

Washington Transportation Professionals

Forum and Peer Exchange

April 30, 2024

8:30 AM-12:00 PM



*Credits: Carmanah and
City of Edmonds*

Welcome

- Rail-Highway Crossing Safety: Section 130 Program Call for Projects
- Washington State Target Zero Plan Update
- Safe Streets and Roads for All: Comprehensive Safety Action Plans
- Rightsizing Roundabouts
- MUTCD State Approval Process
- Setting Safe Speed Limits
- Safe Routes to School and Pedestrian and Bicycle Programs Calls for Projects

Washington Transportation Professionals

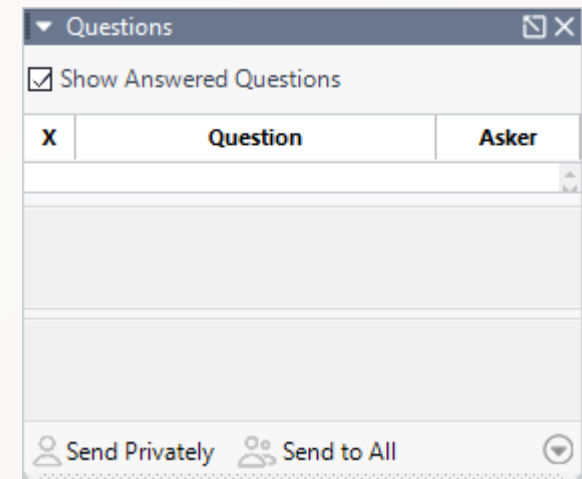
- **Formed**
 - ✓ Over 40 years ago as the Urban Traffic Engineers Council.
 - ✓ By city traffic engineers and focused on traffic operations.
- **Evolution and Growth**
 - ✓ All cities, all counties, MPOs/RTPO's, vendors, consultants, nonprofits, & other agencies = Over 400 entities (Over 1000 individuals).
 - ✓ Discuss local agency transportation issues of statewide significance.
- **Forums and Peer Exchanges**
 - ✓ Facilitated by WSDOT's Local Programs and Active Transportation divisions with help from public agencies, consultants, and vendors.
 - ✓ Looking for relevant topics and presenters.

Statewide Participation

- Cities
- Counties
- Tribes
- WSDOT—All regions, WSF, and HQ
- MPOs/RTPOs
- FHWA
- State Agencies—WTSC, CRAB, TIB, DOH, +others
- Transit, Ports, Railroads, and other transportation providers
- Nonprofit Organizations
- Consultants and Vendors

Webinar Logistics

- Show and hide the GoToWebinar screen:
Press the orange arrow toggle button.
- You are in listen-only mode. Please type comments and questions into the “Questions” box.
We will read it to the presenter for a response.



Agenda

- Rail-Highway Crossing Safety: Section 130 Program Call for Projects
- Washington State Target Zero Plan Update
- Safe Streets and Roads for All: Comprehensive Safety Action Plans
- Rightsizing Roundabouts
- MUTCD State Approval Process
- Setting Safe Speed Limits
- Safe Routes to School and Pedestrian and Bicycle Programs Calls for Projects

Rail-Highway Crossing Safety: Section 130 Program Call for Projects

Paul Snow
Transportation Engineer
WSDOT Local Programs



Credit: FHWA

Section 130 Rail Crossing Safety Program Call for Projects

Open To: All Cities, Counties, Tribes

Application deadline: July 15, 2024. (All applications must be received electronically)

Available Funds: \$20 million Anticipated

In accordance with 23 U.S. Code 130(f), Section 130 projects are funded at a 100% Federal Share.

Eligible Projects: Projects at any public Rail-Highway grade crossings.

Projects that are NOT Eligible: High Speed Rail Crossings or Private Rail Crossings.

Program Goal: To decrease fatal and serious injury crashes at railway-highway grade crossings to help achieve Target Zero.

Section 130 Rail Crossing Safety Program Call for Projects

Additional Information:

Railway Highway Crossing Program Overview at <https://safety.fhwa.dot.gov/hsip/xings/>

WSDOT's Section 130 funding program website, available resources, and the application process at <https://www.wsdot.wa.gov/localprograms/traffic/railway-crossings-program>

Contact:

Paul Snow

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360-402-1703



Washington State Target Zero Plan Update

Mark McKechnie

External Relations Director

Washington Traffic Safety Commission



TARGET ZERO PLAN (STRATEGIC HIGHWAY SAFETY PLAN)

Brian Chandler, Project Manager, DKS

Mark McKechnie, External Relations Director, WTSC

April 30, 2024

PURPOSE & REQUIREMENT

- Target Zero Plan = **Strategic Highway Safety Plan**
- Requirement of the Highway Safety Improvement Program (HSIP)
 - 23 U.S.C. § 148
- Statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads
- Identifies a State's key safety needs and guides investment decisions towards strategies and countermeasure with the most potential to save lives and prevent injuries
- Must be updated every 5 years
- Current version is the [2019 Target Zero Plan](#).

SAFE SYSTEM APPROACH

Layers of safety to prevent serious or fatal injury:

- *Safer roads*
- *Safer vehicles*
- *Safer speeds*
- *Safer road users*
- *Post-crash care*
- **Add Safer Land Use?*



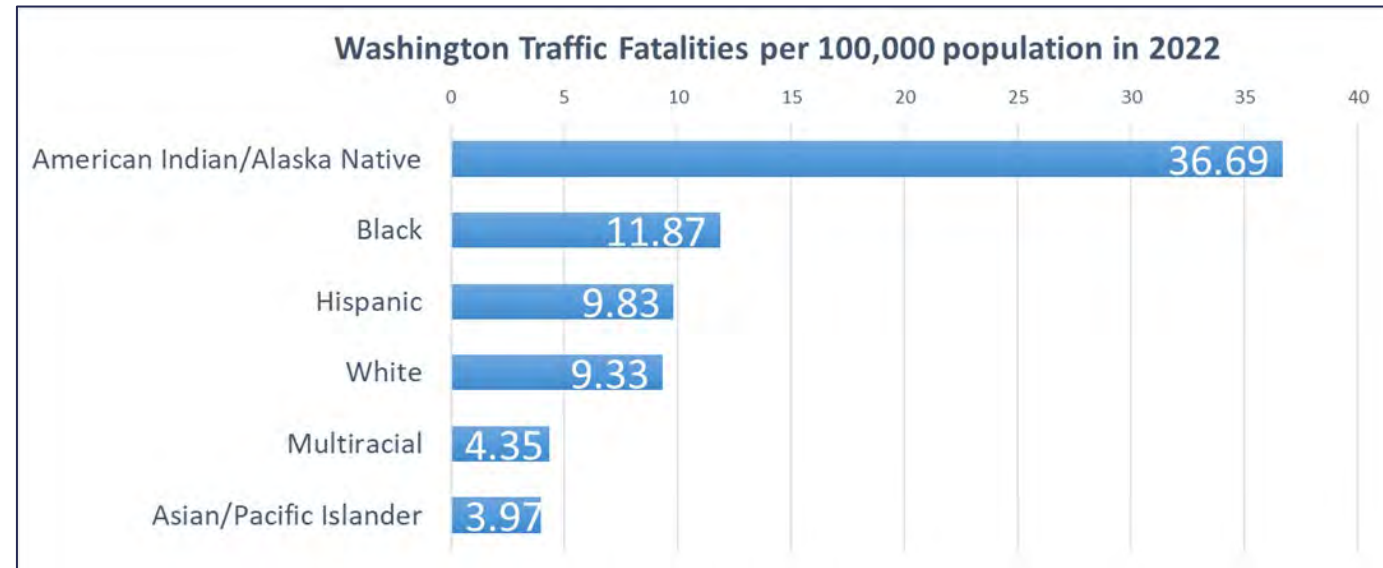
TRAFFIC SAFETY CULTURE

- TRAFFIC SAFETY CULTURE refers to our shared beliefs about our (*individual*) actions that impact safety.
- PROACTIVE traffic safety culture refers to shared beliefs about our responsibility for (*joint*) actions that create a safe system for everyone.
 - **Road owners, partners, and stakeholders** increase responsibility for actions that support building, operating, and maintaining a safe system (collaboration)
 - **Road users** increase responsibility for actions that help ensure the safety of others

INTERSECTIONAL EQUITY

Identify and focus on communities with:

- Underinvestment in safe transportation facilities
- Lack of “Complete Streets” connections
 - Sidewalks, crosswalks, safe routes to school
 - Protected bike routes
 - Transit connections
- High social vulnerability and low social, economic, or political capital
- Overburdened by serious or fatal traffic crashes

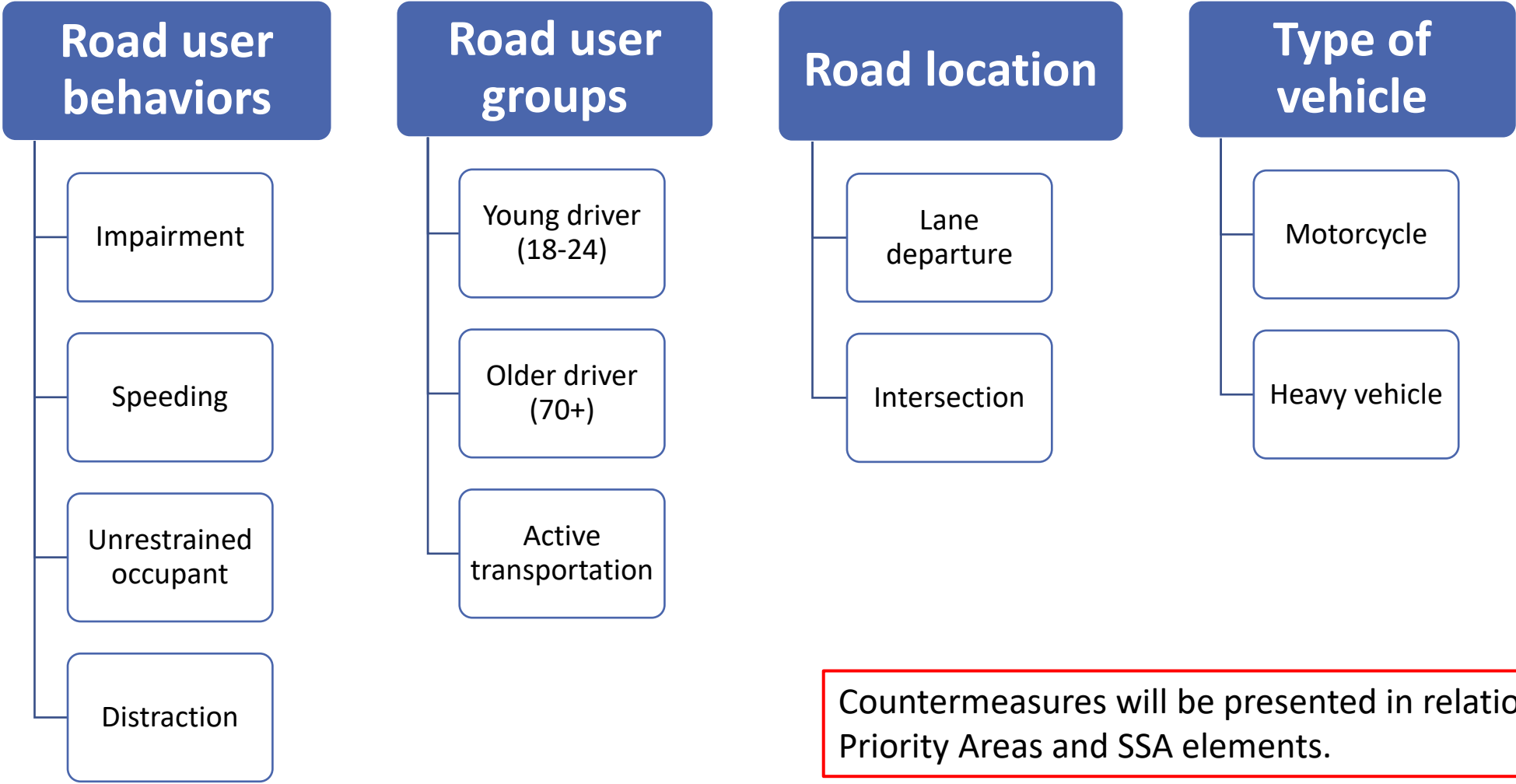


2024 TARGET ZERO PLAN

Additional Changes

- **Reorganize around the Foundation**
 - Safe System Approach
 - Proactive Traffic Safety Culture
 - Equity
- **Improve Usability**
 - Reduce Page Count (296)
- **Focus on Implementation**
 - Identify Champion for Strategies
 - Investigation, Evaluation, Iteration
 - 5-year Horizon

TARGET ZERO PLAN PRIORITY AREAS (2024)



Countermeasures will be presented in relation to Priority Areas and SSA elements.

Priority areas for the 2024 Target Zero Plan	Fatalities 2020-2022	Fatality Proportion (% of Total)
Total	1,991	100%
<i>Road User Behaviors</i>		
Impairment Involved <i>Impaired Driver Involved: 51%</i> <i>Impaired ATU: 11%</i>	1,188	60%
Speeding	633	32%
Unrestrained Occupant	417	21%
Distracted Road User	347	17%
<i>Road User Groups</i>		
Young Driver (15-24) Involved	519	26%
Active Transportation Users	428	21%
Older Drivers (70+) Involved	521	13%

Priority areas for the 2024 Target Zero Plan	Fatalities 2020-2022	Fatality Proportion (% of Total)
Total	1,991	100%
<i>Road Location</i>		
Lane Departure	877	44%
Intersection Related	472	24%
<i>Vehicles Involved</i>		
Motorcycles	318	16%
Heavy Vehicle Involved	255	13%

WTSC DATA DASHBOARDS – <https://wtsc.wa.gov/dashboards/>

The screenshot shows the WTSC Data Dashboards website. At the top left is the logo for the Washington Traffic Safety Commission. The top navigation bar includes links for 'Safe Driving', 'Road Users', 'The Commission', 'Data', and 'Meetings'. A search bar is located in the top right corner. Below the navigation bar is a large header area with the title 'Data Dashboards'. A secondary navigation bar contains links for 'Data Dashboards', 'Traffic Safety Reports', 'Request Fatal Crash Data', and 'Traffic Records Program'. On the right side, there is a vertical menu with options: 'Data Dashboards', 'Traffic Safety Reports', 'Request Fatal Crash Data', and 'Traffic Records Program'. The main content area is titled 'General Dashboards' and features four dashboard cards: 'Fatalities', 'Fatal Crashes', 'Fatal Crash Map', and 'Drivers Involved in Fatal Crashes'. Each card provides a brief description, a list of data points, and a 'View the Dashboard' button. On the far right, there is a sidebar with two sections: 'General Dashboards' and 'Topic Specific Dashboards', each listing various dashboard topics.

TRAFFIC SAFETY COMMISSION

Safe Driving Road Users The Commission Data Meetings

Search here... Search

Data Dashboards

Data Dashboards Traffic Safety Reports Request Fatal Crash Data Traffic Records Program

General Dashboards

Fatalities

Person-level data for all traffic fatalities from crashes involving a motor vehicle in Washington.

- demographics
- high-risk driver behavior
- location

[View the Dashboard](#)

Fatal Crashes

Crash-level data for all fatal crashes involving a motor vehicle in Washington.

- high-risk driver behavior
- location
- road type
- temporal

[View the Dashboard](#)

Fatal Crash Map

Crash-level data mapped by location for all fatal crashes involving a motor vehicle in Washington.

- road type
- temporal

[View the Dashboard](#)

Drivers Involved in Fatal Crashes

Person-level data for all drivers involved in fatal crashes involving a motor vehicle in Washington.

- demographics
- high-risk driver behavior
- license status
- location

[View the Dashboard](#)

General Dashboards

- Fatalities
- Fatal Crashes
- Fatal Crash Map
- Drivers Involved in Fatal Crashes
- Traffic Fatality Rates
- Target Zero Performance

Topic Specific Dashboards

- Active Transportation User Fatalities
- Alcohol or Drug Positive Drivers, Pedestrians & Cyclists
- American Indian/Alaska Native and Tribal Lands
- Child Passenger Vehicle Occupants & Drivers of Child Occupants
- Holiday Fatalities



WSDOT Crash Data Portal
<https://remoteapps.wsdot.wa.gov/highwaysafety/collision/data/portal/public/>

Report Category: (Select Report Category) | Report Name: (Select Report Name)

Parameters: Jurisdiction: (All)

Run Report

Home

Lat/Lon 49.3331 -124.7889

Powered by Esri

CONTACTS

- Mark McKechnie, External Relations Director, WTSC:
mmckechnie@wtsc.wa.gov
- Brian Chandler, Project Manager, Target Zero Plan:
brian.chandler@dksassociates.com

Please take a few minutes to respond to this survey regarding the Target Zero Plan (SHSP)

<https://forms.office.com/g/kcvU8Mg3su>

Transportation Professionals
Forum Target Zero Survey



Safe Streets and Roads for All: Comprehensive Safety Action Plans

Stephen Parker, Safe Streets and Roads for All Program Manager, FHWA

*John Milton, P.E., Director of Transportation Safety and Systems Analysis,
State Safety Engineer, WSDOT*

*Mike Ulrich, AICP, Principal Transportation Planner,
Spokane Regional Transportation Council*

Ryan Shea, Transportation Planner, SCJ Alliance



U.S. Department of Transportation

Safe Streets and Roads for All (SS4A)



NHTSA

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© ambrozio - stock.adobe.com

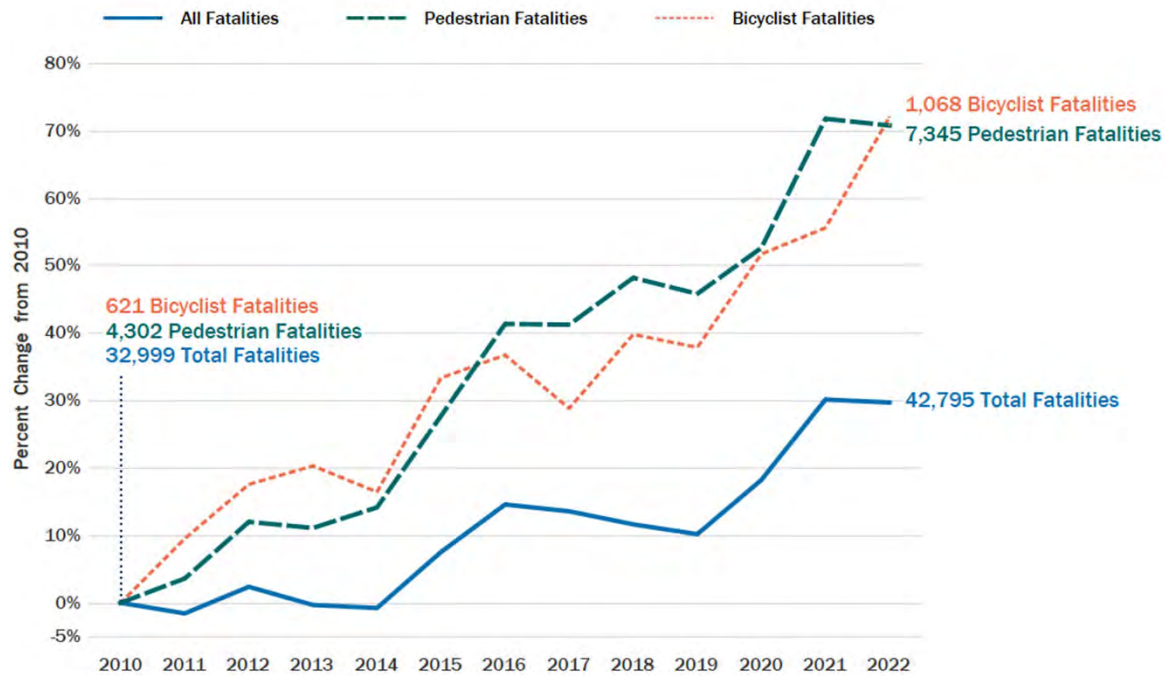
NHTSA



The National Roadway Safety Strategy (NRSS)

We have a National Roadway Safety Problem

Fatalities among **all users** have been increasing.
Fatalities among **pedestrians** and **bicyclists** have been **increasing even faster**.



Source: FARS 2010-2020 Final File; 2021 Annual Report File



National Roadway Safety Strategy (NRSS)

U.S. DOT's comprehensive approach to significantly reducing serious injuries and deaths on our Nation's highways, roads, and streets.

- ❖ **Sets a vision and goal** for the safety of the Nation's roadways
- ❖ **Adopts the Safe System Approach** principles to guide our safety actions
- ❖ **Identifies new priority actions and notable changes to existing practices** and approaches that target our most significant and urgent problems, and are, therefore, expected to have the most substantial impact.
- ❖ States that we cannot do it alone and **Calls Stakeholders to Action**



The Safe System Approach (SSA)



The U.S. DOT adopted the SSA to address roadway safety.

SSA Principles:

- ❖ Deaths and serious injuries are unacceptable
- ❖ Humans make mistakes
- ❖ Humans are vulnerable
- ❖ Responsibility is shared
- ❖ Safety is proactive
- ❖ Redundancy is critical

USDOT FHWA Safe System Approach: <https://highways.dot.gov/safety/zero-deaths>



Safe Streets and Roads for All

- \$5 billion discretionary grant program, with ~\$1 billion/year over 5 years
- Purpose: prevent deaths and serious injuries on our roadways
- Focus on comprehensive safety action planning, and implementing those plans
- Inclusive of all types of roadway safety interventions across the Safe System Approach
- <http://www.transportation.gov/S4A>



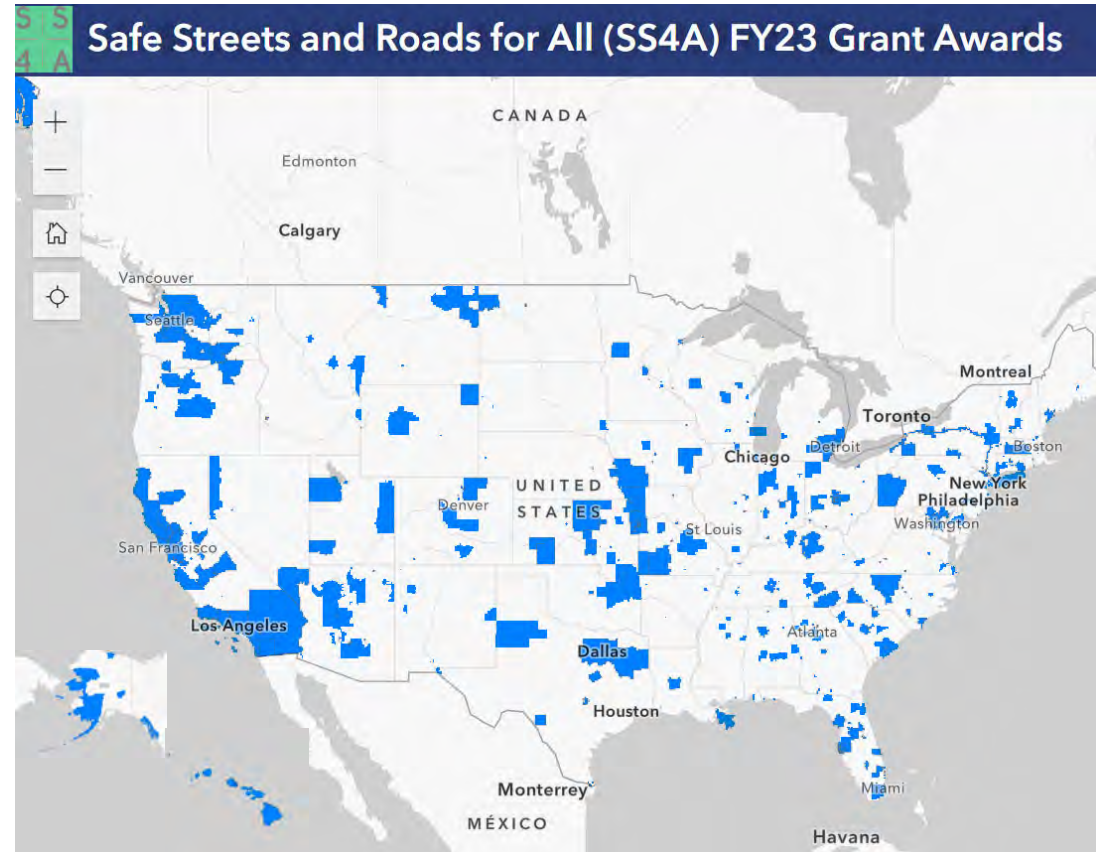
Fiscal Year 2023 Safe Streets and Roads for All

FY23 Awards

- Almost \$900 million in funding for the FY23 cycle.
- 620 regional, local, and Tribal communities received awards.

Round 1 & 2 (Calendar Year 2023)

- Over 1,000 communities received funding totaling \$1.7 billion.
- Awards made to date will improve roadway safety planning for around 70% of the nation's population.



SS4A NOFO Is Now Open!



Submit ~~technical questions by April 17, 2024 to ss4a@dot.gov~~

Apply by ~~April 4~~, **May 16**, and **August 29**, at 5:00 p.m. EDT for Planning and Demonstration

May 16, at 5:00 p.m. EDT for Implementation



Additional resources about SS4A and the NOFO can be found at

<https://www.transportation.gov/grants/SS4A>





About SS4A Grants

SS4A Overview: Eligibility

Eligible Recipients

- Metropolitan planning organization (MPOs)
- Political subdivision of a State
- Federally recognized Tribal government
- Multijurisdictional groups comprised of the above

Eligible Activities

- Develop a Comprehensive Safety Action Plan
 - Develop or complete an Action Plan
 - Conduct supplemental planning
 - Carry out demonstration activities
- Planning, design, and development activities for projects and strategies identified in an Action Plan
- Implement projects and strategies identified in an Action Plan



Planning and Demonstration Activities

Action Plan

- Develop, update, or complete a Comprehensive Safety Action Plan
- 8 components to an Action Plan

Quick Build Example



Source: Solomon Foundation

Supplemental Planning

- Topical safety plans
- Road safety audits
- Additional safety analysis and data collection
- Targeted equity assessments
- Follow-up stakeholder engagement

Demonstration Activities

- Feasibility studies using quick-build strategies
- Pilot programs for behavioral or operational activities
- Pilot programs for new technology
- Manual on Uniform Traffic Control Device (MUTCD) engineering studies



Live web demo

- [How to Apply for the SS4A Opportunity | US Department of Transportation](#)

- [SS4A Grant Recipient Resources | US Department of Transportation](#)

SS4A Framework for Your Successful Action Plan (March 27, 2023)

- [Framework for Your Successful Action Plan - Presentation Slides](#)
- [Framework for Your Successful Action Plan - Webinar Recording](#)
 - Passcode: 0S+wy6!u



Implementation Grants

- Implementation Grants applications must fund projects and strategies identified in an Action Plan that address a roadway safety problem.
- Infrastructure, behavioral, and operational safety activities are all eligible.
- Applicants must have a qualifying Action Plan in place to apply for Implementation Grants.
- Implementation applications may also include supplemental planning and demonstration activities.



Source: FHWA





Webinars and Resources

SS4A Webinars for Potential Applicants

The Safe Streets and Roads for All Program convened three stakeholder webinars to help potential applicants learn about the program and what they need to know to prepare an application.

- **Thursday, March 7: Action Plans**
- **Friday, March 8: Supplemental Planning and Demonstration Activities**
- **Wednesday, March 13: Implementation Grants**

The webinar recordings are on our website:

www.transportation.gov/grants/SS4A/webinars



Application Aids

- A series of checklists, planning worksheets, and fillable forms is available on the SS4A website and the Valid Eval application form to help guide applicants through the eligibility and application process.

S | S
4 | A

Safe Streets and Roads for All
Self-Certification Eligibility Worksheet

All applicants should follow the instructions in the NOFO to correctly apply for a grant. See the [SS4A website](#) for more information.

Table 1 of the SS4A NOFO describes [eight components of an Action Plan](#), which correspond to the questions in this worksheet. Applicants should use this worksheet to determine whether their existing plan(s) contains the required components to be considered an eligible Action Plan for SS4A.

This worksheet is required for all SS4A **Implementation applications to conduct Supplemental Planning** entirely, do not adjust the formatting or headings.

Eligibility

An Action Plan is considered eligible for an SS4A Demonstration Grant to conduct Supplemental Planning if:

- You can answer "YES" to Questions 3, 7
- You can answer "YES" to **at least four** of the remaining questions

If both conditions are not met, an applicant is still eligible to apply for a grant through the creation of a new Action Plan or updates to an existing one.

Applicant Information

Lead Applicant:

Action Plan Documents

In the table below, list the relevant Action Plan documents. Please provide a hyperlink to any documents available in Valid Eval as part of your application. Application coverage must be broader than just a corridor.

Document Title

S | S
4 | A

Safe Streets and Roads for All
Standard Forms (SF)

The Safe Streets and Roads for All (SS4A) discretionary grant program requires applicants to submit Standard Form (SF) 424 family forms to detail proposed funding, project, and lobbying information. **The required forms are available via the application submission software platform, Valid Evaluation (Valid Eval).** See Section D Application and Submission Information in the [SS4A Notice of Funding Opportunity \(NOFO\)](#) for complete application submission instructions. To assist in completing required SF forms, please consider these questions; please consider these questions:

Overall Requirements

What Standard Forms (SF) are applicants required to submit?

Note that the OMB Number and Expiration Date for the correct form version are provided below. Please confirm that the forms that you use have the same information in the top right corner of the form.

- Applications for **Planning and Demonstration Grants** must submit:
 - **SF-424** Application for Federal Assistance
 - OMB Number: 4040-0004
 - Expiration Date: 11/30/2025
 - **SF-424A** Budget Information for Non-Construction Programs
 - In FY 2024, Sections D and E on page 3 of this form are no longer required.
 - OMB Number: 4040-0006
 - Expiration Date: 02/28/2025



SS4A Website

www.transportation.gov/grants/SS4A



Getting to Zero Implementation Plan

Safe Streets for All

John Milton, Ph.D., P.E., RSP_{2IB}, PTOE
State Safety Engineer
WSDOT

April 30, 2024



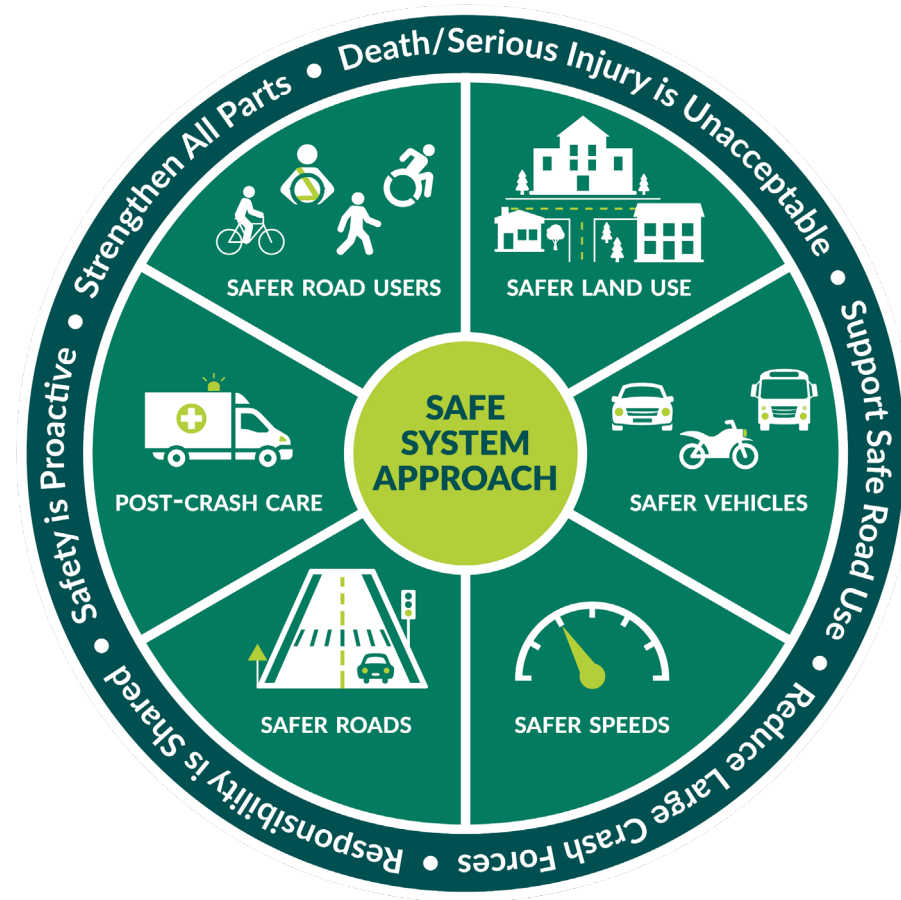
SS4A Matters

Road safety matters for all of us! We are all vulnerable road users as some point.....

