

An aerial photograph of a residential street in Klamath Falls, Oregon. The street is paved and has a white curb. On the left side, there are several houses, including a prominent two-story brick building. On the right side, there are more houses and trees with autumn foliage. In the background, a range of mountains is visible under a cloudy sky.

KLAMATH FALLS TRANSPORTATION SAFETY ACTION PLAN

MARCH 2024



Inside front cover

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Klamath Falls Transportation Safety Action Plan

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SECTION 1

INTRODUCTION



Introduction

Between 2017 and 2021, 113 people were killed or seriously injured in crashes on Klamath Falls streets. This Transportation Safety Action Plan (TSAP) aims to eliminate these serious crashes within the Klamath Falls Urban Growth Boundary (UGB) through strategic investments in infrastructure and programs. Developed in coordination with the City of Klamath Falls, Klamath County, Oregon Department of Transportation (ODOT), and other regional partners, this TSAP provides a data-driven framework for decision making and resource allocation to improve roadway safety on all streets within the Klamath Falls UGB (Figure 1).

Eliminating fatal and serious injury crashes in Klamath Falls is possible through collaboration, strategic investment, and a shared commitment by transportation agencies and the community to prioritize safety.

This plan recommends site-specific and systemic countermeasures and multidisciplinary initiatives to address fatal and serious injury crash trends and locations. Further, the TSAP establishes performance measures to track its implementation and the progress made toward the ultimate goal of zero fatalities and serious injuries.

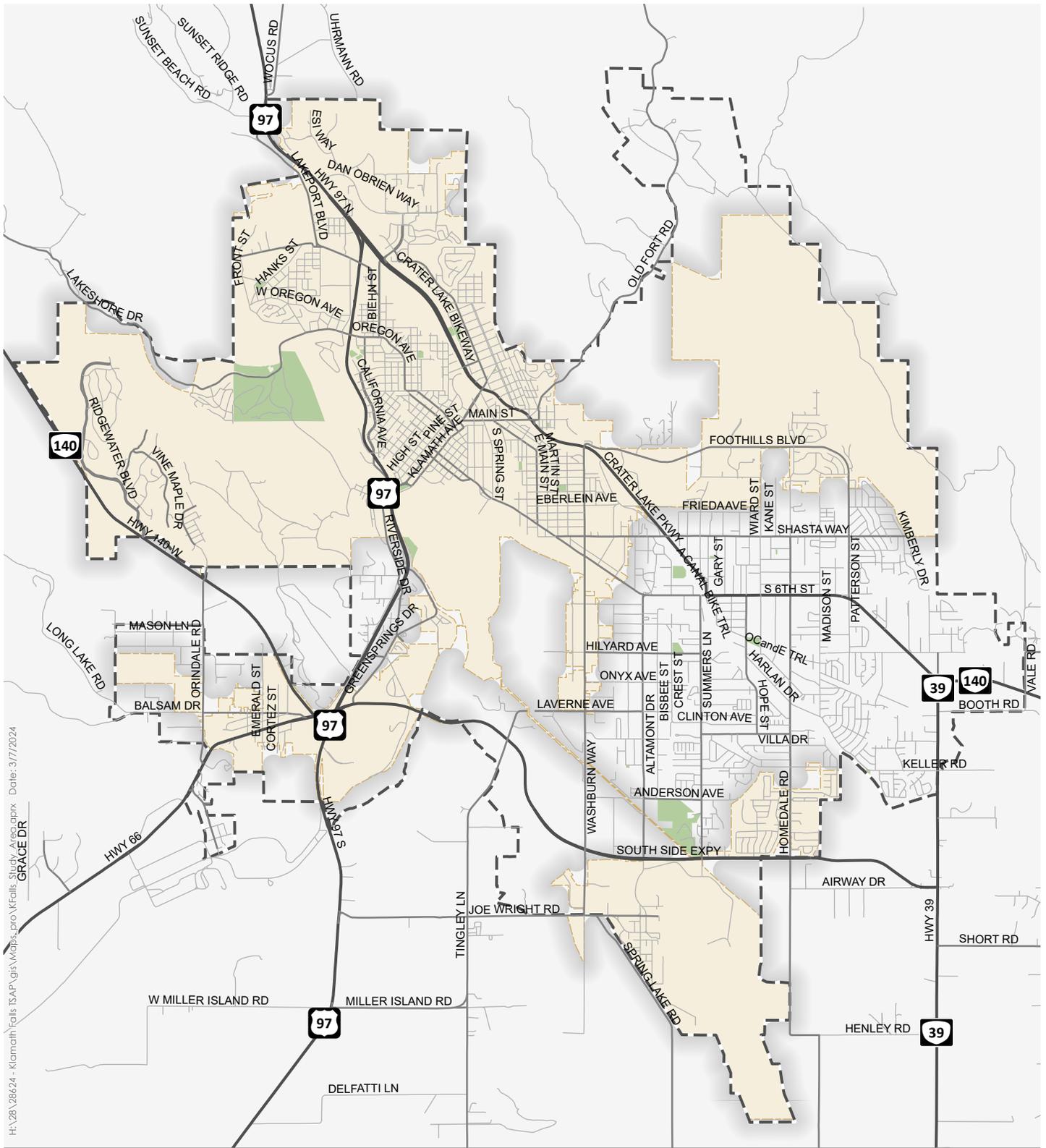
SAFETY GOAL AND POLICIES

The following safety goal and associated policies developed for this plan are based on the Klamath Falls Urban Area Transportation System Plan, Oregon TSAP, and National Roadway Safety Strategy, as well as input provided by partner agencies and the community.

Goal: The City of Klamath Falls has an accessible, welcoming, and comfortable transportation system for all users, including the most vulnerable. The system is designed to result in zero serious injuries or fatal crashes. The City recognizes that the transportation system must be designed and operated with these objectives as a top priority.

There are six specific policies to support the safety goal:

1. Reduce transportation-related fatalities or serious injuries through design, operation, maintenance, education, and enforcement, with the objective of zero serious injuries and fatalities.
2. Prioritize the needs and safety of all users in transportation projects, programs, and funding decisions, with special attention to the needs of vulnerable users.
3. Design its roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.
4. Establish and enforce appropriate motor vehicle travel speeds for the safety of all roadway users.
5. Provide transparent, easy to understand, and effective communication programs to encourage safe travel on the transportation system.
Regularly coordinate with emergency service providers and other safety partners to improve transportation planning, design, and maintenance activities.



H:\28\28624 - Klamath Falls TSAP\gis\maps\pro\Kfalls Study Area.aprx Date: 3/7/2024
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- Highway
- Arterial
- Collector
- Local Street
- UGB (Study Area)



Figure 1
Study Area
Klamath Falls, Oregon

The recommended strategies, actions, and performance measures in this plan implement the safety goal and these policies. To work toward a goal of zero traffic-related fatalities and serious injuries, the City commits to reducing these serious crashes by 50 percent over the next 25 years.

PLAN DEVELOPMENT PROCESS

A comprehensive approach to transportation safety acknowledges that policy, planning, programming, and projects are multidisciplinary. Recognizing this, the U.S. Department of Transportation (USDOT) has adopted the Safe System Approach to guide its roadway safety efforts. Figure 2 illustrates the six principles and five objectives of the Safe System Approach. The six SSA principles, shown on the outside ring of the figure, encompass the fundamental beliefs upon which the approach is built. The five SSA objectives, shown in the middle ring of the figure, are conduits through which the approach is implemented.

To achieve this multidisciplinary plan, input was gathered from a variety of community interests throughout the plan development process:

- **Project Management Team (PMT)** – The PMT included key staff from the City of Klamath Falls who met regularly to provide technical input during key steps.
- **Project Advisory Committee (PAC)** – The PAC represented a wide range of interests (i.e., City and County public works, planning, health, and police departments, City Planning Commission and City Council members, schools, Kingsley Field, ODOT, Sky Lakes Medical Center, and the Klamath County Fire District) and met twice at key project milestones to provide input on the existing conditions analysis and emphasis areas and the TSAP’s policy, program, and project recommendations.
- **Public Outreach** – The planning process included two rounds of public outreach at key milestones to inform transportation safety needs and develop associated recommendations. More details on these efforts are described in Section 2 of this plan.

The plan was developed using the process shown in Figure 3.



Figure 2. Safe System Approach Principles and Objectives (Source: Federal Highway Administration, FHWA)



Figure 3. TSAP Planning Process

Plan monitoring and revisions will occur regularly as described in the last section of this document.

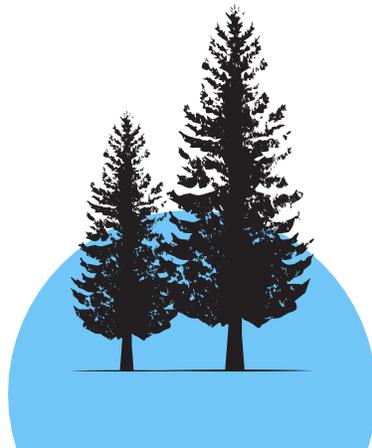
TSAP ORGANIZATION

The TSAP is organized into the following eight sections.

- **Section 1: Introduction** – The plan’s purpose, goal and policies, and development process.
- **Section 2: Public Involvement** – Summary of the techniques used to engage the community and the resulting participation and input.
- **Section 3: Overview of Crash Analysis** – Synopsis of the crash data analysis and resultant crash emphasis areas and High Injury Network.
- **Section 4: Systemic Solutions** – Three lower-cost treatments that are geared toward addressing the emphasis areas and can be applied across Klamath Falls.
- **Section 5: High Priority Location Projects** – Ten medium- to higher-cost projects to address the top-ranking City-owned intersections and segments within the High Injury Network.
- **Section 6: Multidisciplinary Action Items** – Safety culture/educational, engineering, post-crash care/EMS coordination, enforcement, and equity action items for the City and its regional partners.
- **Section 7: Potential Funding Sources** – The most pertinent funding sources for the City and regional partners to pursue for implementing the TSAP.
- **Section 8: Performance Monitoring and Updating** – Performance measures for the City to use in tracking progress toward implementing the TSAP and recommendations for updating this plan.

SECTION 2

PUBLIC INVOLVEMENT



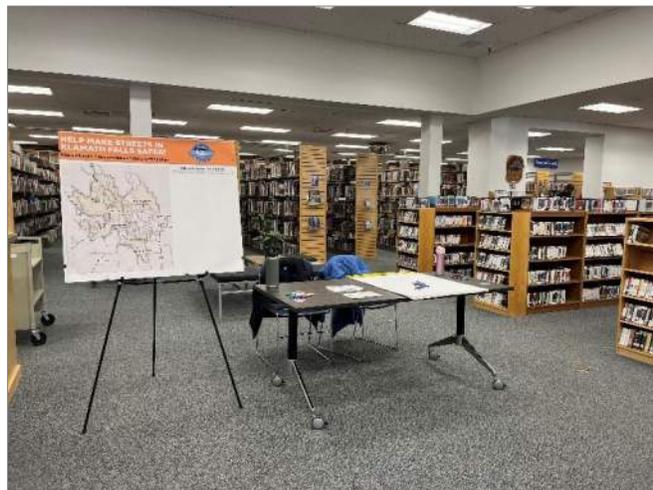
Public Involvement

Public involvement is a critical component of this plan as it helped inform transportation safety concerns from the community's perspective and the solutions to address those concerns. To ensure that as many community members as possible were engaged throughout the planning process in a meaningful and equitable manner, public involvement was administered at two key milestones described in the following sections.

