETS

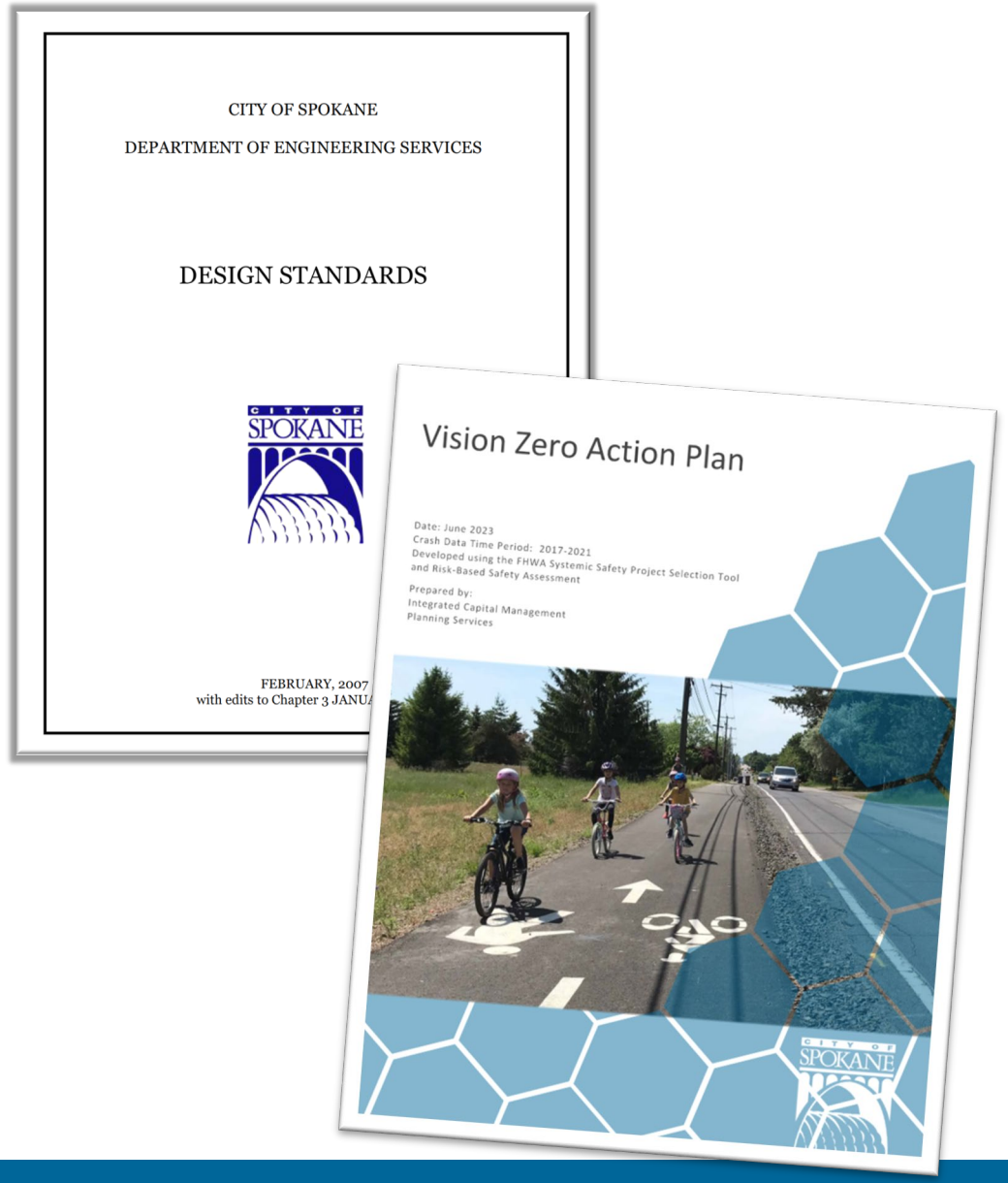
Design Standards Bike Facilities Chapter & Vision Zero Safety Action Plan Update

November 19, 2026

Project Overview

Safe Streets 4 All Supplemental Planning grant from USDOT

- Update the City's Design Standards for Bike Facilities
- Update the 2023 Vision Zero Action Plan