Implementation needs a common safety definition



WSDOT - Safe System Approach



Strategic Highway Safety Plan

Target Zero is
WSDOT's baseline for
Safety

- Priorities
- Emphasis Areas
- Strategies



Target Zero – Strategic Direction

Shared Responsibility between Traffic Safety Commission and WSDOT

- Common Understanding
- 2024 – Safe System and Equity
- Forms the Framework for our Implementation Plan

WTSC Vision

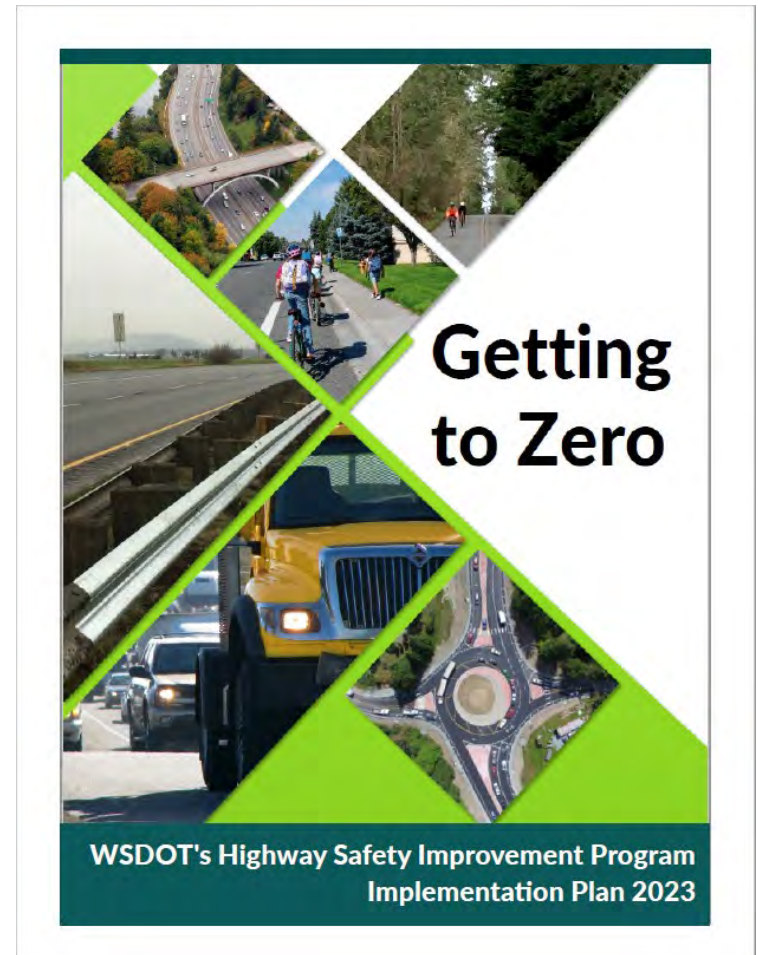


Our vision: A Washington where we all work together to travel safely on our roadways.

Getting to Zero

Informs Safety Program

- Investment Strategies
- Performance Trends
- Categories to address performance

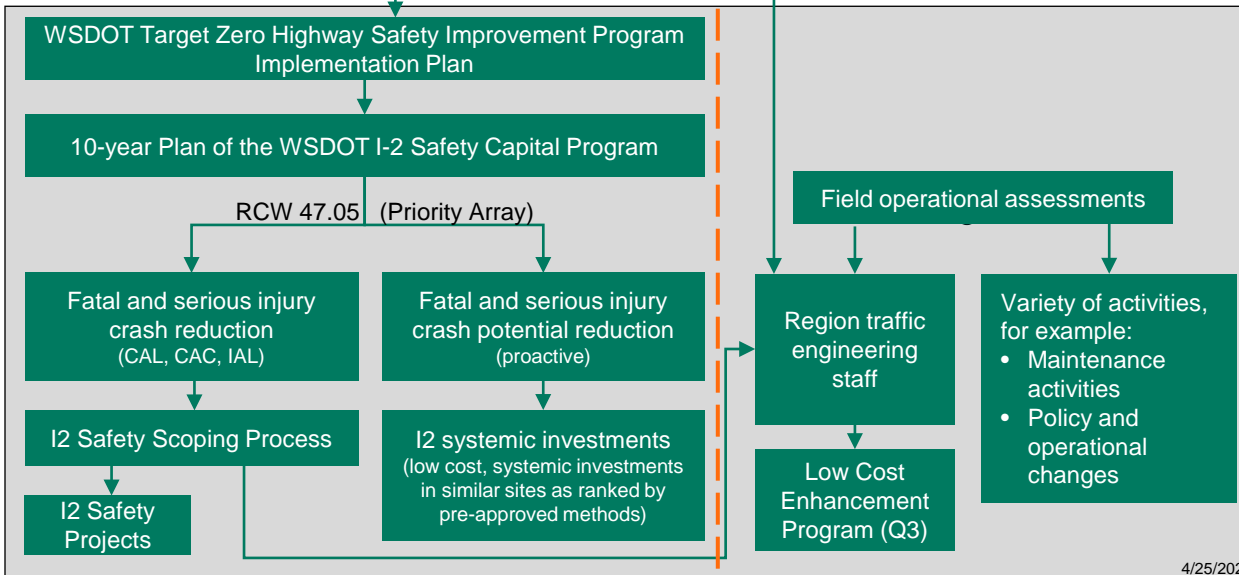


MAP-21, FAST & IIJA Act
Federal safety performance rulemaking



Statewide stakeholder and public engagement
process develops federally required Strategic
Highway Safety Plan

Local public engagement & concerns from the
public



4/25/2024

What is the data
telling us today:

Macro level data for trends and comparison

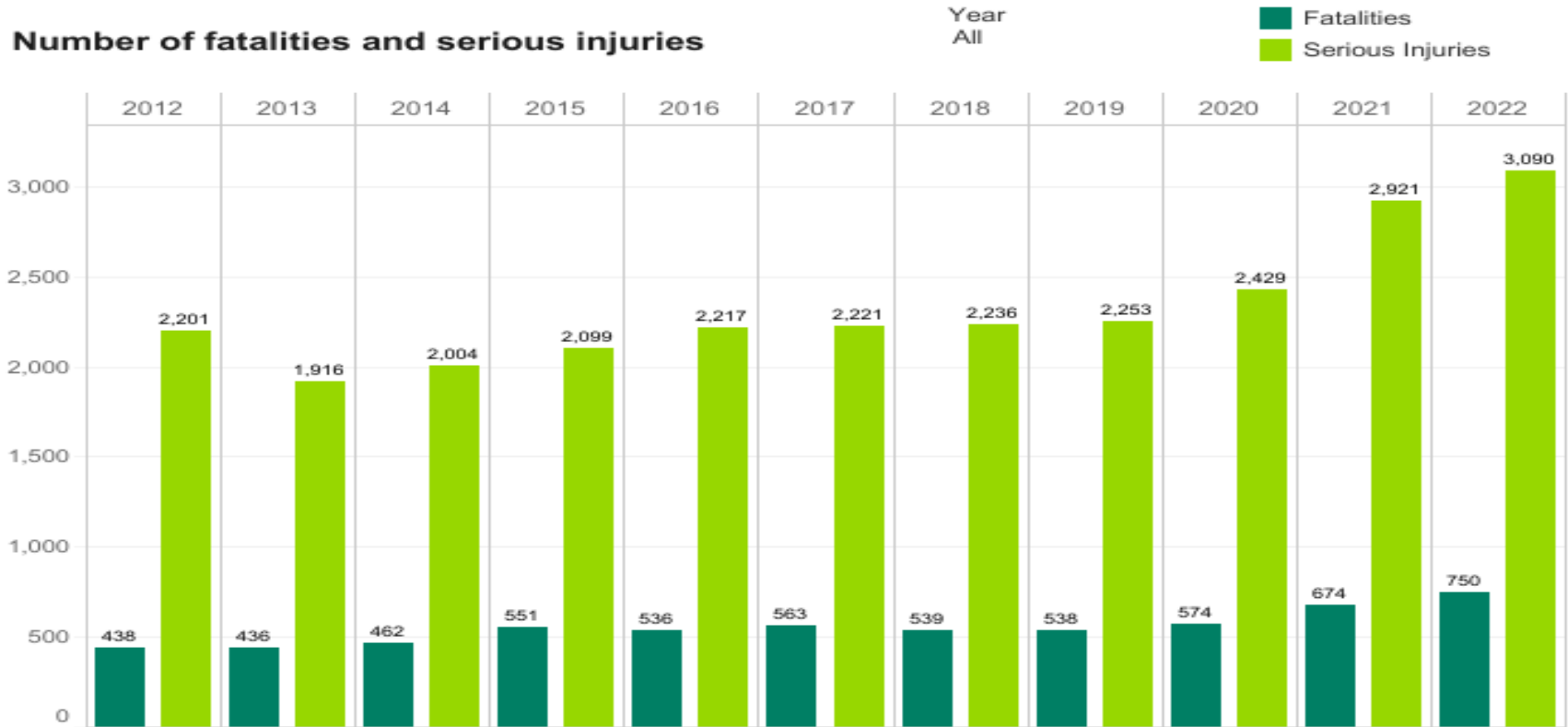
Year	Total Crashes	Fatal Crashes	Total Fatalities	Fatality Rate*	Vehicle Deaths	Pedestrian deaths	Bicyclist deaths	Total SI Crashes	Vehicle Serious Injuries	Pedestrian Serious Injuries	Bicyclist Serious Injuries
2013	99,766	401	436	0.76	375	50	11	1,613	1,573	261	82
2014	107,673	429	462	0.80	377	79	6	1,697	1,596	306	102
2015	117,062	499	551	0.92	451	86	14	1,767	1,705	286	108
2016	122,378	504	536	0.88	431	88	17	1,903	1,725	365	127
2017	121,151	534	563	0.92	439	109	15	1,925	1,772	357	92
2018	116,078	490	539	0.86	420	103	16	1,943	1,713	400	123
2019	111,707	513	538	0.86	422	107	9	1,936	1,793	357	103
2020	86,339	539	574	1.07	451	110	13	2,073	2,032	303	94
2021	103,298	607	674	1.15	514	146	14	2,507	2,412	410	99
2022	103,174	709	750	1.31	603	136	11	2,642	2,540	408	142
10-yr increase	3%	77%	72%	71%	61%	172%	0%	64%	61%	56%	73%

1 – Fatalities per 100 million VMT

2 – latest estimates as of May 2023 subject to change

Fatalities and serious injuries continue to increase on WA roads from a low in 2013

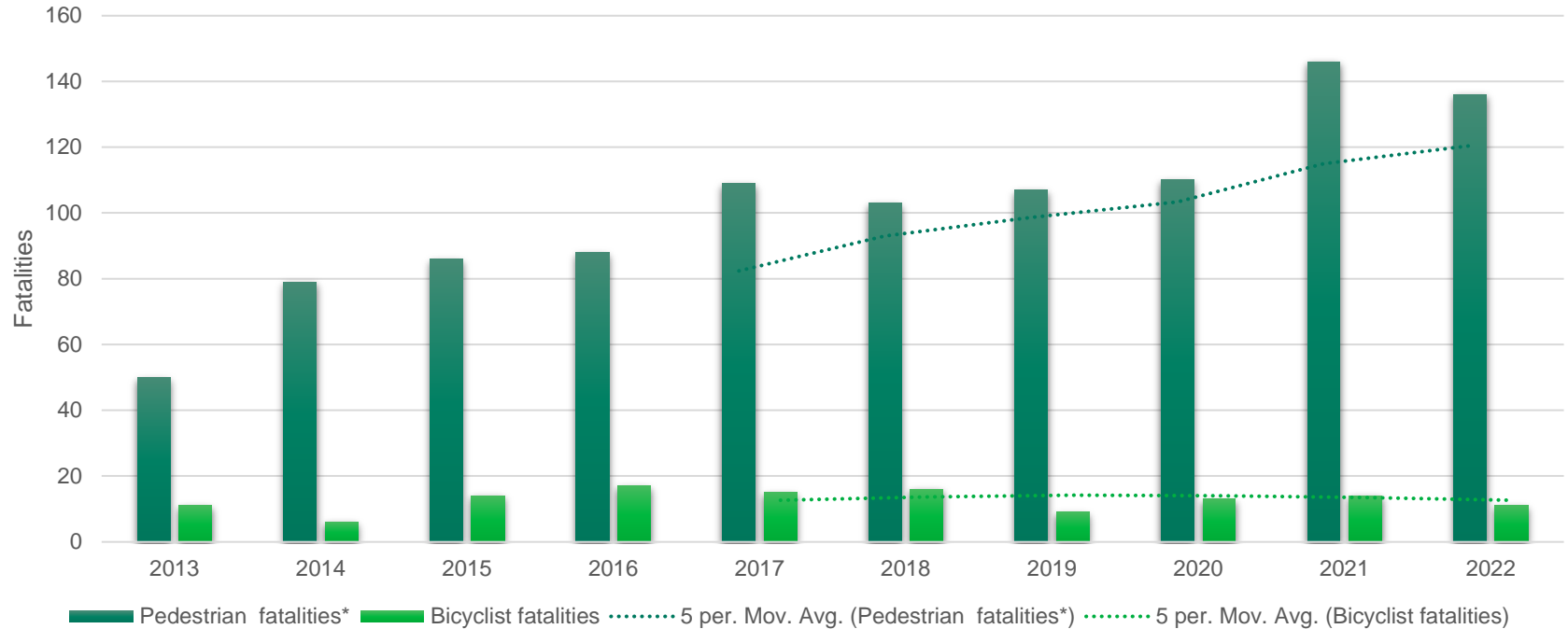
2007 through 2022; Statewide traffic fatalities and serious injuries on public roadways



Data source: WSDOT Crash Data and Reporting Office; the Coded Fatality Crash Files (CFC), WTSC.

General performance

Pedestrian and Bicyclist Fatalities in Washington State



Source: Preliminary fatality data from Coded Fatality Files (WTSC) (Dec 2022)

Targets and Goals

Exhibit 1. Summary of Significant Progress for MAP-21 Safety Performance Measures
2018 through 2022

Performance Measure	Target: 2018-2022 rolling average	Outcome: 2018-2022 rolling average	Baseline: 2016-2020 rolling average	Target/ Baseline Met?	Significant Progress?
Number of fatalities	440	615.00	550	No/No	No
Rate of Fatalities per 100 million VMT on all public roads	0.735	1.049	0.919	No/No	
Number of serious injuries	1819	2585.8	2271.2	No/No	
Rate of serious injuries per 100 million VMT on all public roads	3.042	4.412	3.797	No/No	
Number of non-motorized fatalities and serious injuries	464.6	620.8	581.6	No/No	

What should I focus on?

- High Risk Behavior
- Crash Type
- Road Users
- Decision and Performance Improvement

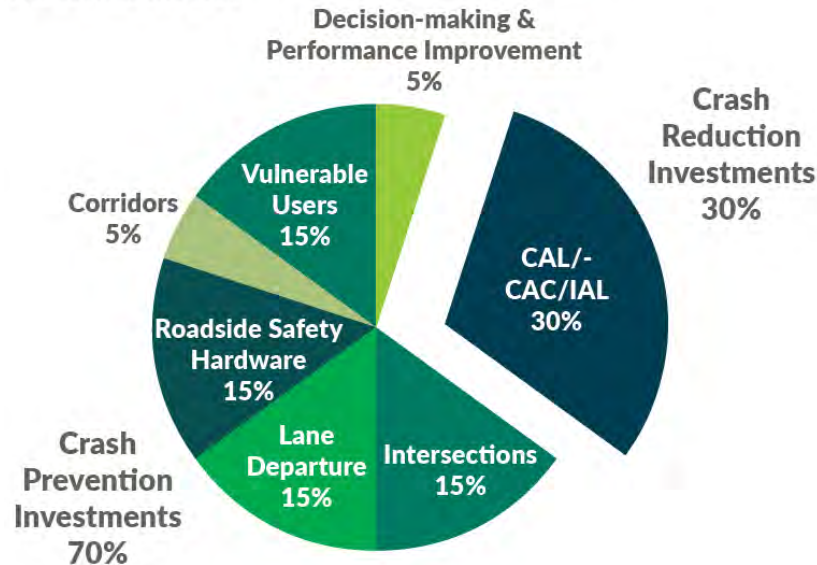
Exhibit 5. Strategic Highway Safety Plan, Target Zero 2019 Emphasis Areas

Source: Target Zero 2019

Priority Level and Emphasis Area	Fatalities ^a		Serious Injuries ^a	
	Number	%	Number	%
	1,650	100%	6,537	100%
High Risk Behavior				
1 Impairment	958	58.1%	1,215	18.6%
1 Distraction	502	30.4%	1,933	29.6%
1 Speeding	485	29.4%	1,579	24.2%
2 Unrestrained Occupants	312	18.9%	701	10.7%
Crash Type				
1 Lane Departure	796	48.2%	2,458	37.6%
1 Intersection Related	377	22.8%	2,256	34.5%
Road Users				
1 Young Drivers 16-25	512	31.0%	2,243	34.3%
2 Pedestrians and Bicyclists	329	19.9%	1,333	20.4%
2 Motorcyclists	236	14.3%	1,209	18.5%
2 Older Drivers 70+	223	13.5%	599	9.2%
2 Heavy Trucks	178	10.8%	442	6.8%
Decision and Performance Improvement				
1 Traffic Data Systems				
1 EMS and Trauma Care Systems				
1 Evaluation and Diagnostics				
1 Safe Systems				
1 Cooperative Automated Transportation, including Autonomous Vehicles				
Other Monitored Emphasis Areas				

Funding targets or project types?

Exhibit 19. Distribution of I-2 Safety Funding to Target Zero Emphasis areas
Federal Fiscal Year 2021



- Using percentages of crashes in each emphasis area to categorizes

Exhibit 40. Summary of WSDOT's I-2 Subprogram Strategies, Emphasis Areas and Subcategories
Target Zero emphasis areas; Washington state; 2022

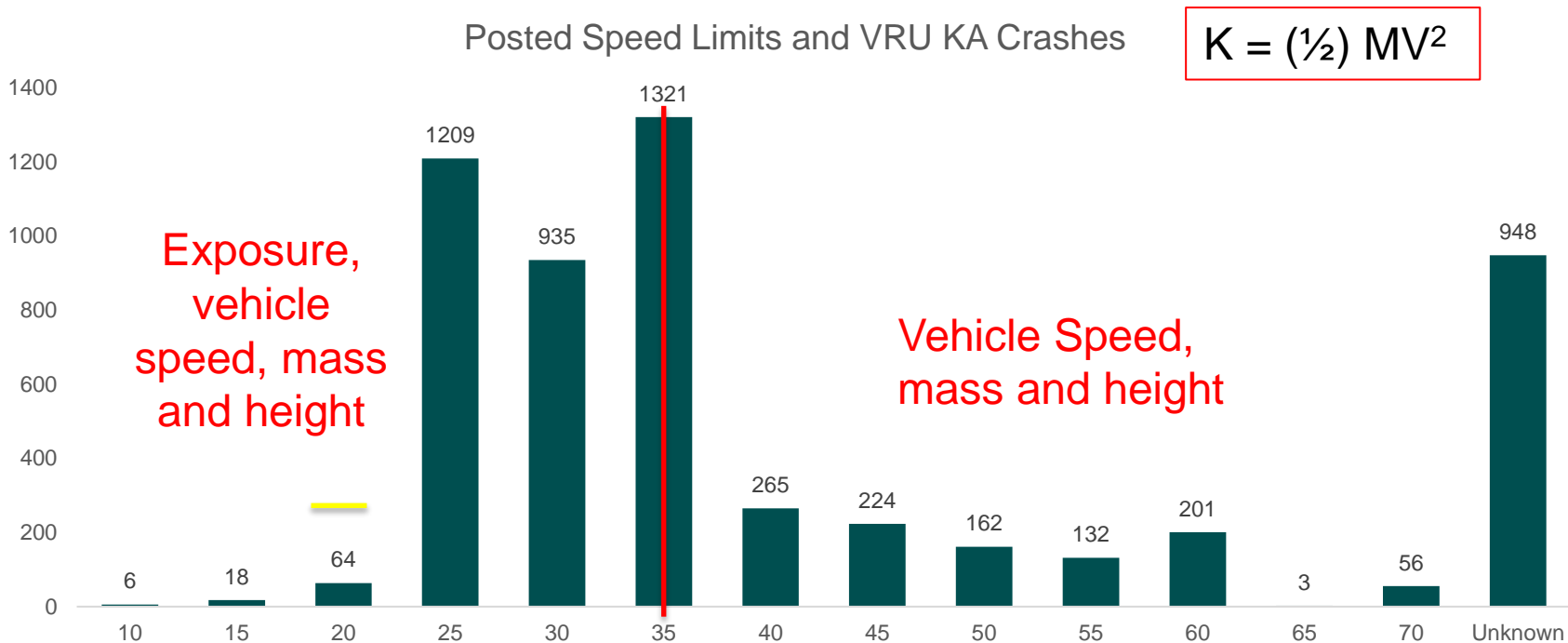
Type of Investment	Emphasis area	Strategies/Subcategories
Crash Reduction Safety Investments	Intersection-related	Intersection Analysis Locations
	Lane departure	Crash Analysis Locations/Crash Analysis Corridors
Crash Prevention Safety Investments	Intersections	Compact roundabouts
	Lane departure	Rumble Strips
		High Friction Surface Treatment Program
		Systemic Curve Treatments
		Breakaway Cable Terminal Replacement
		Cable Median Barriers Conversion (paused for evaluation)
		Guardrail Infill and Retrofit
		Field Assessments
		Edge Line Visibility Pilot
	Active Transportation	
	Motorcyclists	
Safety Decision-making and Performance Improvement	Safe System - Speed Management	

Exhibit 42. Safe System Alignment

Type of Investment	Strategy Subcategories	Safe System Approach		
		Exposure	Likelihood	Severity
Reactive Safety Category	Intersection Analysis Locations	✓	✓	✓
	Crash Analysis Locations/Crash Analysis Corridors	✓	✓	✓
Proactive Safety Category	Intersection Systemic Safety	✓	✓	✓
	Rumble Strips		✓	
	High Friction Surface Treatment		✓	✓
	Systemic Curve Treatments		✓	
	Breakaway Cable Terminal Replacement			✓
	Cable Median Barriers			✓
	Guardrail Infill and Retrofit			✓
	Field Assessments			
	High Visibility Edge Line		✓	
	Active Transportation	✓	✓	✓
	Speed Management			✓
	Decision Making and Performance Improvement	✓	✓	✓

Posted speeds

2012-2021 – Crashes involving ped/bike killed/seriously injured



Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

Proven Countermeasures

Proven Safety Countermeasures | FHWA (dot.gov)

[Home](#) / [Safety](#) / [Proven Safety Countermeasures](#)

Proven Safety Countermeasures

Search Safety Proven Countermeasures

Resources

Proven Safety Countermeasures

FHWA's Proven Safety Countermeasures initiative (PSCI) is a collection of 28 countermeasures and strategies effective in reducing roadway fatalities and serious injuries on our Nation's highways. Transportation agencies are strongly encouraged to consider widespread implementation of PSCs to accelerate the achievement of local, State, and National safety goals. These strategies are designed for all road users and all kinds of roads—from rural to urban, from high-volume freeways to less traveled two-lane State and county roads, from signalized crossings to horizontal curves, and everything in between. Each countermeasure addresses at least one safety focus area – speed management, intersections, roadway departures, or pedestrians/bicyclists – while others are crosscutting strategies that address multiple safety focus areas. [Search Proven Safety Countermeasures.](#)

Speed Management



[Appropriate Speed Limits for All Road Users](#)



[Speed Safety Cameras](#)



[Variable Speed Limits](#)

Pedestrian/Bicyclist



[Bicycle Lanes](#)



[Crosswalk Visibility Enhancements](#)



[Leading Pedestrian Interval](#)



[Medians and Pedestrian Refuge Islands in Urban and Suburban Areas](#)



[Pedestrian Hybrid Beacons](#)



[Rectangular Rapid Flashing Beacons \(RRFB\)](#)



[Road Diets \(Roadway Reconfiguration\)](#)



[Walkways](#)

Program Approach

- **Proactive** – approach may be better associated to reducing crashes in Skagit.
- Addresses multiple locations, and does not require crashes to occur before installation.

Wider Edge Lines

Up to 10,000 Miles – \$30 million over 5 years

POTENTIAL \$25 RETURN FOR EVERY \$1 SPENT

Estimated Cumulative Benefit	\$750 Million
Potential Crashes Prevented	608 per year
Potential Serious Injuries and Fatalities Prevented	79 per year
Potential Lives Saved Over Service Life	88

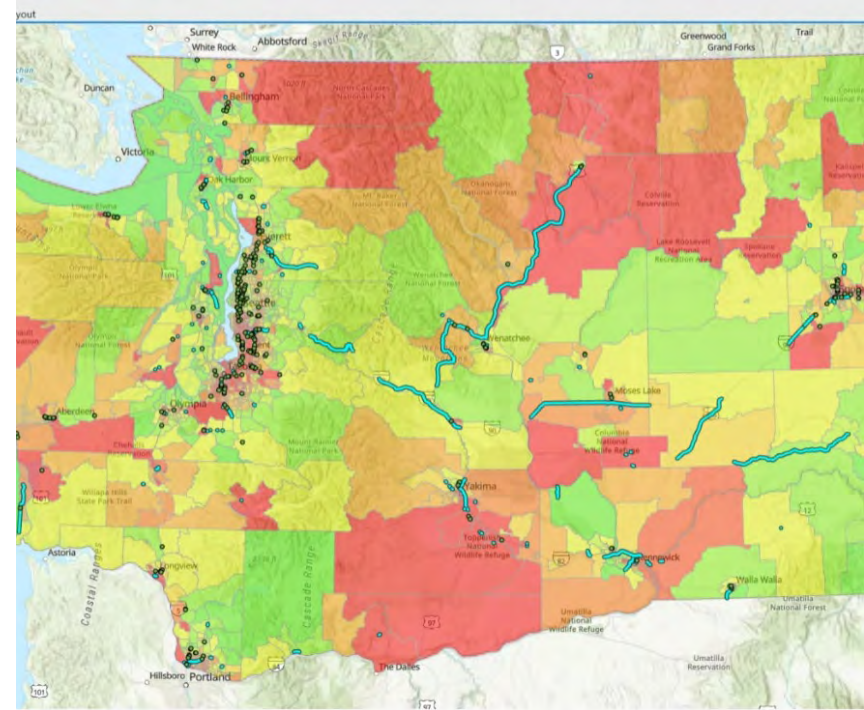
Potential Lives Saved	88
Service Life of Treatment	1-5 years
Potential Treated Sites	10,000 miles
Target Crash Type(s)	Roadway Departure, Nighttime

Roadway departure crashes account for over half of all traffic fatalities annually nationwide. Installing edge lines, and further enhancing by widening the edge lines from 4 to 6 inches, can promote proper vehicle alignment, particularly through horizontal curves and at night or under inclement weather conditions. Wider edge lines may also provide better guidance for sensors on newer and automated vehicles.

WSDOT recommends that all facility types be considered for wider edge line

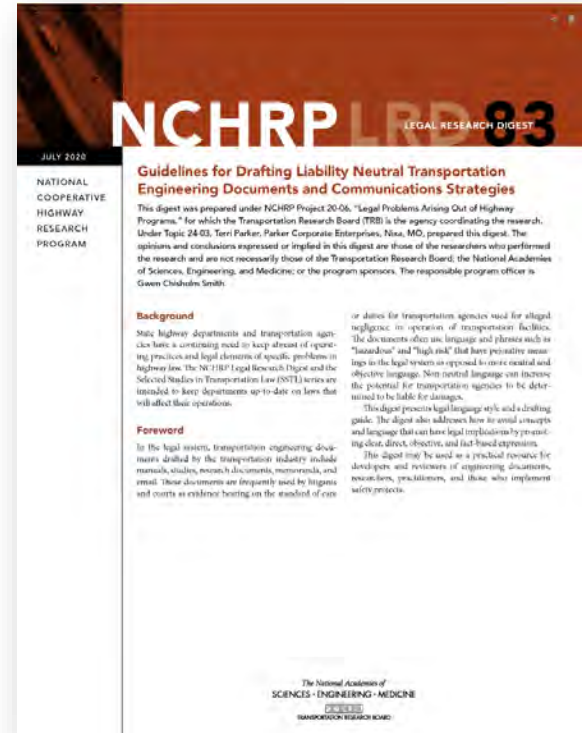
Equity Analysis

- Systemic as a characteristics or contributing factor
- Post processing to see where identified projects fall in relationship to communities that fall within WSDOT Safety Equity Score



Considerations for plans

- Language matters
- Some words can create misunderstanding and other challenges
- FHWA is flexible with how wording is used in products to be consistent with local or state needs



NCHRP Legal Research Digest 83: [Guidelines for Drafting Liability Neutral Transportation Engineering Documents and Communication Strategies](#), (2020)

Questions?