Identifying Transportation Safety Needs

The first round of public involvement was conducted in two formats:

1. **In-person intercept efforts.** These were staged in locations in Klamath Falls where people were already gathering. They included interactions with the community by passing out survey flyers at the 2023 Snowflake Festival Parade (a well-attended holiday event in Downtown Klamath Falls) and displaying poster boards at the Klamath County Library (also located in Downtown) and at a local farm supply store near a major commercial hub. These locations are centered in areas of populations that are likely transportation disadvantaged, relying on transportation modes other than driving a personal vehicle to reach their destinations.



2. **A virtual open house.** This was a supplemental tool for broadening community reach and offering an option to people who preferred giving input through virtual mediums. The virtual open house provided background information on the plan and included survey questions and a real-time commenting map for people to provide their feedback. The online survey requested demographic information. The demographic make-up of participants generally aligned with the overall demographics of Klamath Falls, indicating this effort was successful at reaching a representative range of the community. A separate Spanish version of the virtual open house was also made available.



This event was advertised through several venues in English and Spanish:

- Post cards distributed by the City of Klamath Falls and Healthy Klamath to their network partners and Sky Lakes Medical Center staff;
- Press releases to local media outlets, including the Herald and News;
- Posts to social media pages for the City of Klamath Falls, Healthy Klamath, and Klamath County Public Health (including its Hispanic Facebook page);
- Public service announcements to the local Spanish radio station; and,
- Flyers posted around the Klamath County Library and local farm supply store.

Developing Transportation Safety Solutions

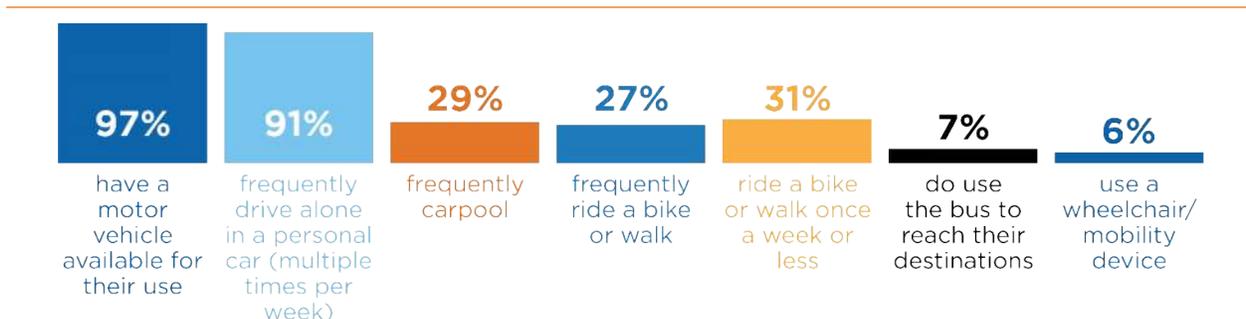
The second round of public involvement was conducted using a virtual open house, similar to the one previously described, to solicit feedback on the recommended transportation safety solutions. The virtual open house re-oriented the community to the plan and presented the various transportation safety solutions aimed at addressing their concerns as well as the crash history in Klamath Falls (see Section 3). The virtual open house included a survey to request specific input on each recommendation as well as contributor demographics. Due to the successful turnout from the first round of public involvement, this round was also advertised through similar venues.

Participation and Feedback

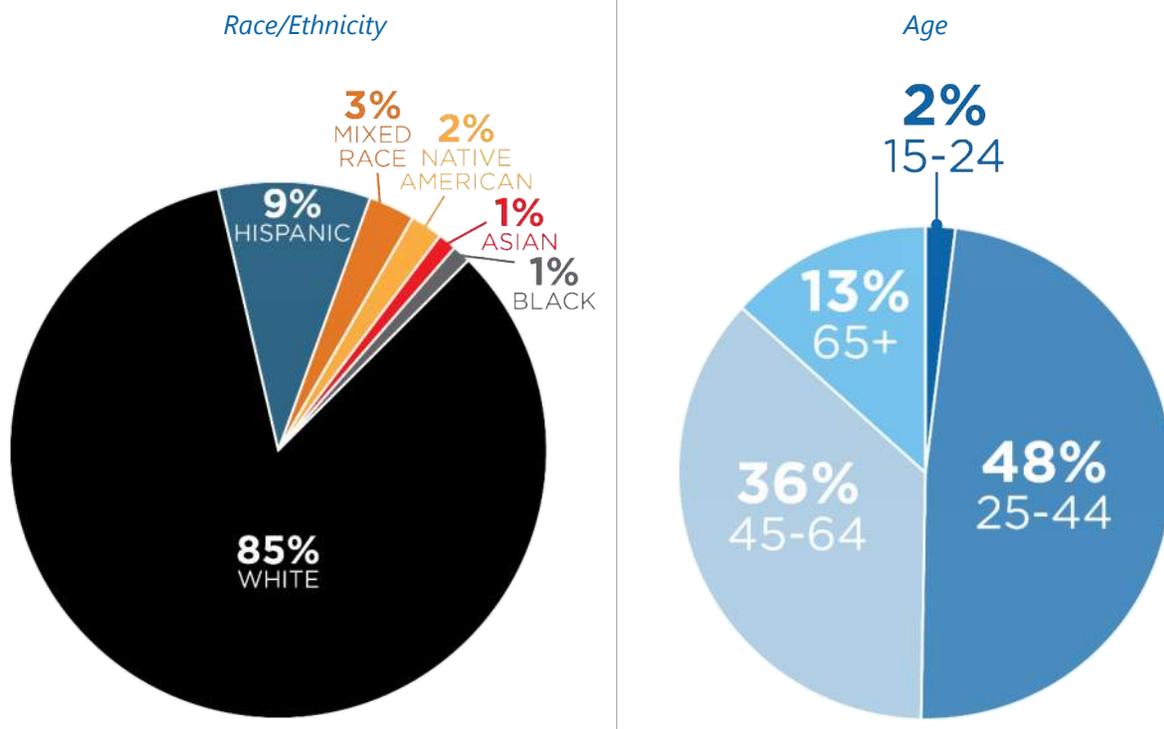
The following infographics summarize the amount of feedback that the plan received by people of all walks of life in the community. They also include input on transportation safety needs and feedback on recommended solutions (Section 4 and 5 of plan).



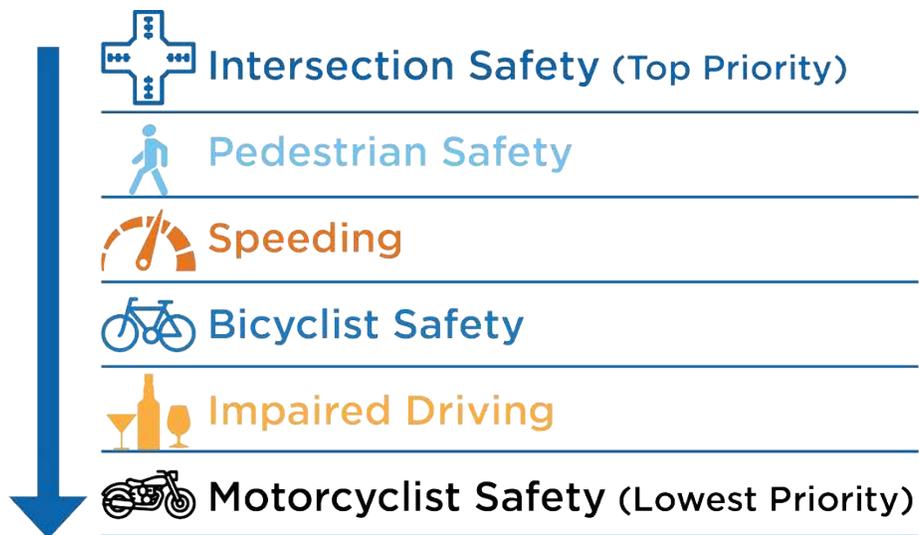
Transportation Modes of Participants



Participant Demographics (Self-Identified)



Community's Priorities for Where to Focus Transportation Improvements



Common Themes on Community's Transportation Needs

Disregard for Red Lights and Stop / Yield Signs

With frequent mention of Downtown and Pacific Terrace

Intersection Traffic Control and Signage Modifications

23 specific intersections identified; some mentioned multiple times

"Roundabouts work."

More Robust Sidewalk Connections

Especially up at OIT and near schools

Increased Lighting Citywide

Especially along biking/walking paths, in Downtown, around Sky Lakes Medical Center, and on S 6th Street

Safer Pedestrian and Bicycle Facilities Citywide

Particularly along Lakeshore Drive, near schools, and gaps in connections

Additional Marked Crosswalks

Particularly around Sky Lakes Medical Center, near schools, and along S 6th Street, Washburn, and the A Canal Trail

More Protected Bike Facilities and Biking Connections

Particularly between the OC&E Trail and Downtown, Moore Park, and OIT

"Love the [Oregon Ave] bike lane! It slows down traffic to actually meet the speed limit."

Mixed Support / Opposition to Converting Downtown Traffic Signals to Stop Control

"Change the [signal] timing [Downtown] to DISINCENTIVISE high speed travel and aggressive driving."

Traffic Calming

With frequent mention of Downtown, Pacific Terrace, N 9 Street, and Lakeshore Drive

"Would recommend narrower streets anywhere you want to promote foot traffic, like Downtown."

Driver Visibility Concerns in Downtown

Due to on-street parking - particularly angled stalls - or vehicles parked too close to intersections

US 97 Interchange Ramp Concerns

Increased Police Presence and Traffic Law Enforcement

Especially for street crossings and user right-of-way

How the Community Ranked Recommended Safety Solutions

SYSTEMIC SOLUTIONS

Align with Community Safety Goals:

3+ out of 5 stars



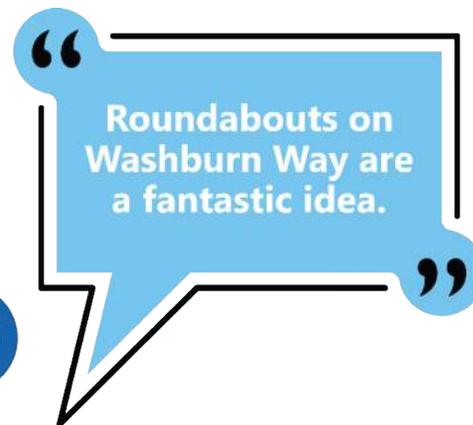
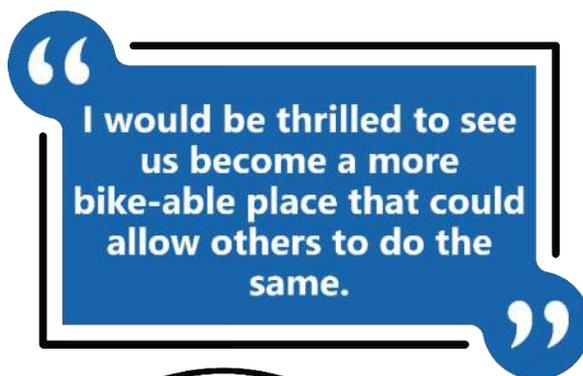
HIGH PRIORITY LOCATIONS FOR CAPITAL IMPROVEMENTS

Align with Community Safety Goals:

4 out of 5 stars



What the Community Said about the Recommended Safety Solutions



Overarching Input that the Community Provided on the Solutions

Most participants did not oppose the recommendations but rather expanded on them or made open-ended suggestions.