Project Purpose

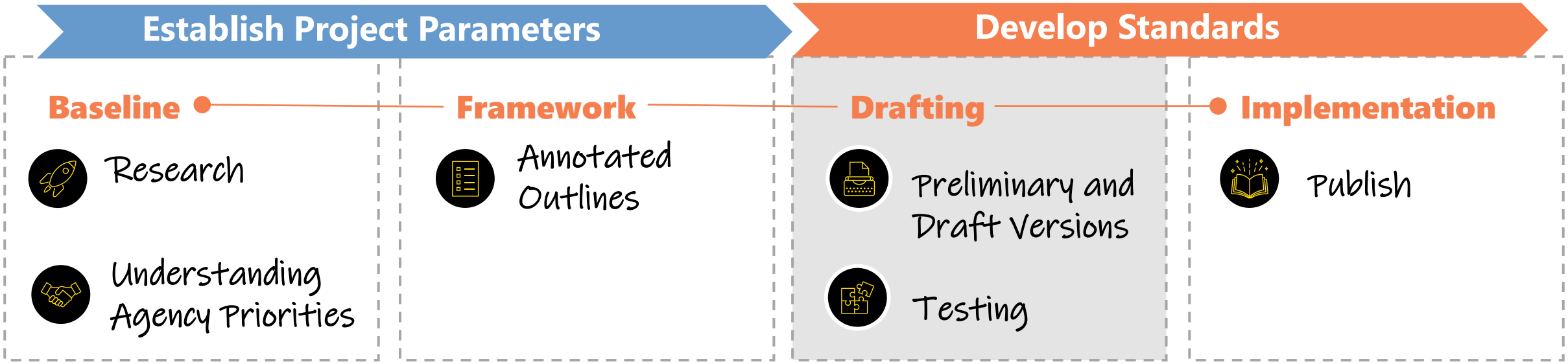
Develop Decision-Making Frameworks

Bikeway Guide: Clear direction, consistency, & standards

Vision Zero Plan: Actionable projects and programs



The Planning Process



Project Management Team & Technical Advisory Committee

Partner Work Sessions

Standard Plans Team

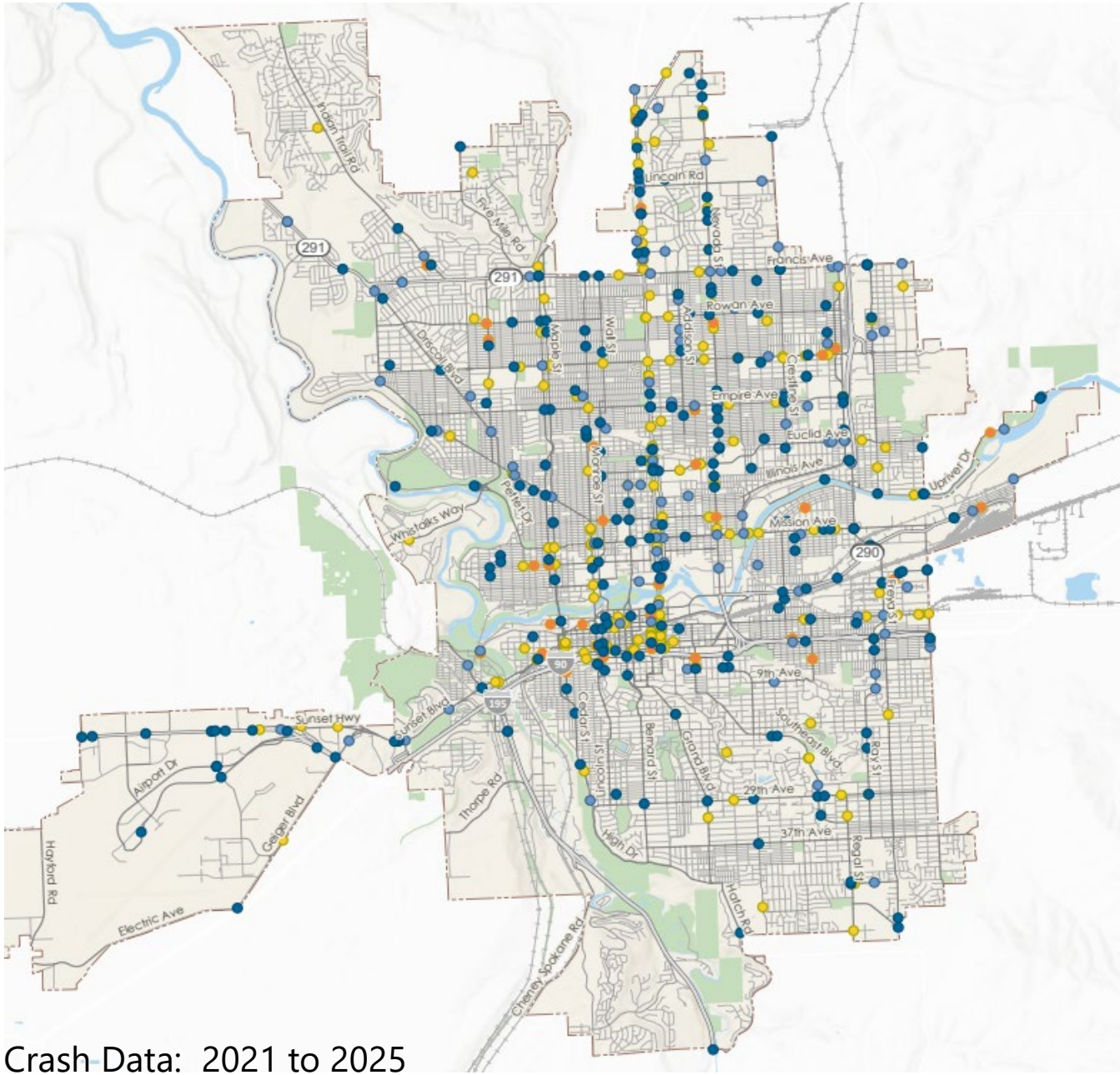
City Work Sessions & Presentations

Vision Zero Safety Action Plan Update

Vision Zero Safety Action Plan Update

Eliminate Fatal & Serious Injury Crashes

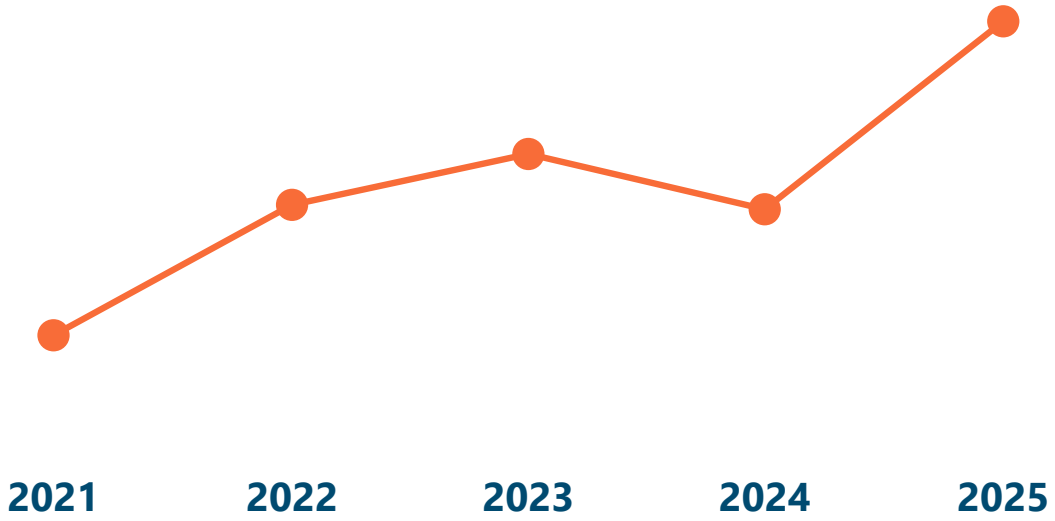
Secure Federal and State funding to address Fatal and Serious Injury Crashes



WSDOT Crash Data: 2021 to 2025

Trends

Fatal and Serious Injury Crashes have been increasing.



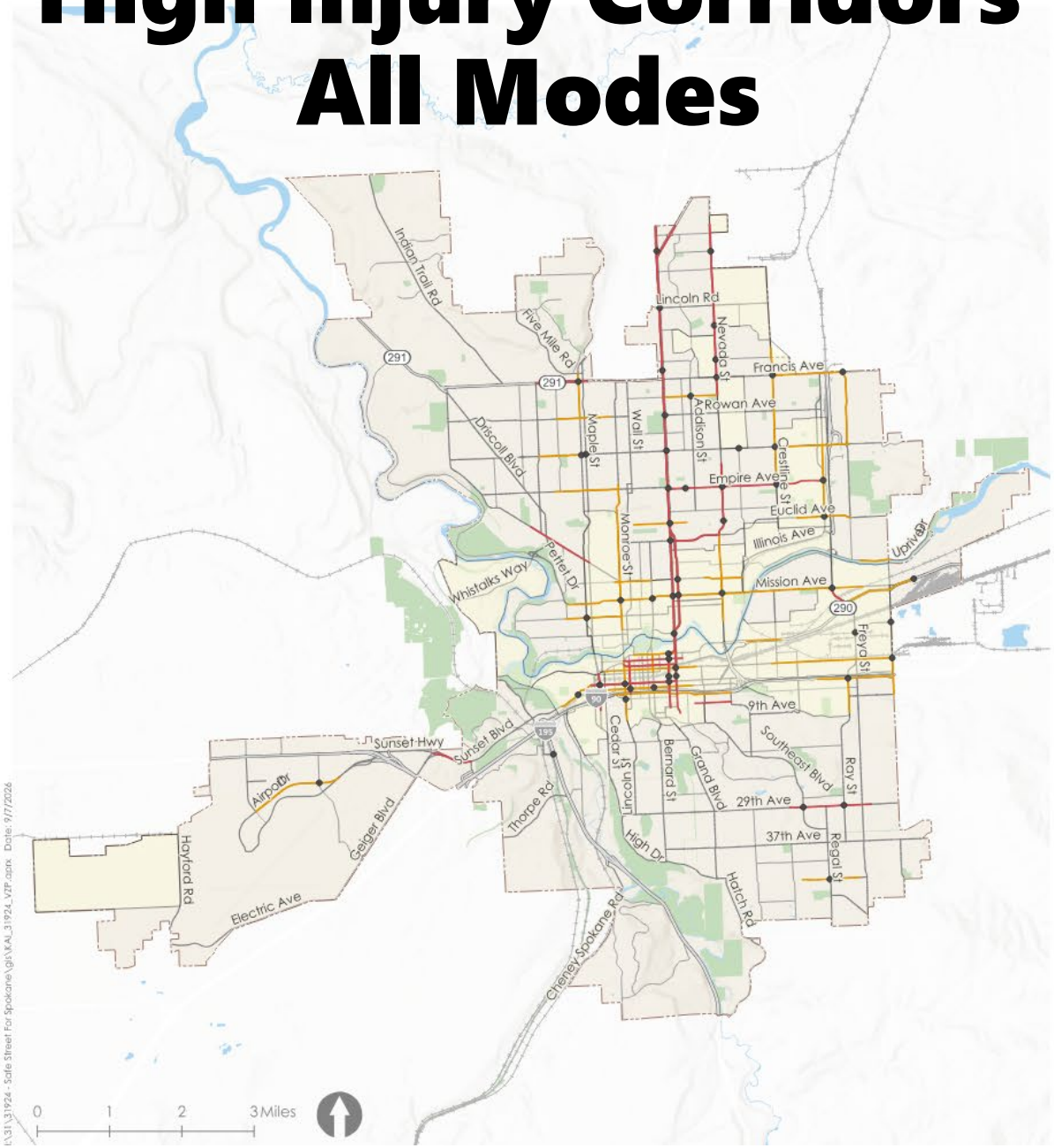
City of Spokane

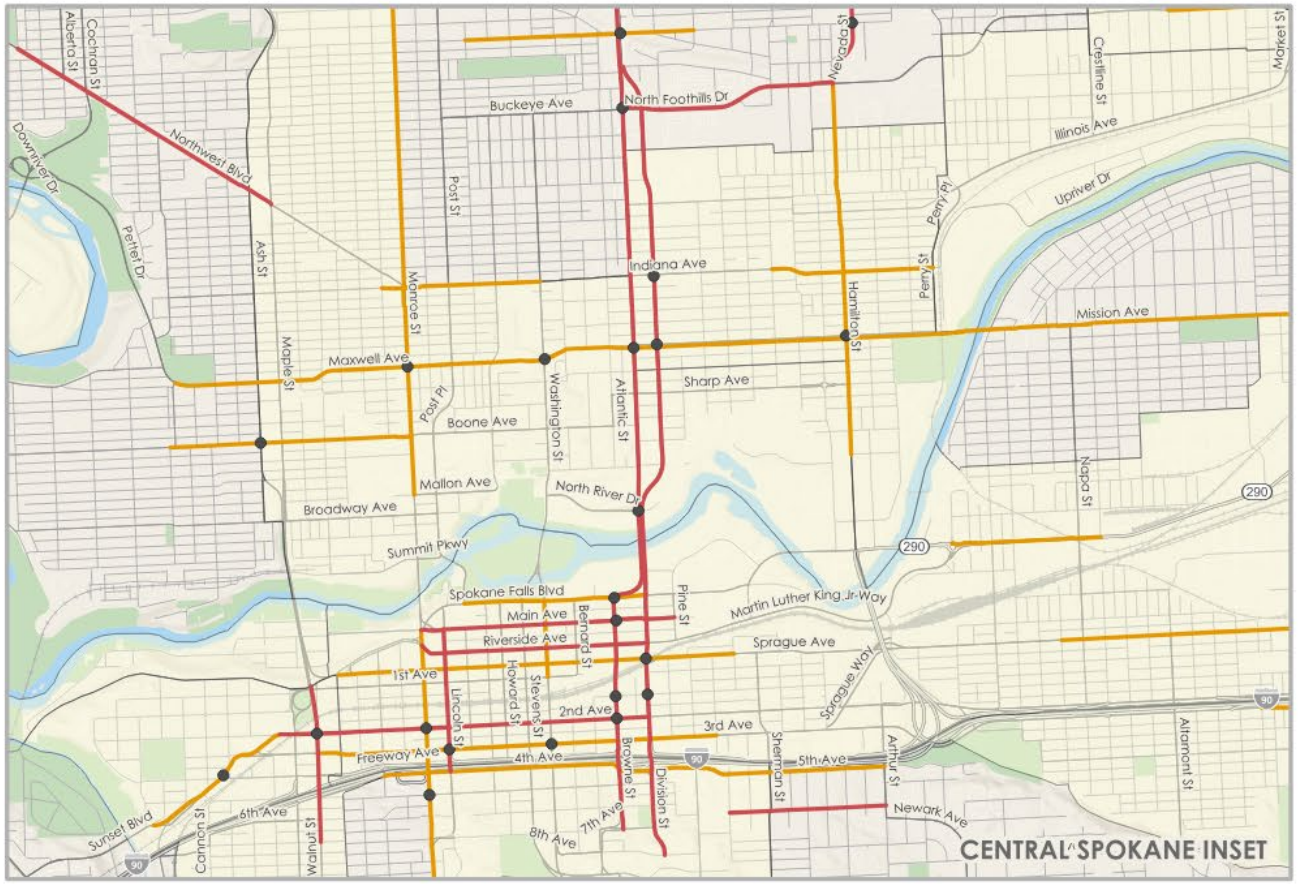
Vision Zero Action Plan

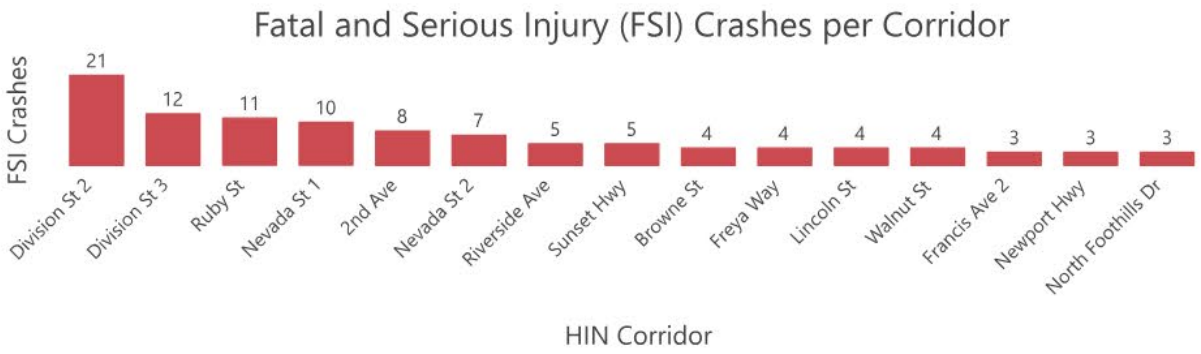
Fatal and Serious Injury Crashes by Mode (2021–2025)