John Milton, Ph.D., P.E., RSP_{2IB}, PTOE
State Safety Engineer
WSDOT
miltonj@wsdot.wa.gov

Regional Safety Action Plan

Washington Transportation Professionals Forum and Peer Exchange

April 30, 2024

Overview

- **Regional Safety Planning**
- **Target Setting**
- **Data Analysis**
- **Public Outreach**
- **Equity**
- **Targeted Corridors & Strategies**

Regional Conversation

- **Safety Target Setting Process**
- **2022 Discussion Series (need for regional plan identified)**
- **Safe Streets and Roads for All Grant Program Announced**
- **Board Authorized Grant Application**

Role of RTPO in Safety Planning

- **Coordination**
- **TPM Requirements**
- **Project Selection Criteria**
- **Reporting**

Steering Committee

- **Spokane County**
- **City of Spokane**
- **City of Spokane Valley**
- **Spokane Transit Authority**
- **WTSC Target Zero Task Force**
- **Spokane Regional Health District**
- **Transportation Advisory Committee**

Target Setting

Achieve 50% reduction in fatal and serious injury crashes by 2030:

- on the High Injury Network
- crashes impacting vulnerable roadway users

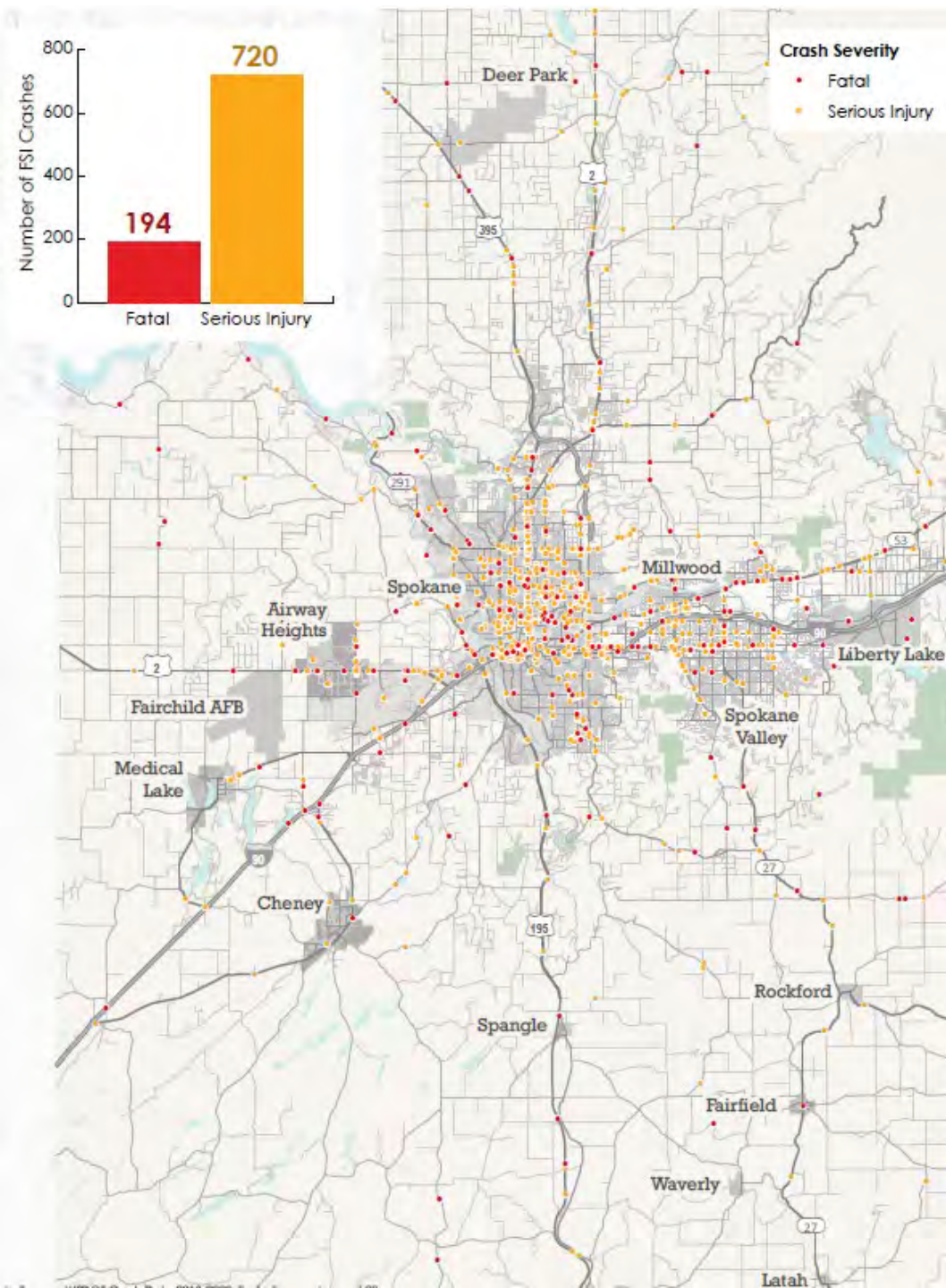
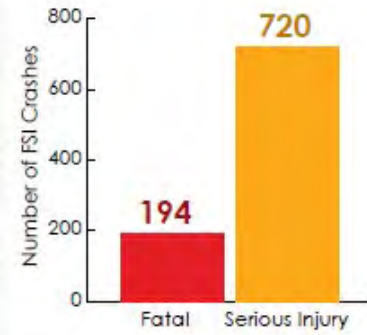
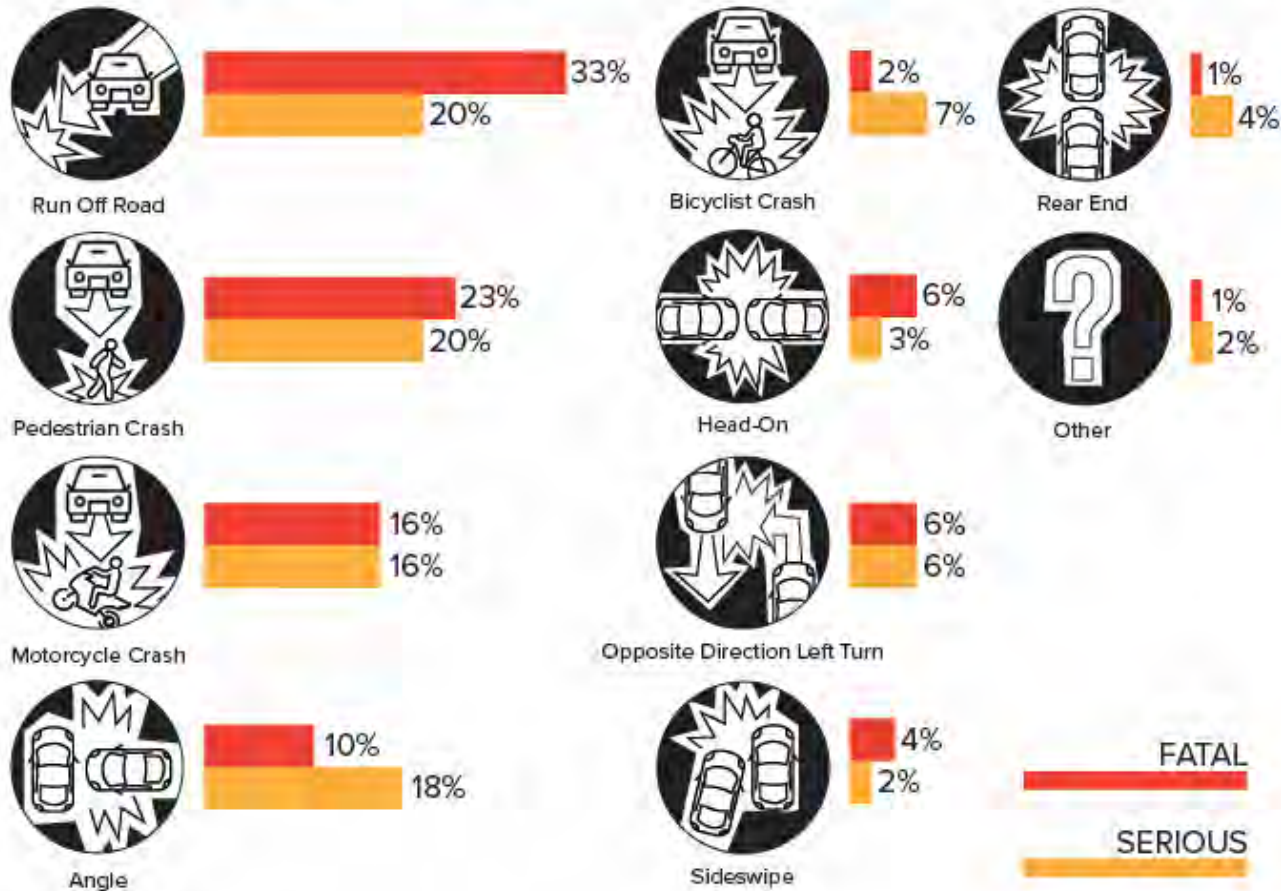
Achieve zero fatal and serious injury crashes within the SRTC planning area by 2042

Reassess data and targets at least every 4 to 5 years

Safety Analysis

2018-2022

MOST COMMON CRASH TYPES BY MANEUVER



Coordination with Member Agencies & Planning Partners
20 Interviews



In Person Outreach
Spoke with about 130 people
Presented to over 150

Online Outreach
E-mail blasts – thousands
150 survey responses
250 points on the map

- North Spokane Library
- Hillyard Library
- Spokane County Library/Podcast
- Transit Plaza
- Homeless Coalition Meeting
- On-line Open House and Interactive Map
- News Interview
- Facebook Live Presentation

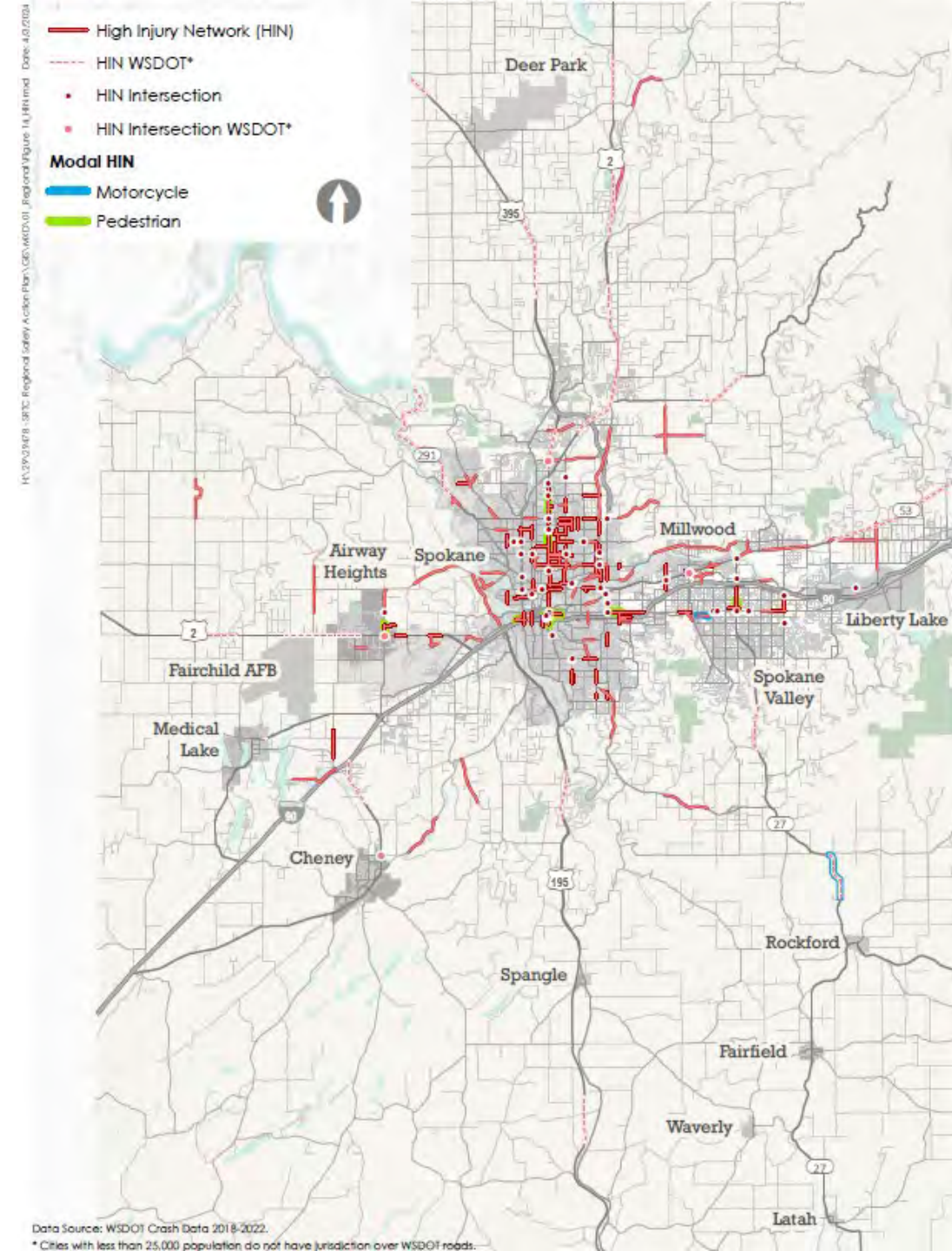


Key Themes

- Aggressive and distracted driving
- Speeding
- Limited visibility
 - Poor lighting
 - Sightline obstructions (e.g., parked cars)
- Right-turning vehicles don't watch for pedestrians
- Long crossing distances (4+ lanes)
- Missing crosswalks near transit stops
- Lack of protected bike lanes
- Unpredictable behavior by people walking and biking
- Increasing vehicles sizes
- Missing sidewalks

Targeted Corridors

- **High Injury Network:** Segments and intersections with higher incidents of Fatal and Serious Crashes
- **High Priority Network:** Small communities with no or very low numbers of fatal and serious injury crashes
 - Segments and intersections are identified for proactive treatments based on:
 - Total crashes
 - Land use/roadway characteristics
 - Local input



Applying Equity

Combining the ***High Injury Network*** with 6 indicators of potential disadvantage for project prioritization:

- Individuals with low incomes
- Minorities
- Limited English proficiency (LEP)
- Limited vehicle access
- Age dependency (elderly and youth)
- Disabilities

Source: ETC Explorer tool and SRTC Indicators of Potential Disadvantage

Key Take Aways



- Airway Heights has the highest or close to the highest concentration of:
 - Low-income populations (25%)
 - Minority population (23%)
 - Limited English Proficiency (4%)
 - Population with disability (19%)
- Cheney has the largest population of low-income residents at 28 percent
- Largest proportion of households without vehicles is concentrated in downtown Spokane

Actions –

Strategy Infrastructure Countermeasures

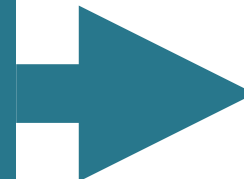
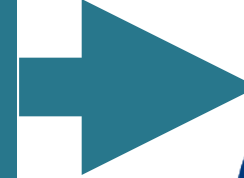
Prioritize implementation of crossing enhancements at intersections and mid-block crossings on the High Injury Network in disadvantaged communities.



Rectangular Rapid Flashing Beacons (RRFB)



Medians and Pedestrian Refuge Islands



Emphasis area:
Pedestrian Safety



Strategy Programs and Policies

Develop and implement education and outreach campaigns focused on safety.

Coordinate and support the development of safety materials and resources in communities along the High Injury Network.

Actions –

Emphasis
area:
Departure
Crash

Strategy Infrastructure Countermeasures

Prioritize implementation of crossing enhancements at intersections and mid-block crossings on the High Injury Network.



Rectangular Rapid
Flashing Beacons
(RRFB)



Medians and
Pedestrian Refuge
Islands

Strategy Programs and Policies

Develop and implement education and outreach campaigns focused on safety.

Coordinate and support
the development of safety
materials and resources in
communities along the
High Injury Network.

Identifying Priority Projects to Streamline Funding Applications

Three regionally significant projects

Selection based on:

1. High Injury Network
2. Equity analysis
3. Multi-jurisdictional Status
4. Steering Committee Input
5. Member Agency Input

Example Prospectus Sheet

Description: Install roundabout with gradually increasing curve and illumination/treatments to facilitate deceleration. An operational analysis should be performed to determine the number of lanes that will be needed at the time of design. The OR 126 Corridor Plan identified a multilane roundabout at this location. If a single lane roundabout is determined to be sufficient, features to make it easily expandable to multiple lanes should be considered. The design of this project must consider all modes including farm equipment, freight vehicles, bicyclists, and pedestrians.

Project Type: Roadway

Priority: Medium



Cost: \$3,500,000

Expected County Contribution: \$385,000

Potential Funding Sources:

Project Goals: Safety, Mobility and Connectivity

Project Location/Images:



Questions?

Mike Ulrich, AICP

Principal Transportation Planner

mulrich@srtc.org | 509.343.6384

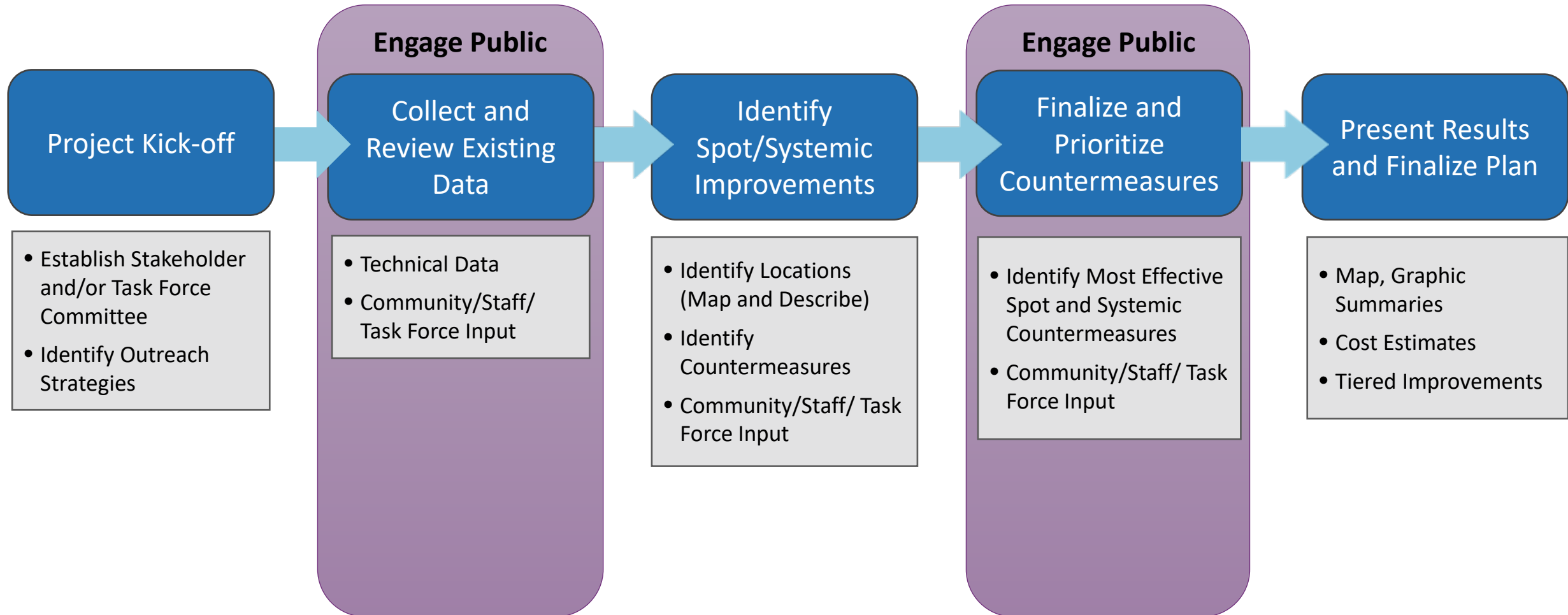
Safety Action Plan

WSDOT Transportation Professions Forum and Peer Exchange | April 30, 2024

Presentation Outline

- Safety Action Plan Process
- Crash Analysis Work
- Public Outreach
- Applications of Completed Safety Plan

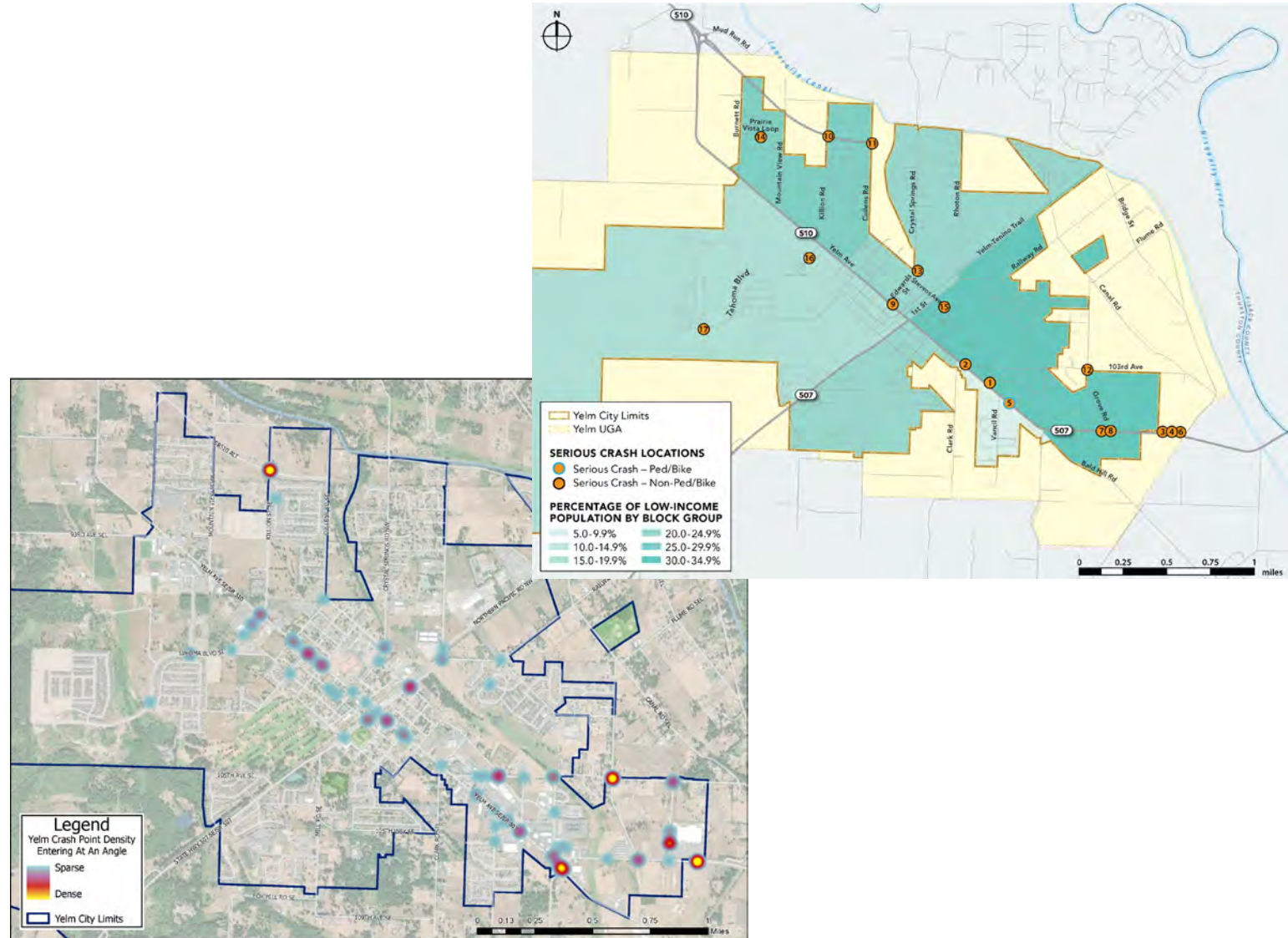
Safety Action Plan Process



Crash Analysis

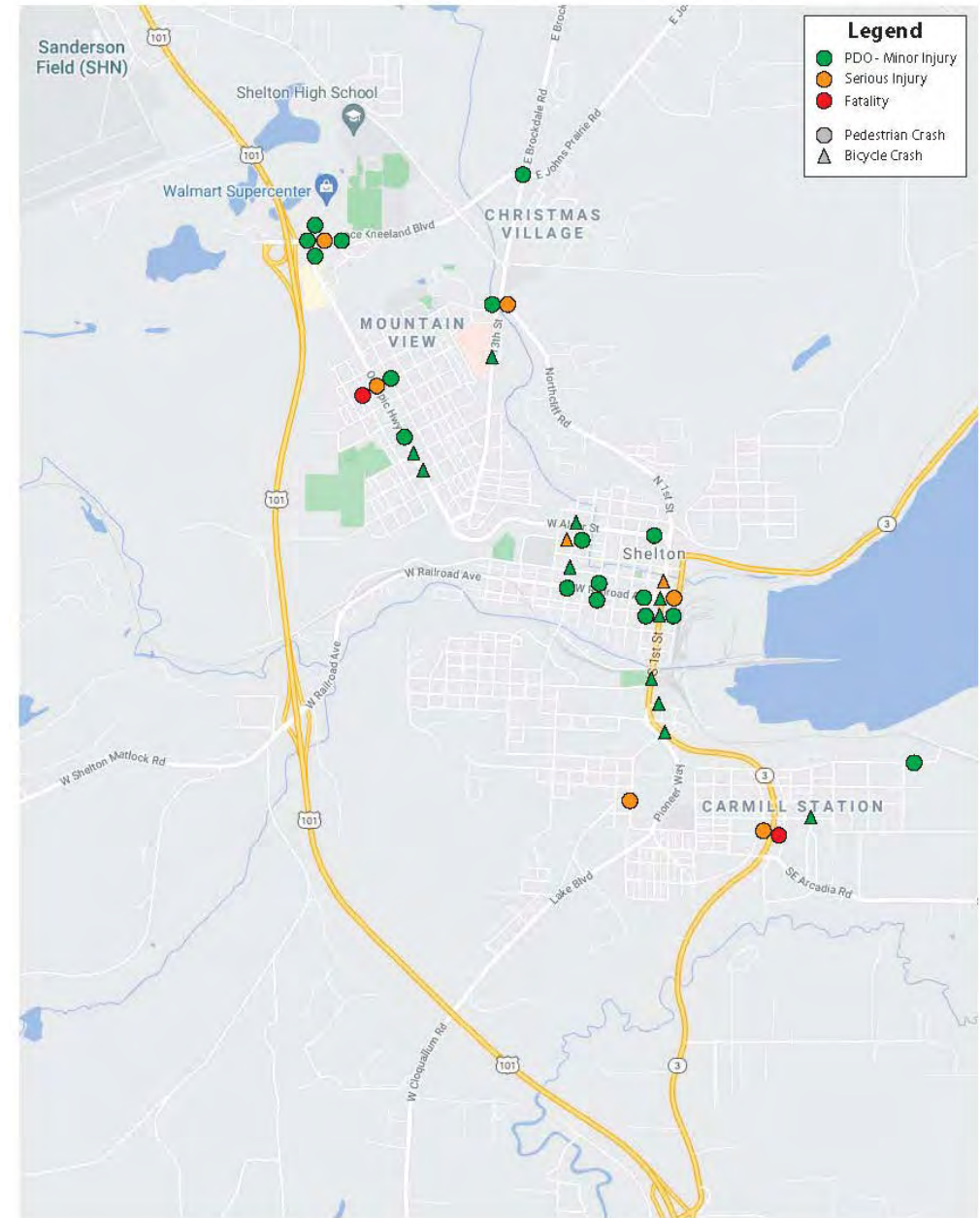
Collect and review existing crash data:

- Pedestrian and bicycle crashes
- Serious Injury and Fatal (Severe) crashes
- Overall crash clustering
- Specific subset of crashes based on local trends, as appropriate



Spot vs. Systemic Improvements

- Spot improvements relate to a location-specific issue
- Identify systemic deficiencies by evaluating trends among the location-specific issues
- Systemic improvements aim to address deficiencies before a severe crash is experienced



Public Outreach

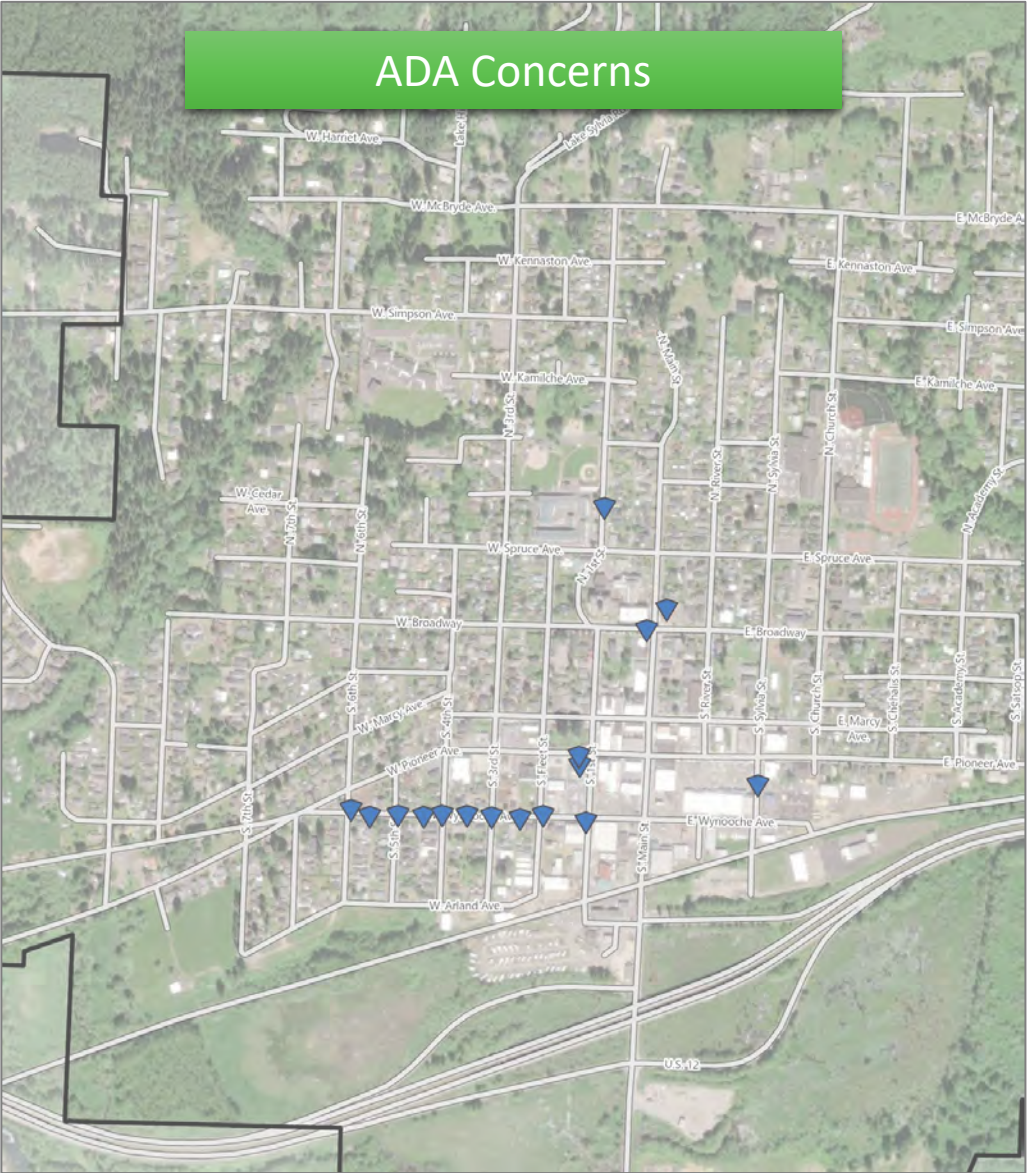
Collect input from stakeholders and the general public:

- City Council meetings
- Farmers market or other community events
- Open house event
- Online outreach

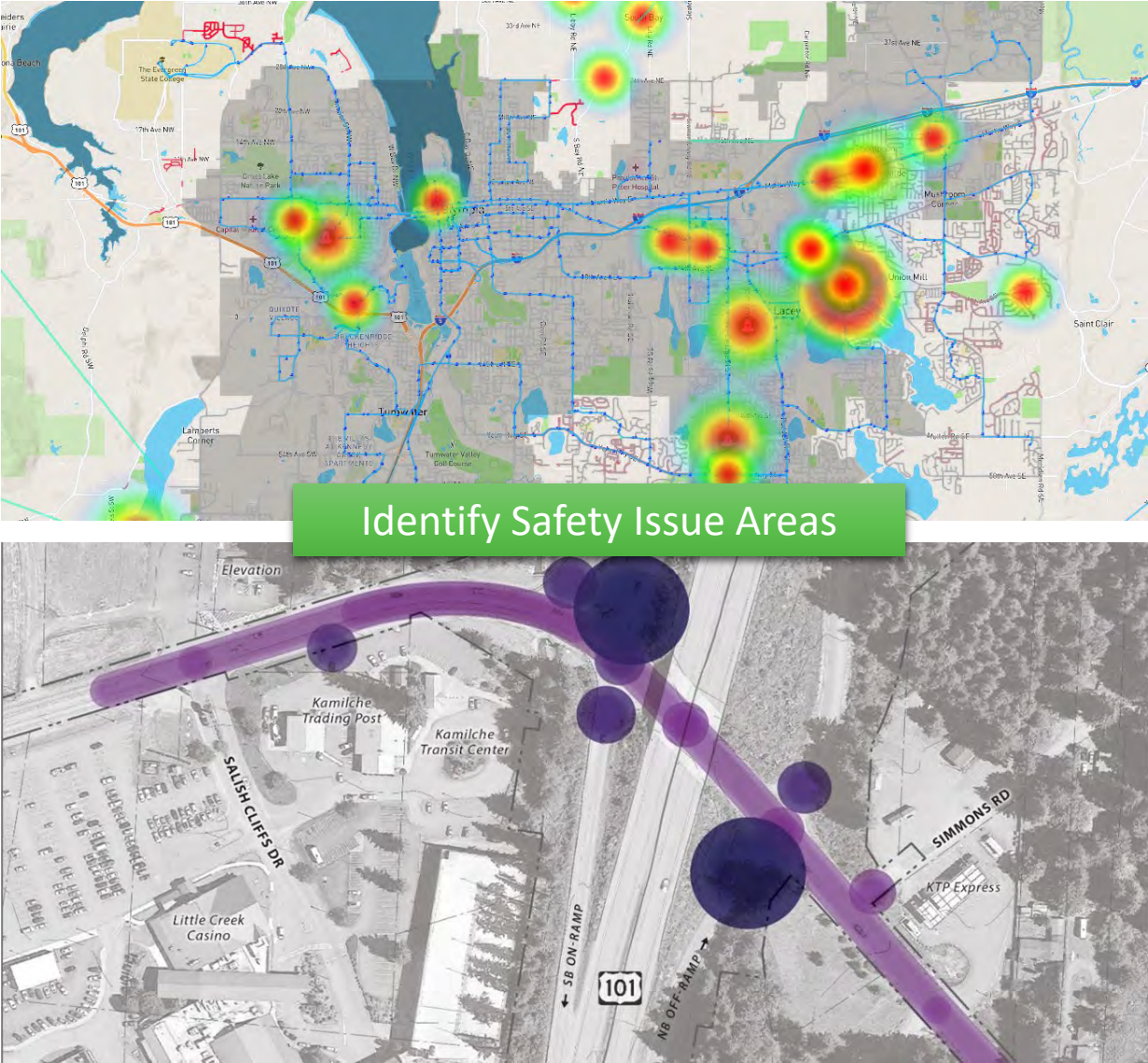


Online Outreach

ADA Concerns

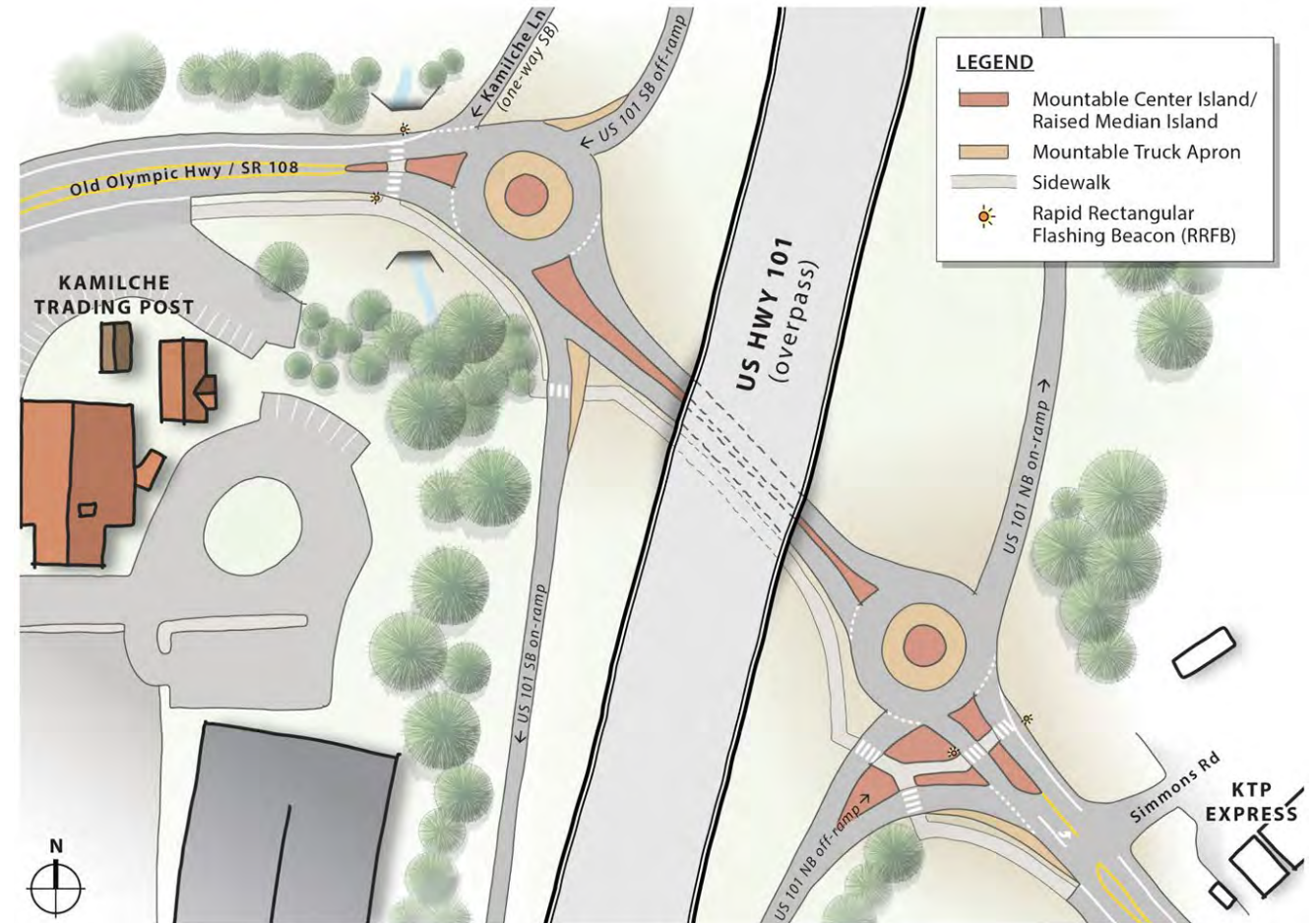


Identify Safety Issue Areas



Develop and Present Recommendations

- Tiered improvements with priorities clearly identified
- Layout priority recommendations with maps/graphics, descriptions and cost estimates



Multiple Applications for a Safety Action Plan

- Creates eligibility for multiple grant opportunities
- Identifies projects that can be incorporated into larger city maintenance or roadway projects
- Identifies safety projects that can become development mitigation



Safe Streets and Roads for All

Self-Certification Eligibility Worksheet

All applicants should follow the instructions in the NOFO to correctly apply for a grant. See the [SS4A website](#) for more information.