The community would like to see more robust and safer pedestrian and bicycle facilities and connections throughout Klamath Falls, especially near schools and downtown.

They would also like intersection safety to be increased through larger signs, improved sight distance, roundabout implementation, and traffic law enforcement like red light cameras.

Some community members are concerned about traffic calming treatments like eliminating travel lanes, but others prefer it, including features like speed humps.

Many participants would like to see increased traffic law enforcement for speeding, including the use of speed safety cameras.

In general, folks desire increased lighting across Klamath Falls.

Additional details about public involvement are contained in Appendix A, including the detailed (anonymous) survey responses from the community.

SECTION 3

CRASH ANALYSIS OVERVIEW



Crash Analysis Overview

The crash analysis for the Klamath Falls TSAP relies on the five years of crash data that were most recent at the time this plan was developed (January 1, 2017, to December 31, 2021) provided by ODOT's Crash Analysis and Reporting Unit. The crash analysis also uses other data sources, such as the functional classification of streets and traffic control of intersections, to link roadway characteristics to crash data. ODOT categorizes crash severity into five groups: Injury K (Fatal Injury), Injury A (Suspected Serious Injury), Injury B (Suspected Minor Injury), Injury C (Possible Injury), and Injury O (No Apparent Injury). While all crashes were evaluated, the TSAP primarily focuses on Fatal and Injury A crashes, collectively referred to as serious crashes in this document, to eliminate them from streets within the Klamath Falls UGB.

The analysis investigates serious crashes through two primary methods:

- **Urban Area Crash Pattern Evaluation:** identifies the history and patterns of crashes on all public streets, including characteristics like collision types (e.g., rear-end, bicycle), street features (e.g., lack of pedestrian infrastructure), driver behaviors (e.g., speeding), and external conditions (e.g., low lighting, weather). The results of this analysis helped to identify crash Emphasis Areas in Klamath Falls.
- **Network Screening Evaluations:** screens the transportation network for higher concentrations of crashes, particularly serious crashes, to identify Klamath Falls' High Injury Network. The network screening was a two-pronged approach:
 - An *Equivalent Property Damage Only (EPDO)* analysis, that is a performance measure from the *Highway Safety Manual (HSM)*, assigns weights to the five crash severities ('100' for Injury K and A crashes, '0' for Injury O crashes) to help locate intersections and street corridors within the entire system that exhibit the most frequent and serious crashes; and,
 - A *Critical Crash Rate* analysis of 60 intersections (signalized and unsignalized) helps identify which intersections have the highest crash rates relative to one another. A crash rate is determined based on the number of reported crashes and the recorded traffic volume at an intersection.

Additional details about these analyses are described in the Existing Safety Conditions Memorandum included in Appendix B.

The following sections describe the crash emphasis areas and High Injury Network for Klamath Falls identified through the crash analysis.

EMPHASIS AREAS

The urban area crash pattern evaluation revealed the following emphasis areas for Klamath Falls.

INTERSECTIONS



- 62% of all crashes and 61% of serious crashes in Klamath Falls occurred at intersections.
- Unsignalized intersections accounted for 61% of serious intersection crashes.
- Turning Movement (31%), Angle (27%), and Rear-End (19%) were the most frequently reported crash types.

VULNERABLE ROAD USERS



- Pedestrian, bicyclist and motorcycle crashes represented a small proportion of total crashes (5%) but accounted for nearly one quarter of serious crashes (23%).
- Pedestrian crashes (65%) and bicyclist crashes (61%) were more frequently reported at intersections.
- 24% of bicyclist crashes involved riders aged 18 and younger.
- People aged 65 and older accounted for 8% of vehicle crashes, 13% of pedestrian crashes, and 9% of bicyclist crashes.
- 24% of motorcycle crashes resulted in fatal or serious injuries.

DRIVER BEHAVIOR



- 28% of serious crashes involved driver speeds too fast for conditions or over the posted speed limit, which is more than twice as high as all reported crashes (13%).
- Over 30% of serious crashes involved drugs or alcohol.

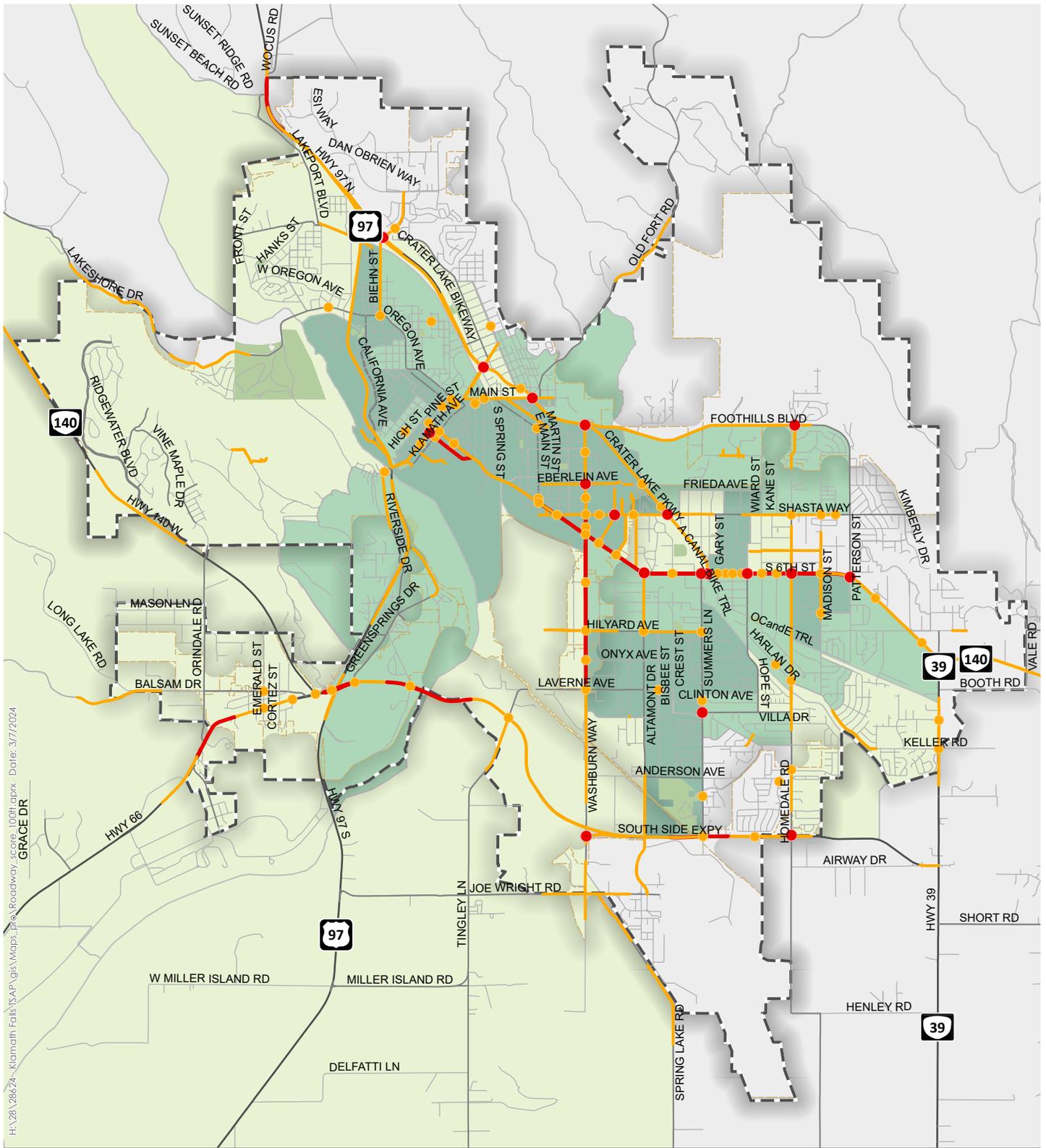
These emphasis areas and associated crash statistics guided the development of systemic solutions presented in Section 4 of this plan.

HIGH INJURY NETWORK

The network screening described previously established a High Injury Network (HIN) that identifies streets and intersections with the highest levels of crash severity. The HIN in Klamath Falls is illustrated in Figure 4 as red and orange locations which represent intersections and street segments that have the most frequent/serious crashes.

Demographics

Figure 4 also identifies the locations of populations in Klamath Falls that might be considered transportation disadvantaged (e.g., low income, living with a disability, not of age to drive, no access to a personal vehicle, etc.) and how they relate to the HIN.



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Intersections

- Top 1%
- Top 2-5%

Street Segments

- Top 1%
- Top 2-8%

Transportation Disadvantaged Populations

- 1.61 - 2.69
- 1.31 - 1.60
- 1.01 - 1.30

- No more than 1
- Klamath Falls UGB



Figure 4

**High Injury Network
 Klamath Falls, Oregon**

Sites Selected for Project Development

The following ten HIN sites that are under City jurisdiction were selected for capital to address the identified crash history. These sites were selected based on their crash history, location in proximity to transportation disadvantaged communities, and public input:

Intersections

- Main Street / 3rd Street
- Main Street / 5th Street
- Pine Street / 11th Street
- S 6th Street / E Main Street
- Washburn Way / Eberlein Avenue
- Washburn Way / Radcliffe Avenue
- Shasta Way / Avalon Street

Street Corridors

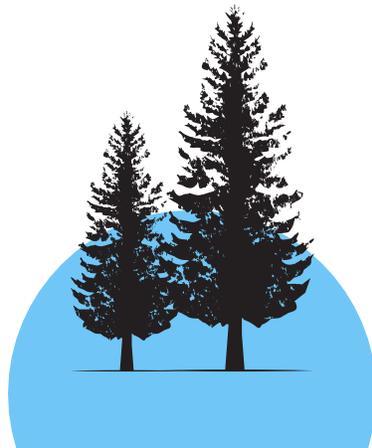
- S 5th Street: Klamath Avenue to S 6th Street
- S 6th Street: Owen Street to Washburn Way
- Washburn Way: Shasta Way to Laverne Avenue

The recommended capital projects at these locations are presented in Section 5.

These locations are focused on City-owned streets. Roads under Klamath County and ODOT jurisdiction that are also within the HIN will be addressed in the Klamath Falls Urban Area Transportation System Plan (TSP), which is currently being updated.

SECTION 4

SYSTEMIC SOLUTIONS



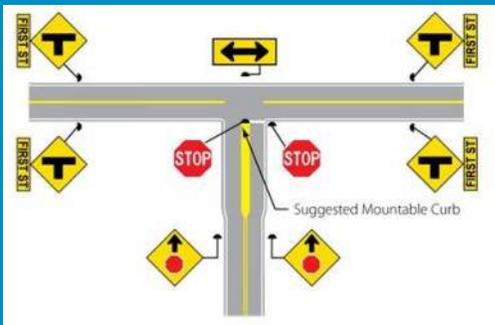
Systemic Solutions

Serious crashes tend to be spread across the transportation network, and therefore, their locations can seem random but their contributing factors are predictable. Systemic treatments are intended to be lower-cost countermeasures that can be applied area-wide to address serious crash trends and proactively reduce the likelihood of future such crashes occurring. This section presents the systemic solutions recommended to address the emphasis areas identified in Section 3 (i.e., crashes related to intersections and people walking and biking).