Bicycle	Pedestrian	Motorcycle	Vehicle Only
38	180	125	241
FSI crashes	FSI crashes	FSI crashes	FSI crashes

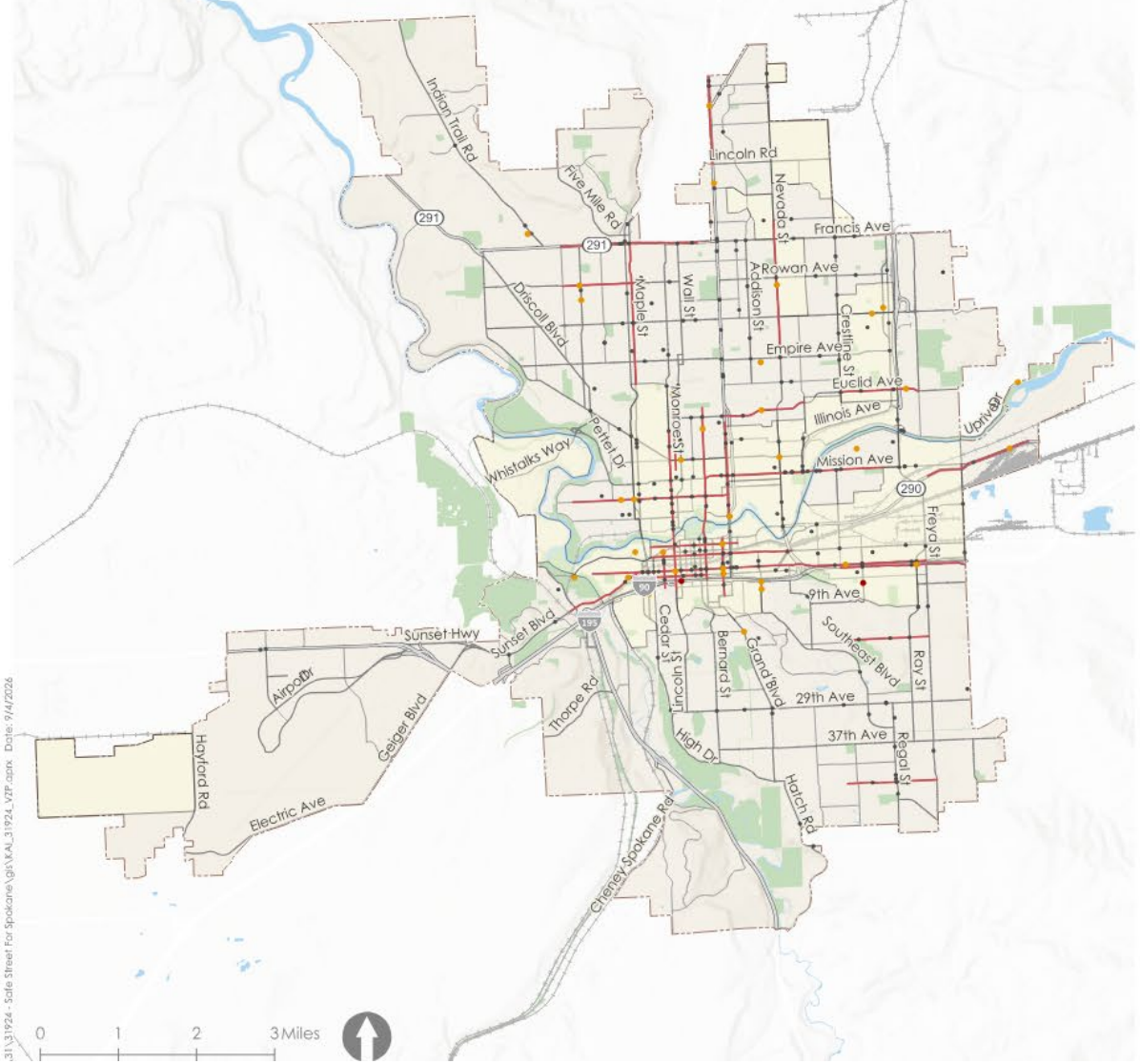
High Injury Corridors
All Modes

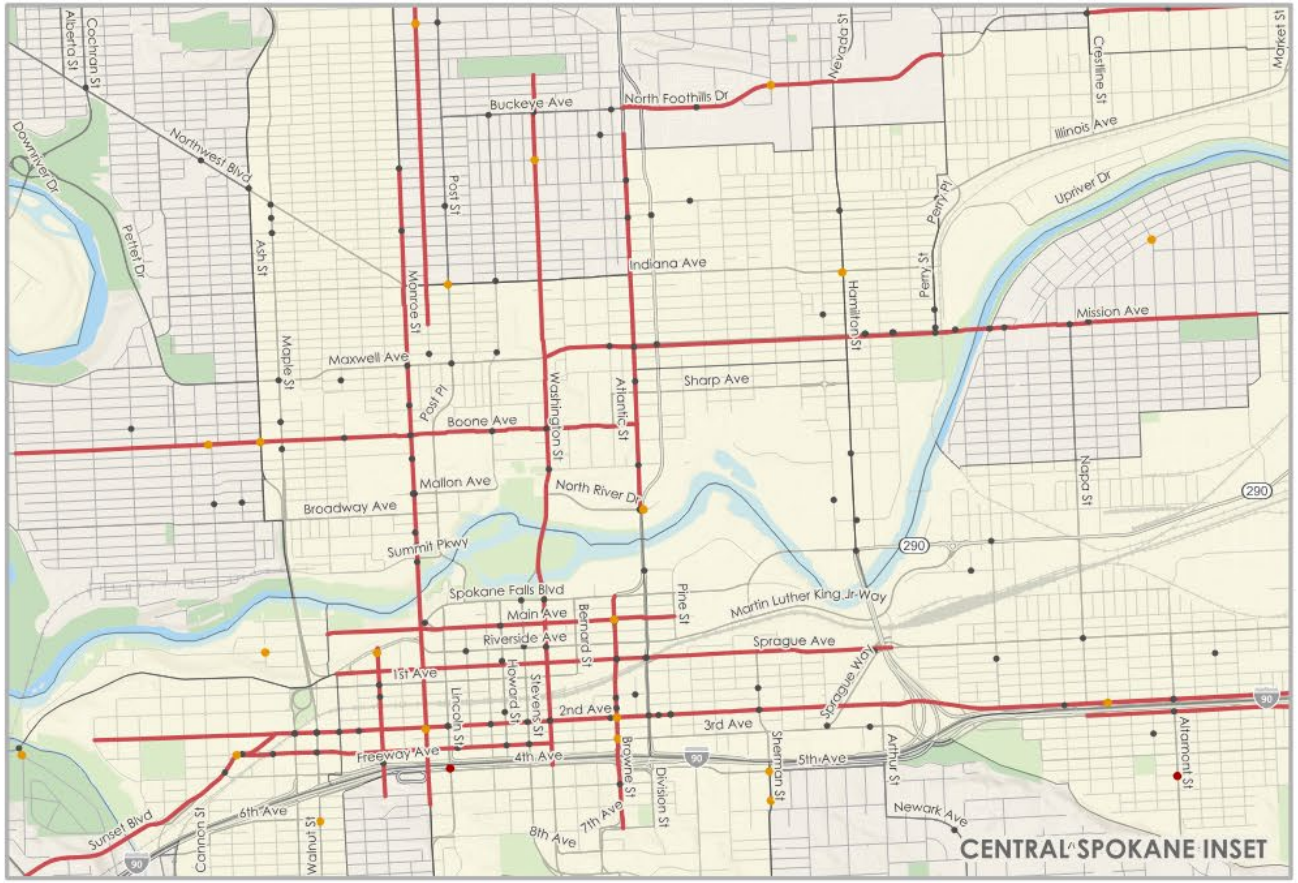


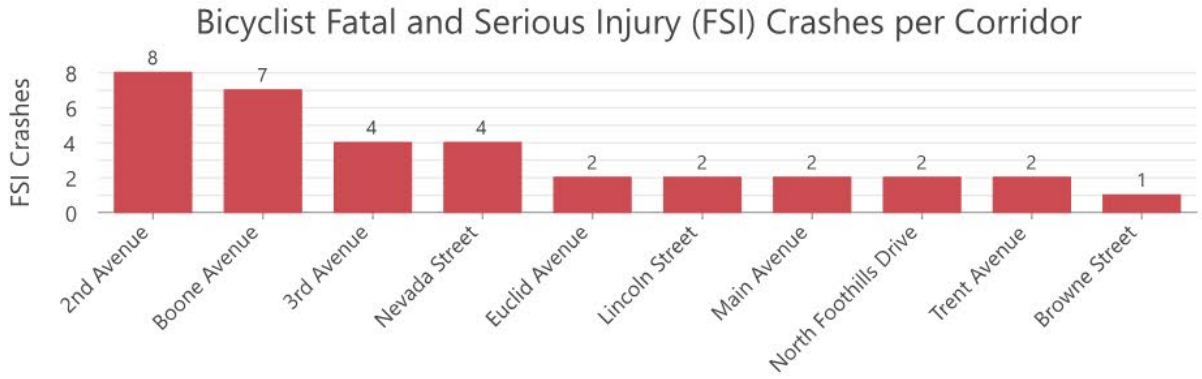




High Injury Corridors
Bicycles









Highest Scoring

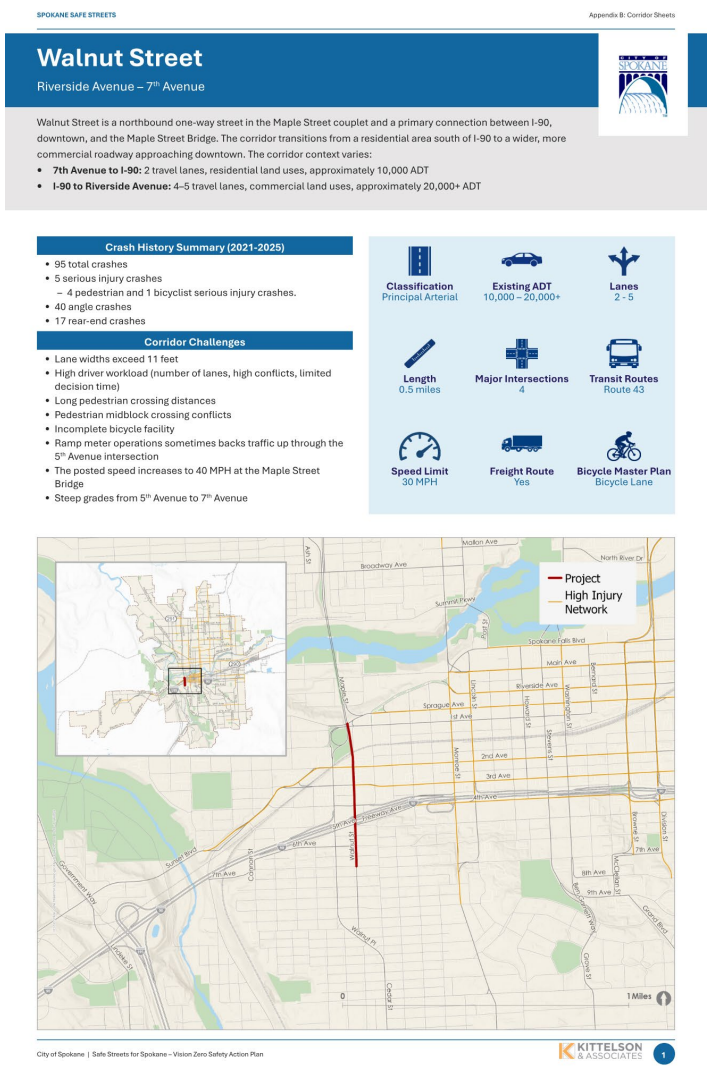
High Injury Corridors

Bicycles

	Corridor	From	To	All Bicycle Crashes	Bicycle FSI* Crashes
1	Browne St	Spokane Falls Blvd	7th Ave	11	3
2	Jefferson St	5th Ave	Riverside Ave	4	1
3	2nd Ave	Freya St	Coeur d'Alene St	28	2
4	Mission Ave	Regal St	Washington St	12	0
5	Monroe St	Jackson Ave	Bishop Ct	11	1
6	Division St	York Ave	North River Dr	6	0
7	3rd Ave	Sunset Blvd	Washington St	5	0
8	Division St	Westview Ave	Lincoln Rd	4	1
9	Washington St	4th Ave	Waverly Pl	8	1
10	Boone Ave	A St	Division St	6	2

Safety Projects

- ✓ 10 projects
- ✓ Context driven safety improvements
- ✓ Grant-positioning



SPOKANE SAFE STREETS — Appendix B: Corridor Sheets

Walnut Street

Riverside Avenue – 7th Avenue

Walnut Street is a northbound one-way street in the Maple Street couplet and a primary connection between I-90, downtown, and the Maple Street Bridge. The corridor transitions from a residential area south of I-90 to a wider, more commercial roadway approaching downtown. The corridor context varies:

- **7th Avenue to I-90:** 2 travel lanes, residential land uses, approximately 10,000 ADT
- **I-90 to Riverside Avenue:** 4–5 travel lanes, commercial land uses, approximately 20,000+ ADT

Crash History Summary (2021-2025)

- 95 total crashes
- 5 serious injury crashes
  - 4 pedestrian and 1 bicyclist serious injury crashes.
- 40 angle crashes
- 17 rear-end crashes

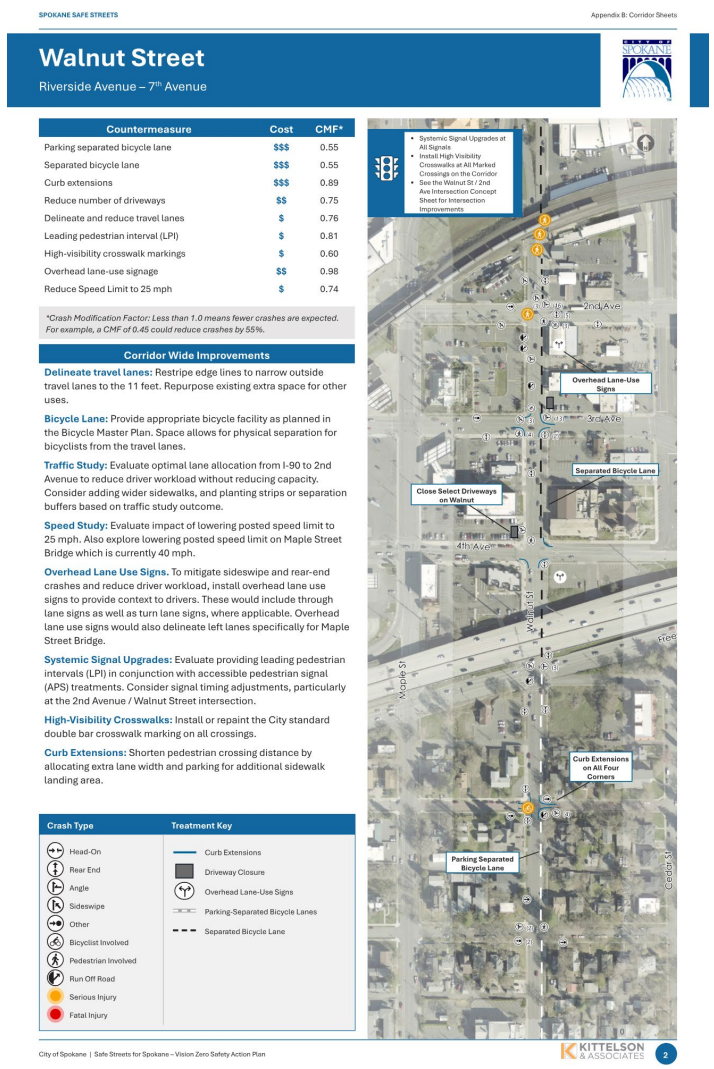
Corridor Challenges

- Lane widths exceed 11 feet
- High driver workload (number of lanes, high conflicts, limited decision time)
- Long pedestrian crossing distances
- Pedestrian midblock crossing conflicts
- Incomplete bicycle facility
- Ramp meter operations sometimes backs traffic up through the 5th Avenue intersection
- The posted speed increases to 40 MPH at the Maple Street Bridge
- Steep grades from 5th Avenue to 7th Avenue

Classification: Principal Arterial	Existing ADT: 10,000 – 20,000+	Lanes: 2 - 5
Length: 0.5 miles	Major Intersections: 4	Transit Routes: Route 43