Table 1 of the SS4A NOFO describes [eight components of an Action Plan](#), which correspond to the questions in this worksheet. Applicants should use this worksheet to determine whether their existing plan(s) contains the required components to be considered an eligible Action Plan for SS4A.

This worksheet is required for all SS4A **Implementation Grant** applications and any **Planning and Demonstration Grant applications to conduct Supplemental Planning/Demonstration Activities only**. Please complete the form in its entirety, do not adjust the formatting or headings of the worksheet, and upload the completed PDF with your application.

Eligibility

An Action Plan is considered eligible for an SS4A application for an Implementation Grant or a Planning and Demonstration Grant to conduct Supplemental Planning/Demonstration Activities if the following two conditions are met:

- You can answer "YES" to Questions **3, 7, and 9** in this worksheet; *and*
- You can answer "YES" to **at least four of the six remaining** Questions, **1, 2, 4, 5, 6, and 8**.

If both conditions are not met, an applicant is still eligible to apply for a Planning and Demonstration Grant to fund the creation of a new Action Plan or updates to an existing Action Plan to meet SS4A requirements.

Applicant Information

Lead Applicant:

UEI:

Action Plan Documents

In the table below, list the relevant Action Plan and any additional plans or documents that you reference in this form. Please provide a hyperlink to any documents available online or indicate that the Action Plan or other documents will be uploaded in Valid Eval as part of your application. Note that, to be considered an eligible Action Plan for SS4A, the plan(s) coverage must be broader than just a corridor, neighborhood, or specific location.

Document Title	Link	Date of Most Recent Update



Thank you

Ryan D Shea, PTP
Ryan.shea@scjalliance.com



SCJ ALLIANCE
CONSULTING SERVICES



Rightsizing Roundabouts

Scott Davis, P.E., Assistant State Traffic Design Engineer, WSDOT

John Deskins, P.E., Traffic Engineer, City of Richland

Rick Perez, P.E., Traffic Engineer, City of Federal Way



Right Sized Roundabouts

Crafting a compact roundabout

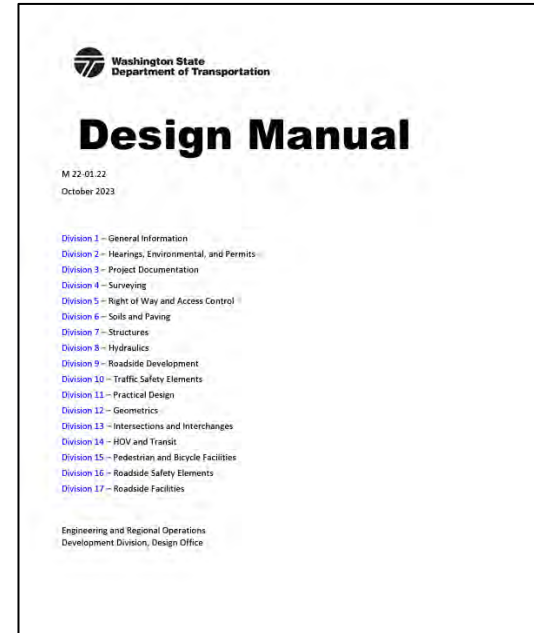
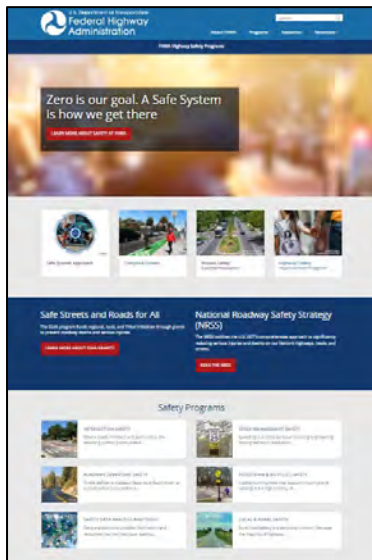
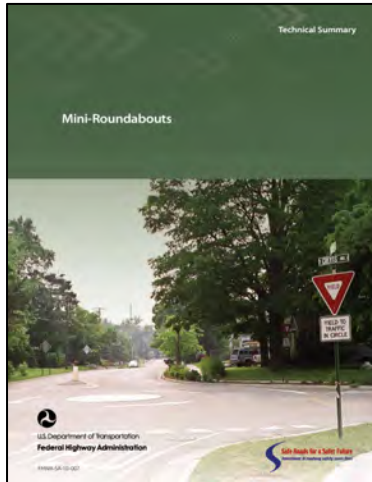
Scott Davis PE – Assistant State Traffic Design Engineer

April 2024

Learning Objectives

- Introduction and awareness to
 - Smaller Roundabouts
 - Design Resources
 - Examples from around the state

Design Information



Plenty of guidance
Few standards
Plenty of judgement involved

Terminology

- Conventional Multilane
- Conventional Single Lane
- Compact
- Mini



What is a Compact roundabout?

- Smaller than conventional roundabouts
- Typically, are built in existing pavement area
- Operate the same as conventional roundabouts



Shelton, WA



Cashmere, WA

What is different about compact roundabouts?

- Mountable curbing
- Mountable central islands
- Shorter and traversable splitter Islands

Compact



Shelton, WA



Source: Google

SR 902 east of Spokane

Conventional



Source: Google

SR 20 at Thomas St
Port Townsend



Source: Google

SR 20 at Thomas St

Compact Roundabout Examples

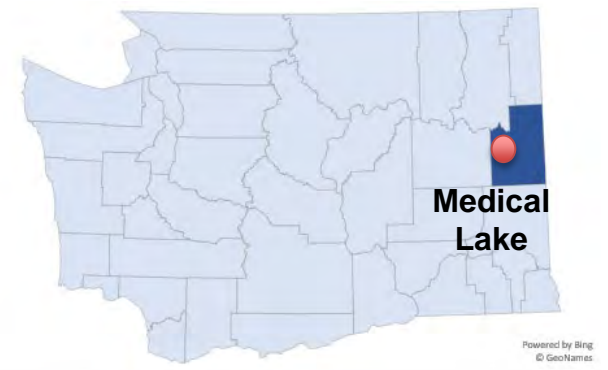
Rural – Loon Lake on US395



A compact roundabout can be used on a roadway with high-speed traffic

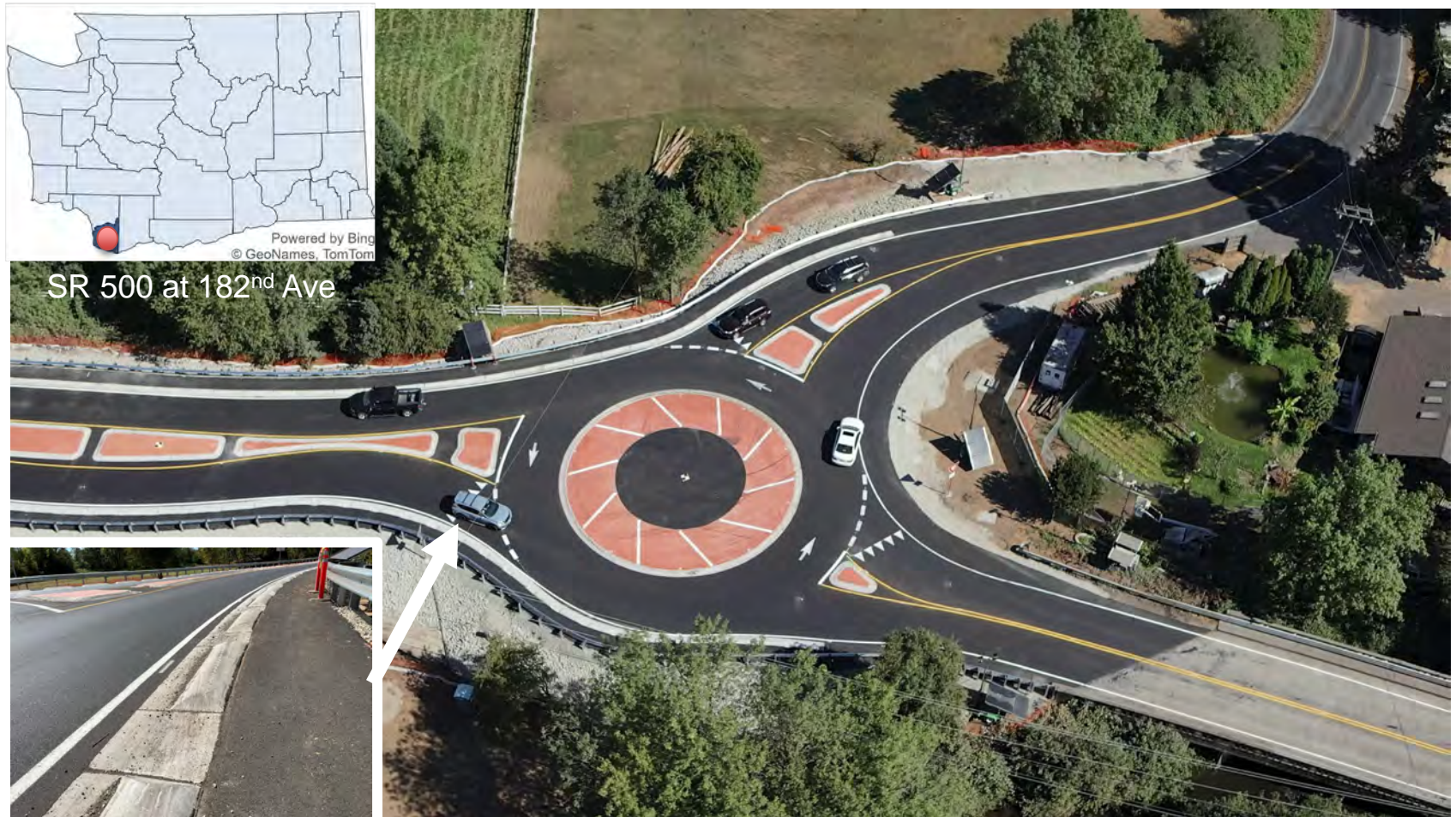
Compact Roundabout Examples

Rural – West Spokane County



Compact Roundabout Examples

Rural – East Clark County



Compact Roundabout Examples

Interchange Ramp – SR 432 (Old Pacific Hwy at I-5)



Compact Roundabout Examples

Urban – SR 20 and Kearney Rd - Port Townsend



Right Sizing Lane Reduction



Before



After



Right Sizing Lane Reduction



Before



After



Right Sizing Lane Reduction



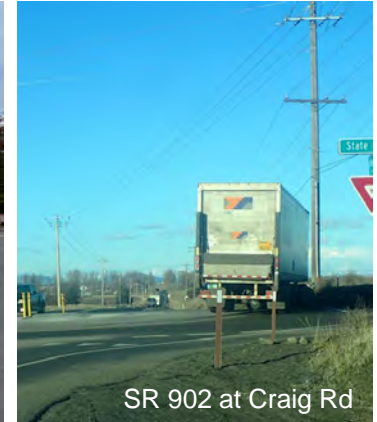
Before



After

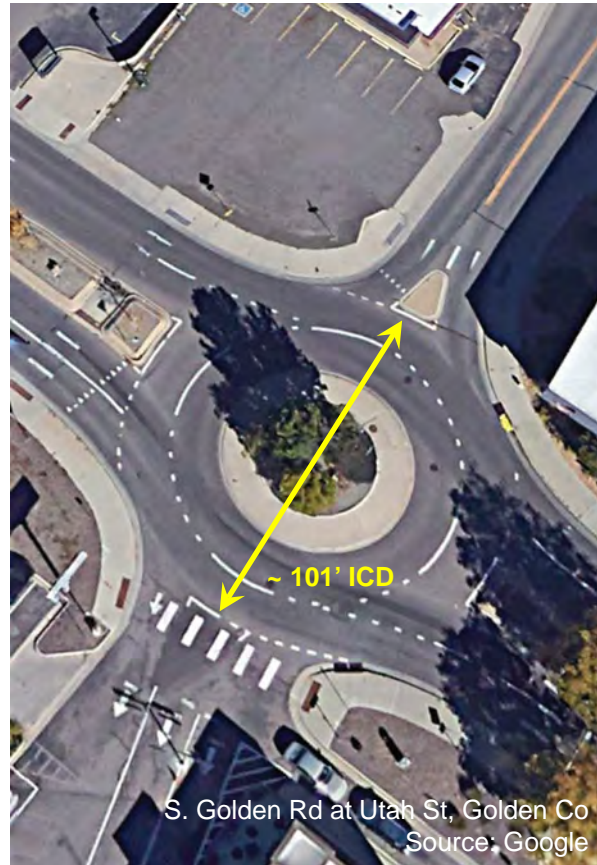
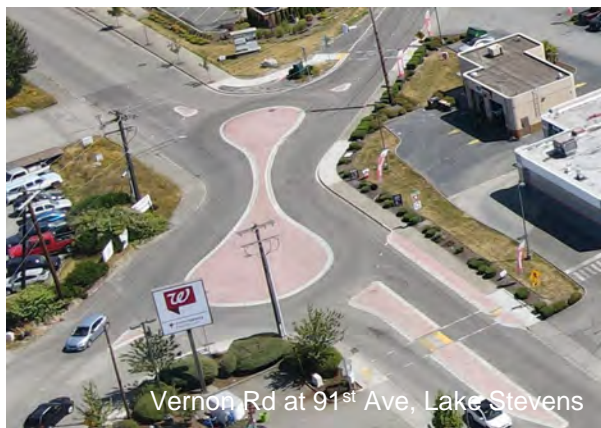


Can Trucks Navigate Small Roundabouts?



Accommodate trucks & design for smaller vehicles

Resources & Questions



WSDOT [Design Manual](#)

WSDOT [Standard Plans](#)

NCHRP 1043 – [Guide for Roundabouts](#)

FHWA Office of Safety - [Intersection Safety](#)

Scott Davis PE – Assistant State Traffic Design Engineer – daviss@wsdot.wa.gov

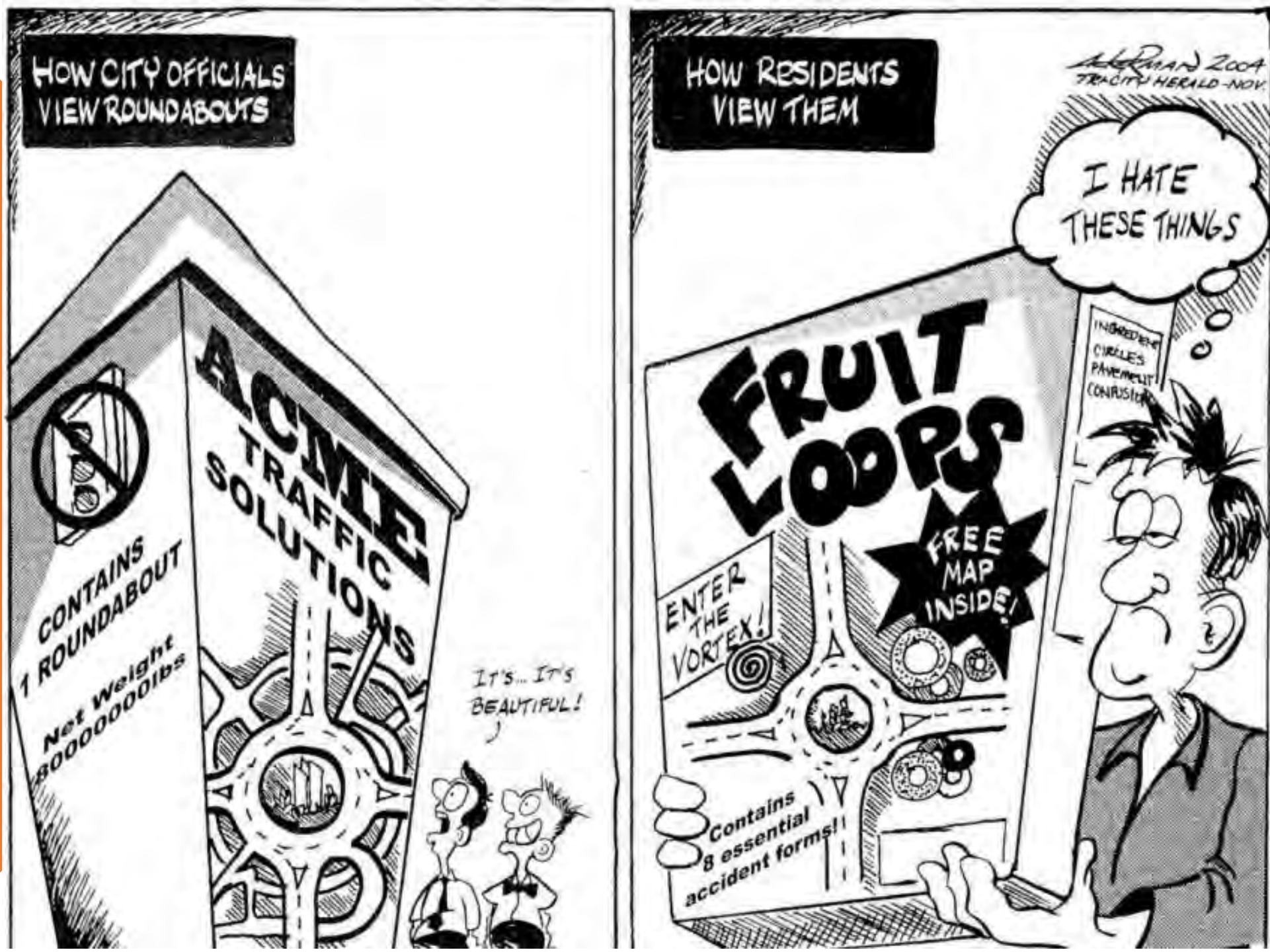
Mini-Roundabouts & the City Safety Program

Part of the Rightsizing Roundabouts Session
for the Washington Transportation Professionals Forum

John Deskins, PE, PTOE
Tuesday, April 30, 2024



The Beginning



Contents

- Richland's First Roundabout
- 2018 City Safety Program Roundabout
- Mini-Roundabouts currently in Design
 - Three for 2022 City Safety Program
 - One Developer Roundabout
- Curb Extension Alternative

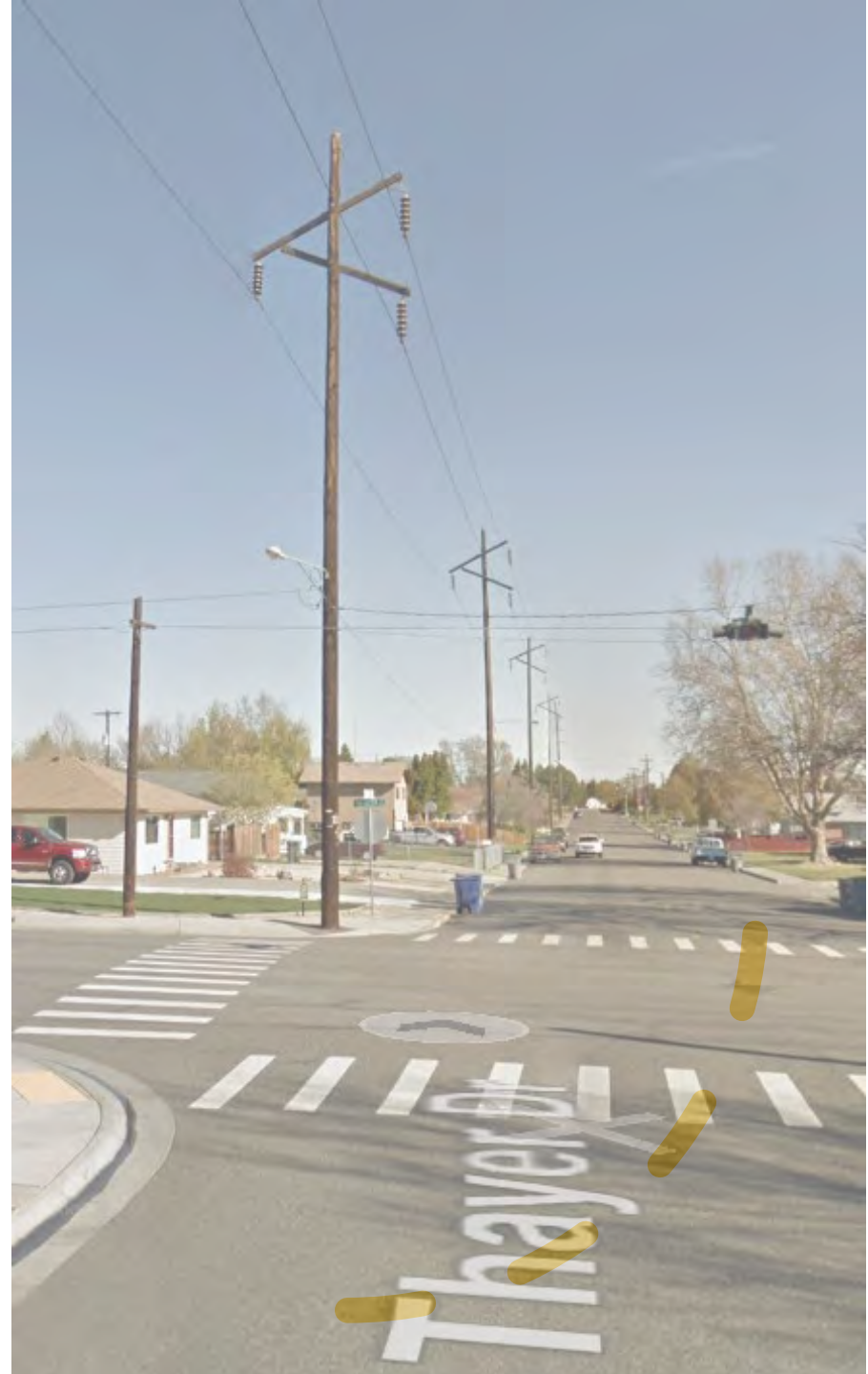




The First Roundabout in Richland (2002) –
Inscribed Circle Diameter (ICD) = 82'

History

- In 2018, the City received a Grant from the City Safety Program to install a Standard Roundabout at the intersection Van Giesen & Thayer.
- So how did we end up with a mini-roundabout?
 - The BPA pole was within the ICD of any typical roundabout design we would have considered.
 - Schedule for pole line relocation was several years out.
 - Rather than wait we changed course and decided to go with a Mini-Roundabout option that would allow the pole to remain in place for now.



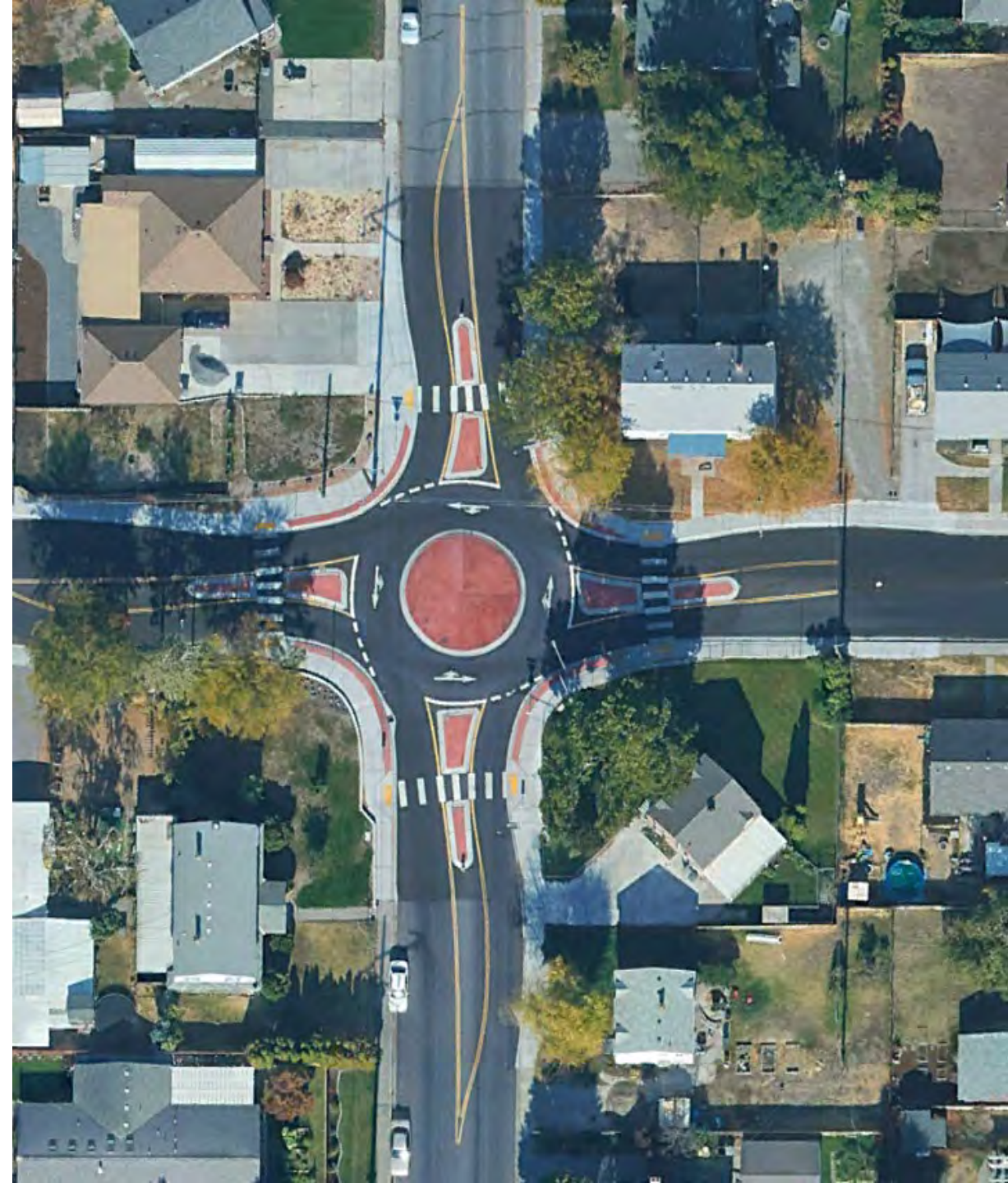
History

- Van Giesen & Thayer was one of four intersections in the City with overhead beacons. All were at Two-Way Stop Control intersections. There was a reason for these beacons as they all demonstrated high crash rates, even with the beacons in place.
- Though some of the other intersections had more crashes, Van Giesen & Thayer received a spot project on the basis of having a serious injury crash in 2014.



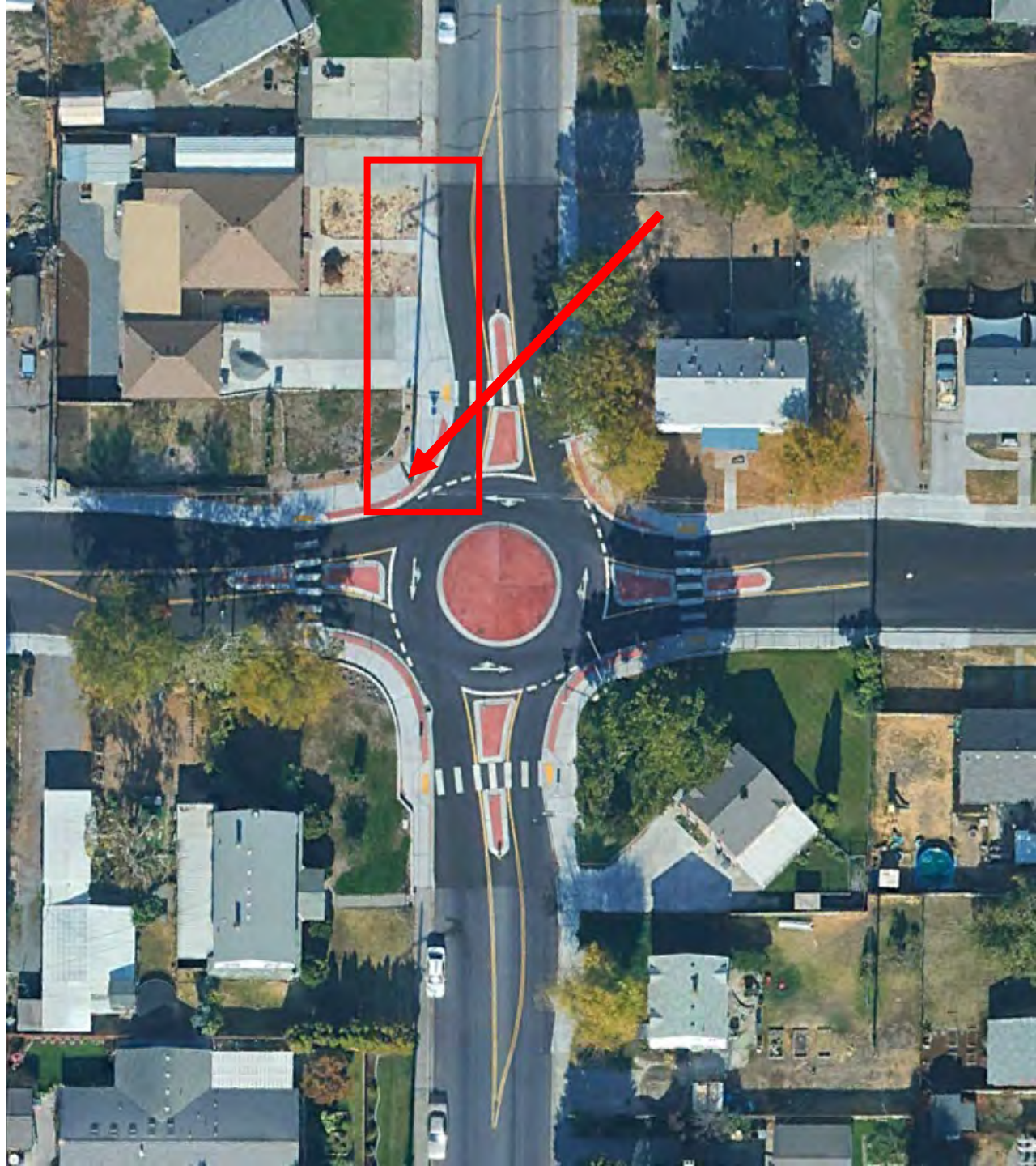
Intersection Facts

- Posted Speeds are 30 mph on 3 out of 4 legs. 25 mph on the other.
- Volumes are about 9000 vpd on Van Giesen (a Minor Arterial) and 2500 vpd on Thayer (a Major Collector)
- PM TEV = 730
- Inscribed Circle Diameter = 67'
- Design vehicles were an Aerial Fire Truck, Transit & School Busses, and we also tested a WB-67 to make sure it could go straight through the intersection. Another common design vehicle we use is a WB-40.