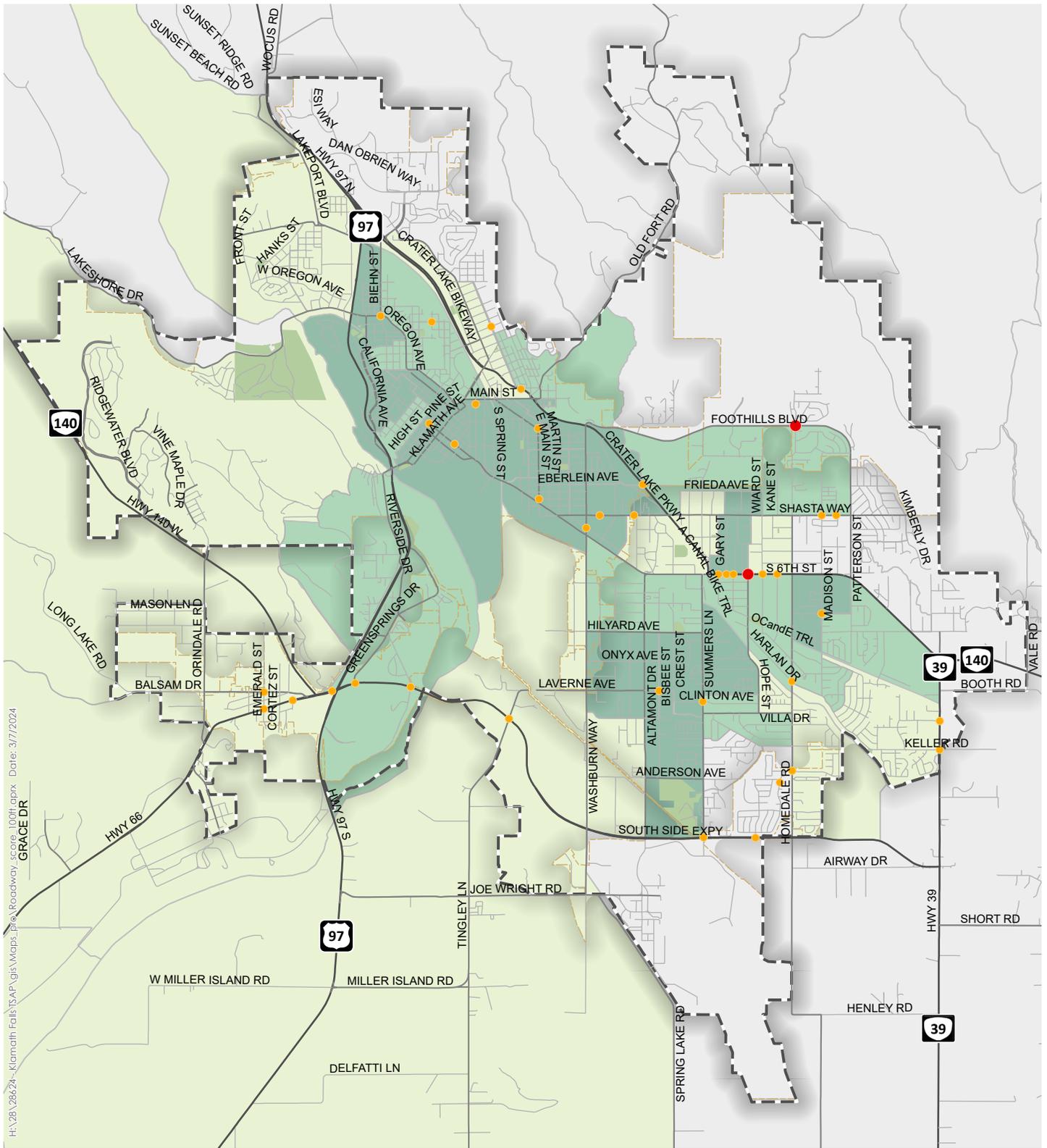
One set of treatments was prioritized and developed for each emphasis area from ODOT’s crash reduction factor (CRF) list and previous plans completed by the City. These are not the only countermeasures that can be used to address these emphasis areas, and this section also provides additional resources on systemic countermeasures for the City to use in identifying other treatments to address the emphasis areas. *Additional details regarding the systemic solutions presented herein are included in the Transportation Safety Recommendations Memorandum contained in Appendix C.*

INTERSECTION TREATMENT

The intersection warning improvements detailed below are recommended for consideration at unsignalized intersections, starting with the intersections identified in Figure 5 and Table 1, to address the ‘Intersections’ emphasis area and associated crash statistics (see Section 3).

Improve Intersection Warning (I21) ¹		
 <p>(Source: FHWA)</p>	Intersection Type	Unsignalized
	Intersection Context	Urban or Rural
	Crash Type	All
	Crash Severity	All
	Service Life	10 Years
	CRF	20% (1-2 treatments) 25% (3-4 treatments) 30% (5-7 treatments)
	Notes	Includes ‘Stop Ahead’ pavement markings, ‘Stop Ahead’ signs, larger signs, additional stop signs and/or other intersection warning or regulatory signs
Implementation Cost	Varies: \$500 per new sign; \$800 per oversized sign; \$1,100 per ‘Stop Ahead’ legend	

¹Countermeasure Number per ODOT’s CRF List



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Priority Intersections

- Top 1% Crash Severity
- Top 5% Crash Severity

Transportation Disadvantaged Populations

- 1.61 - 2.69
- 1.31 - 1.60
- 1.01 - 1.30
- No more than 1
- ⎓ Klamath Falls UGB



Figure 5
Systemic Intersection Treatments
Priority Locations
Klamath Falls, Oregon

Note that some projects have already been developed for a few intersections listed in Table 1. The City should consider whether this treatment should still be applied at these intersections with these improvements. *Details are included in the Transportation Safety Recommendations Memorandum contained in Appendix C.*

Table 1. Systemic Intersection Treatment – Locations for Near-Term Implementation

City	County	ODOT
Pershing Way / Washburn Way	Shasta Way / Madison St ³	OR 140 / Summers Ln ⁶
Oregon Ave / Biehn St¹	Clinton Ave / Summers Ln	OR 140 / Glenwood Dr ⁶
Home Ave / E Main St / Stukel St²	Homedale Rd / Harlan Dr ⁴	S 6th St / Fargo St
Gateway Dr / Golden Ct	Homedale Rd / Bartlett Ave ⁵	S 6th St / Gettle St
Shelley St / Lancaster Ave	Shasta Way / Arthur St	S 6th St / Wiard St
Pacific Terrace / Manzanita	Delaware Ave / Madison St	S 6th St / Kane St
N 6th St / Pine St	Bisbee St / Laverne Ave	OR 39 / Keller Rd
E Main St / Radcliffe Ave	Shasta Way / Ogden St	OR 140 / Memorial Dr
Balsam Dr / Cleveland Ave	Foothills Blvd / Homedale Rd	OR 140 / Greensprings Dr
Klamath Ave / S Broad St		OR 140 / US 97 SB ramp
Shasta Way / east Fred Meyer access		S 6th St / Plum Ave
		Crater Lake Pkwy / Herbert St
		Crater Lake Pkwy / Eberlein Ave
		S 6th St / Gary St
		OR 66 / Agate St
		OR 66 / Emerald St
		OR 39 / Hager Ln

Sites where projects from other plans have been developed:
¹ Safe Routes to School (SRTS) crossing enhancements project.
² SRTS crossing enhancements project.
³ Traffic calming and SRTS crossing enhancement projects.
⁴ Intersection realignment safety project from Klamath County TSAP.
⁵ Traffic calming project to enhance crossings.
⁶ Trails Master Plan shared-use path project on OR 140.

PEDESTRIAN AND BICYCLE TREATMENTS

The systemic solutions recommended to address the ‘Vulnerable Road Users’ emphasis area and associated crash statistics (see Section 3) are two packages of treatments that include *Urban Trail Access Countermeasures* and *Safe Routes to School Countermeasures*. These packages implement projects from the previously adopted Klamath Falls Urban Trail Master Plan and Klamath Falls Safe Routes to School Master Plan. The recommended treatments are summarized in three tables:

- Table 2 presents the Urban Trail Access Countermeasures, which are trail crossing projects from the Klamath Falls Urban Trail Master Plan yet to be implemented for “A” Canal Trail crossing locations. The planning-level cost estimates are from the master plan and inflated to 2024 dollars.
- Table 3 presents the Safe Routes to School Countermeasures, which are high priority crossing projects from the Klamath Falls Safe Routes to School Master Plan for the 10 City and County elementary and middle schools in Klamath Falls. The planning-level cost estimates are from the master plan and inflated to 2024 dollars.
- Table 4 are the crash reduction details associated with these crossing countermeasures based on ODOT’s CRF list.

Table 2: Urban Trail Access Countermeasures – Crossing Projects

Crossing Project Description	Cost
Conduct study to determine final crossing treatment for “A” Canal Trail at Washburn Way. Enhanced crossing treatments recommended and may include Rectangular Rapid Flashing Beacons (RRFB) with a pedestrian refuge island, connections to the Crater Lake Parkway traffic signal, or a grade-separated crossing of Washburn Way.	\$3,000- \$65,000
Conduct study to determine final crossing treatment for “A” Canal Trail at Main Street. Enhanced crossing treatments recommended and may include RRFBs with a pedestrian refuge island, connections to the Crater Lake Parkway traffic signal, or a grade-separated crossing of Main Street.	\$3,000- \$65,000
Conduct study to determine final crossing treatment for “A” Canal Trail at Esplanade Avenue. Enhanced crossing treatments recommended and may include RRFBs with a pedestrian refuge island using existing median, connections to the Crater Lake Parkway traffic signal to encourage crossings there, or a grade-separated crossing of Esplanade Avenue.	\$3,000- \$65,000
Conduct study to determine final crossing treatment for “A” Canal Trail at Eberlein Avenue. Enhanced crossing treatments recommended and may include RRFBs. Close proximity of Avalon Street may present issues.	\$3,000- \$65,000

Table 3: Safe Routes to School Countermeasures – High Priority Crossing Projects

School	Location	Project Description	Cost
City Schools			
Mills Elementary School / Ponderosa Middle School	E Main St / Stukel Ave / Home Ave	Replace existing crosswalk with two separate crosswalks Add school crossing warning and advanced warning signs on Stukel Ave and Home Ave	\$17,900
	McLean St / Harvard St	Add school crossing warning signs to north leg	\$9,500
Pelican Elementary School	Hanks St / Harvard St	Add continental crosswalks to west, south, and east legs Add school crossing warning and advanced warning signs to east leg	\$14,000
	Fremont St / Eldorado Ave	Add pavement striping on west leg Upgrade east leg to ladder striping Add school crossing advanced warning signs to north, east, and west approaches	\$13,500
Roosevelt Elementary School / Ponderosa Middle School	Leroy St / Eldorado Ave	Upgrade east and west legs to ladder striping Add school crossing advanced warning signs to south and east approaches	\$12,000
	Leroy St / Pacific Terrace	Upgrade to ladder striping Add pavement striping to south leg Add sidewalk through grass median Add school crossing warning and advanced warning signs on north and south legs Add SCHOOL CROSSING pavement markings on north approach	\$32,700
	Fremont St / Pacific Terrace	Add SCHOOL CROSSING pavement markings on south approach	\$9,100