Speed Limit: 30 MPH	Freight Route: Yes	Bicycle Master Plan: Bicycle Lane

City of Spokane | Safe Streets for Spokane – Vision Zero Safety Action Plan — KITTELSON & ASSOCIATES — 1

Sheet 1



SPOKANE SAFE STREETS — Appendix B: Corridor Sheets

Walnut Street

Riverside Avenue – 7th Avenue

Countermeasure	Cost	CMF*
Parking separated bicycle lane	$$$	0.55
Separated bicycle lane	$$$	0.55
Curb extensions	$$$	0.89
Reduce number of driveways	$$	0.75
Delineate and reduce travel lanes	$	0.76
Leading pedestrian interval (LPI)	$	0.81
High-visibility crosswalk markings	$	0.60
Overhead lane-use signage	$$	0.98
Reduce Speed Limit to 25 mph	$	0.74

*Crash Modification Factor: Less than 1.0 means fewer crashes are expected. For example, a CMF of 0.45 could reduce crashes by 55%.

Corridor Wide Improvements

Delineate travel lanes: Restripe edge lines to narrow outside travel lanes to the 11 feet. Repurpose existing extra space for other uses.

Bicycle Lane: Provide appropriate bicycle facility as planned in the Bicycle Master Plan. Space allows for physical separation for bicyclists from the travel lanes.

Traffic Study: Evaluate optimal lane allocation from I-90 to 2nd Avenue to reduce driver workload without reducing capacity. Consider adding wider sidewalks, and planting strips or separation buffers based on traffic study outcome.

Speed Study: Evaluate impact of lowering posted speed limit to 25 mph. Also explore lowering posted speed limit on Maple Street Bridge which is currently 40 mph.

Overhead Lane Use Signs. To mitigate sideswipe and rear-end crashes and reduce driver workload, install overhead lane use signs to provide context to drivers. These would include through lane signs as well as turn lane signs, where applicable. Overhead lane use signs would also delineate left lanes specifically for Maple Street Bridge.

Systemic Signal Upgrades: Evaluate providing leading pedestrian intervals (LPI) in conjunction with accessible pedestrian signal (APS) treatments. Consider signal timing adjustments, particularly at the 2nd Avenue / Walnut Street intersection.

High-Visibility Crosswalks: Install or repaint the City standard double bar crosswalk marking on all crossings.

Curb Extensions: Shorten pedestrian crossing distance by allocating extra lane width and parking for additional sidewalk landing area.