Construction

- Project Opened in Fall of 2021
- Final Cost = \$664,000
- There is a lot of curb work on the entry approaches with chicanes and on the splitter islands. New Ramps and widened sidewalks.
- We repaved within the project limits.
- We managed to do the project while the large BPA transmission line was still in place.



Van Giesen & Mini Thayer Roundabout Economic Analysis					
		Crashes			
Crash Type	Cost	5 years Before	2.5 years After	Annual Societal Cost Before	Annual Societal Cost After
Fatality (K)	\$3,423,400	0	0	\$0	\$0
Serious Injury (A)	\$3,423,400	0	0	\$0	\$0
Evident Injury (B)	\$237,400	3	0	\$142,440	\$0
Possible Injury (C)	\$142,300	2	0	\$56,920	\$0
Property Damage Only (PDO)	\$14,800	8	5	\$23,680	\$29,600
Totals		13	5	\$223,040	\$29,600

- The initial cost was pretty high, but the savings show out. We are now 2.5 years since opening and at this rate the mini-roundabout will have made up its project cost in societal cost reductions in just 3.5 years.

Signs & Markings

- No Signs in the Central Island
- Object Marker at the splitter
- Pedestrian Crossing Signs
 - Tend to block Yield signs if used
 - In-Street School Crossing Sign used here to avoid this. (not allowed in 11th Edition MUTCD)
- Crosswalk Markings
- Delineator posts (for plows)
- Red stamped concrete



Interesting Photos

- Bicyclists like the roundabout



Interesting Photos

- Works for Everyone!

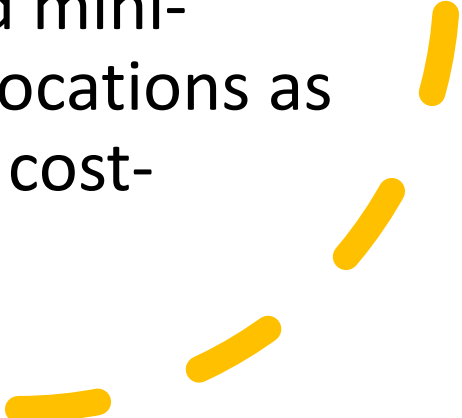


Interesting Photos

- Make sure that transit & school busses can squeeze between the end of the splitter and the nearest parked car.



Next Steps for the Mini- Roundabout Program

- Remember there were Four Flashing Beacon Locations.
 - Though the first roundabout was successful, the cost was pretty high, so I wanted to try and pursue these projects in a more cost-effective way.
 - We applied for a Systemic Intersection Improvement project grant in the 2022 City Safety program, where we received mini-roundabout funding for the other locations as well as some funds for some other cost-effective intersection treatments.
- 

Splitter Islands

Are they really necessary?

- Entry Curbing in plastic avoiding the cost of full curbing at splitter islands. This is an example of Tuff-Curb from Impact Recovery Systems we considered.



Alternate Materials and Modular Installations to Reduce Cost

- Splitter islands and central islands filled with rubber material or even asphalt. Here's a Virginia DOT example of a modular roundabout.

Photo below from completed VDOT modular roundabout at Otterdale Road and Hampton Park Drive in Chesterfield County:



The Virginia Department of Transportation built this modular roundabout in Chesterfield County. A similar one is being considered for Stafford County.

VIRGINIA DEPARTMENT OF TRANSPORTATION

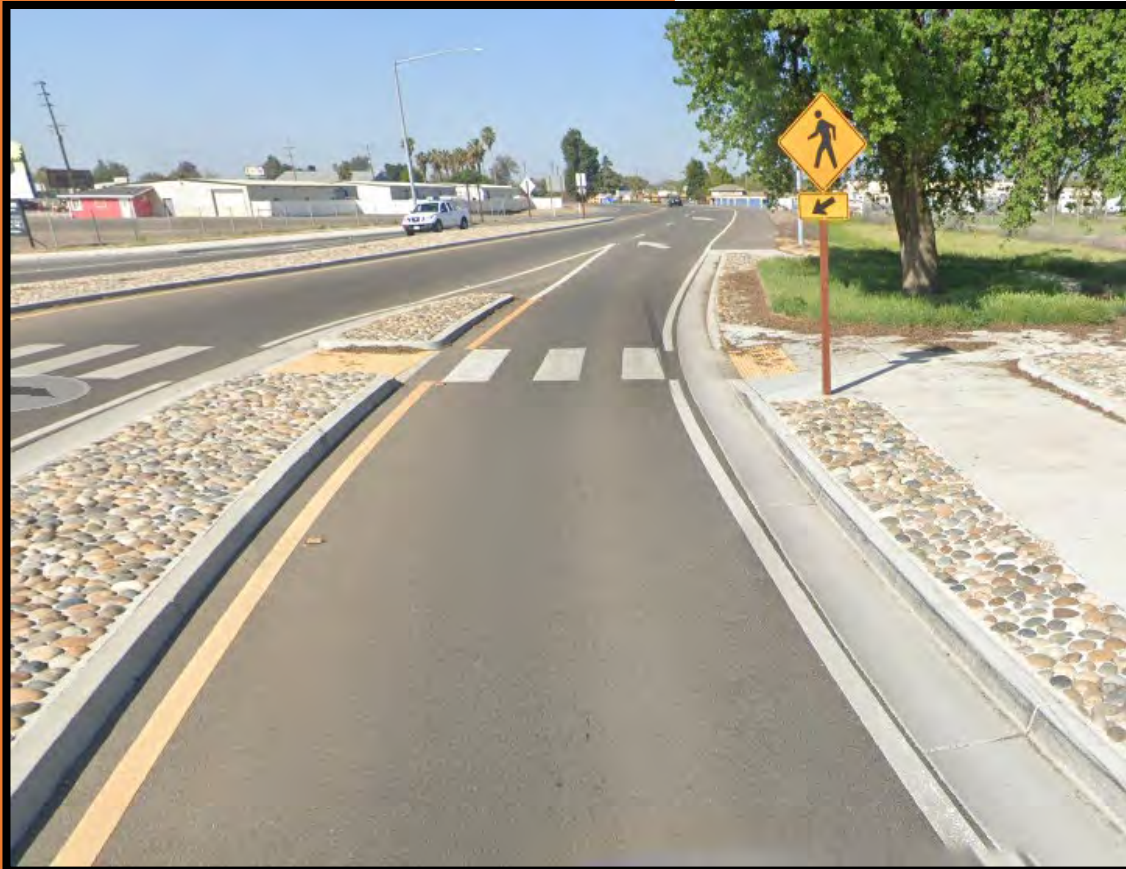
The Real Costs

- Many of the corners had diagonal ramps that wouldn't work. We basically needed eight new ramps at each intersection.
- Sidewalks, if they existed were typically 4 feet wide. We needed to widen the sidewalks to a minimum of 5' and we also needed to provide a non-traversable 2' buffer for horizontal separation per PROWAG
- Extra width of the sidewalk and buffer meant more potential for property impacts including potential right-of-way needs. In this case the bigger problem was that we were adding retaining walls at some locations.
- Pavement patching was also substantial and based upon the size patches we require, you are pretty much going to end up paving the whole roundabout.
- We decided to consider some Street Lighting as well.

Horizontal Separation

- For the buffer we weren't sure what to use. Grass was definitely out. It needed to be drivable so vehicle off tracking wouldn't destroy them.

Rock Blanket at Handford Armona Road at SR 198 in CA



From NCHRP 1043 –Guide for Roundabouts

Exhibit 14.16. Example of embedded river rock being placed in the buffer.



SOURCE: Fred Wismer.

Safety

- From ***Mini-Roundabout CMF Development*** published by North Carolina DOT in 2021
 - CMF stands for Crash Modification Factors.

Table ES-2. Recommended CMFs for a mini-roundabout.

Crash severity type	CMF	Standard error	Confidence interval	Lower limit	Upper limit	Statistical significance
TWSC/OWSC intersection						
Total	0.83	0.08	± 1.96	0.67	0.98	Significant at $\alpha=0.05$
FI	0.41	0.09	± 1.96	0.23	0.59	Significant at $\alpha=0.05$
PDO	1.09	0.12	± 1.96	0.86	1.32	Not significant
AWSC intersection						
Total	3.25	0.27	± 1.96	2.72	3.78	Significant at $\alpha=0.05$
FI	1.74	0.26	± 1.96	1.23	2.25	Significant at $\alpha=0.05$
PDO	3.83	0.31	± 1.96	3.22	4.44	Significant at $\alpha=0.05$

- There is also the broader scoped document:
 - NCHRP 888 - *Development of Roundabout Crash Prediction Models and Methods* (2019)

Crash Statistics for the Before Condition

Swift & Wright

Type	Cost	Last 5 years	Annual Societal Cost	Projected Annual Societal Cost	Annual Reduction	
Fatality (K)	\$3,423,400	0	\$0	\$97,276.60		
Serious Injury (A)	\$3,423,400	0	\$0			
Evident Injury (B)	\$237,400	2	\$94,960			
Possible Injury (C)	\$142,300	5	\$142,300			
Property Damage Only (PDO)	\$14,800	18	\$53,280			\$58,075.20
Totals		25	\$290,540			\$155,352

Thayer & Williams

Type	Cost	Last 5 years	Annual Societal Cost	Projected Annual Societal Cost	Annual Reduction	
Fatality (K)	\$3,423,400	0	\$0	\$151,806.60		
Serious Injury (A)	\$3,423,400	0	\$0			
Evident Injury (B)	\$237,400	6	\$284,880			
Possible Injury (C)	\$142,300	3	\$85,380			
Property Damage Only (PDO)	\$14,800	9	\$26,640			\$29,037.60
Totals		18	\$396,900			\$180,844

Stevens & Symons

Type	Cost	Last 5 years	Annual Societal Cost	Projected Annual Societal Cost	Annual Reduction	
Fatality (K)	\$3,423,400	0	\$0	\$354,658.20		
Serious Injury (A)	\$3,423,400	1	\$684,680			
Evident Injury (B)	\$237,400	2	\$94,960			
Possible Injury (C)	\$142,300	3	\$85,380			
Property Damage Only (PDO)	\$14,800	8	\$23,680			\$25,811.20
Totals		14	\$888,700			\$380,469

Swift & Wright

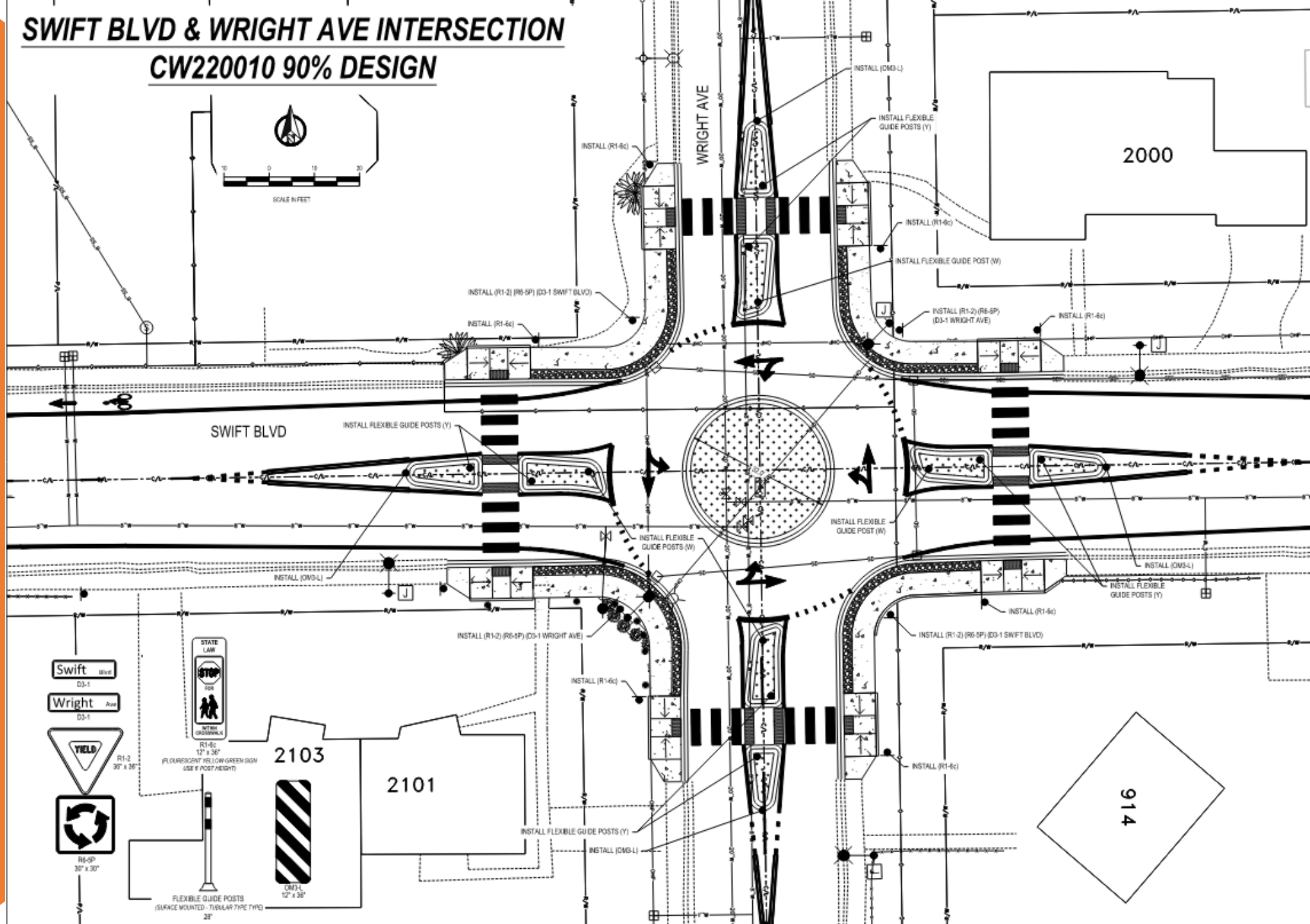
ICD = 66'

PM TEV = 765

Splitter Type =
Standard WSDOT
Type 2 curb for
Roundabouts

Crosswalk
Signage will
change

SWIFT BLVD & WRIGHT AVE INTERSECTION CW220010 90% DESIGN



Thayer & Williams

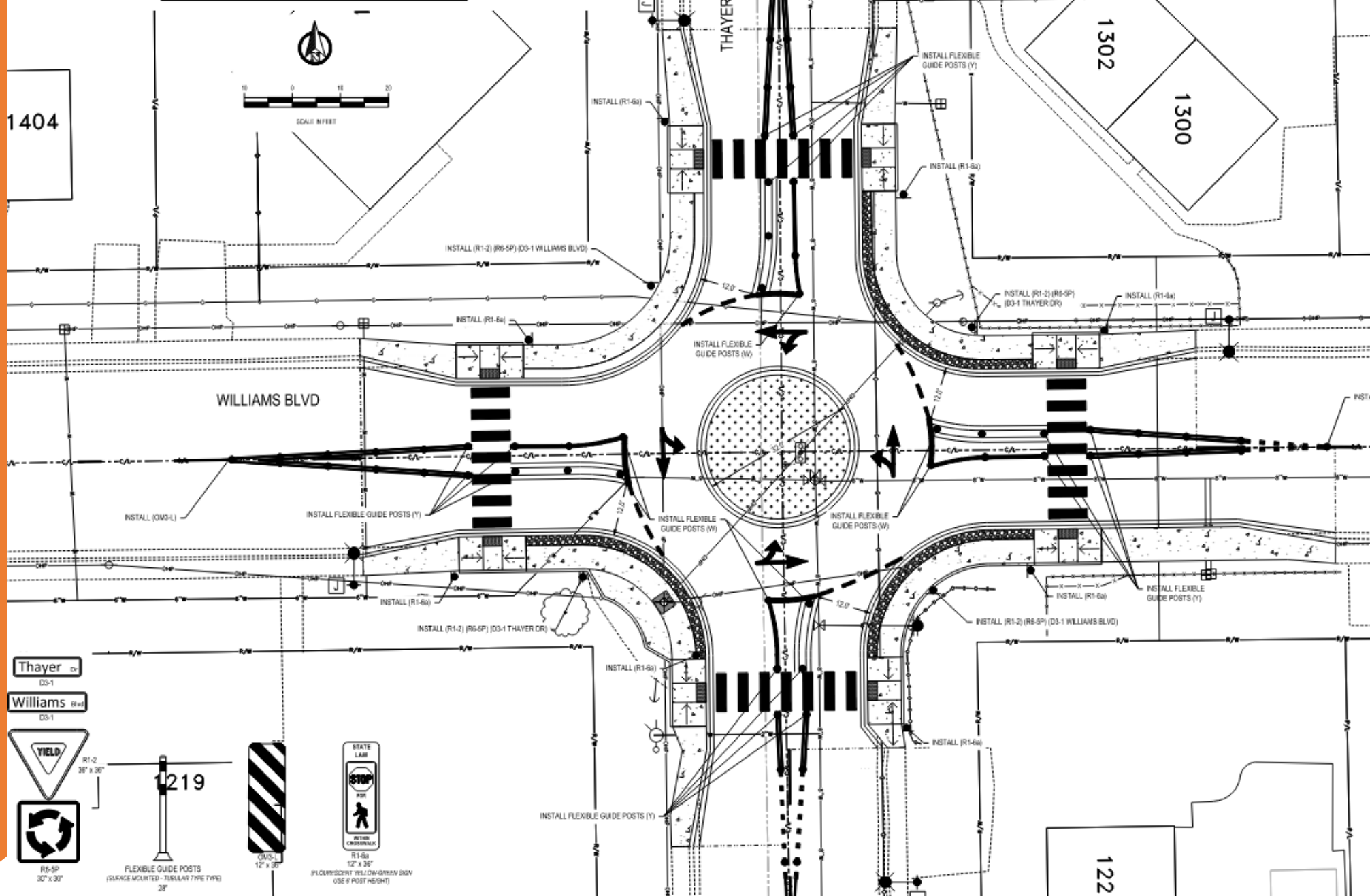
ICD = 67'

PM TEV = 550

Splitter Type =
Double-Faced
Concrete Curb
(modified to be
mountable) along
with Paint with
Delineators

Necked Down
to reduce ROW
impacts

THAYER DR & WILLIAMS BLVD INTERSECTION CW220010 90% DESIGN



Stevens & Symons

ICD = 62'

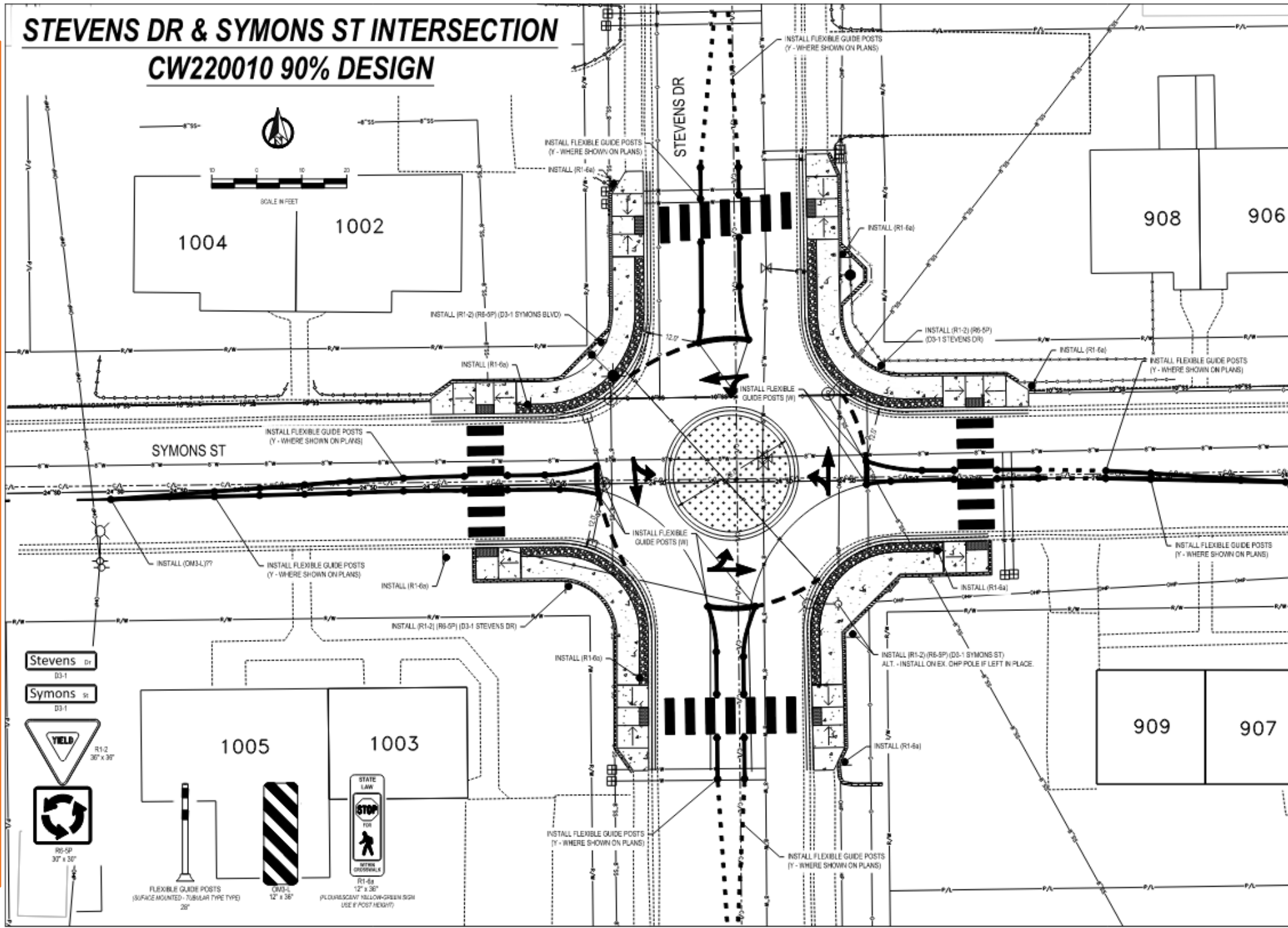
PM TEV = 600

Splitter Type =
Paint &
Delineators Only

Retaining Wall Modifications

Needed on all four
properties due to
grades.

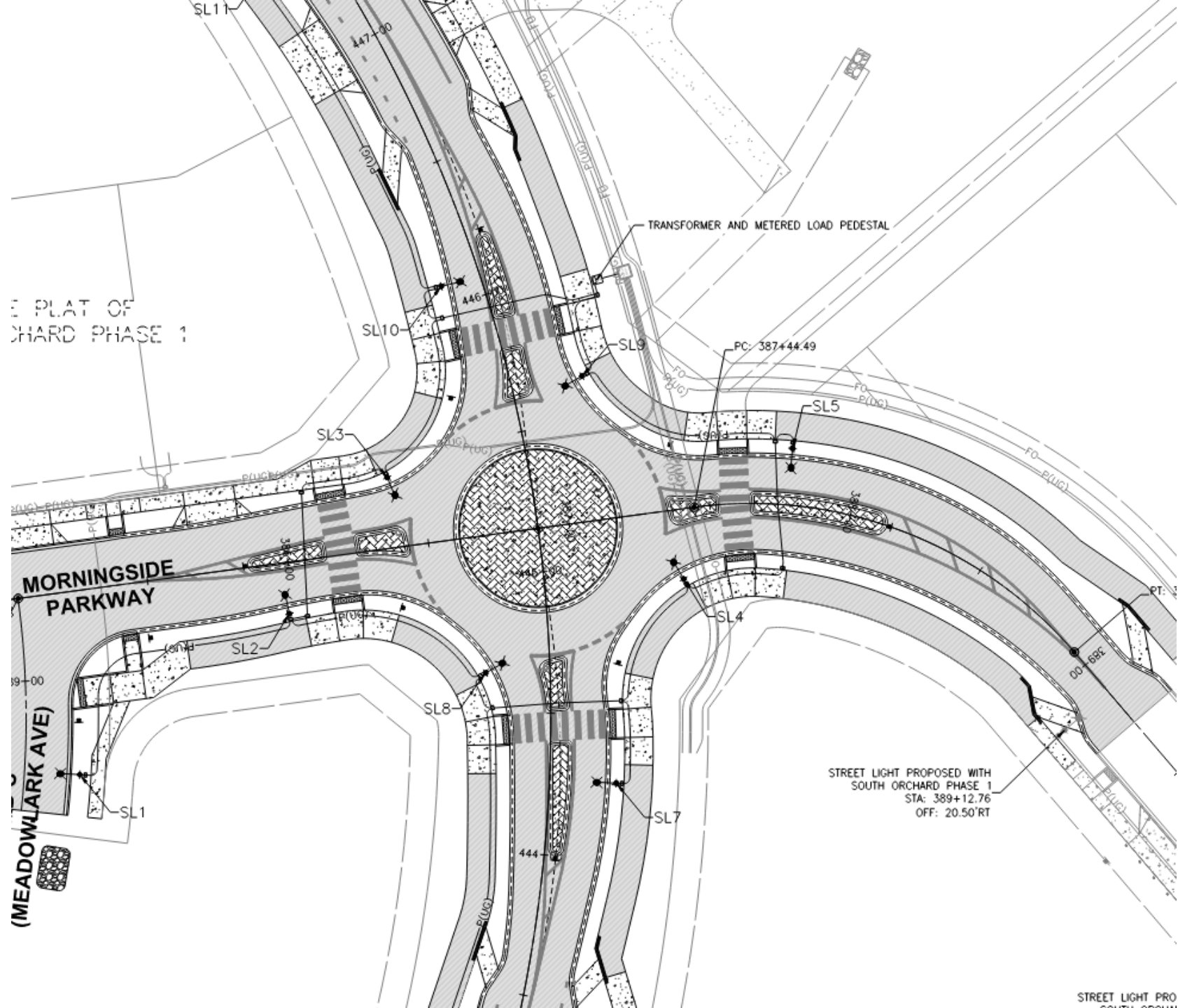
STEVENS DR & SYMONS ST INTERSECTION CW220010 90% DESIGN



Gage & Morningside

ICD = 90'

Bike Ramps with
Tactile Directional
Indicators (TDI)



What if you can't afford a mini-roundabout

- Williams & Wright – Over time the previous traffic engineer had tried a larger Stop sign, a Stop Ahead sign, and a Stop Ahead stencil on the pavement. I tried a 12" solar LED over the stop sign. Nothing had much success.
- Finally, our Transportation & Development Director suggested a low-cost curb extension done in paint and delineators.

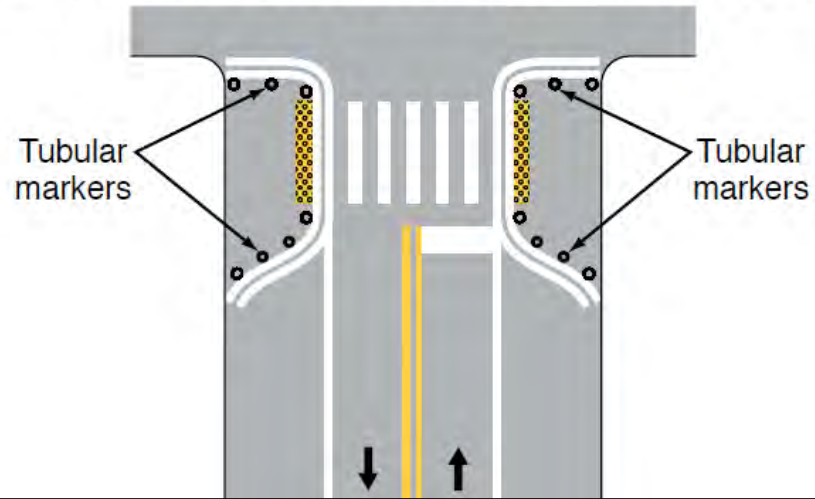


Curb Extensions/ Neckdown

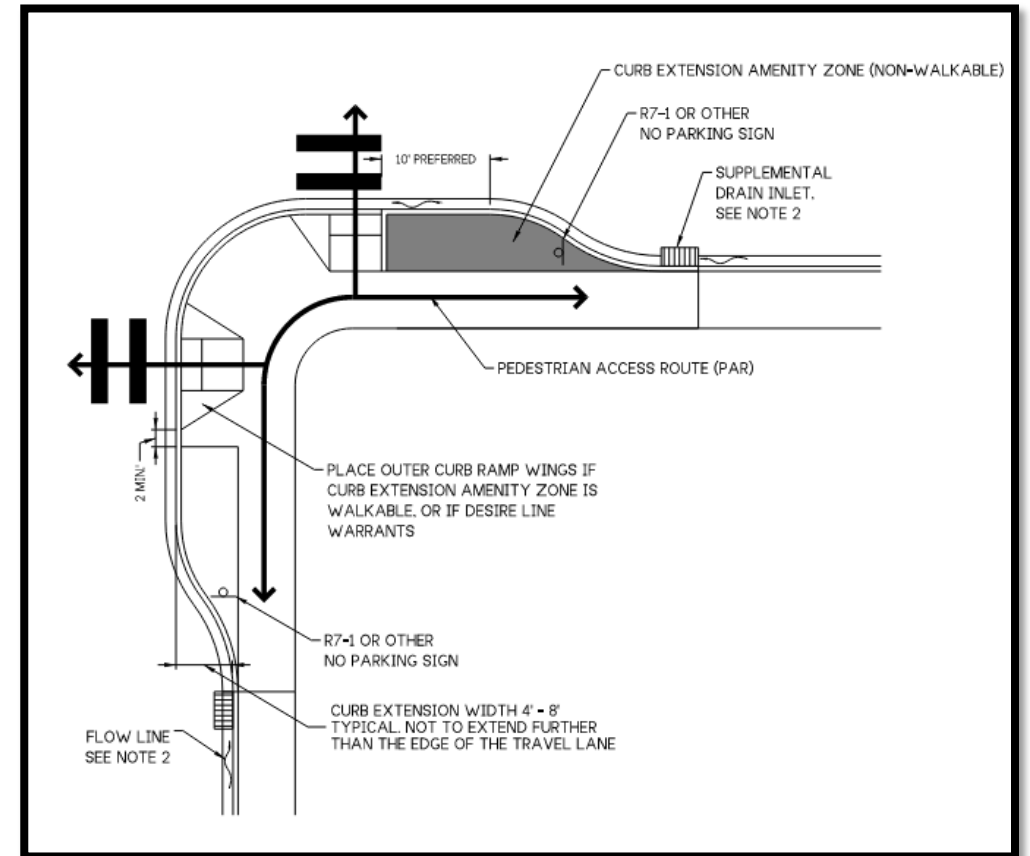
MUTCD – 11th Edition

Figure 3J-6. Examples of Sidewalk Extensions Designated by Pavement Markings and Channelization

A – Sidewalk extension to reduce the pedestrian crossing distance



Curb Extensions from WSDOT Active Transportation Manual



Wright & Williams

Plan View for Painted Curb Extension



Wright &
Williams

Curb
Extensions



Wright & Williams



Wright & Williams



Wright & Williams



Wright & Williams Curb Extensions Economic Analysis

		Crashes			
Crash Type	Cost	5 years Before	2 years After	Annual Societal Cost Before	Annual Societal Cost After
Fatality (K)	\$3,423,400	0	0	\$0	\$0
Serious Injury (A)	\$3,423,400	0	0	\$0	\$0
Evident Injury (B)	\$237,400	4	0	\$189,920	\$0
Possible Injury (C)	\$142,300	4	0	\$113,840	\$0
Property Damage Only (PDO)	\$14,800	16	2	\$47,360	\$14,800
Totals		24	2	\$351,120	\$14,800

- Because this treatment has worked so well. We are trying it at two more locations with funding from our 2022 City Safety Intersection Grant.

The
End



John Deskins, PE, PTOE

Traffic Engineer, City of Richland

625 Swift Blvd., MS-26 | Richland, WA 99352

(509) 942-7514

jdeskins@ci.richland.wa.us



Interesting Photos

- OK. The bus still had to run over the splitter island.