School	Location	Project Description	Cost
	Main St / Williams St	Add school crossing warning signs to west and south approaches	\$11,000
	Main St / Laguna St	Add school crossing warning and advanced warning signs to west approach Add marked crosswalk to west leg	\$14,300
Ponderosa Middle School	Main St / Crater Lake Parkway	Add yield signs to free right-turn lanes	\$11,000
County Schools			
Ferguson Elementary School	Independence Ave / Madison St	Add actuated beacons to north leg Add continental crosswalks to north and west legs	\$40,900
	Maryland Ave / Homedale Rd	Add continental crosswalk to north leg Add actuated beacons to north leg	\$40,400
	Mack Ave / Madison St	Add actuated beacons to north leg Add continental crosswalks to north and west legs	\$40,900
Peterson Elementary School / Brixner Junior High School	Bristol Ave / Meadows Dr	Add actuated beacon to east leg Add continental crosswalks to east leg Add school crossing advanced warning signs to east leg Add ADA ramp to north sidewalk	\$51,300
	Bristol Ave / Hope St	Add continental crosswalks to west and north legs Add actuated beacons to west leg	\$40,900
	Homedale Rd, south of Sturdivant Ave	Add actuated beacons Refresh SCHOOL CROSSING pavement markings	\$39,800
	Homedale Rd / Bartlett	Add continental crosswalk to north leg Add actuated beacons to north leg Add school crossing warning and advanced warning signs to north and south legs	\$50,400
	Bristol Ave, west of Hope St	Add continental crosswalk Add actuated beacons to crosswalk Add warning signs to crosswalk	\$58,400
Shasta Elementary School	Shasta Way / Madison St	Update SCHOOL CROSSING pavement markings Add continental crosswalks to all legs Add passive beacons to warning signs on east and west legs	\$43,800
	North of Bryant Ave / Madison St	Update SCHOOL CROSSING pavement markings Upgrade to continental crosswalk Add actuated beacons to signs on Madison Add ADA ramps to crosswalk	\$57,200
Stearns Elementary School	Laverne Ave / Crest St	Update SCHOOL CROSSING pavement markings Add continental crosswalks to all legs Add school crossing warning sign and plaque to west leg stop sign	\$13,100

Table 4. Urban Trail Access and SRTS Crossing Countermeasures – Crash Reduction Details

Countermeasure	Crash Type	Crash Severity	Service Life	Context	CRF
Rectangular Rapid Flashing Beacon (2-Lane Roadway) (BP9) ¹	Pedestrian	All	20 Years	Urban or Rural	10%
Rectangular Rapid Flashing Beacon without Median (3-Lane or More Roadway) (BP11) ¹	Pedestrian	All	20 Years	Urban or Rural	10%
Pedestrian Refuge Island (BP8) ¹	Pedestrian	All	20 Years	Urban or Rural	31%
Intersection Lighting (Bike & Ped) (BP2) ¹	Pedestrian and Bicycle (Night)	All Injuries (Excludes PDO)	20 Years	Urban or Rural	42%
Flashing Beacons as Advance Warning to Intersections (I15) ¹	All	All	10 Years	Urban or Rural	13%
Pedestrian Activated Beacon at Intersection (BP10) ¹	Pedestrian and Bicycle	All	20 Years	Urban	10%
Pedestrian Activated Beacon Midblock (BP13) ¹	Pedestrian and Bicycle	All	20 Years	Urban	10%
Pedestrian Activated Beacon with Median and Stop Bar (BP14) ¹	Pedestrian and Bicycle	All	20 Years	Urban	56%
Continental Crosswalk Markings and Advance Pedestrian Warning Signs (BP15) ¹	Pedestrian	All	10 Years	Urban or Rural	15%
Advance Pedestrian / Bicycle Warning Signs	Pedestrian and Bicycle	All	10 Years	Urban or Rural	5%

¹Countermeasure number per ODOT's CRF List

ADDITIONAL RESOURCES

In addition to the systemic solutions presented in the previous sections, there are several more that could benefit the Klamath Falls urban area. They can address various community concerns, and the City and other jurisdictions in the area could implement them as needs, opportunities, and funding arise. Two primary sources for the City to reference include:

- **ODOT's Crash Reduction Factor Manual** currently housed on its ARTS Program web page: <https://www.oregon.gov/odot/engineering/pages/arts.aspx>; and,
- The **Federal Highway Administration's (FHWA) Proven Countermeasure list** found on its Highway Safety Programs web page: <https://highways.dot.gov/safety/proven-safety-countermeasures>.

Countermeasures within these resources cover streets and intersections, rural and urban facilities, and all surface transportation modes (driving, walking, rolling, and biking). Of note, FHWA's countermeasure list provides "speed management" treatments, including Speed Safety Cameras.

SECTION 5

**HIGH PRIORITY
LOCATION PROJECTS**



High Priority Location Projects

This section presents the recommended projects to mitigate crash frequencies and severities at these 10 high priority locations on City facilities, previously identified in Section 3:

Intersections

- Main Street / 3rd Street
- Main Street / 5th Street
- Pine Street / 11th Street
- S 6th Street / E Main Street
- Washburn Way / Eberlein Avenue
- Washburn Way / Radcliffe Avenue
- Shasta Way / Avalon Street

Street Corridors

- S 5th Street: Klamath Avenue to S 6th Street
- S 6th Street: Owen Street to Washburn Way
- Washburn Way: Shasta Way to Laverne Avenue

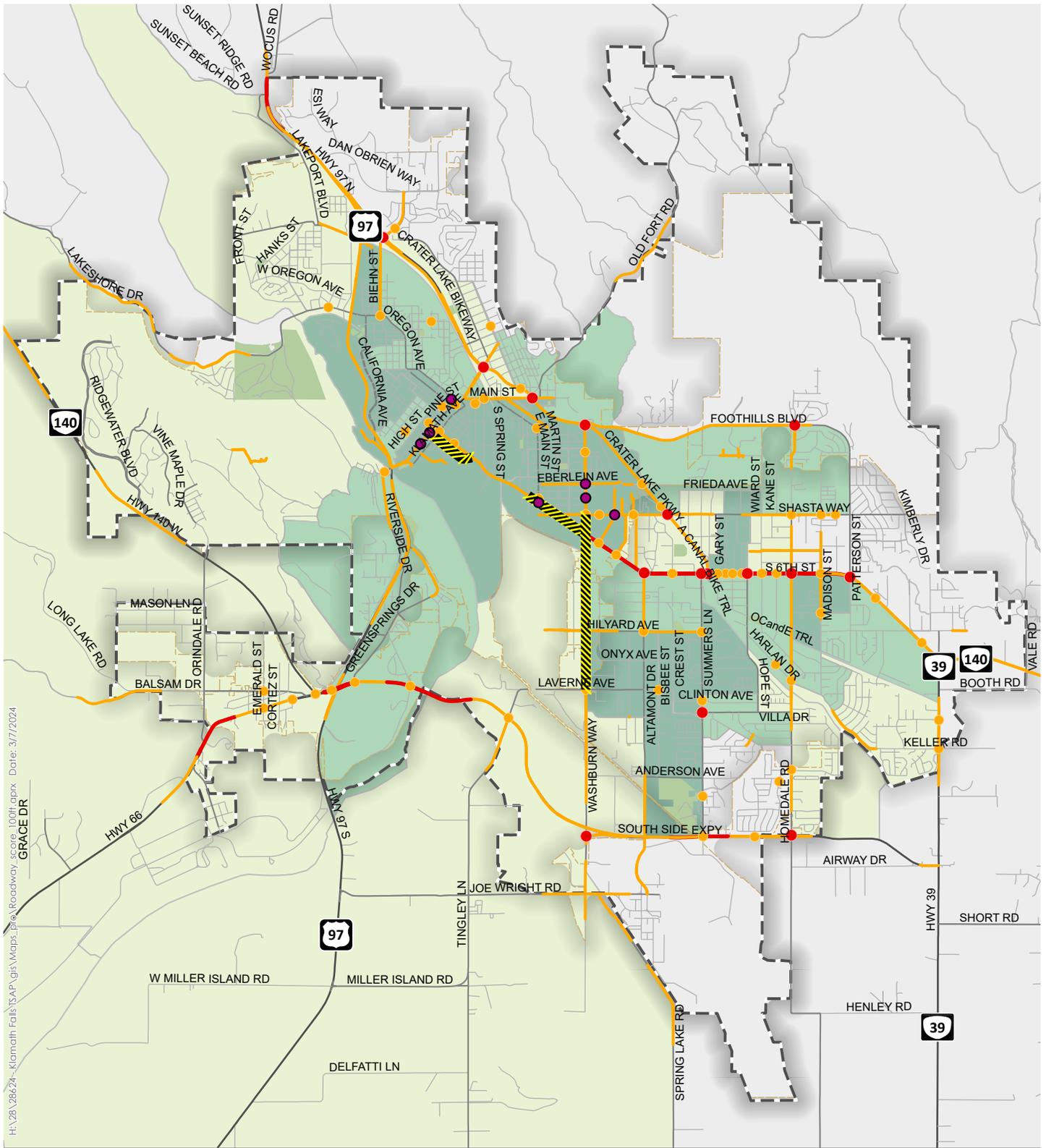
These priority sites are identified in Figure 6 to show how they relate to the HIN as well as locations of transportation disadvantaged populations in Klamath Falls, demonstrating that they serve historically underserved communities.

The recommendations presented herein adhere to intersection design principles rooted in the Safe System Approach:



Projects range from traffic signal upgrades to crossing enhancements to access control. Countermeasures were developed based on the detailed crash history at each site (e.g., types, severities, crash concentrations, other unique factors, etc.), the existing characteristics of each intersection and street corridor (e.g., traffic control, direction of travel, geometry, roadway space, presence of pedestrian and bicycle facilities, etc.), and ODOT’s CRF list. *More details on the crash history, street characteristics, and countermeasures for these locations are included in Appendix C.*

The recommended projects are presented in Figure 7 through Figure 16. Following these figures is an implementation plan for the recommended projects, including planning-level cost estimates, implementation timeframes, and the criteria used to prioritize implementation.