Crash Type	Treatment Key
Head-On	Curb Extensions
Rear End	Driveway Closure
Angle	Overhead Lane-Use Signs
Sideswipe	Parking-Separated Bicycle Lanes
Other	Separated Bicycle Lane
Bicyclist Involved	
Pedestrian Involved	
Run Off Road	
Serious Injury	
Fatal Injury	

City of Spokane | Safe Streets for Spokane – Vision Zero Safety Action Plan — KITTELSON & ASSOCIATES — 2

Sheet 2

Walnut Street

Countermeasure	Cost	CMF*
Parking separated bicycle lane	$$$	0.55
Separated bicycle lane	$$$	0.55
Curb extensions	$$$	0.89
Reduce number of driveways	$$	0.75
Delineate and reduce travel lanes	$	0.76
Leading pedestrian interval (LPI)	$	0.81
High-visibility crosswalk markings	$	0.60
Overhead lane-use signage	$$	0.98
Reduce Speed Limit to 25 mph	$	0.74

**Crash Modification Factor: Less than 1.0 means fewer crashes are expected. For example, a CMF of 0.45 could reduce crashes by 55%.*

Crash Type

- Head-On
- Rear End
- Angle
- Sideswipe
- Other
- Bicyclist Involved
- Pedestrian Involved
- Run Off Road
- Serious Injury
- Fatal Injury

Treatment Key

- Curb Extensions
- Driveway Closure
- Overhead Lane-Use Signs
- Parking-Separated Bicycle Lanes
- Separated Bicycle Lane

Corridor Wide Improvements

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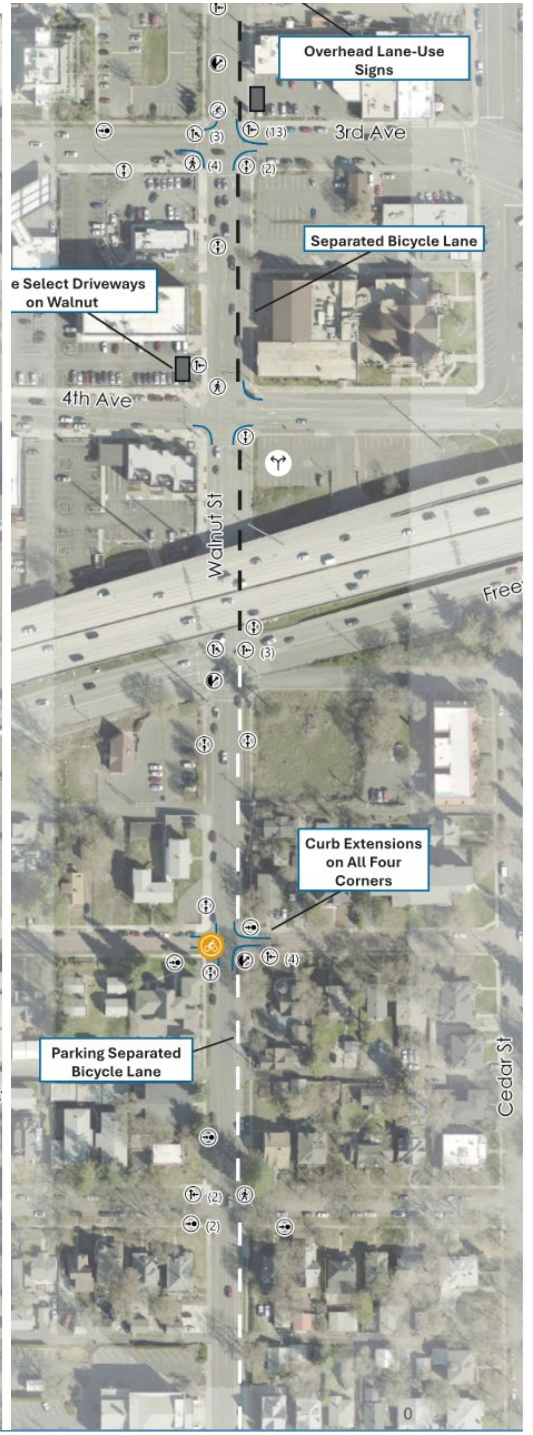


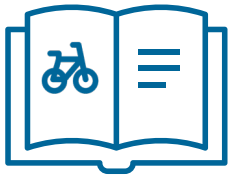
Design Standards Update – Bike Facilities Section

What's in the Update?

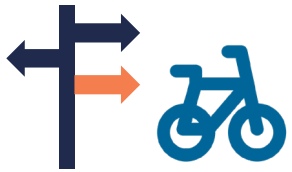
1 3.14-1 Purpose and Applicability



2 3.14-2 Definitions



3 3.14-3 Bicycle Facility Selection for Street Segments



4 3.14-4 General Bicycle Facility Design



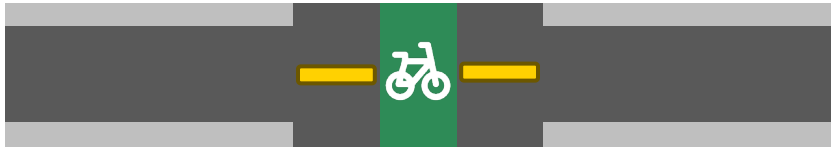
5 3.14-5 Design of Bicycle Facilities along Street Segments

- 3.14-5.1 Shared-Use Pathway
- 3.14-5.2 Separated Bicycle Lanes
- 3.14-5.3 Striped and Buffered Bicycle Lanes
- 3.14-5.4 Contraflow Bicycle Lanes
- 3.14-5.5 Shared Streets
- 3.14-5.6 Neighborhood Greenways
- 3.14-5.7 Paved Shoulders
- 3.14-5.8 Shared Lanes



6 3.14-6 Design of Bicycle Facilities at Intersections

- 3.14-6.1 Intersection Sight Distance
- 3.14-6.2 Intersection Approaches with Turn Lanes
- 3.14-6.3 Bicycle Intersection Treatments
- 3.14-6.4 Traffic Control Devices for Unsignalized Intersections
- 3.14-6.5 Non-Standard Intersections



7 3.14-7 Transitions Between Bicycle Facility Types



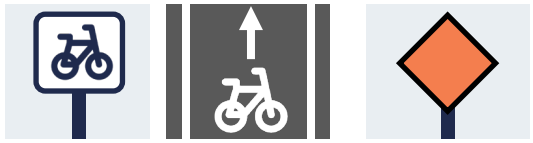
8 3.14-8 Midblock Considerations for Bicycle Facilities

- 3.14-8.1 Driveways and Alleys
- 3.14-8.2 Transit Stops



9 3.14-9 Signing and Striping for Bicycle Facilities

- 3.14-9.1 Traffic Control Signs for Bicycles
- 3.14-9.2 Markings for Bicycle Facilities
- 3.14-9.3 Temporary Traffic Control for Bicycle Facilities

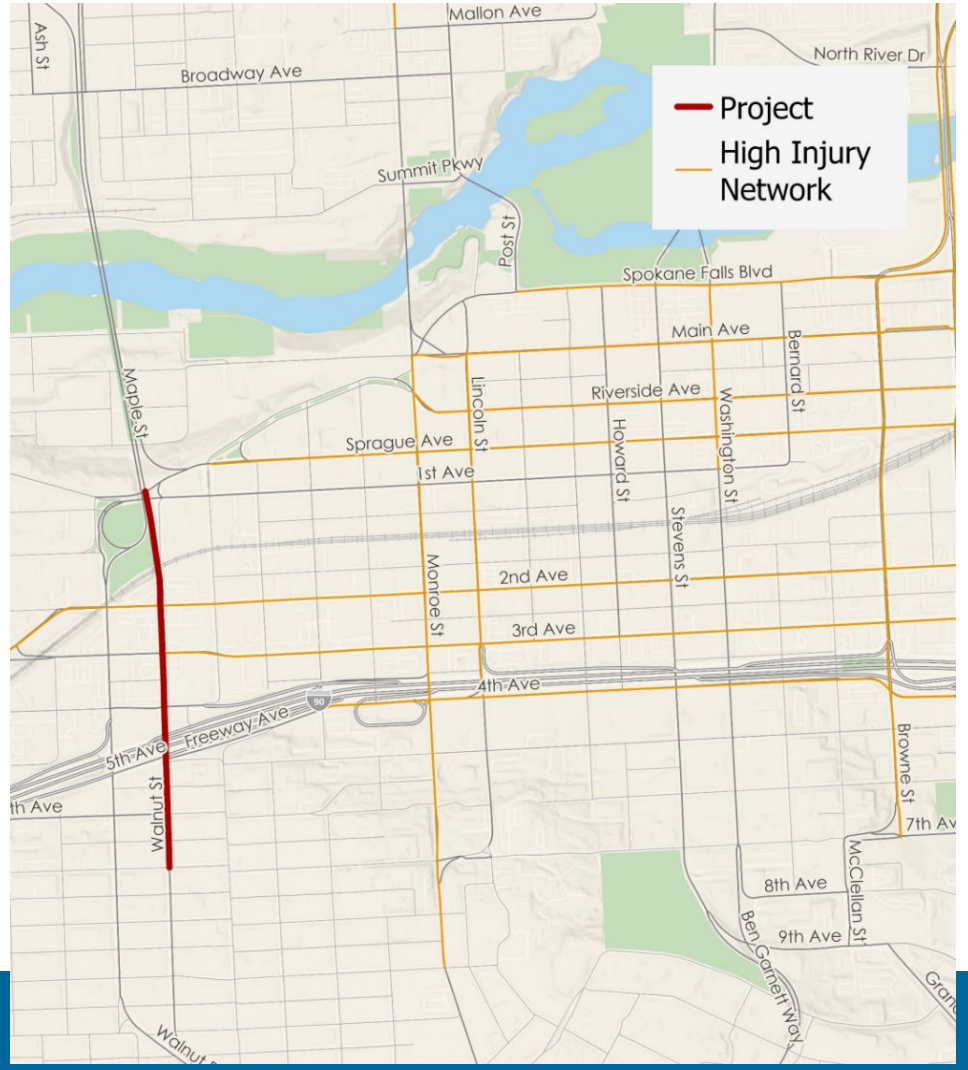


10 3.14-10 Bicycle Parking



Scenario: Walnut Street I-90 to Riverside

- 30 mph speed limit
- 10,000-20,000+ vehicles/day
- 2-5 travel lanes
- Mix of contexts (residential, downtown)
- 4 major intersections