Swift & Wright

PM TEV = 765

Current Annual Societal Cost = \$290,540



Thayer & Williams

PM TEV = 555

Current
Annual
Societal Cost
= \$396,900

← 1005 Symons St
 Richland, Washington
 Google Street View
 Aug 2022 See more dates

Stevens & Symons

PM TEV = 600

Current Annual Societal Cost = \$888,700



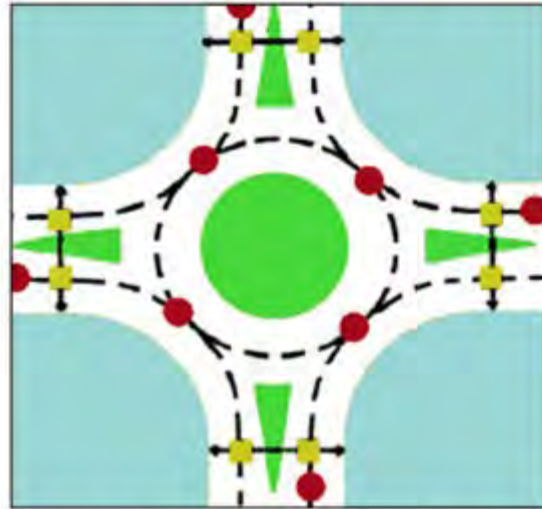
Splitter Islands

- As it turns out we decided to try three different splitter island alternatives.
 - Full splitters similar to Van Giesen & Thayer for the intersection of Swift & Wright. A similar intersection that gets about 8000 vpd on Swift and about 4000 vpd on Wright.
 - Partial Raised splitter using WSDOT dual faced curbing similar to the original tough curb idea.
 - Painted Splitter Islands.



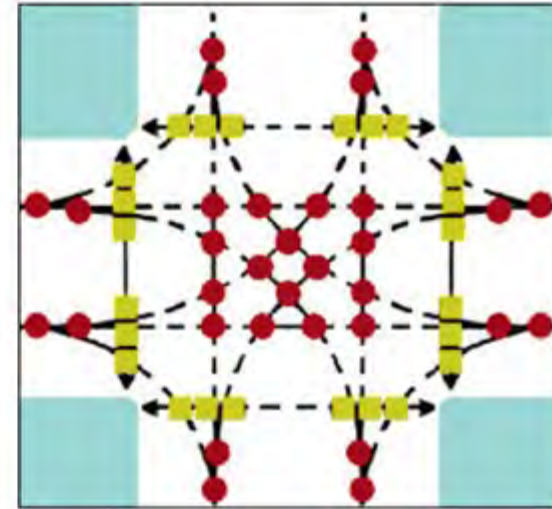
• Conflict Analysis

Roundabout

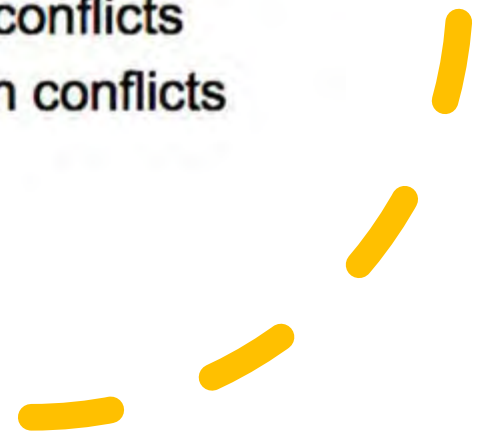


● 8 Vehicle conflicts
■ 8 Pedestrian conflicts

Intersection



● 32 Vehicle conflicts
■ 24 Pedestrian conflicts



Crosswalk Locations

From NCHRP 1043 –Guide for Roundabouts

Roundabouts have design features specifically intended to serve people walking, including the following considerations:

- Motor vehicle speeds are designed to be low, improving a driver's ability to react and yield to pedestrians. If a driver collides with a pedestrian, the kinetic energy is lower to reduce the likelihood of severe injury or death.
- Crossing locations are set back from the roundabout circulatory roadway to separate the driver decisions at the crosswalk from the driver decisions at the circulatory roadway.

- As I've prepared for this presentation and looked at the original mini-roundabout design that I showed earlier, I think it's worth asking ourselves if some of these roundabouts would be better with crosswalks closer, basically right up near the yield line.
- Driver yielding should still be more than adequate at entry and we might get better driver compliance on the downstream side.
- As long as pedestrian and vehicle volumes are low to medium.

25 Years of Practice Negotiating Horizontal Bumps in the Road

Washington Transportation
Professionals Forum

2024 Apr 30

Rick Perez, P.E.

City Traffic Engineer

Background

Sharjah, United Arab Emirates; 1982

- 250,000 Population
- No traffic signals
- No congestion

Why?

Roundabouts!



Federal Way 1999

Weyerhaeuser
Technology
Center

Weyerhaeuser
Corporate
Headquarters



Proposed Additions

82 Townhomes

50 Acres Commercial

10 Acres Commercial

Weyerhaeuser
Technology
Center

90 single-family homes

260,000 SF Office

300,000 SF Office

Weyerhaeuser
Corporate
Headquarters

65,000 SF Office

120,000 SF Office

65,000 SF Office



Forecast Conditions

● Signal Warrants Met

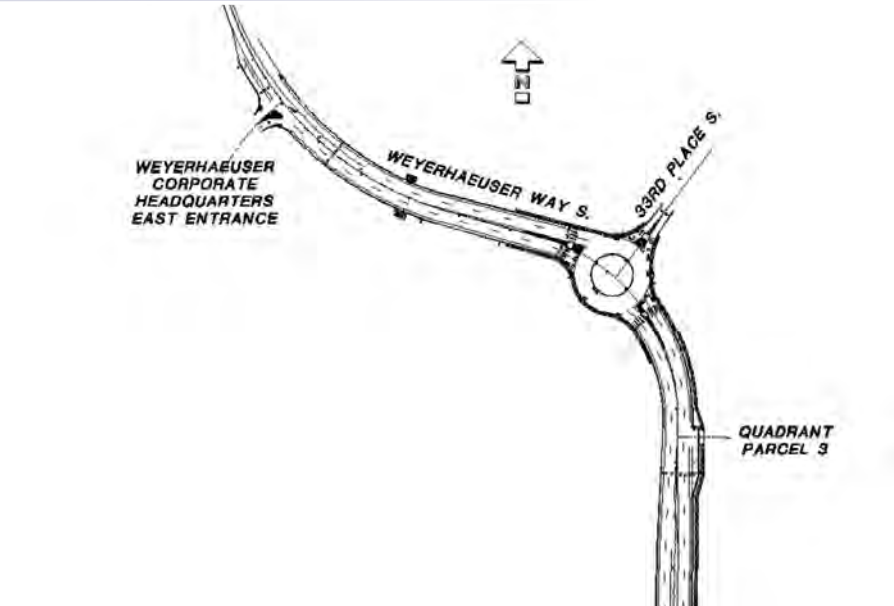
— Roadway Widening
Needed

- High speeds
- Poor sight distance at driveways and intersections



Proposal

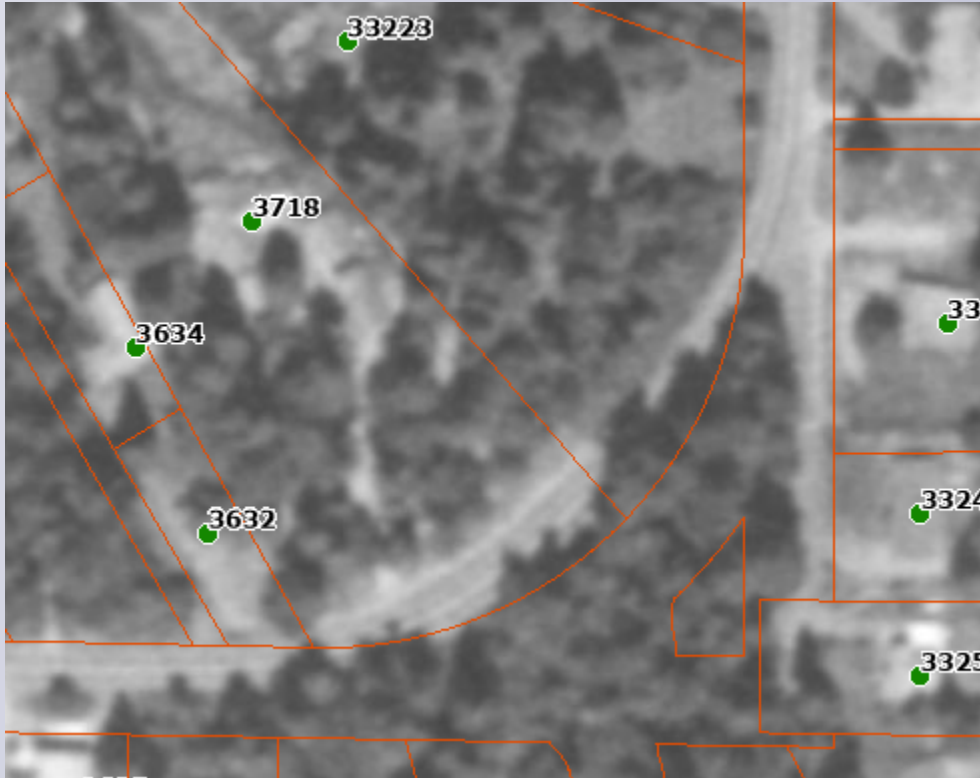
- Roundabout
- Turn Restrictions
- Roadway Widening



Roundabouts for Access Management

- Improve safety
- Maintain arterial capacity
- Cost less to operate and maintain
- Function safely without electricity
- Accommodate high U-Turn volumes
- Improve side street capacity

Substandard Curve



- Existing road outside of ROW
- Property to south has only access to public ROW here
- 90-lot subdivision proposed.
- Bringing curve up to standards would require full takes on 3 houses.

Roundabout Replaces Substandard Curve

Yes, it really is
within ROW.



Design Vehicle Check

Which is it?

- Garbage truck?
- S-BUS? (Not a transit route)
- SU-30? (Not a truck route)



Learning From Others' "Mistakes"

Question:

What does context-sensitive design mean?

Learning From Others' "Mistakes"

Question:

What does context-sensitive design mean?

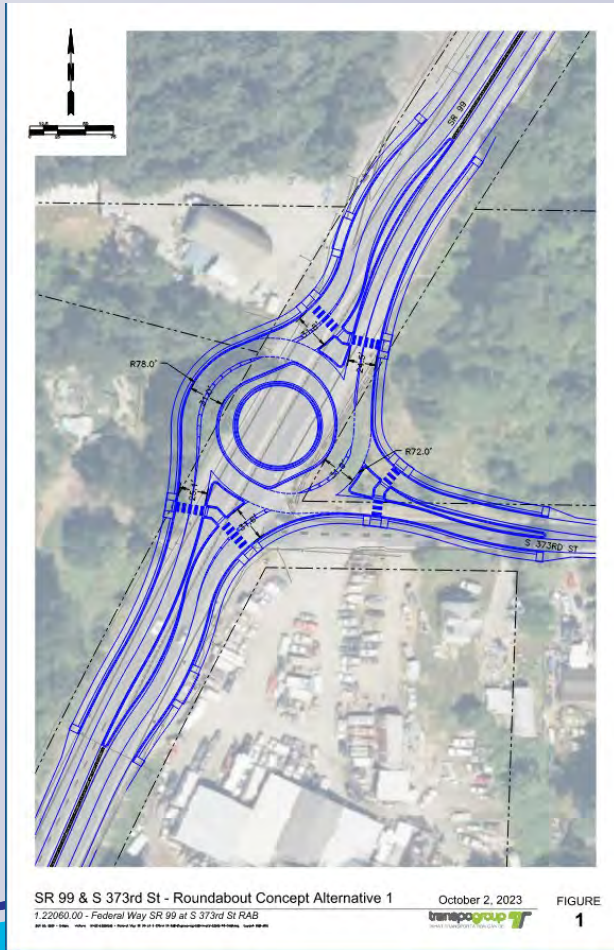
Answer:

The design can be approved by the State and your City Council.

Learning From Others' "Mistakes"

- Project for roundabout on high-speed state highway.
- Opposition to roundabout at this location based on another roundabout nearby.
- Design philosophy issue: how to handle large vehicles while minimizing pedestrian crossing distances and vehicle speeds.

Central Question



Can large vehicles
take two lanes?

YES
←

NO
→

Longest Ped Crossing
31.6' 35.6'

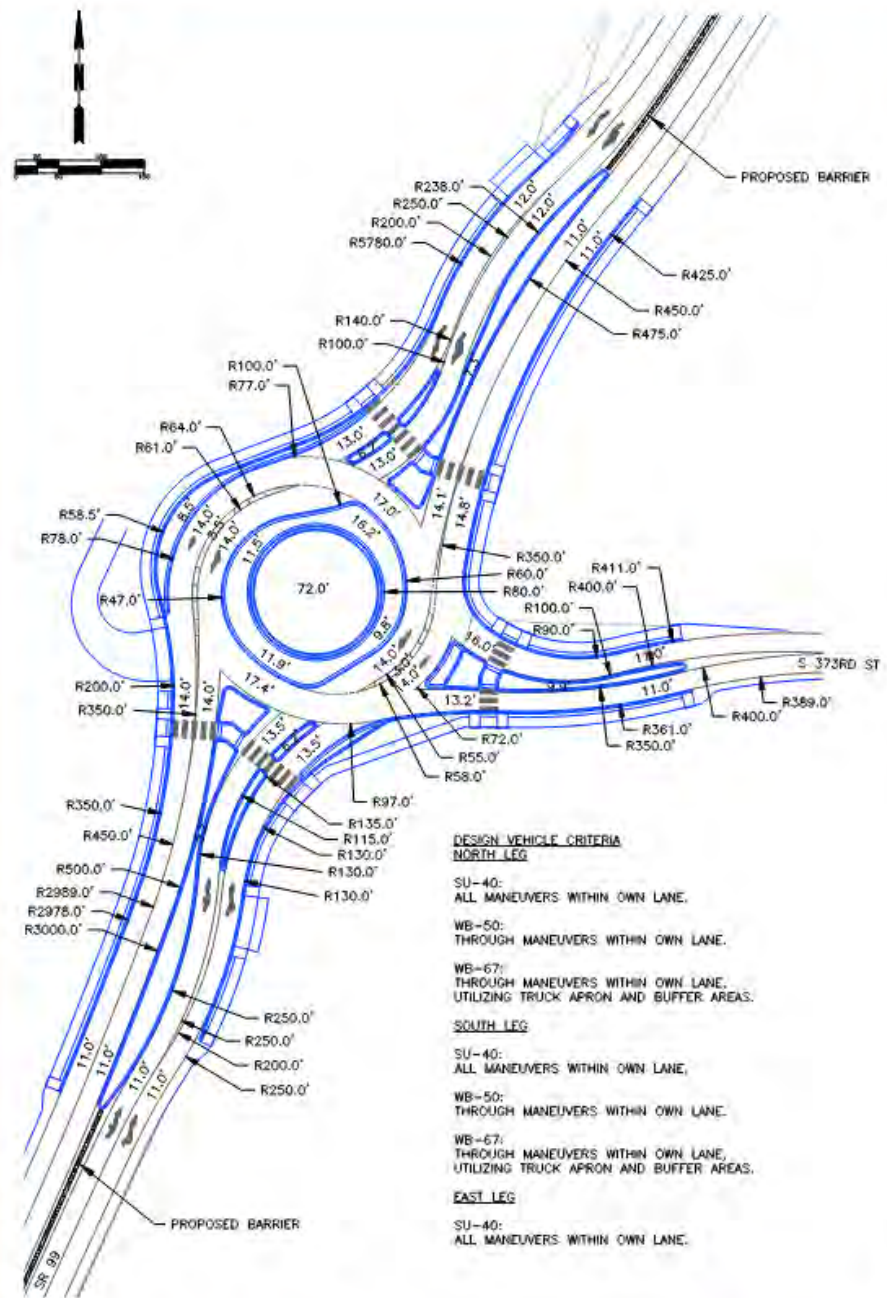
Entry Speeds
30.1 mph 25.2 mph

Circulating Speeds
22.7 mph 16.6 mph



Compromise

- All vehicles in own lane
- WB-67's use truck aprons
- Raised splitters on approach lanes, not in circulating roadway



SR 99 & S 373rd St - Roundabout Concept

1.22060.00 - Federal Way SR 99 at S 373rd St RAB

February 28, 2024

FIGURE



1

Guidance

- Context matters!
 - Weyerhaeuser wanted to maintain rural atmosphere; signals wouldn't do that.
 - High truck volumes and low ped volumes -> staying in lanes > minimal ped crossing distance
- Check your design vehicle!
- Roundabouts go beyond mere traffic control
 - Alignment issues
 - Access Management
 - Ambience

Questions?



MUTCD State Approval Process

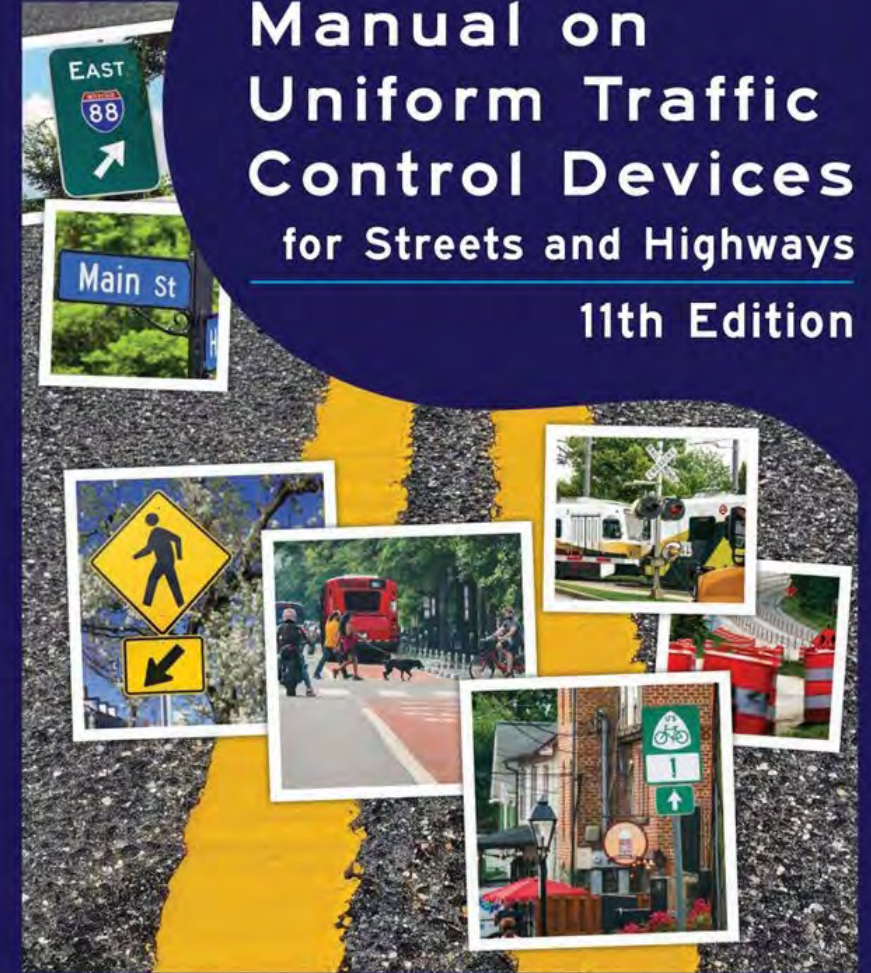
Trevor McCain

WSDOT Transportation Operations
Division

Matthew Enders, P.E.

WSDOT Local Programs Division

Manual on Uniform Traffic Control Devices for Streets and Highways 11th Edition



U.S. Department of Transportation
Federal Highway Administration

December 2023

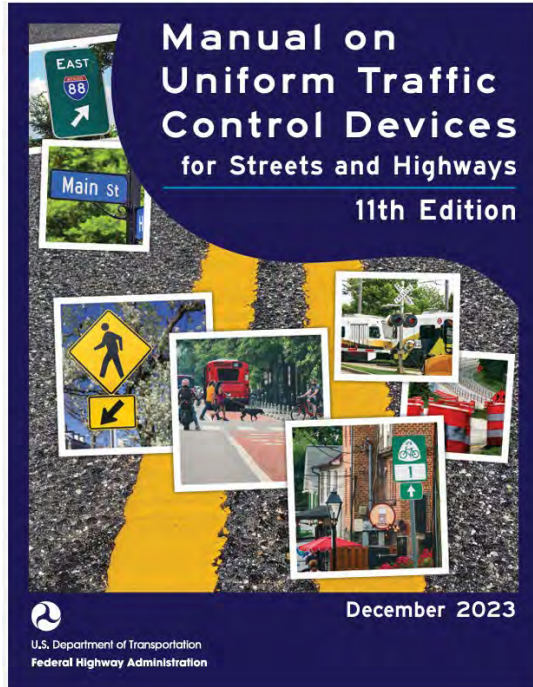
MUTCD Update

11th Edition MUTCD Discussion

Trevor McCain, WSDOT Traffic Signing Specialist

Updated March 2024

Adoption Timeline



6/2022: Technical Review Committee (TRC) established to review the new MUTCD and update/submit changes to the WAC. Minor revisions to existing WAC were made at this time.

12/2023: Final Rule issued by FHWA. States have two years to adopt MUTCD.

1/2024: TRC Meetings begin with review of existing WAC and RCW. Expected review period to last 12-18 months.

5/2025: Begin WAC adoption process based on TRC review of MUTCD.

12/2025: 11th Edition MUTCD and WAC adoption process complete.


Adopting the MUTCD for Washington

23 CFR 655.603

State may make modifications to Standards in the MUTCD based on state law in existence prior to 1/16/2007.

The Guidance statements contained in the national MUTCD shall also be in the State MUTCD or Supplement unless the reason for not including it is satisfactorily explained based on engineering judgment, specific conflicting State law, or a documented engineering study.

Changes must still be in substantial conformance with MUTCD and approved by FHWA.



The screenshot shows the Washington State Legislature website. The header includes the logo and the text "WASHINGTON STATE LEGISLATURE". Below the header, there is a navigation menu with "Legislature Home" and "WACs > Title 468 > Chapter 468-95". The main content area displays "Complete Chapter" with links for "HTML" and "PDF", and "including dispositions". Below this, it says "Chapter 468-95 WAC | Show Dispositions" and "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS". A table lists "WAC Sections" with columns for "HTML", "PDF", "WAC Number", and "Description".

HTML	PDF	WAC Number	Description
		468-95-010	General.
		468-95-017	Engineering study and engineering judgment.
		468-95-019	Definitions of headings, words, and phrases used in this manual.
		468-95-022	Definitions of headings, words, and phrases used in this manual.
		468-95-024	Definitions of headings, words, and phrases used in this manual.
		468-95-033	In-street pedestrian crossing sign (R1-6a).
		468-95-045	Speed limit sign (R2-1).
		468-95-075	Higher fines signs and plaque (R2-6R, R2-10, and R2-11).
		468-95-085	Two-way left turn only signs (R3-9a, R3-9b).
		468-95-120	Traffic signal sign.

<https://app.leg.wa.gov/WAC/default.aspx?cite=468-95>

Washington Modifications to the MUTCD can be found in WAC 468-95.

MUTCD Technical Review Committee (TRC)

TRC consists of staff from:

WSDOT:

- Transportation Operations
- Active Transportation
- Safety & Systems Analysis
- Design Office
- Local Programs
- Northwest Region Traffic
- Olympic Region Traffic
- Eastern Region Traffic
- Southwest Region Traffic
- Maintenance

Local Agencies:

- City of Richland
- City of Seattle
- City of Tacoma
- City of Montlake Terrace
- City of Federal Way
- City of Spokane
- Island County

Private Sector:

- Transpo Group
- Casseday Consulting

Washington State
Office of the Attorney
General

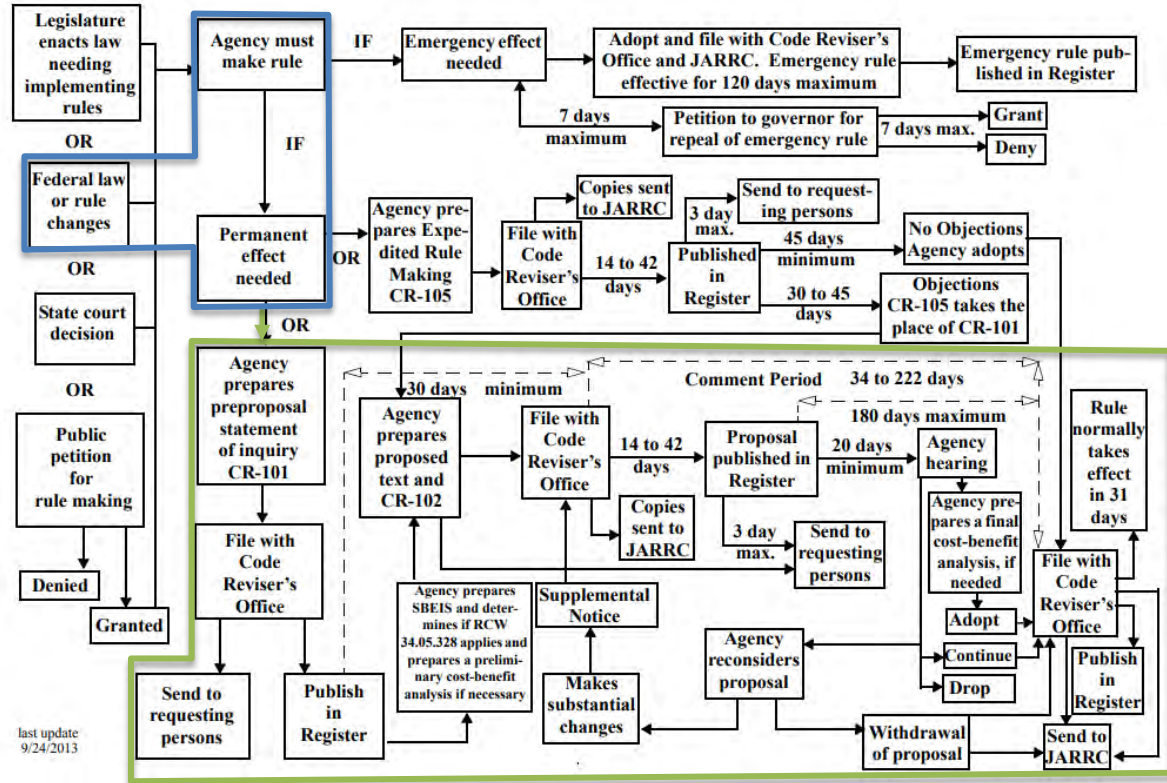
Federal Highway
Administration (FHWA)

MUTCD Technical Review Committee (TRC)

The TRC meets monthly to discuss changes:

- Review MUTCD updates
- Determine if there is a conflict with state law (RCW and WAC)
- Assess comments received and provide feedback
- Recommend modifications/additions to WAC
- Provide updates to Code Reviser and assist in the WAC adoption process.

RULE-MAKING PROCESS



<https://leg.wa.gov/CodeReviser/Documents/registerflowchart.pdf>

WSDOT MUTCD Information Page

Washington State Department of Transportation

Travel Construction & planning Business with WSDOT Engineering & standards About

Home > Engineering & standards > All manuals & standards > Manuals > Manual on Uniform Traffic Control Devices (MUTCD)

Manual on Uniform Traffic Control Devices (MUTCD)

Publication URL: <http://mutcd.fhwa.dot.gov/index.htm>
Publication Number: N/A
Manual Manager: Trevor McCain, Transportation Signing Specialist, Trevor.Mccain@wsdot.wa.gov
Originator: WSDOT

Related Publications:

- [Changes and experimentations for the Manual on Uniform Traffic Control Devices | WSDOT \(wa.gov\)](#)
- [Current WAC modifications list](#)
- [FHWA's MUTCD](#)

Washington State Manual on Uniform Traffic Control Devices – 2024-2025 Adoption Process

The Federal Highways Administration, also referred to as the FHWA, published the 11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD) in December 2023. The MUTCD sets minimum standards for all Traffic Control Devices used on U.S. roads and highways. This includes all road signs, highway markings, electronic traffic signals, railroad crossings and roadway construction zone areas.

This is the first federal MUTCD update since 2009. Washington state will adopt the MUTCD with state specific revisions in compliance with [23 CFR 633.605](#). WSDOT is the lead for that process, with local agencies also contributing.

Adoption date

The effective date for the 11th Edition of the MUTCD was Jan. 18, 2024. Washington has two years from the effective date to adopt the MUTCD with modifications.

Giving feedback

WSDOT plans to collect initial public feedback via an online form, which will be made available on this site as the process develops.

Washington state MUTCD email distribution list

If you would like to receive notifications on the MUTCD adoption process, please sign up for the [WSDOT MUTCD email distribution list](#).

Technical Review Committee

The Technical Review Committee is responsible for public responses about the proposed MUTCD and will advise WSDOT on proposed modifications.

<https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/manuals/manual-uniform-traffic-control-devices-mutcd>

For MUTCD adoption information, contact:

Trevor McCain – Traffic Signing Specialist, WSDOT Transportation Operations

Trevor.McCain@wsdot.wa.gov

For Washington State MUTCD adoption comments and feedback:

mutcd@wsdot.wa.gov

Links:

FHWA MUTCD page:

<https://mutcd.fhwa.dot.gov/index.htm>

WSDOT MUTCD page:

<https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/manuals/manual-uniform-traffic-control-devices-mutcd>

Washington MUTCD modifications (WAC 468-95)

<https://app.leg.wa.gov/WAC/default.aspx?cite=468-95>

23 CFR 655.603

<https://www.ecfr.gov/current/title-23/chapter-I/subchapter-G/part-655/subpart-F/section-655.603>

MUTCD Current Law Edition

For Questions

Matthew Enders

Technical Services Manager

WSDOT Local Programs

matthew.enders@wsdot.wa.gov

360-705-6907

Ed Spilker

City Safety & Traffic Programs

Manager

WSDOT Local Programs

ed.spilker@wsdot.wa.gov

360-705-7387

Current Law MUTCD

- 2009 edition with Washington State modifications (WAC 468-95)
- <https://wsdot.wa.gov/business-wsdot/support-local-programs/technical-assistance/traffic-safety-services>
- In effect until the adoption process is complete

Setting Safe Speed Limits

Briana Weisgerber, P.E.

WSDOT Active Transportation Division



Credit: Shutterstock

Improving Safety with Speed Limit Setting and Speed Management

Washington Transportation Professionals Forum

Briana Weisgerber, P.E.