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High Priority Project Locations

- Priority Intersections
- Priority Segments

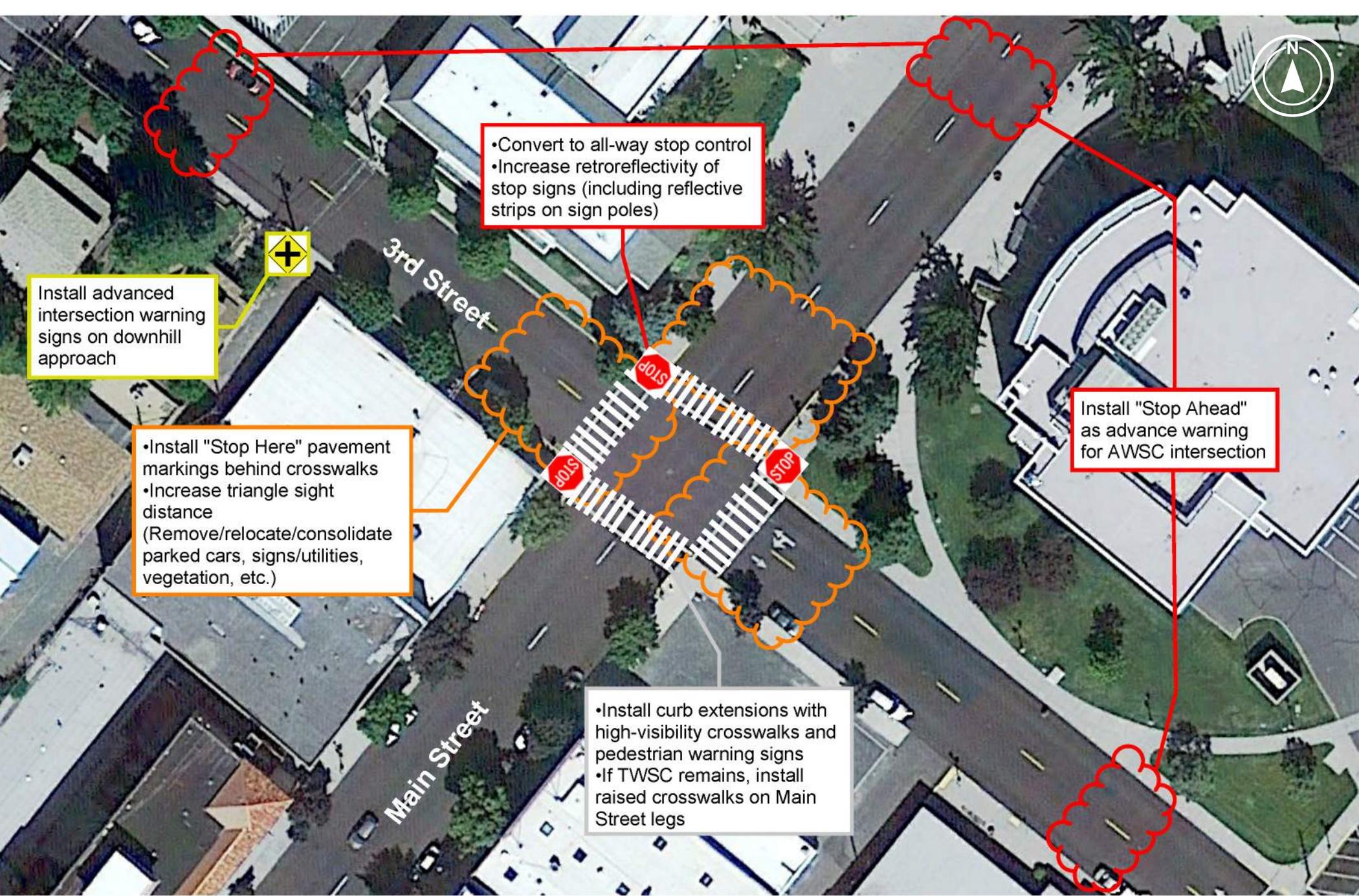
Transportation Disadvantaged Populations

- 1.61 - 2.69
- 1.31 - 1.60
- 1.01 - 1.30
- No more than 1
- Klamath Falls UGB



Figure 6

**High Priority Locations within HIN
Klamath Falls, Oregon**



- Convert to all-way stop control
- Increase retroreflectivity of stop signs (including reflective strips on sign poles)

Install advanced intersection warning signs on downhill approach



- Install "Stop Here" pavement markings behind crosswalks
- Increase triangle sight distance (Remove/relocate/consolidate parked cars, signs/utilities, vegetation, etc.)

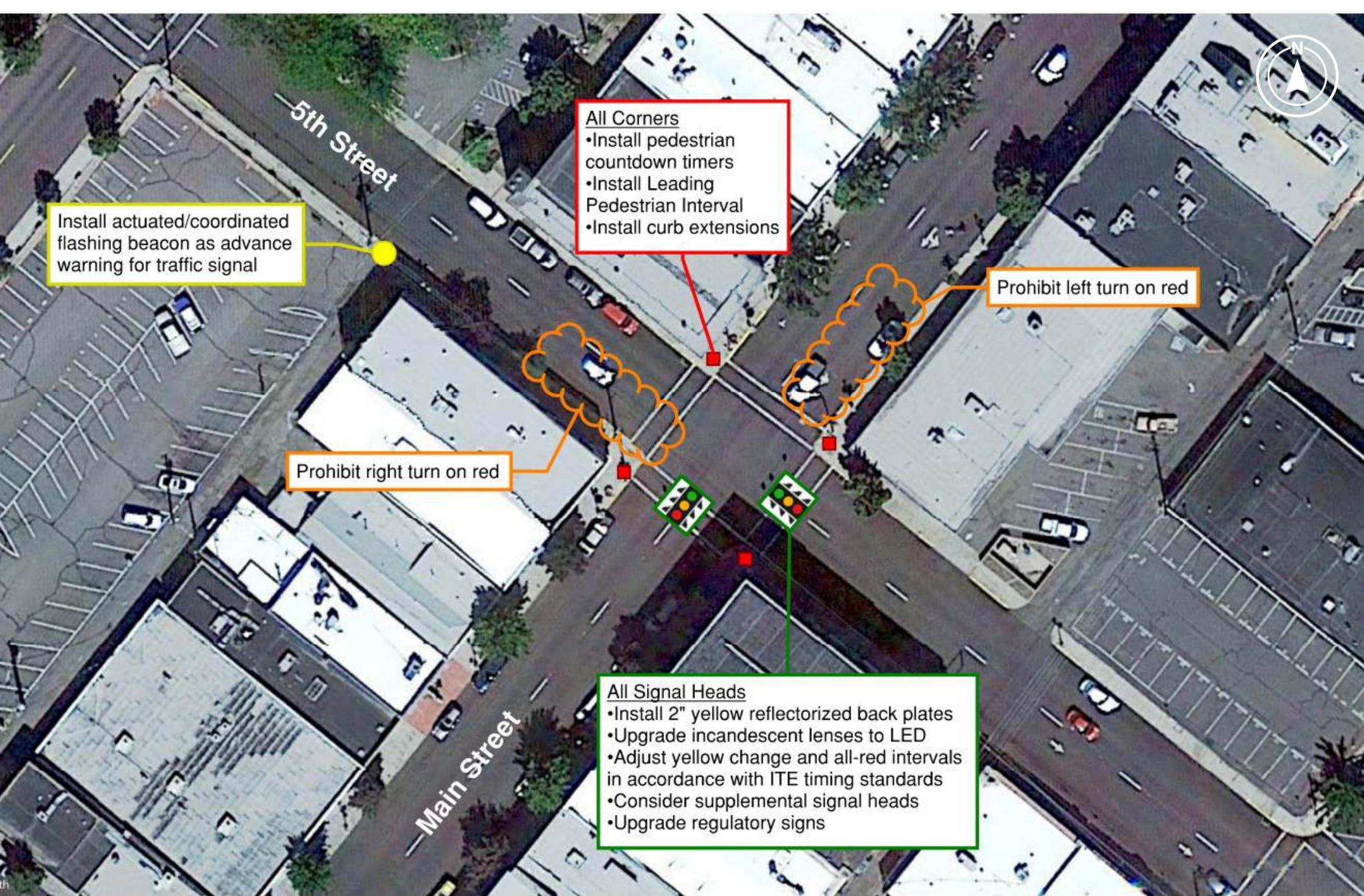
Install "Stop Ahead" as advance warning for AWSC intersection

- Install curb extensions with high-visibility crosswalks and pedestrian warning signs
- If TWSC remains, install raised crosswalks on Main Street legs



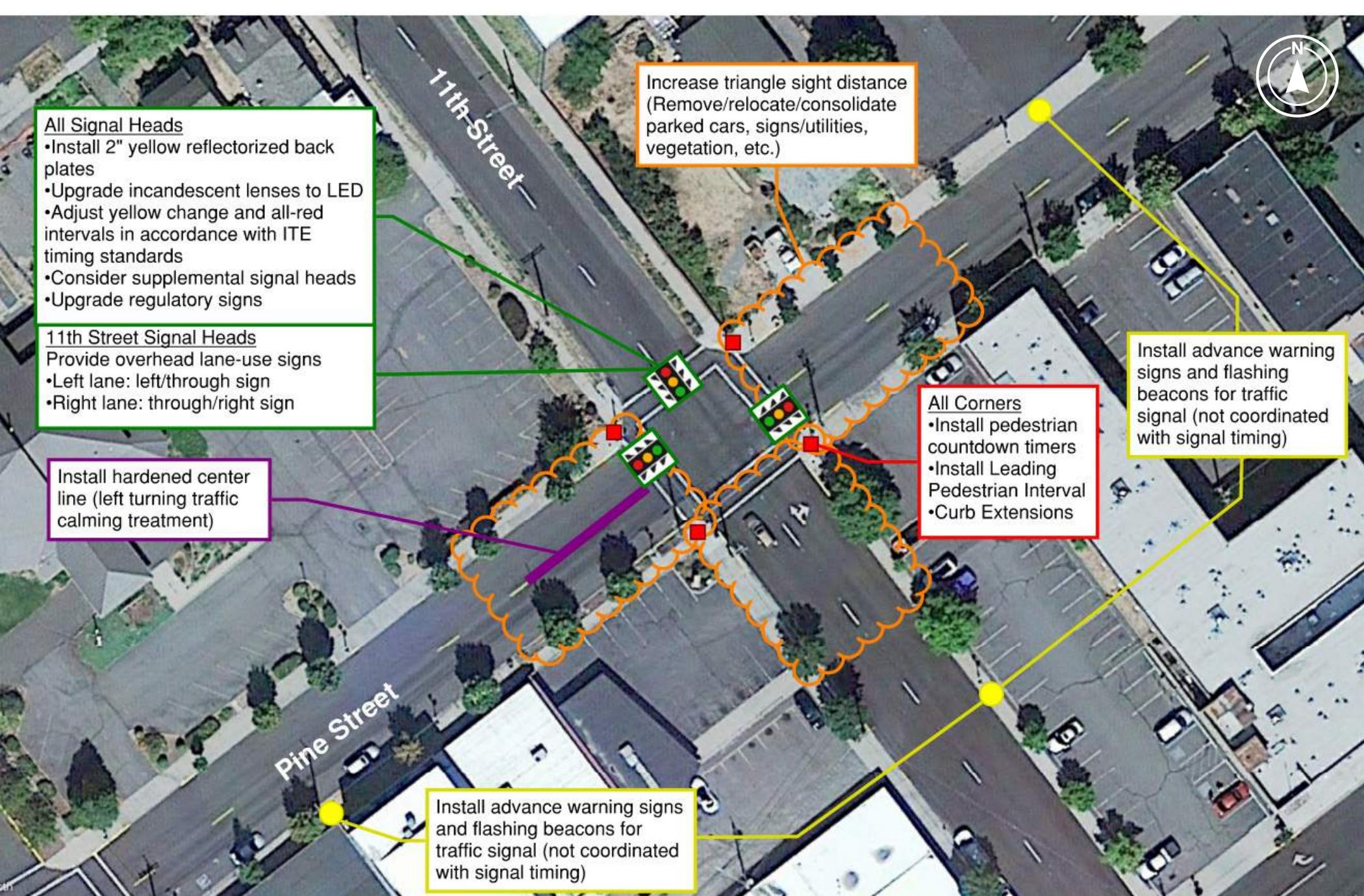
Transportation Safety Projects
Main Street/3rd Street

Figure 7



Transportation Safety Projects
Main Street/5th Street

Figure 8



All Signal Heads

- Install 2" yellow reflectorized back plates
- Upgrade incandescent lenses to LED
- Adjust yellow change and all-red intervals in accordance with ITE timing standards
- Consider supplemental signal heads
- Upgrade regulatory signs

11th Street Signal Heads

Provide overhead lane-use signs

- Left lane: left/through sign
- Right lane: through/right sign

Install hardened center line (left turning traffic calming treatment)

Increase triangle sight distance (Remove/relocate/consolidate parked cars, signs/utilities, vegetation, etc.)