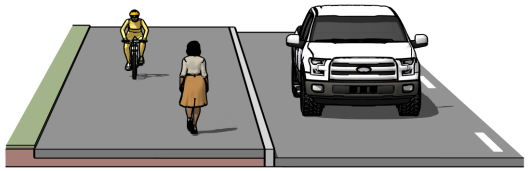


Guidance for Selecting a Facility

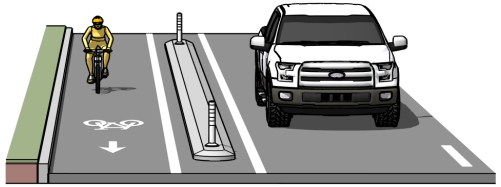
85th % Operating Speed or Posted Speed	AADT	Project Type	Preferred Bicycle Facility	Secondary Bicycle Facility (Downgrade)	Tertiary Bicycle Facility (Downgrade)
<25 mph	<3k	Any	Shared lane, neighborhood greenway, or shared street		
	3k-6.5k	Any	Buffered bicycle lane	Striped bicycle lane	Shared lane
	6.5k+	Preservation	Separated bicycle lane (consider parking-protected)	Buffered bicycle lane using dimensions for separated bicycle lane	Striped bicycle lane
		New Construction or Reconstruction	Separated bicycle lane or shared-use pathway	Buffered bicycle lane using dimensions for separated bicycle lane	Striped bicycle lane
25 mph–35 mph	<3k	Any	Buffered bicycle lane	Striped bicycle lane	Shared lane
	3k-6.5k	Any	Buffered bicycle lane	Striped bicycle lane	
	6.5k+	Preservation	Separated bicycle lane (consider parking-protected)	Buffered bicycle lane using dimensions for separated bicycle lane	Striped bicycle lane
		New Construction or Reconstruction	Separated bicycle lane or shared-use pathway	Buffered bicycle lane using dimensions for separated bicycle lane	Striped bicycle lane
>35 mph	Any	Preservation	Separated bicycle lane (consider parking-protected)	Buffered bicycle lane using dimensions for separated bicycle lane	
		New Construction or Reconstruction	Separated bicycle lane or shared-use pathway	Buffered bicycle lane using dimensions for separated bicycle lane	
Any	Any	Any	Paved shoulder		

Bicycle Facility Types

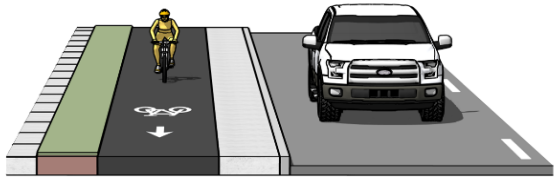
Shared-Use Pathway



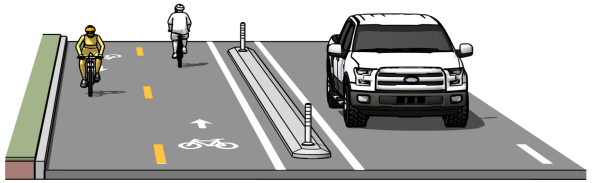
Separated Bicycle Lane (Street-Level)



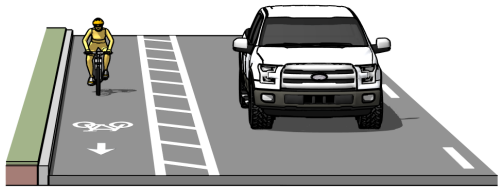
Separated Bicycle Lane (Sidewalk-Level)



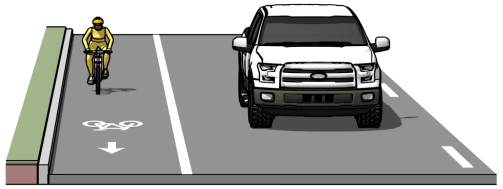
Separated Bicycle Lane (Two-Way)



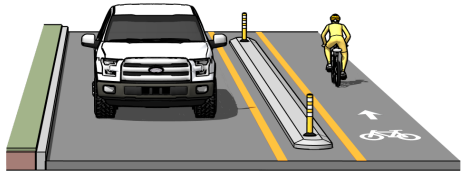
Buffered Bicycle Lane



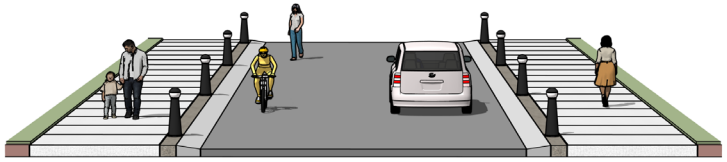
Striped Bicycle Lane



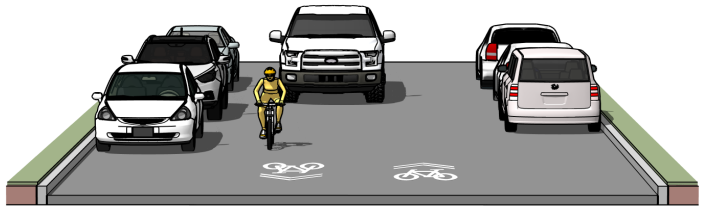
Contraflow Bicycle Lane



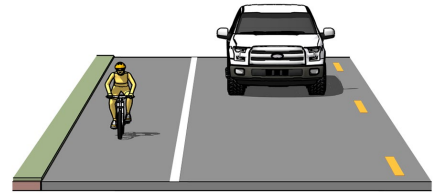
Shared Street



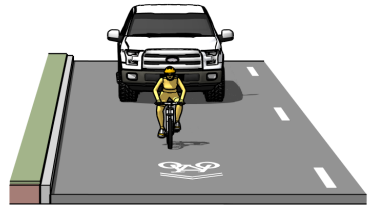
Neighborhood Greenway



Paved Shoulder

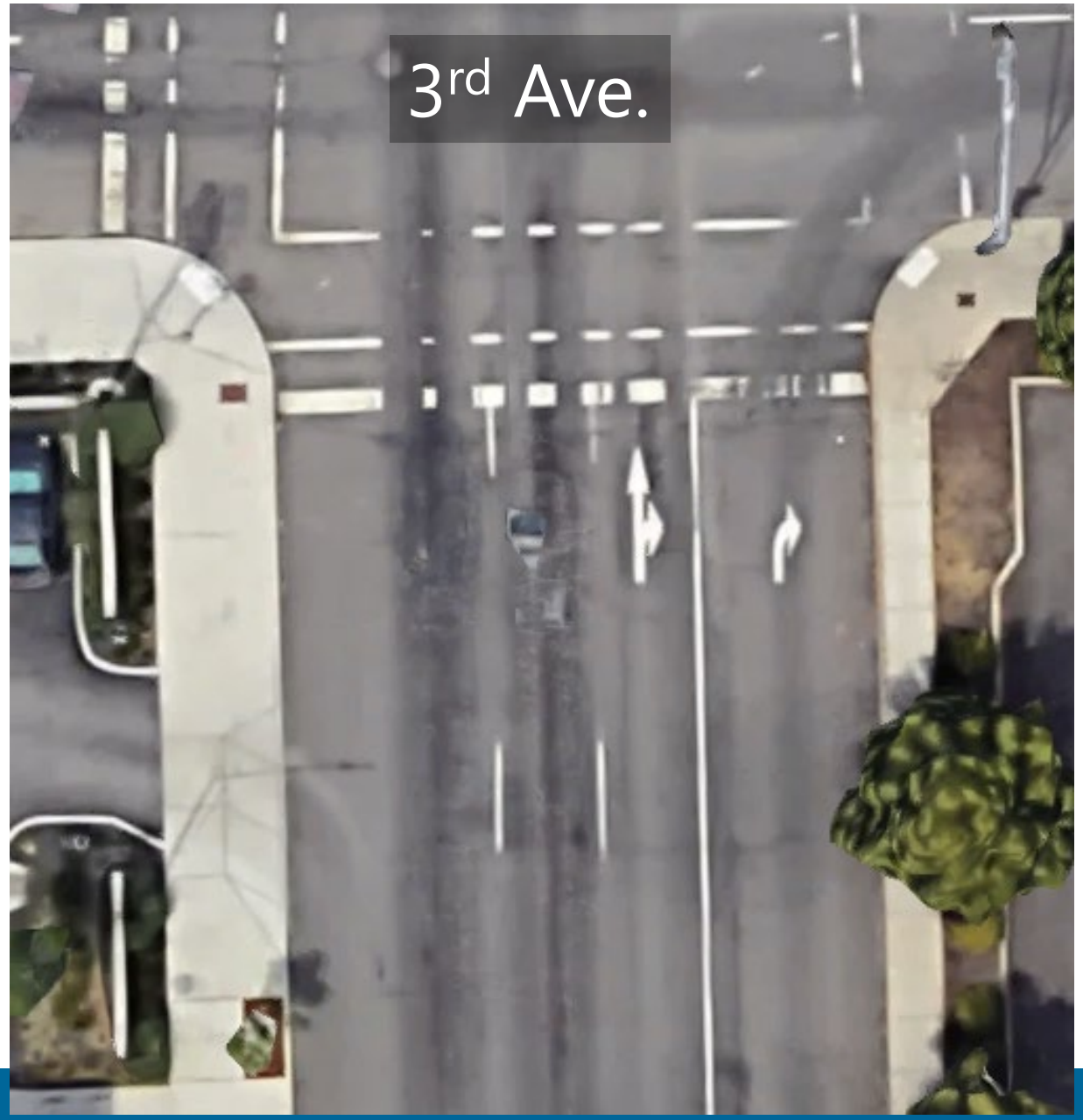


Shared Lane



Key Challenge: Turn Lanes

How should a bike lane be organized around turn lanes?