Active Transportation Programs Engineer

April 30, 2024

Purpose

- Review the need for speed management and speed limit reductions
- Review recent changes to best practice speed limit setting procedures
- Invite you to share barriers to adoption of safer speed limits and speed management

Agenda

- ❖ Existing research
- ❖ The safety context
- ❖ Washington state law
- ❖ Practitioner tools
- ❖ Questions to attendees
- ❖ Funding opportunities
- ❖ Next steps for us



Definitions

- **Design speed:** The speed on which the geometry or physical elements of the roadway is based.
- **Operating speed:** The speed at which drivers are traveling along a roadway.
- **Posted speed limit:** The maximum lawful speed as displayed on a regulatory sign.
- **Statutory speed limit:** The speed limit established under law, which applies in the absence of a posted speed limit.
- **Target (desired) speed:** The highest operating speed at which vehicles should ideally operate on a roadway in a specific context.
- **Speed Management:** The use of engineering, traffic control and road design to induce drivers to travel at target speeds.
- **Self-enforcing or self-explaining road:** A road that is planned and designed to encourage drivers to select operating speeds consistent with the posted speed limit

Speed definitions

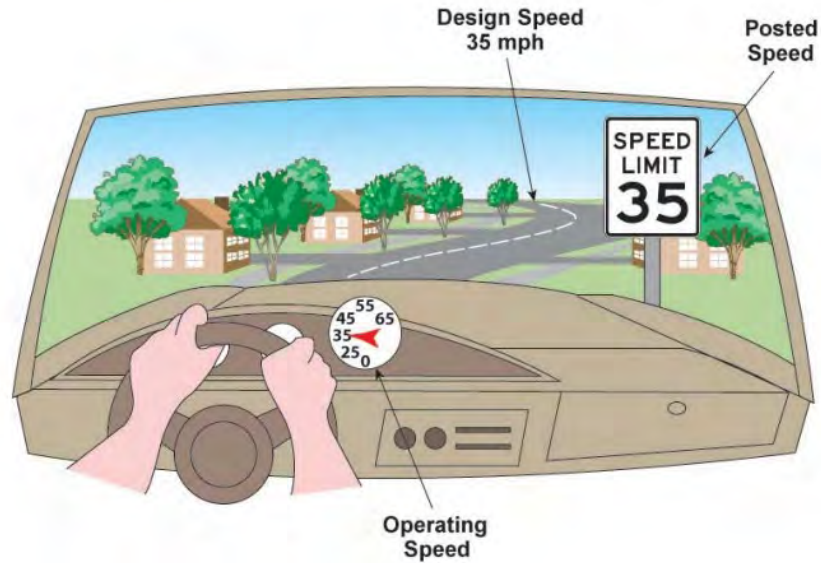
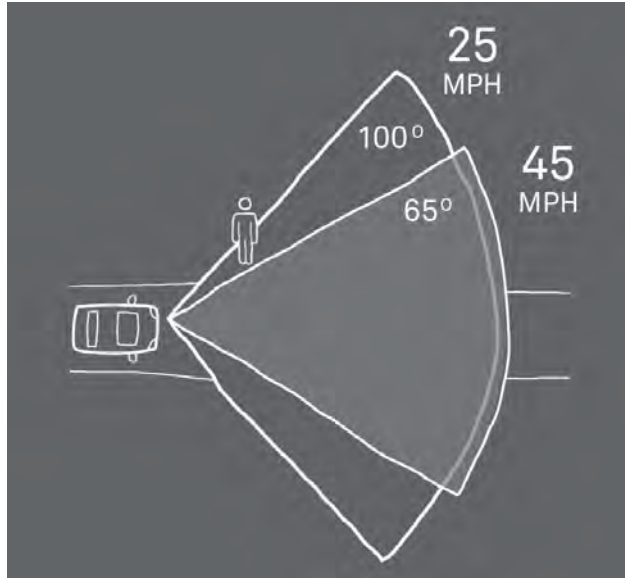


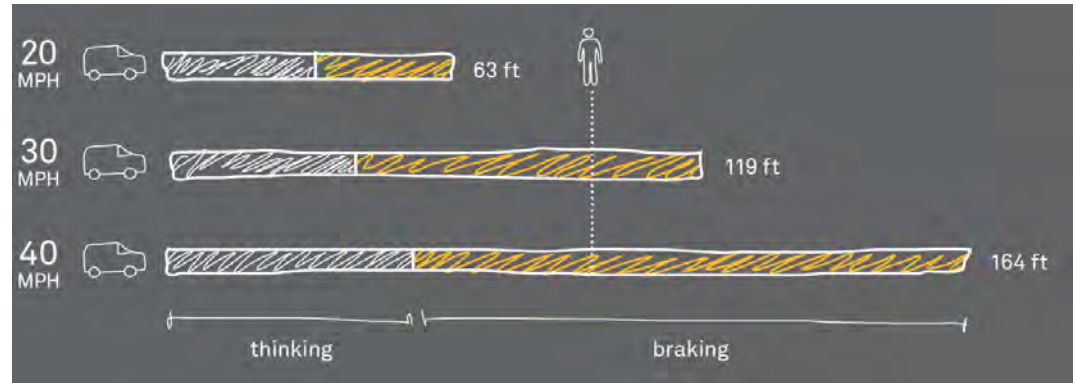
Image Source: Smart Transportation Guidebook, 2005, NJDOT and PennDOT

Existing research

The dangers of speed



Source: NACTO City Limits



How speed kills

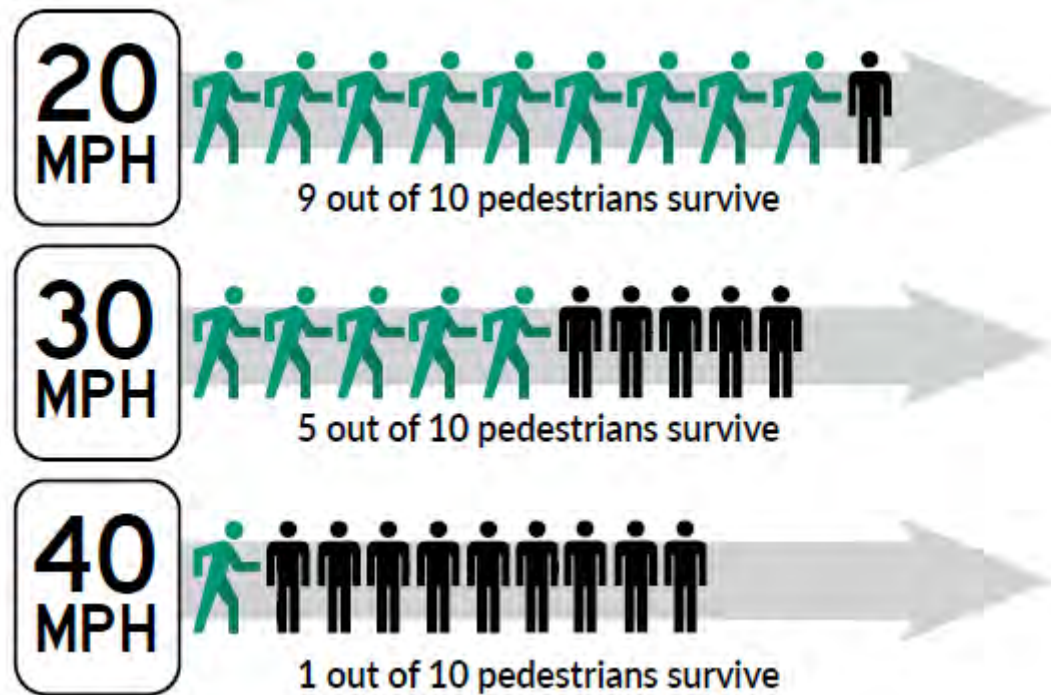
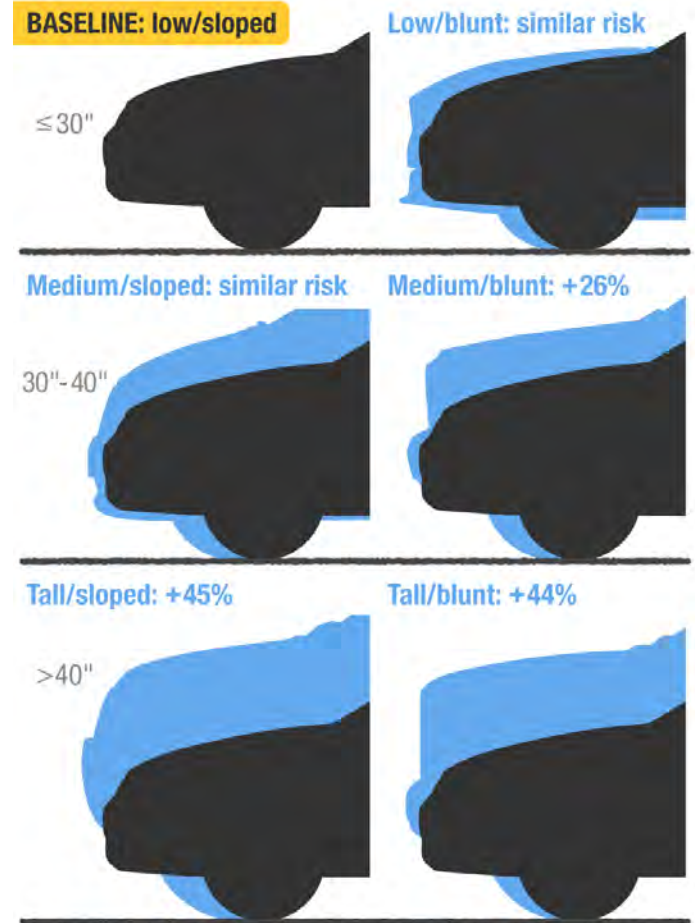


Image Source: Target Zero 2019

Data Source: European Transport Safety Council 1995

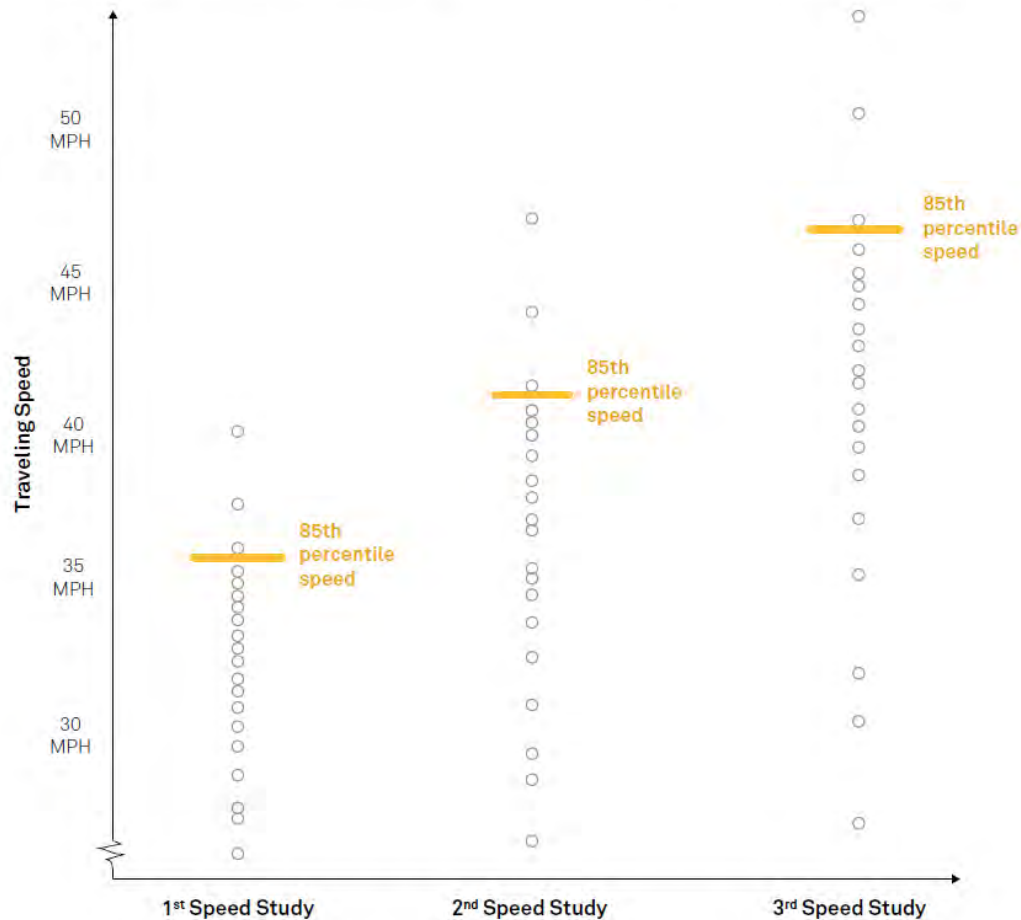
Other factors

- IIHS study of turning vehicles
- IIHS study on front-end vehicle design and pedestrian injury severity in crashes



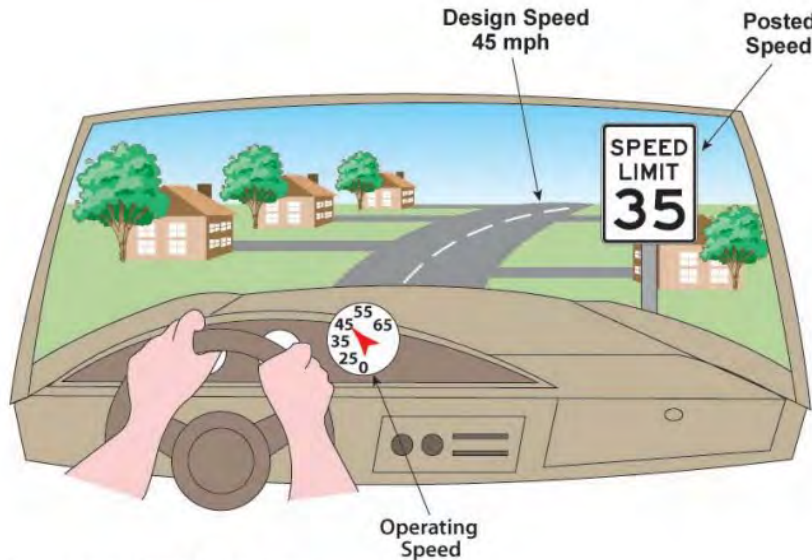
USING PERCENTILES TO DETERMINE SPEED LIMITS
RESULTS IN INCREASED SPEEDS OVER TIME

○ = 5 vehicles (out of 100)
recorded in speed study

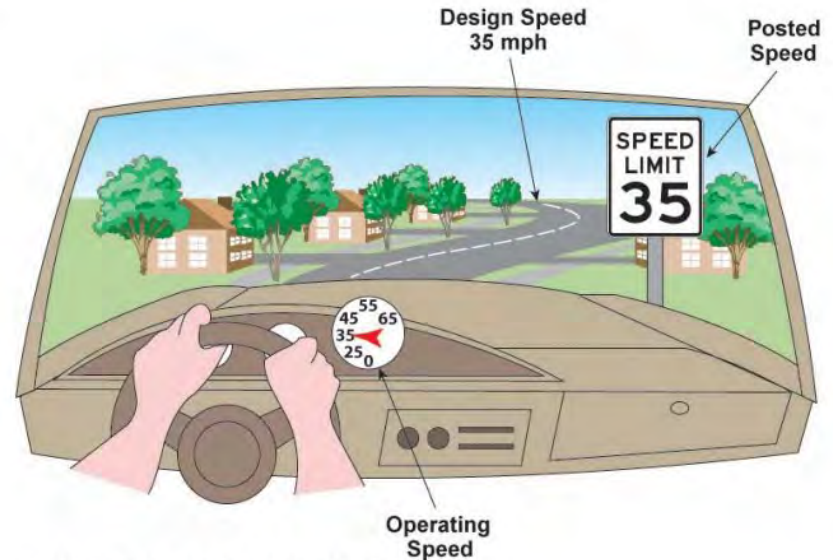


Source: NACTO City Limits

Design speed



Conventional Design



Using Desired Operating Speed

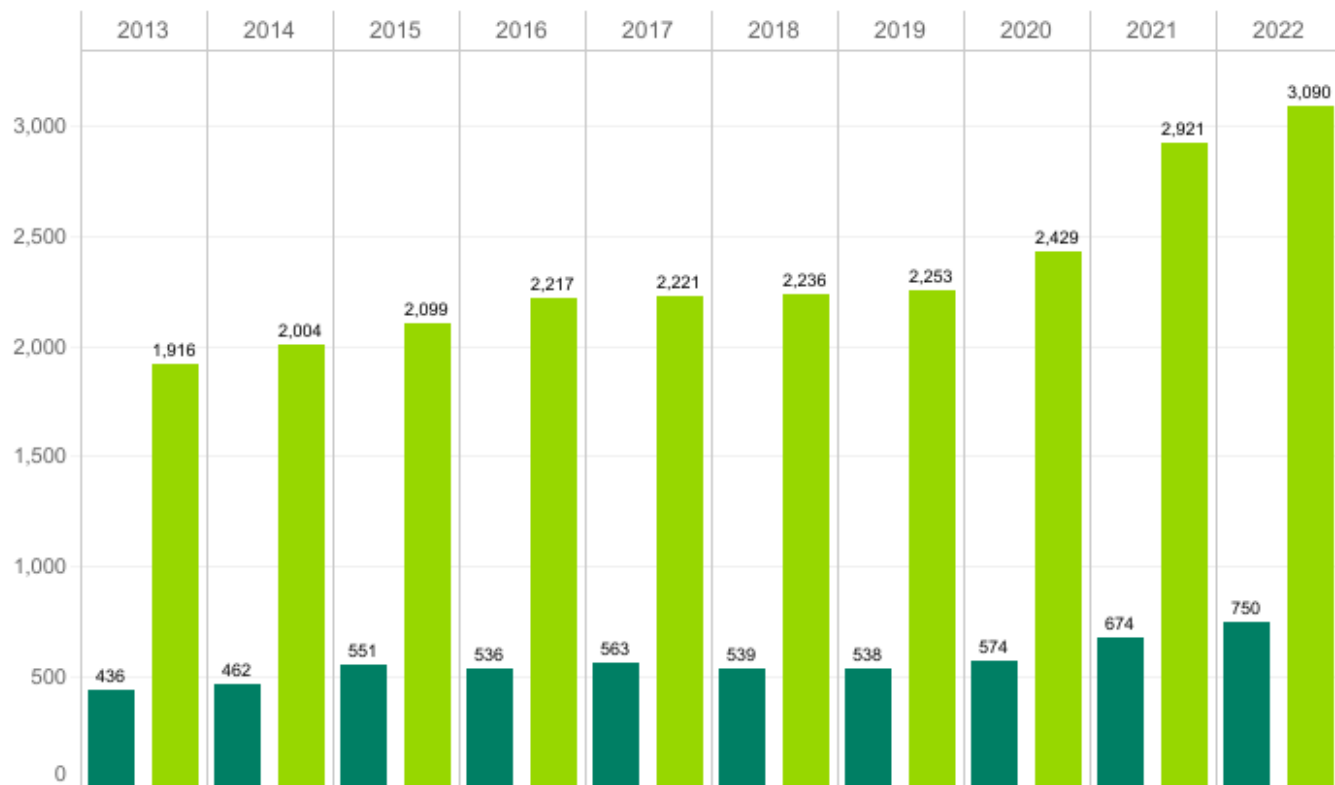
Image Source: Smart Transportation Guidebook, 2005, NJDOT and PennDOT

The safety context

Number of fatalities and serious injuries

Year
Multiple values

Fatalities
Serious Injuries



Source: [WSDOT Gray Notebook](#)

Combined pedestrian and bicyclist fatalities and serious injuries

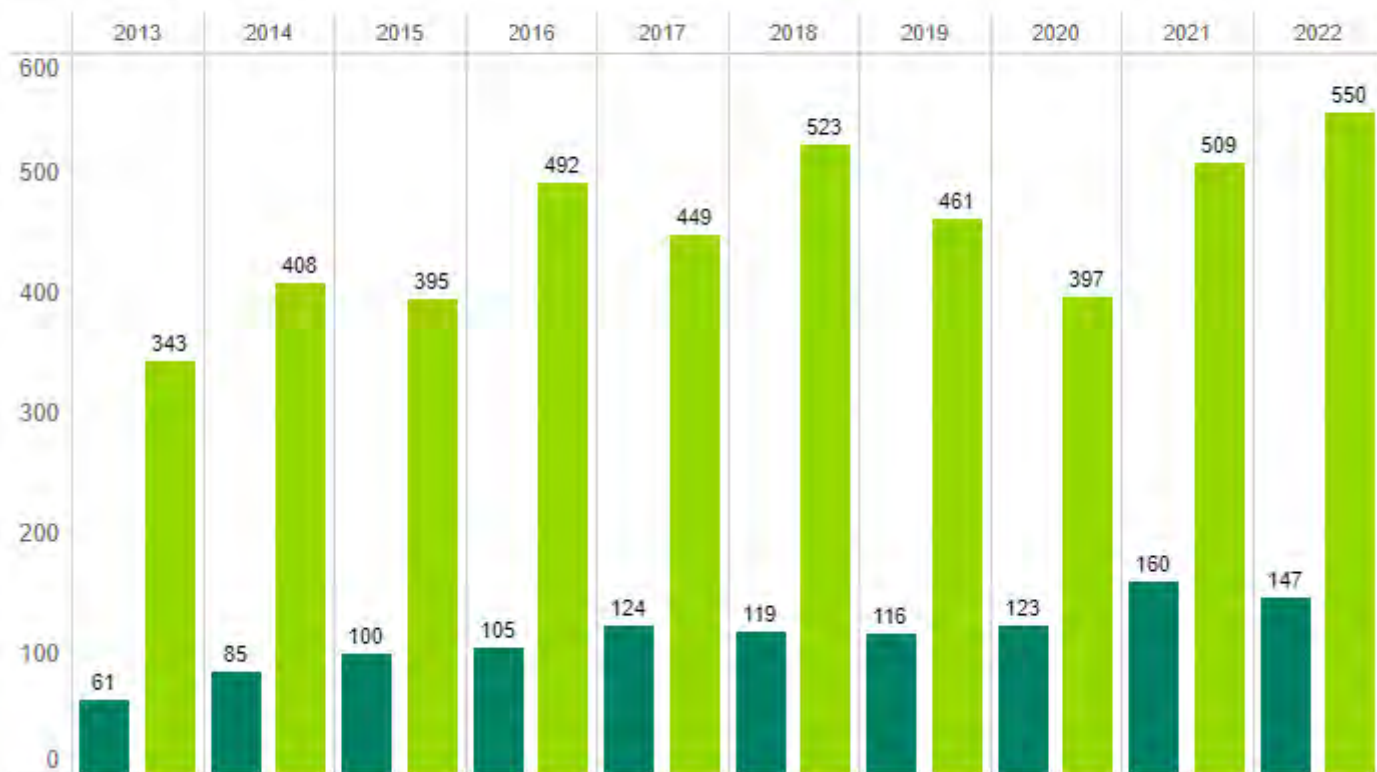
Combined pedestrian and bicyclist fatalities and serious injuries in Washington state; 2013 through 2022

Legend

- Fatalities
- Serious Injuries

Select detail

- Combined
- Bicyclist
- Pedestrian



Source: [WSDOT Blue Notebook](#)

What the public is hearing

In 'vexing' trend, traffic fatalities in Washington state continue to rise

By Libby Denkmann & Hans Anderson

February 15, 2024 / 5:36 pm



Posted Sunday, September 3, 2023 10:16 am

The Chronicle

Division of CT Publishing

Washington State Patrol: Deadliest year for motorists since 1990 and getting worse

NEWS > TRANSPORTATION

Getting there: Washington traffic deaths have continued to increase so far this year

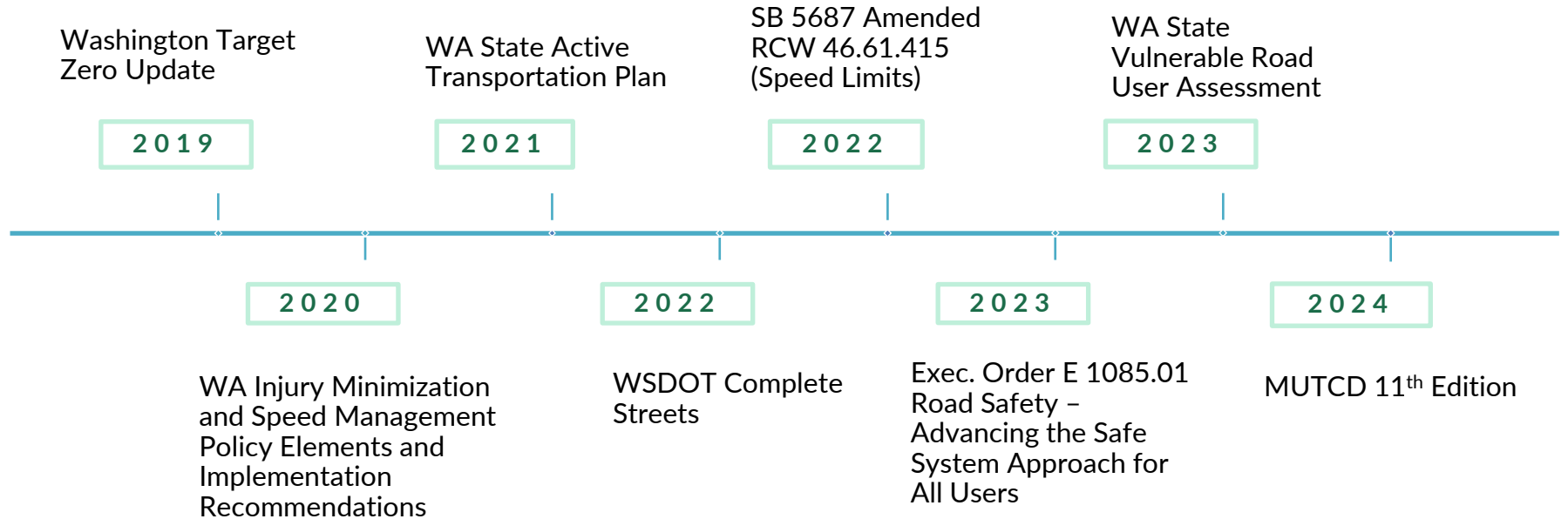
Mon., Sept. 11, 2023



THE SPOKESMAN-REVIEW

Spokane, Washington Est. May 19, 1883

Policy timeline

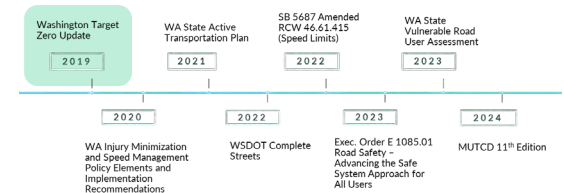


Washington Target Zero Update (2019)

“

The speed of a vehicle is a factor in all crashes. The more force applied, the more damage to the vehicles and injuries to the occupants or pedestrians. Controlling vehicle speed can prevent crashes and reduce their impact by lessening the severity of injuries sustained by the victims.”

“**Posted speed is an important factor.** Higher operating speed—whether or not the driver is actually exceeding the posted speed limit or driving too fast for conditions—increases exposure to negative outcomes. This is both in terms of the likelihood of being involved in a crash, as well as in terms of the severity of injuries sustained by those involved.”



WA Injury Minimization and Speed Management Policy Elements and Implementation Recommendations (2020)

“ Driver speed is directly linked to the likelihood of a crash and to crash severity. The current system is not bringing about the desired goals of reducing injuries and eliminating traffic deaths. Taken together the information and research reviewed by the work group **presents a strong basis for the need to change the operating speeds on many segments of Washington’s streets and roads.** ”

Washington State Injury Minimization and Speed Management Policy Elements and Implementation Recommendations

Prepared and Reviewed by:

Washington Injury Minimization and Speed Management Policy and Guidelines Workgroup

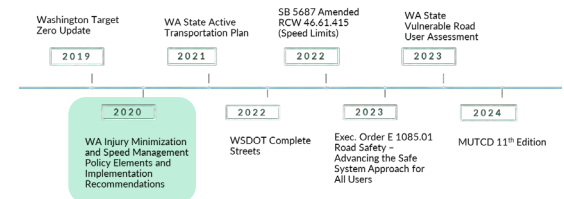
Members

Andrew Beagle, P.E. City of Olympia
 Charlotte Clarkbook, WSDOT, Active Transportation Division (Facilitator)
 Scott Davis, P.E. WSDOT, Headquarters (HQ) Traffic Operations, formerly with Thurston County
 Josh Diekmann, P.E. PTOC, City of Tacoma (Active Transportation Safety Council Member)
 John Desjardis, P.E. City of Richland
 Dongho Chang, P.E. Traffic Engineer, City of Seattle (Active Transportation Safety Council Member)
 Mike Donnell, WSDOT, HQ Traffic Operations
 Peter Eurt, Transportation Safety Engineer, Federal Highway Administration, Resource Center, Safety and Design Team, Pedestrian Safety
 Matthew Enders, P.E. WSDOT, HQ Local Programs
 Will Hitchcock, Washington State Department of Health
 Colleen Jodie, Retired WSDOT Tribal Liaison
 Scott Langer, P.E. WSDOT Southwest Region, Assistant Region Traffic Engineer
 Katherine Miller, P.E. City of Spokane
 John Milton, PhD, P.E., NPS2L, PTOC, WSDOT, HQ Transportation Safety & Systems Analysis, State Safety Engineer
 Gabe Phillips, AICP WSDOT, HQ Multimodal Planning
 Chris Schwedes, WSDOT, HQ Design Office & Lead for WSDOT Multimodal Technical Forum
 Jeff Shea, P.E., Kitsap County
 Kira Van Skaill-Wyck, Safety Engineer, WSDOT, HQ Design Office
 Kiri Vinick, AICP Lummi Tribe
 Scott Waller, Washington Traffic Safety Commission
 Bayne Whitehead, City of Blaine (WA City Design Standards Committee Member)
 Chris Workman, P.E. Washington Transportation Improvement Board

October 2020

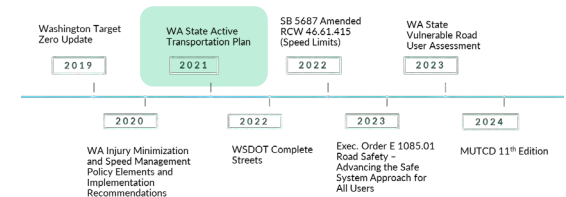
DISCLAIMER

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WA State Active Transportation Plan (2021)

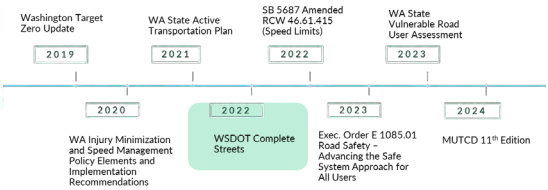
86%
OF PEDESTRIAN & BICYCLIST
FATALITIES
OCCURRED ON ROADS WITH A
POSTED SPEED OVER
25 MILES
PER
HOUR
FROM **2010-2019**



State routes – Complete Streets (2022)



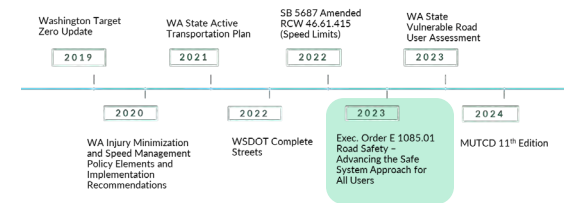
https://caltransdot.gov/projects/like-hills/like-hills/2018-04-23-001_Cat_Cover_Motor_Vehicle_Parking.pdf



State routes – Executive Order E 1085.01 (2023) Road Safety – Advancing the Safe System Approach for All Users



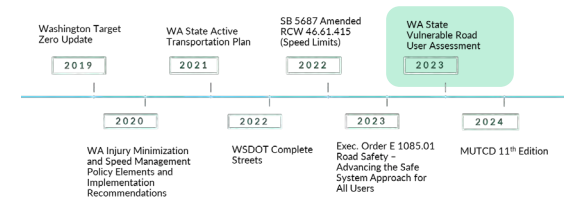
“Prioritizing design and operational decisions that support safety for all users based on the context of the road, particularly in locations affected by legacy state transportation facilities and where gaps in walking and biking facilities exist, as outlined by the Active Transportation Plan.”



WSDOT Vulnerable Road User Safety Assessment (2023)



“For speeds posted 30 mph and above, death and serious injury potential rapidly increases. Target speeds and adjustment to achieve target speeds is an important concept for these locations to bring speed and crash forces down. Appropriate speed management techniques and self-enforcing/explaining roads concepts will help reduce speeds at these locations.”



What does this mean for you?



Washington state law

WAC 468-95-045

Speed limit sign (R2-1).

Revise MUTCD Section 2B.13 to read:

Standard:

Speed Limits (R2-1) signs (see Figure 2B-1) shall display the speed limit established by statute; or, by an ordinance or regulation adopted by the authorized agency, based on the engineering study or traffic investigation required by RCW [46.61.405](#), [46.61.410](#), and [46.61.415](#). The speed limit shall be set in multiples of 5 mph.

Guidance:

Authorized agencies should reevaluate speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review.

No more than three speed limits should be posted on any one Speed Limit sign or assembly.

When evaluating speed limits, the following factors should be considered:

- The 85th percentile speed of vehicles traveling on the road;
- Road characteristics, shoulder condition, grade, alignment, and sight distance;
- The pace speed;
- Roadside development and environment;
- Parking practices and pedestrian activity;
- Reported crash experience for at least a 12 month period; and
- Other factors such as route development or comprehensive plans.

RCWs

- [RCW 46.61.400](#) – **Basic rule and maximum limits**
- [RCW 46.61.405](#) – **Decreases by secretary of transportation**
- [RCW 46.61.410](#) – **Increases by secretary of transportation**
- [RCW 46.61.415](#) – **When local authorities may establish or alter maximum limits**
- [RCW 46.61.440](#) – **Maximum speed limit when passing school or playground crosswalks**

RCW 46.61.415

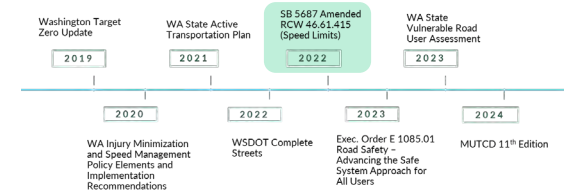
Amended in 2022

(3)(a) **Local authorities** in their respective jurisdictions may establish a maximum speed limit of **20 miles per hour on a nonarterial highway or part of a nonarterial highway.**

(b) A speed limit established under this subsection by a local authority **does not need to be determined on the basis of an engineering and traffic investigation if the local authority has developed procedures regarding establishing a maximum speed limit under this subsection.**

Any speed limit established under this subsection may be canceled within one year of its establishment, and the previous speed limit reestablished, without an engineering and traffic investigation. This subsection does not otherwise affect the requirement that local authorities conduct an engineering and traffic investigation to determine whether to increase speed limits.

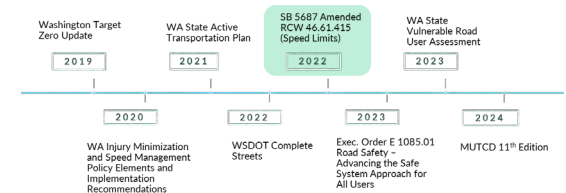
(c) When establishing speed limits under this subsection, local authorities shall consult the manual on uniform traffic control devices as adopted by the Washington state department of transportation.



RCW 46.61.405

Amended in 2022:

“(2) The secretary of transportation may establish a maximum speed limit **of 20 miles per hour on a nonarterial state highway, or part of a nonarterial state highway**, without a determination made on the basis of an engineering and traffic investigation, subject to the conditions described in RCW 46.61.415(3).”



What does this mean for you?