All Corners

- Install pedestrian countdown timers
- Install Leading Pedestrian Interval
- Curb Extensions

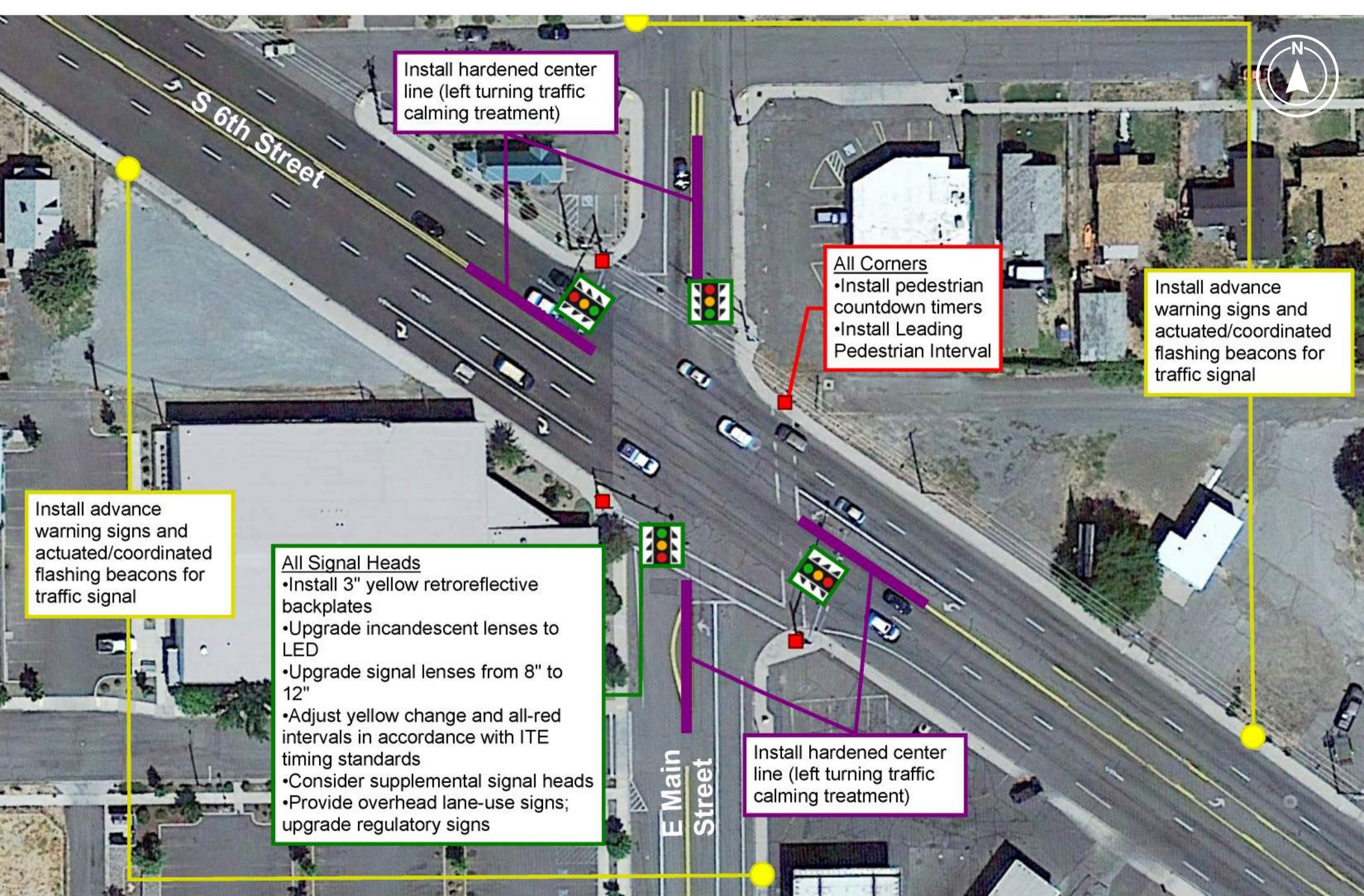
Install advance warning signs and flashing beacons for traffic signal (not coordinated with signal timing)

Install advance warning signs and flashing beacons for traffic signal (not coordinated with signal timing)



Transportation Safety Projects
Pine Street/11th Street

Figure 9



Install hardened center line (left turning traffic calming treatment)

All Corners
•Install pedestrian countdown timers
•Install Leading Pedestrian Interval

Install advance warning signs and actuated/coordinated flashing beacons for traffic signal

Install advance warning signs and actuated/coordinated flashing beacons for traffic signal

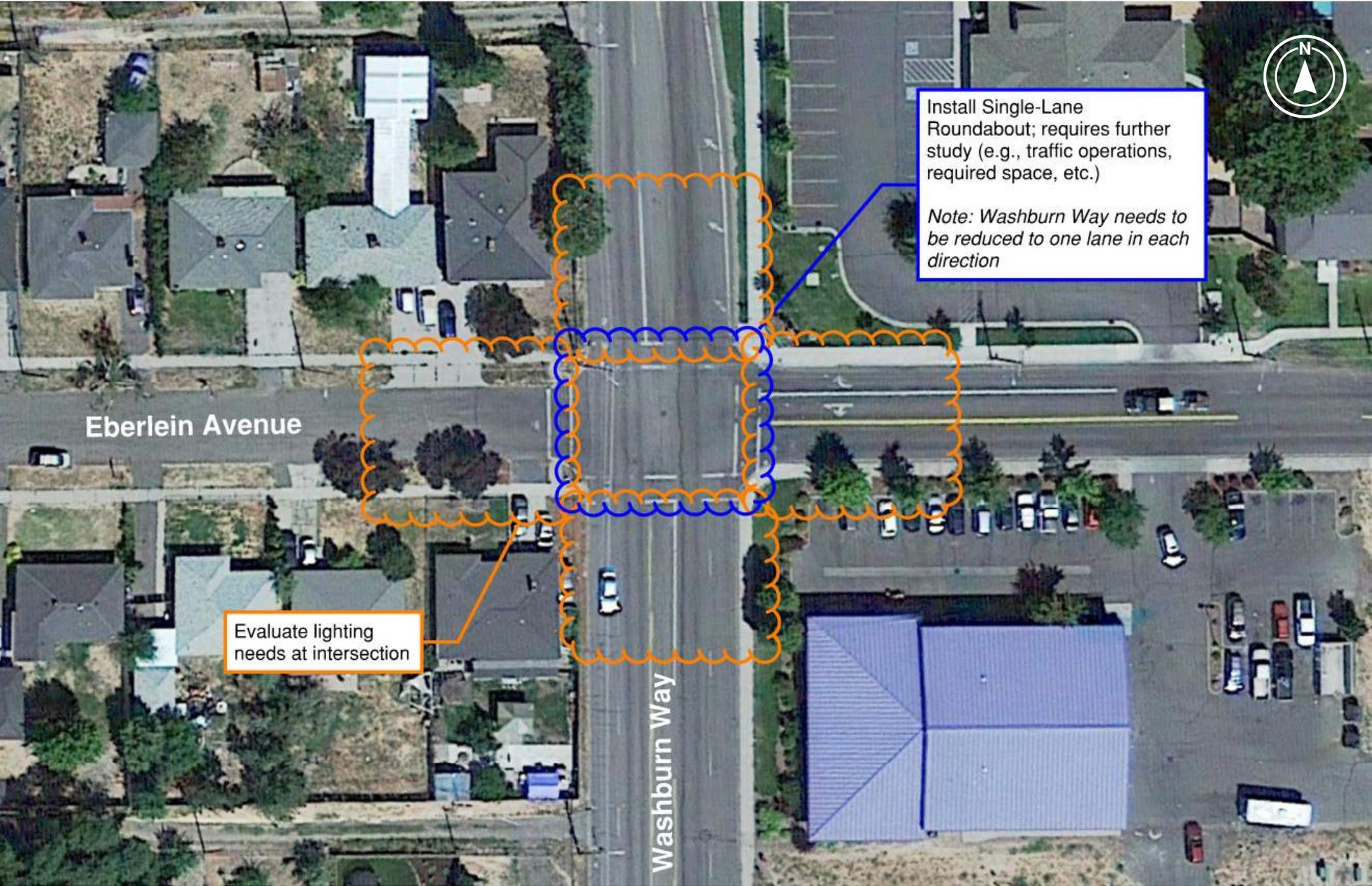
All Signal Heads
•Install 3" yellow retroreflective backplates
•Upgrade incandescent lenses to LED
•Upgrade signal lenses from 8" to 12"
•Adjust yellow change and all-red intervals in accordance with ITE timing standards
•Consider supplemental signal heads
•Provide overhead lane-use signs; upgrade regulatory signs

Install hardened center line (left turning traffic calming treatment)



Transportation Safety Projects
S 6th Street/E Main Street

Figure 10



Install Single-Lane Roundabout; requires further study (e.g., traffic operations, required space, etc.)