Key Challenge: Turn Lanes

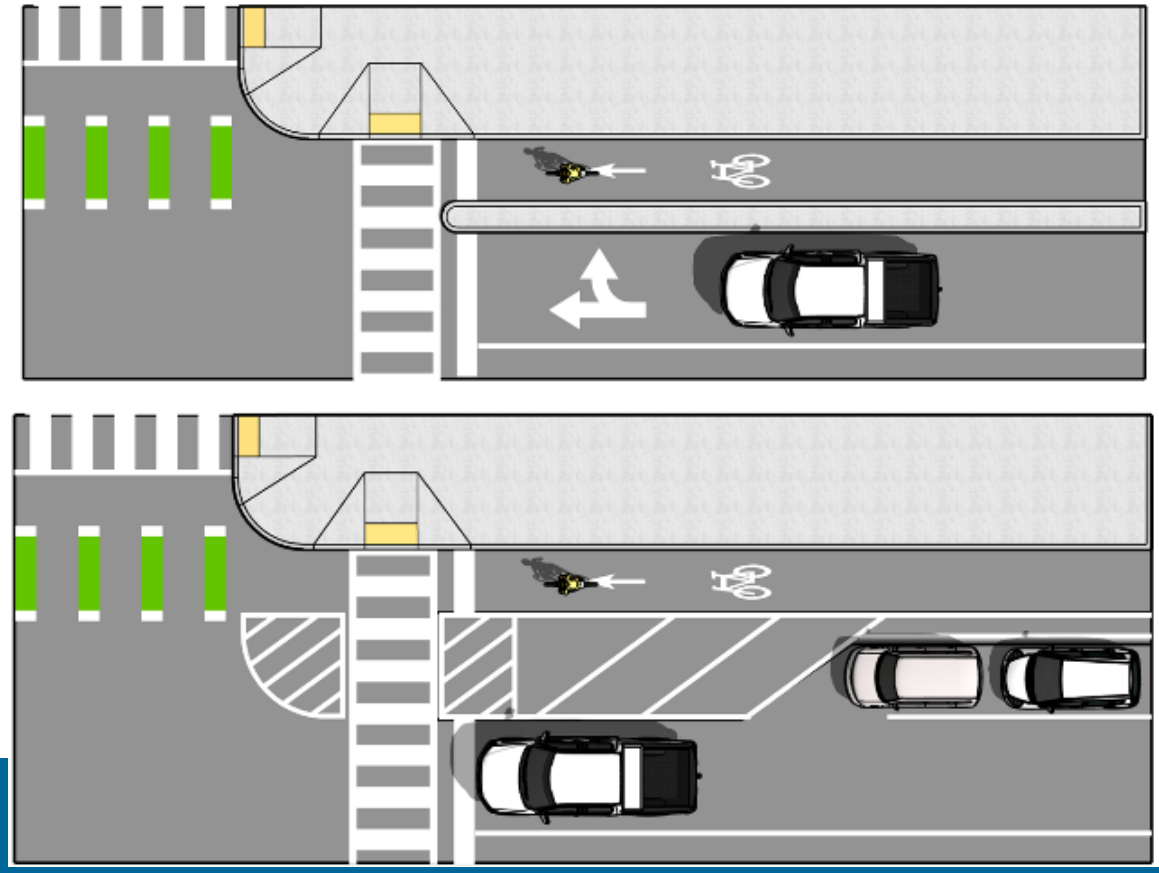
Table 26 – Bicycle Lane Intersection Approach Configuration

Turn Lane Type	Bicycle Lane Type	On-Street Parking	Preferred	Secondary	Tertiary
Shared Through/ Right-Turn Lanes	Separated	Any	Continuous transition (protected corner)	*N/A*	*N/A*
	Buffered or Striped	Yes	Bend-out	Continuous transition	*N/A*
		No	Continuous transition	*N/A*	*N/A*
Signalized Dedicated Right-Turn Lane	Separated	Any	Continuous transition (protected corner)	Lateral shift	*N/A*
	Buffered or Striped	Yes	Bend-out	Continuous transition	Lateral shift
		No	Continuous transition	Lateral shift	*N/A*
Unsignalized Dedicated Right-Turn Lane	Separated, Buffered, or Striped	Any	Lateral shift	*N/A*	*N/A*

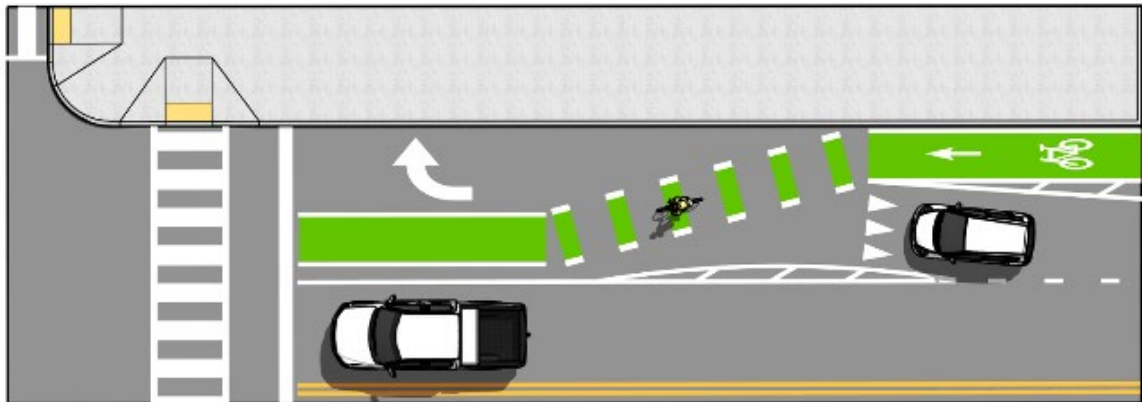
Key Challenge: Turn Lanes

Preferred: Continuous Transition

* Requires signal separation



Secondary: Lateral Shift

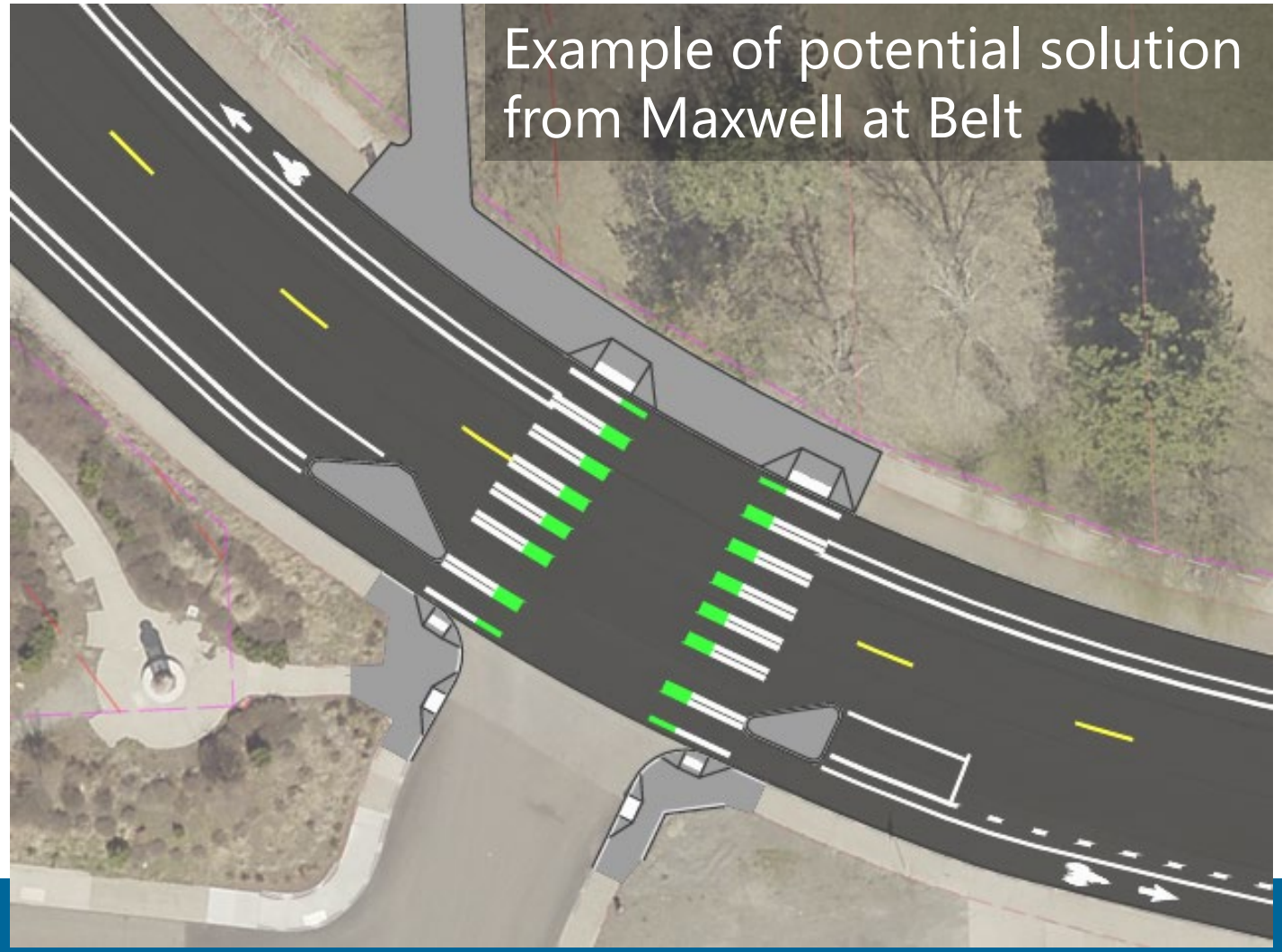


Key Challenge: Bumpouts

How should a bike lane maneuver around a bumpout?