Source: [JAYRAY](#)

Practitioner tools

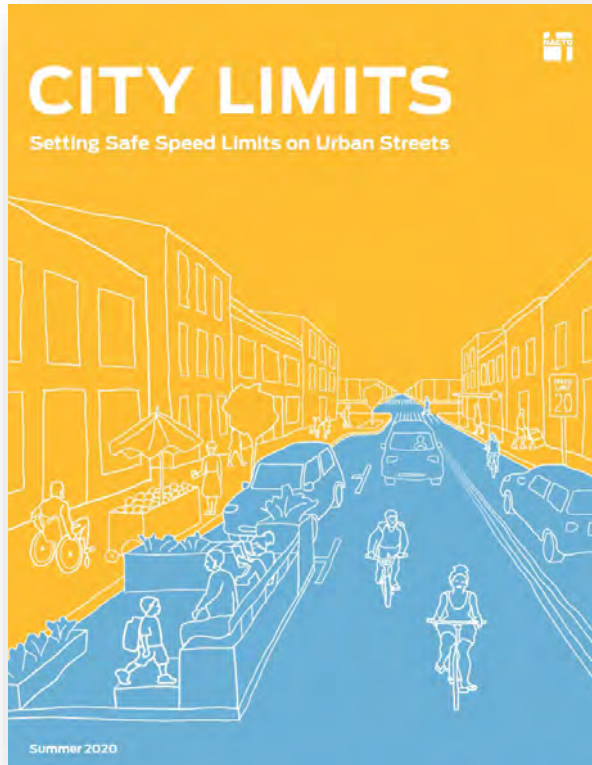
Per WAC 468-95-045

Authorized agencies should reevaluate speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review...

When evaluating speed limits, the following factors should be considered

- The 85th percentile speed of vehicles traveling on the road;
- Road characteristics, shoulder condition, grade, alignment, and sight distance;
- The pace speed;
- Roadside development and environment;
- Parking practices and pedestrian activity;
- Reported crash experience for at least a 12 month period; and
- Other factors such as route development or comprehensive plans.

Practitioner tools



Washington State Injury Minimization and Speed Management Policy Elements and Implementation Recommendations

Prepared and Reviewed by:

Washington Injury Minimization and Speed Management Policy and Guidelines Workgroup

Members

Andrew Beagle, P.E. City of Olympia
Charlotte Claybrooke, WSDOT, Active Transportation Division (Facilitator)
Scott Davis, P.E. WSDOT, Headquarters (HQ) Traffic Operations, Formerly with Thurston County
Josh Diekmann, P.E. PTOE City of Tacoma (Active Transportation Safety Council Member)
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Chris Schroedel, WSDOT, HQ Design Office & Lead for WSDOT Multimodal Technical Forum
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Kirk Vinish, AICP Lummi Tribe
Scott Waller, Washington Traffic Safety Commission
Ravyn Whitewolf, City of Blaine (WA City Design Standards Committee Member)
Chris Workman, P.E. Washington Transportation Improvement Board

October 2020

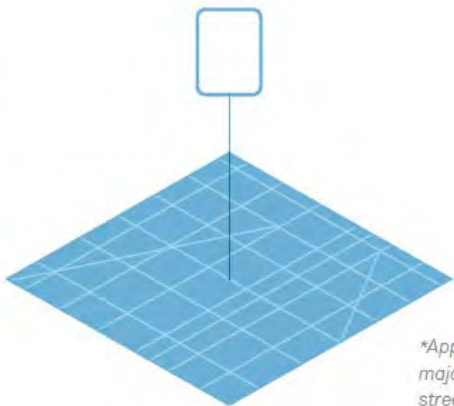
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City Limits tools

Default Speed Limits*

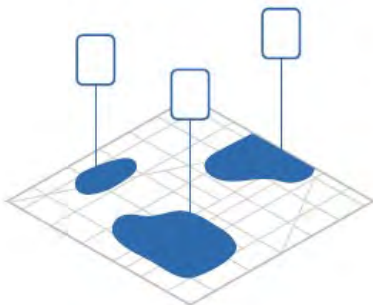
Set default speed limits on many streets at once.



**Applicable on all streets—major, minor, and shared streets / alleys*

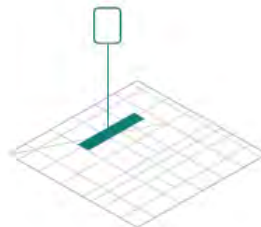
Slow Zones

Designate slow zones in sensitive areas.



Corridor Speed Limits*

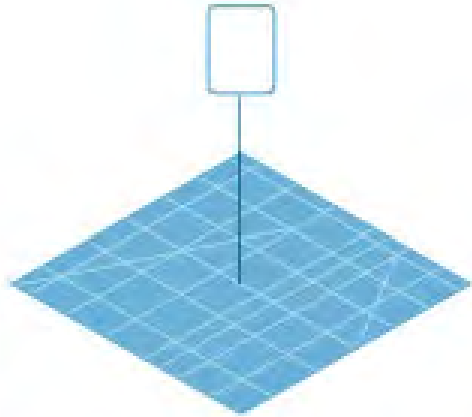
Set corridor speed limits on high priority major streets using a Safe Speed Study (see page 58).



**Applicable on major streets only*

Default speed limits

Default citywide

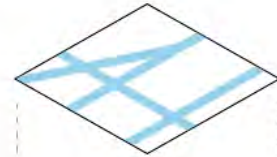


Default Citywide Speed Limit

Category

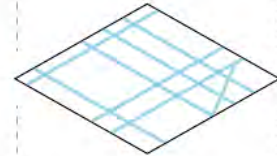
MAJOR
STREETS:

25
MPH



MINOR
STREETS:

20
MPH



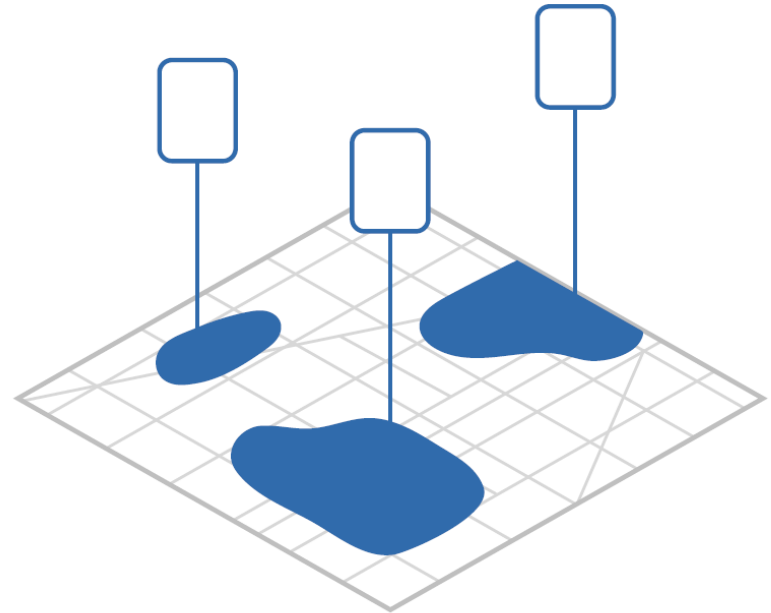
SHARED
STREETS
& ALLEYS:

10
MPH



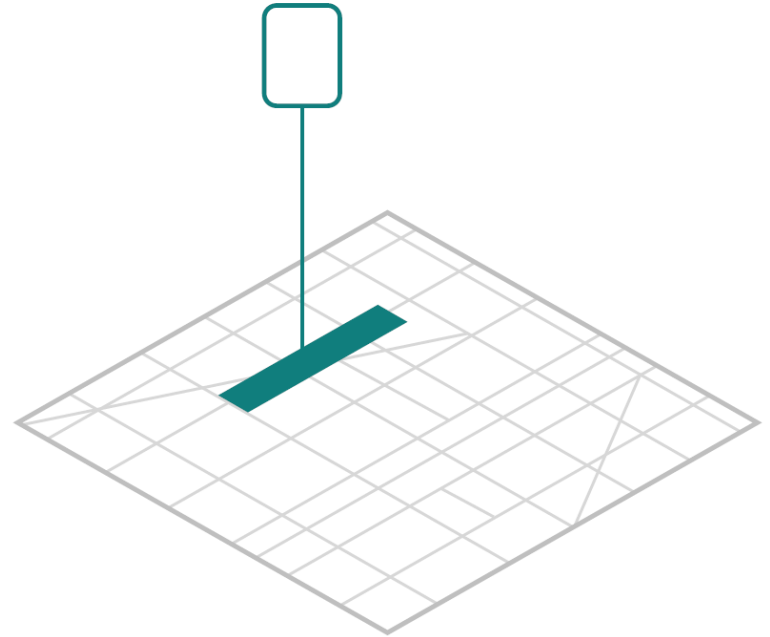
Slow zones

- School, park, and senior areas
- Downtown
- Neighborhoods and districts



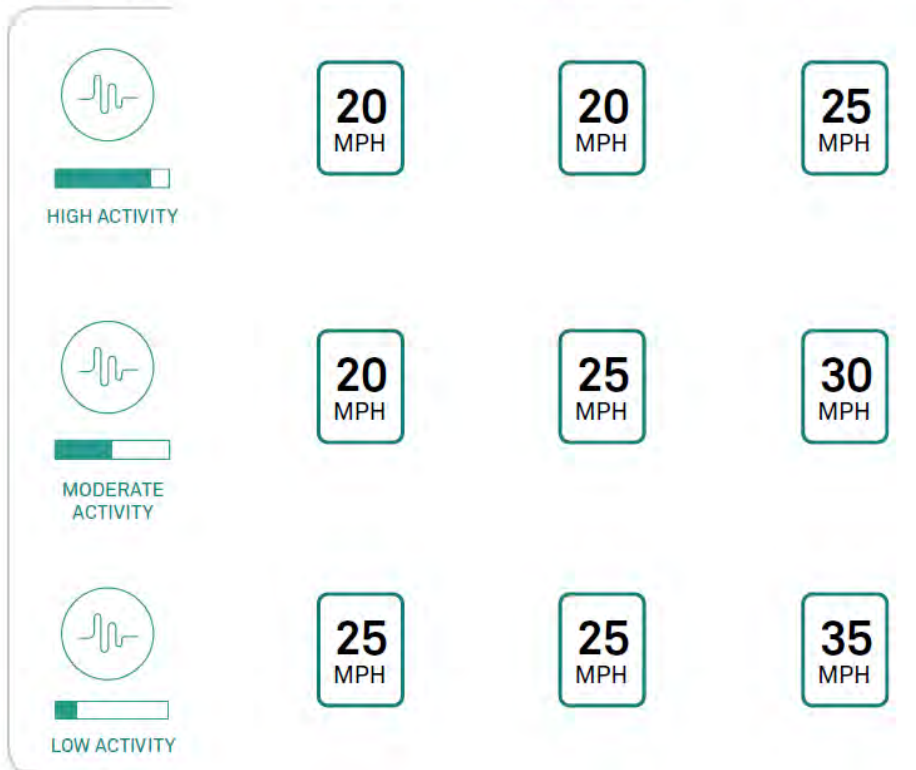
Corridor speed limits

1. Collect before data
2. Analyze existing conditions
3. Determine best options for speed management
4. Conduct an evaluation



CONFLICT DENSITY:

ACTIVITY LEVEL:

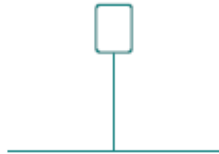


WA Injury Minimization & Speed Management Workgroup

Example target speeds based on research:

- 20 mph for residential and business districts
- 25 mph or less target for arterials and state highways that are not limited access in urban, suburban and rural town centers where origins and destinations are within a walking (1 mile) or biking (3 mile) distance;
- 30 - 45 mph on rural roads where there are no median barriers and head-on collisions are possible.

3. Determine best option for speed management



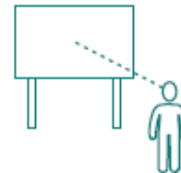
Signs and markings



Automated enforcement

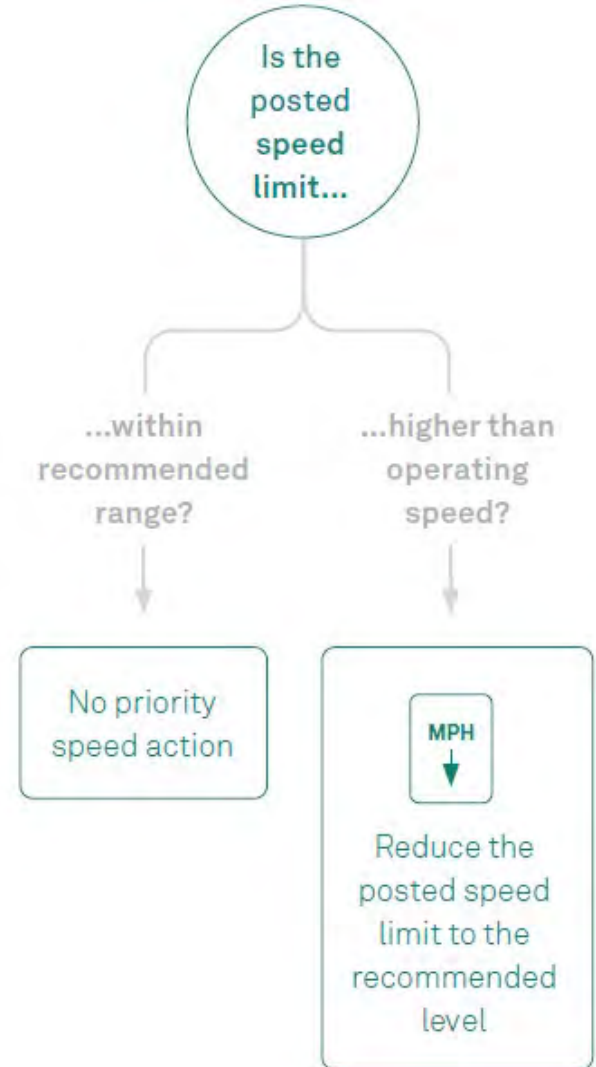


Design and operations

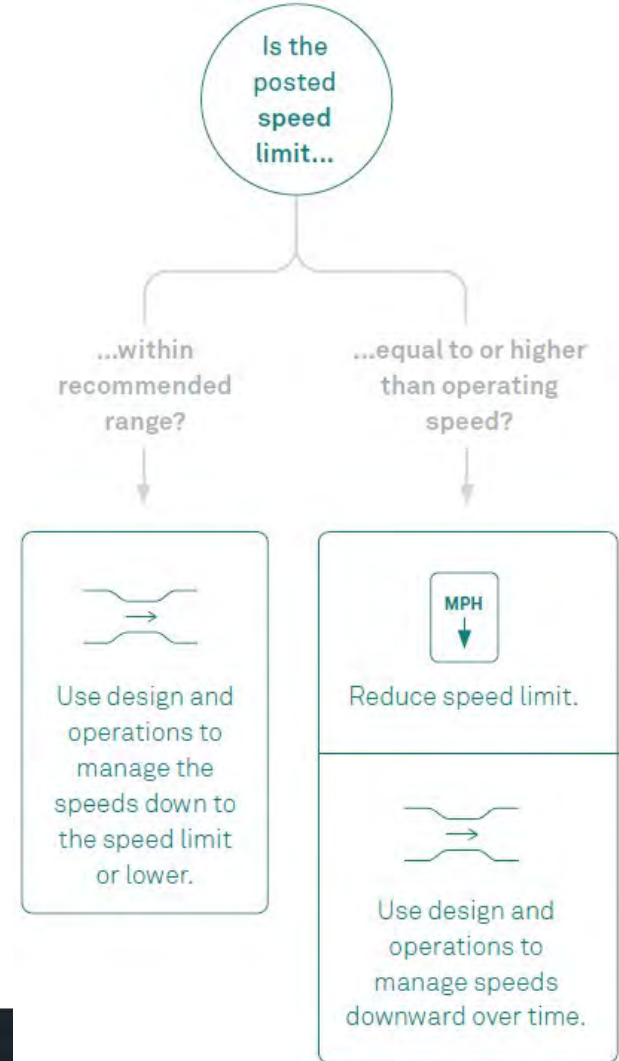


Messaging and education

If the operating speed is at or below the maximum safe speed...



If the operating speed is above the maximum safe speed...



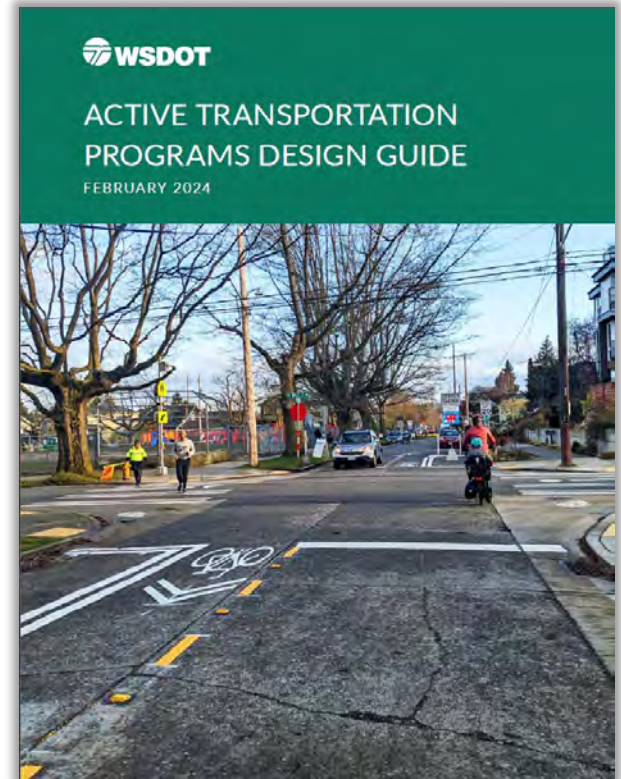
WA Injury Minimization & Speed Management Workgroup

- If operating speed **is within 5 mph** of the target speed, adopt the target speed
 - Use speed management as needed to reach compliance
- If the operating speed **exceeds** the target speed by more than 5 mph, use an engineering study to determine a starting posted speed limit
 - Adjust the speed limit down over time with speed management to achieve the target speed

Speed management tool selection

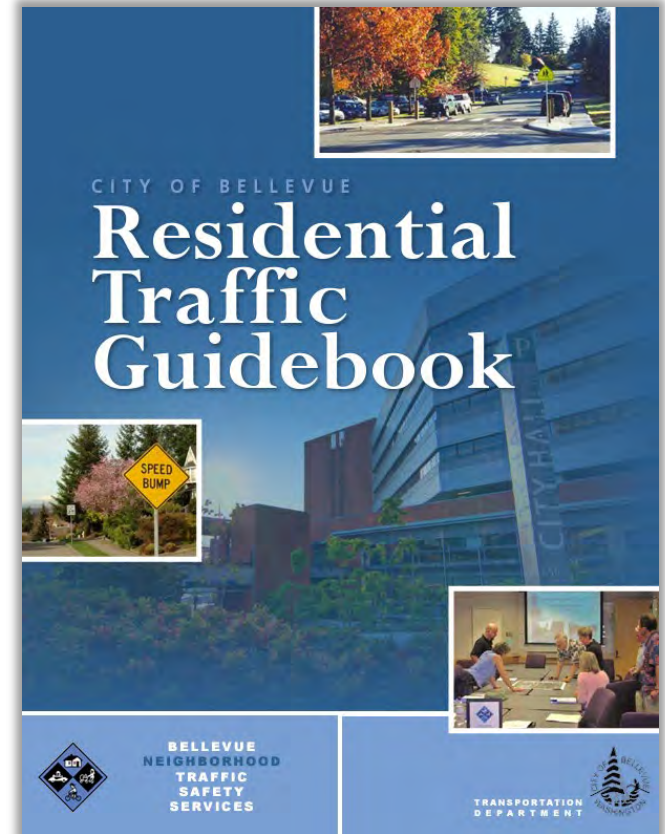
Resources include:

- [WSDOT Active Transportation Programs Design Guide](#)
- [WSDOT Design Manual](#)
- [Institute of Transportation Engineers](#)
- [FHWA Traffic Calming e-Primer](#)



Washington traffic calming

- [Yakima Neighborhood Traffic Program](#)
- [Bellevue Neighborhood Traffic Safety Services](#)
- [Spokane Traffic Calming Program](#)
- [Seattle Traffic Calming](#)



4. Conduct an evaluation



Change in the number of high-end or top-end speeders; change in operating speed



Change in the number of speeding opportunities



Change in the number of people killed or severely injured



Change in conflict counts

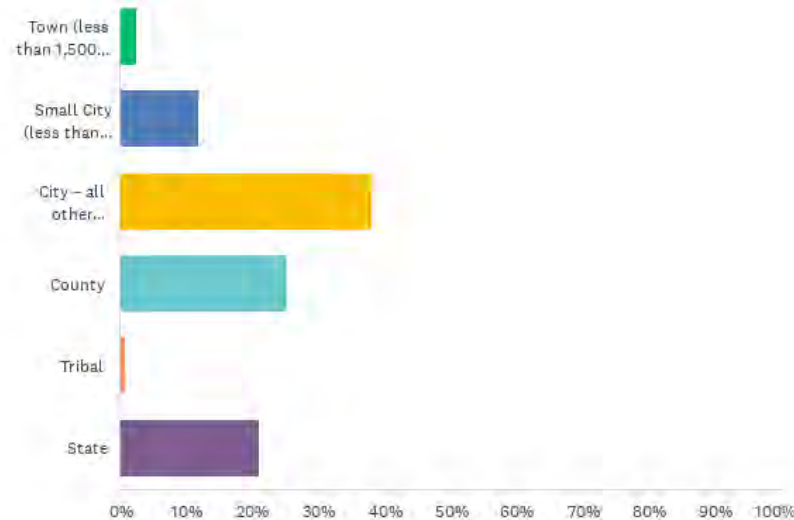
Additional information

- City Limits
 - Analyzing speed data approaches
 - Checklists for analyzing existing conditions
- WA Injury Minimization Speeds Workgroup
 - Recommendations for partners and policy changes
- Speed management
- Work zone speed limits

Questions to attendees

Speed Limit and Speed Management Practices in Washington State (2019)

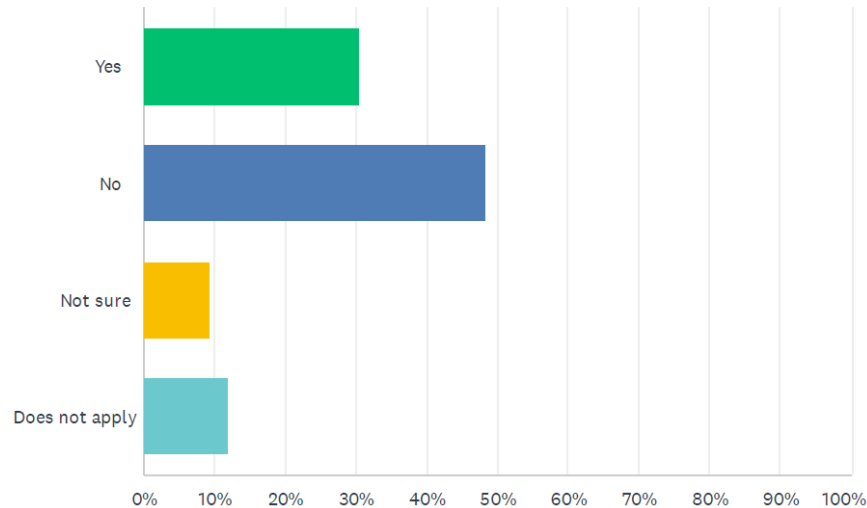
Q1 Check the agency type that applies to your current work situation



20 mph speed limits

Q12 Have you established a 20mph speed limit on non-collector streets in residential or neighborhood business districts per RCW 46.61.415 (3)(a)?

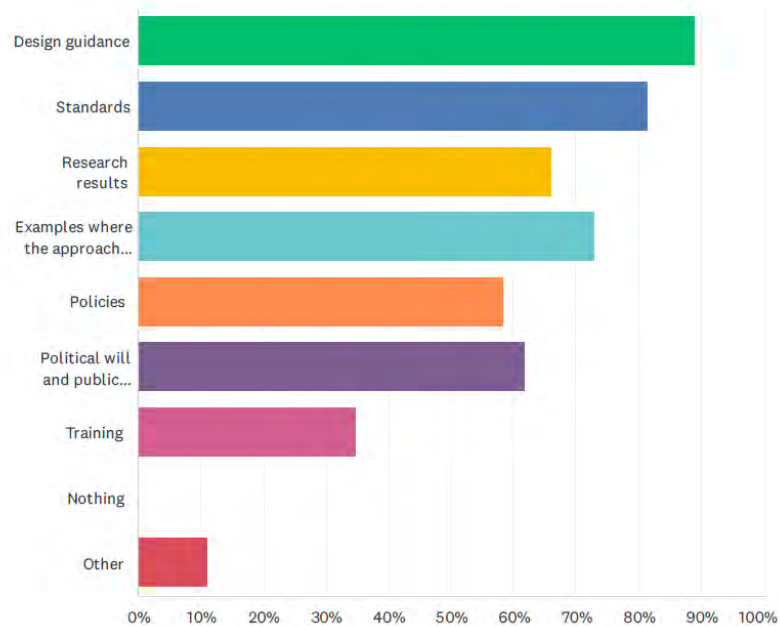
Answered: 118 Skipped: 0



Professional practice factors

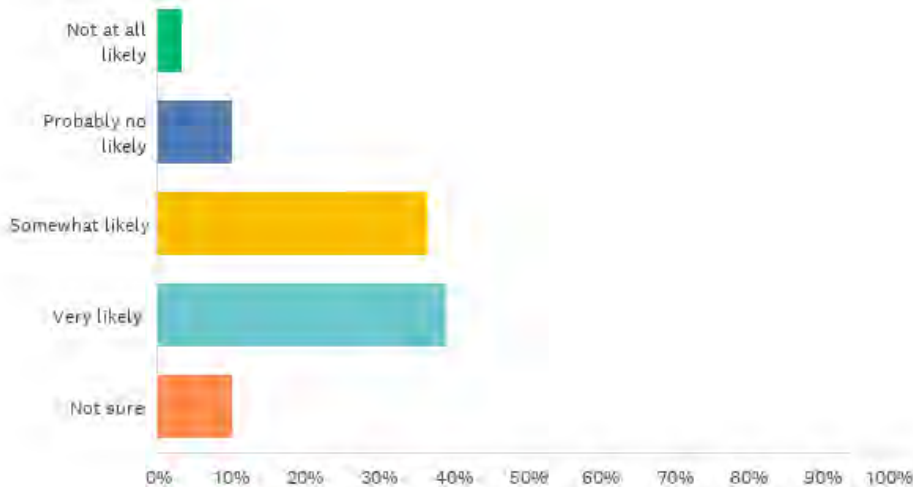
Q11 What factors influence your professional practice around road design, traffic operations, and setting speed limits as it applies to reducing injury severity in crashes? (choose all that apply)

Answered: 118 Skipped: 0



Change Speed Limit Setting Practice

Q10 How likely are you to consider changing your practice around road design, traffic operations and setting speed limits to get to operating speeds that would minimize injury severity?



Barriers to Changes in Speed Limits

- Local ordinances
- Political will or interest
- Public concerns
- Department procedures
- Funding for engineering and traffic investigations
- Funding for speed management projects
- Personnel capacity
- Other?

Funding opportunities

Funding opportunities

- [FHWA Safe Streets and Roads for All \(SS4A\) Grant Program](#)
- [WSDOT Safe Routes to School Program](#)
- [WSDOT Pedestrian/Bicyclist Program](#)
- [WSDOT Highway Safety Improvement Program](#)

Next steps for us

Next steps for us

- Continue to collect Washington case studies
- Identify barriers to speed limit setting for safety
- Create tools to best support agencies in implementing safer speed limits
- Provide training to local agencies and other practitioners

List of references

- [Washington State Injury Minimization and Speed Management Policy Elements and Implementation Recommendations](#)
- [Washington State Target Zero](#)
- [WSDOT Active Transportation Plan](#)
- [Washington Traffic Safety Commission Speeding in School Zones Study](#)
- [NACTO City Limits](#)
- [Insurance Institute for Highway Safety](#)

Active Transportation Contacts for Local Agencies

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Active Transportation Programs Manager
(360) 790-5231, claybrc@wsdot.wa.gov

Pedestrian and Bicycle Program and Safe Routes to School Program

2024 Call For Projects

Charlotte Claybrooke
Active Transportation Division
Washington State Department of Transportation
April 30, 2024

Both Programs 2025-2027

- All roads
- All public agencies & tribal governments are eligible
- Projects must:
 - Comply with funding requirements
 - Be in (or added to) local Transportation Improvement Program
 - No match is required



A man carrying a child and a woman pushing a stroller while walking on a shared use path.

Pedestrian and Bicycle Program

- Eliminate pedestrian and bicyclist fatal and serious injury crashes and increase the numbers of walkers and bikers
- ~\$23 million expected for the 2025-2027 biennium
- Multi-Modal Account and Climate Commitment Act (*state funds*)
- No minimum or maximum request limits.
- Application due – May 31, 2024

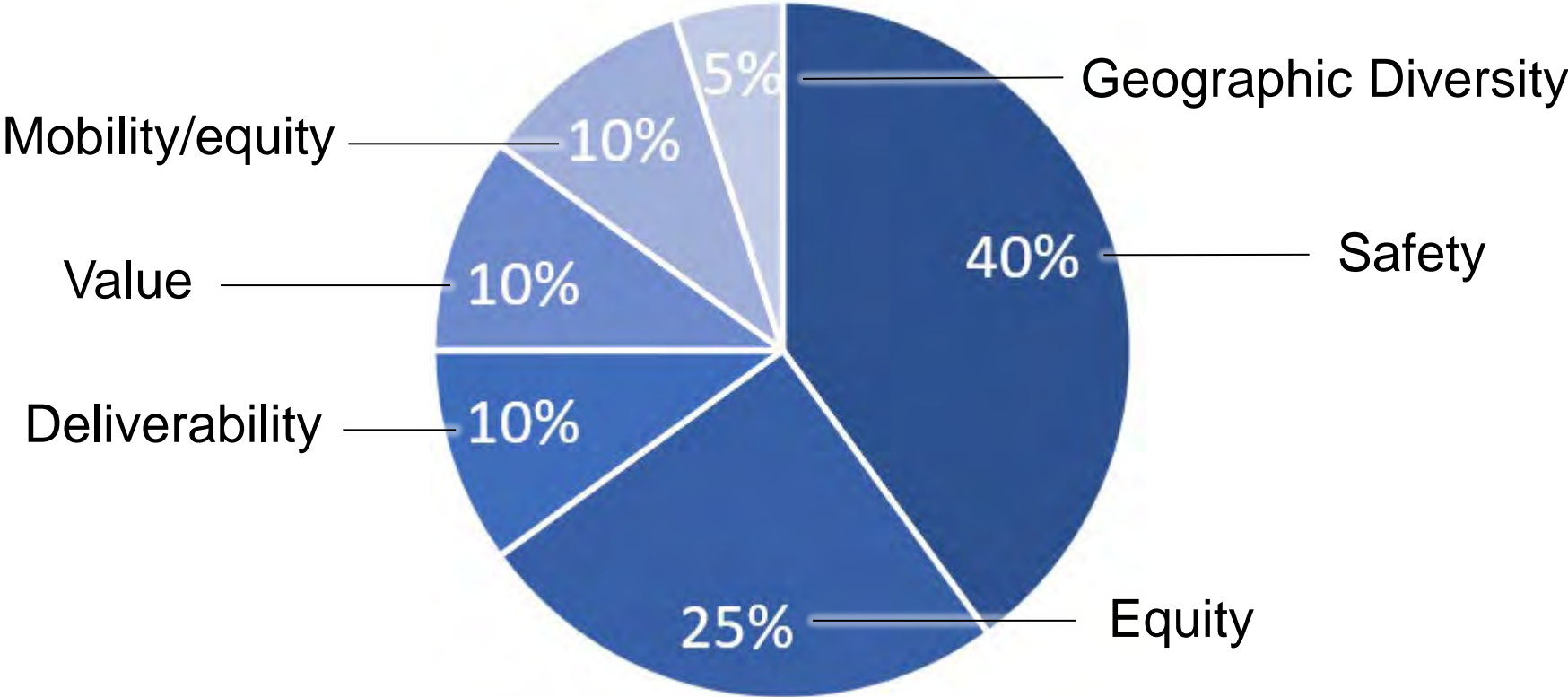


Safe Routes to School Program

- Increase the number of children walking and biking to school safely
- ~\$25.6 million expected for the 2025-2027 biennium
- State & federal funds
- No minimum or maximum request limits. Nonprofit entities are eligible
- Application due – June 7, 2024



Project Review Criteria:



Call for Projects

WSDOT Pedestrian & Bicycle Program webpage

- ↳ [Pedestrian & Bicycle program call for projects webpage](#)
- ↳ [Application Survey Monkey link](#)

WSDOT Safe Routes to School Program webpage

- ↳ [Safe Routes to School Program call for projects](#)
- ↳ [Application Survey Monkey link](#)

Active Transportation Division Contacts

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Chris Hawkins
Active Transportation Planner
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Thank you!

Next Forum and Peer Exchange:

- ✓ September 2024
- ✓ Do you have a topic of interest?
- ✓ Contacts:
 - Ed Spilker– Ed.Spilker@wsdot.wa.gov
 - Charlotte Claybrooke– ClaybrC@wsdot.wa.gov



Credit: City of Spokane Valley