Key Challenge: Bumpouts





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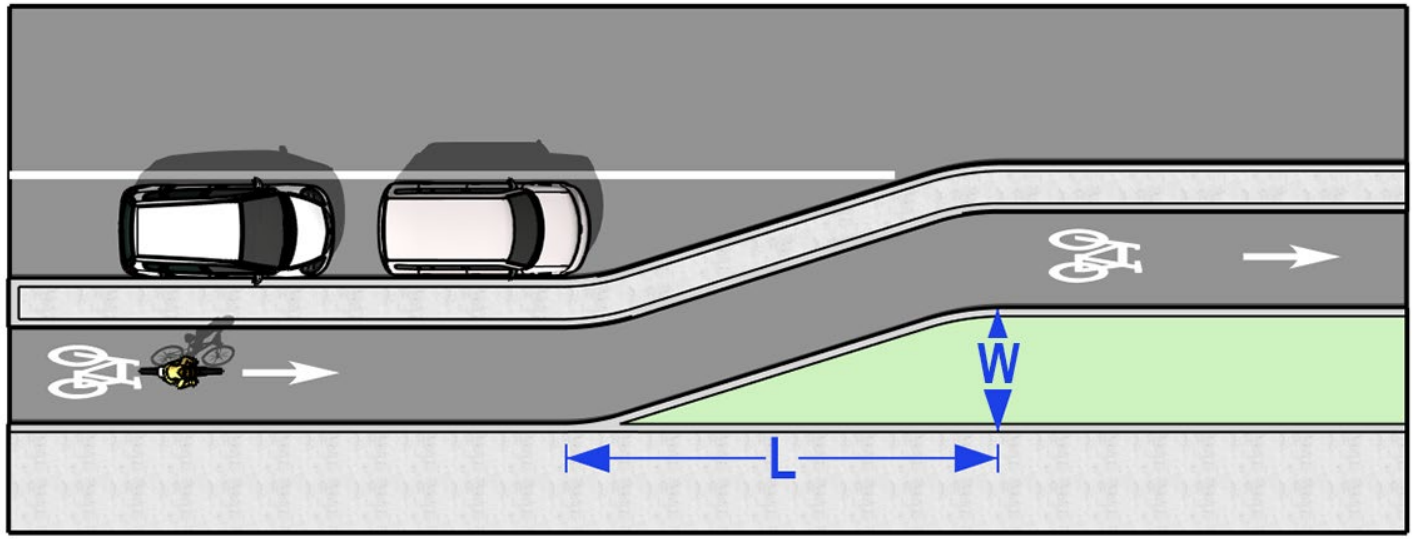
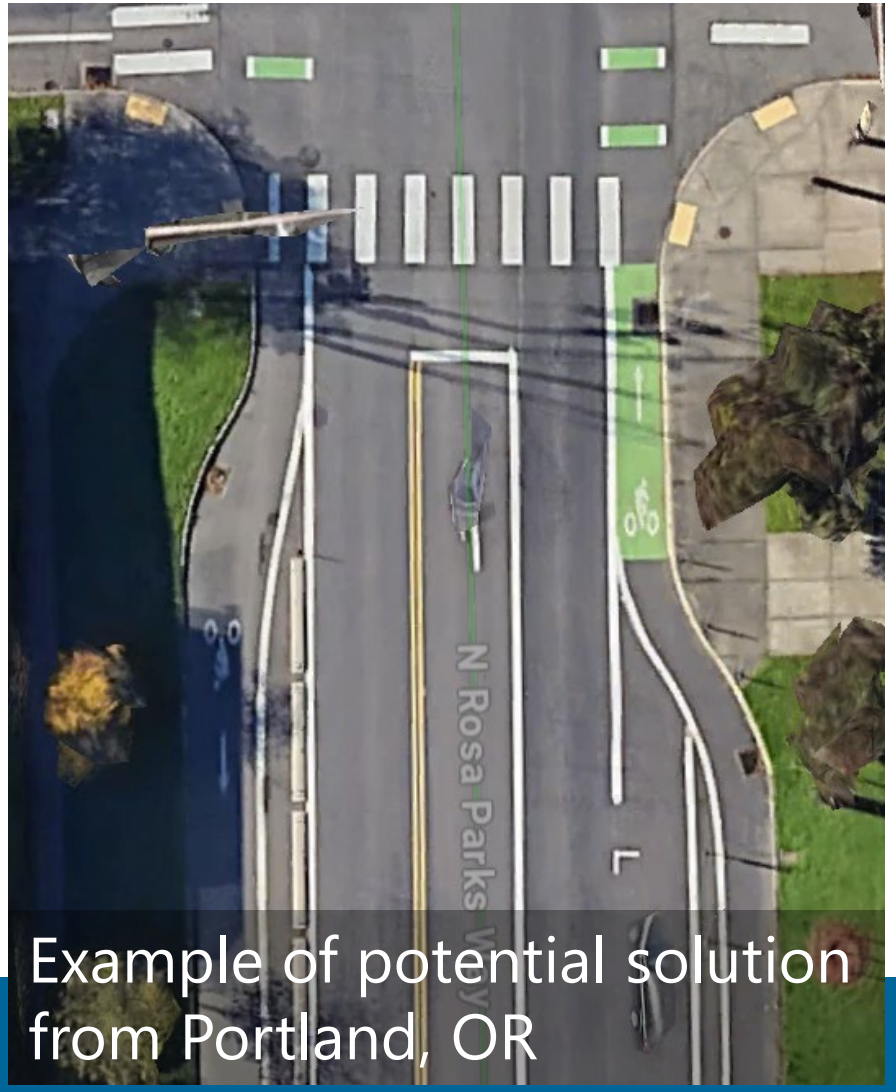


$$L = \frac{WS^2}{60}$$

Where: L = longitudinal lane shift length (feet), minimum 20 feet, as shown in Figure 36

W = lateral offset width (feet), as shown in Figure 36

S = target bicyclist operating speed (mph), assume 20 mph unless facility-specific guidance recommends a higher speed, such as on steep downgrades (see Section 3.14-4.7).



Example of potential solution from Portland, OR

Key Challenge: Bike Left Turns

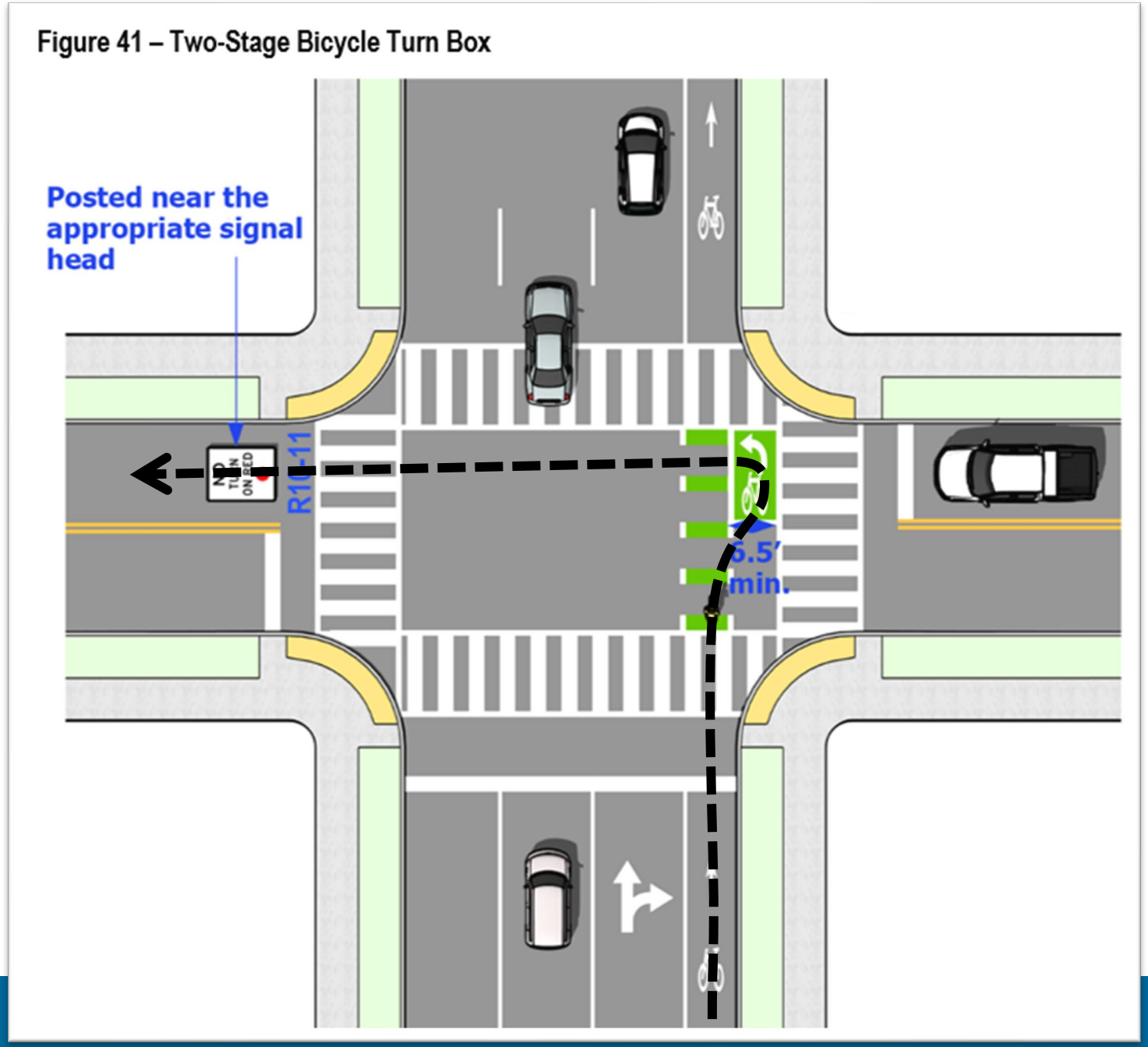
Left turns across multiple lanes of traffic can be challenging.



Key Challenge: Bike Left Turns

Multi-stage left turn

"Copenhagen left"



Supplemental Memo

Supplemental Memo

New or not yet widely adopted treatments; better served as future design manual updates as the system matures.

Markings

- Enhanced Parking
- One-Piece Markers
- Continuous Green Conflict Markings

Signals and Timing

- Bicycle Green Extensions
- Minimum Green Time
- Minimum Red Time
- Time Separated Phasing
- Leading Interval
- Bicycle Detection Confirmation
- Detection-Activated Signs

Facilities

- Intermediate Bike Lane
- Advisory Bike Lane
- Intersection 16 Flag Guidance

Additional Bike Infrastructure

- Bike Rests
- Bike Ramps on Stairs
- Service Stations
- Bike Trash Cans
- Bike Lockers
- Bike Counters

+ additional policy recommendations


Thank you!