Note: Washburn Way needs to be reduced to one lane in each direction

Eberlein Avenue

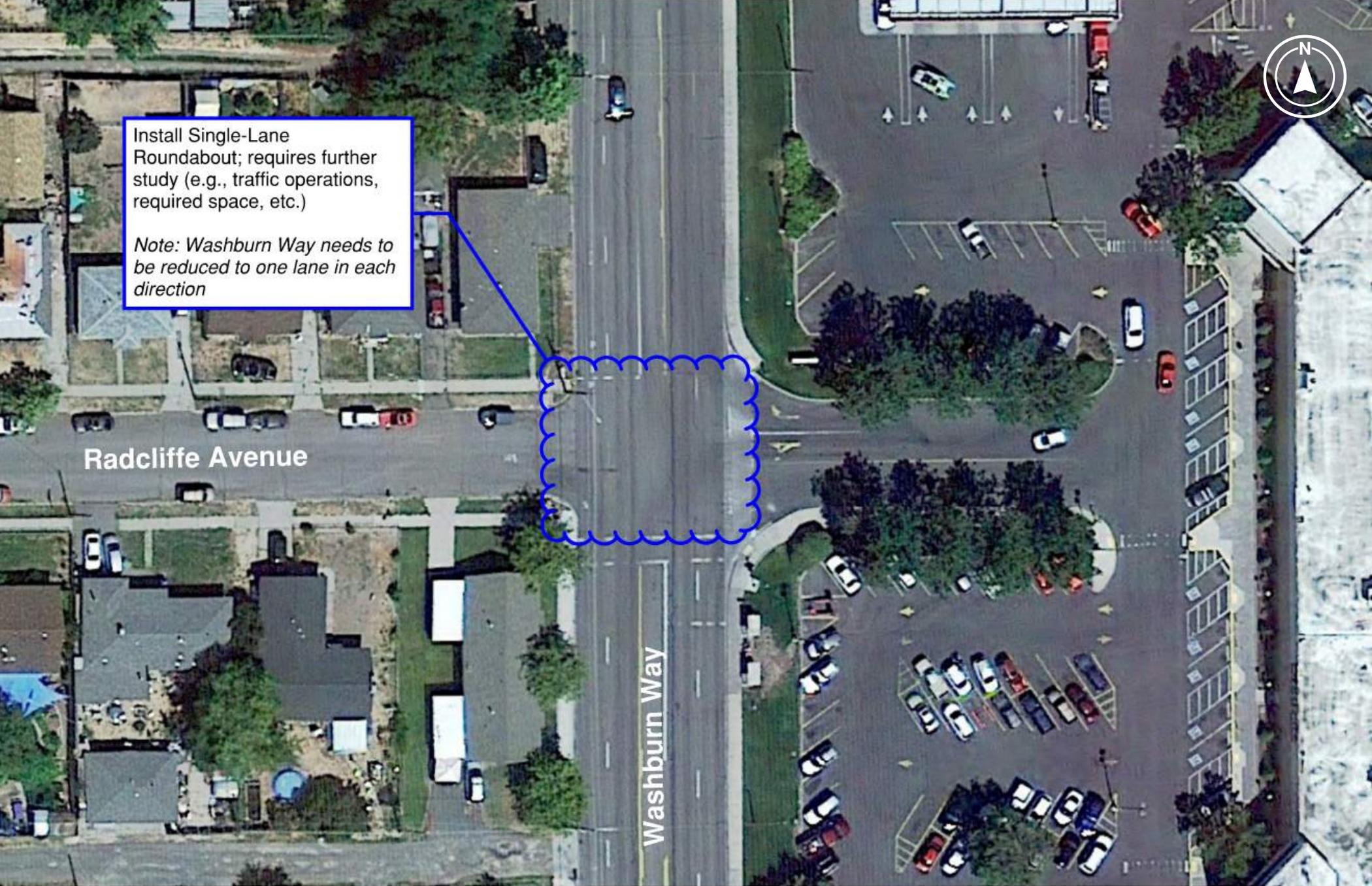
Washburn Way

Evaluate lighting needs at intersection



Transportation Safety Projects
Washburn Way/Eberlein Avenue

Figure 11



Install Single-Lane Roundabout; requires further study (e.g., traffic operations, required space, etc.)

Note: Washburn Way needs to be reduced to one lane in each direction

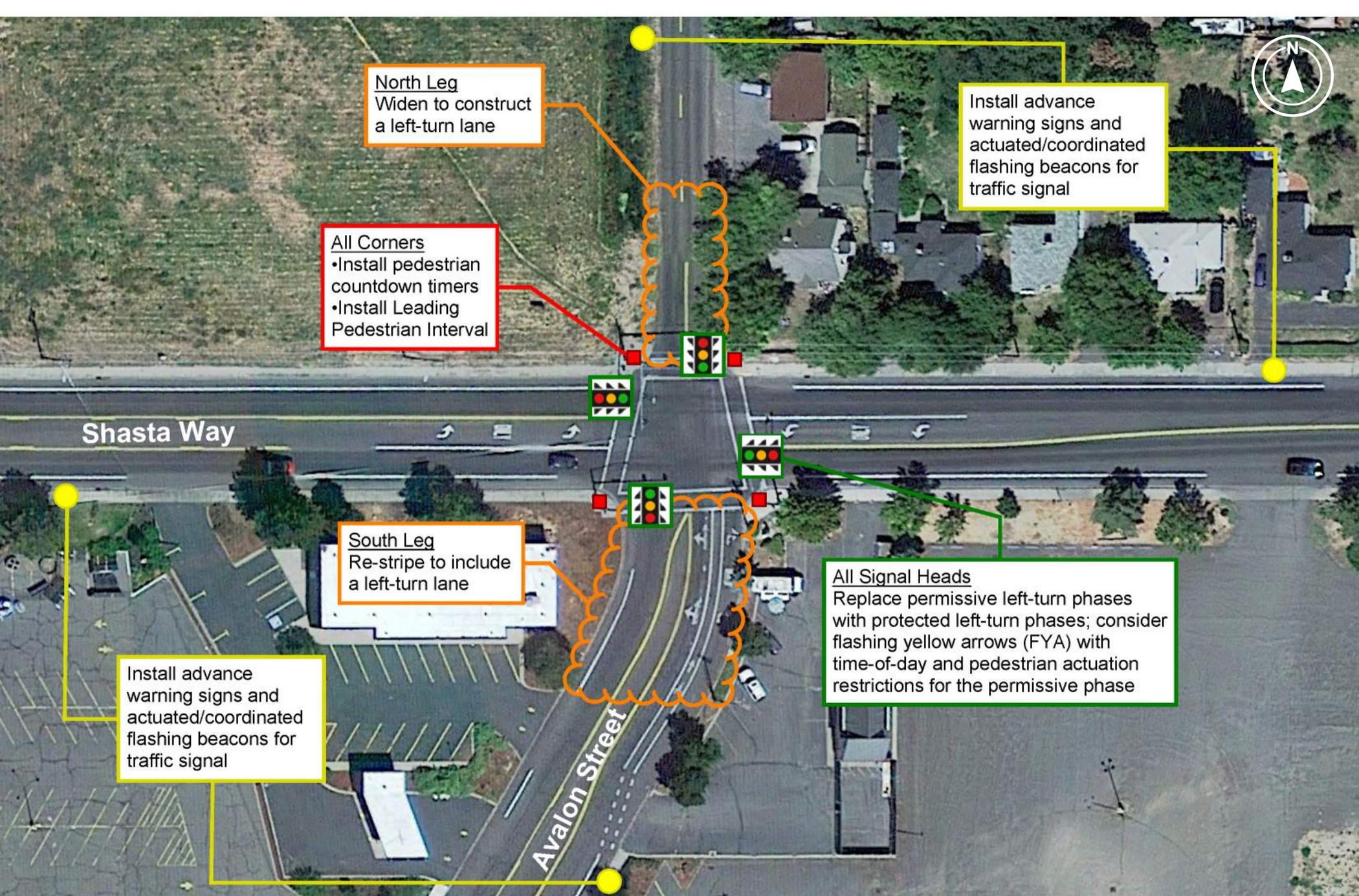
Radcliffe Avenue

Washburn Way



Transportation Safety Projects
Washburn Way/Radcliffe Avenue

Figure 12



North Leg
Widen to construct
a left-turn lane

All Corners
•Install pedestrian
countdown timers
•Install Leading
Pedestrian Interval

Install advance
warning signs and
actuated/coordinated
flashing beacons for
traffic signal

Shasta Way

South Leg
Re-stripe to include
a left-turn lane

Install advance
warning signs and
actuated/coordinated
flashing beacons for
traffic signal

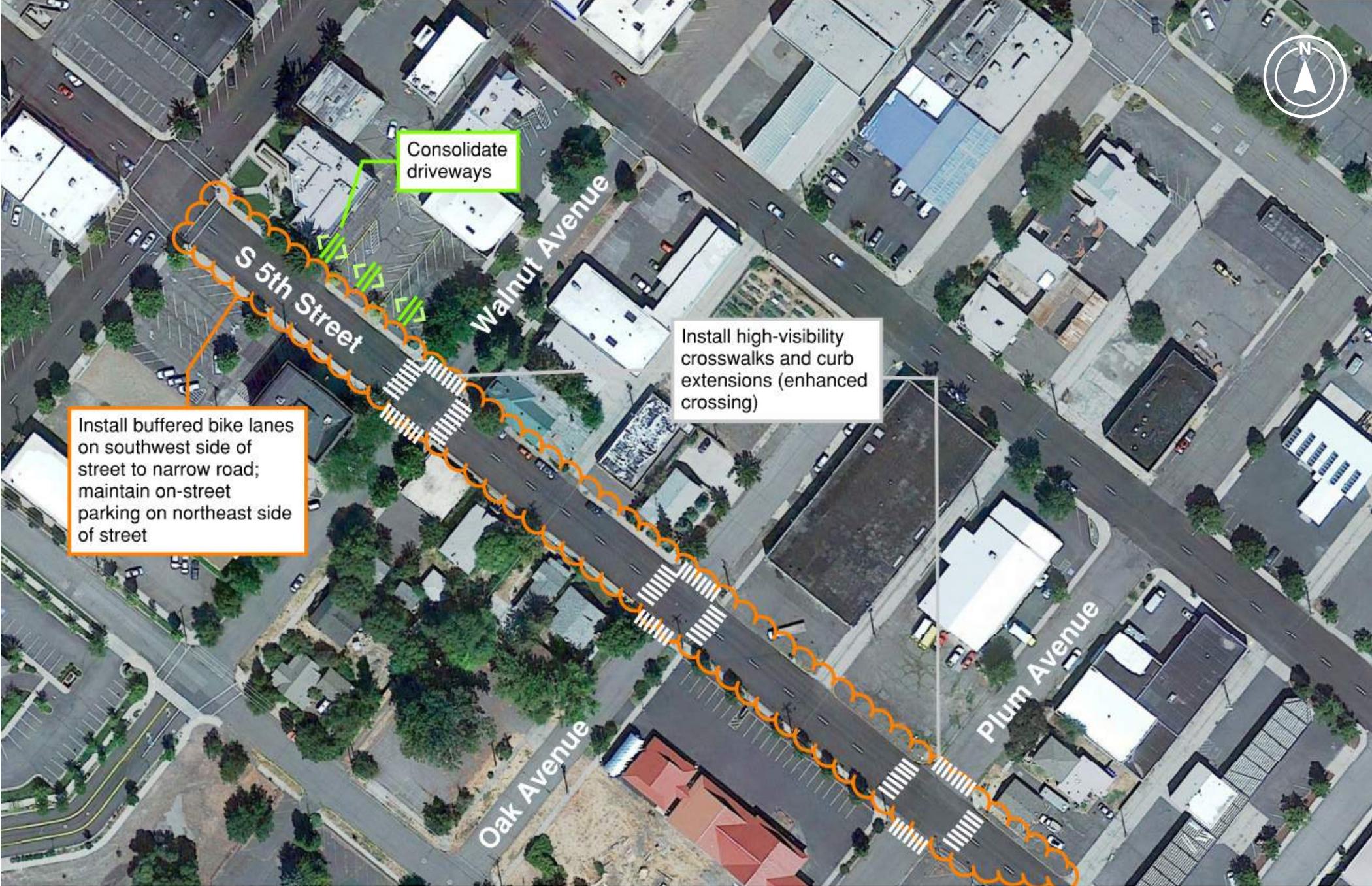
All Signal Heads
Replace permissive left-turn phases
with protected left-turn phases; consider
flashing yellow arrows (FYA) with
time-of-day and pedestrian actuation
restrictions for the permissive phase

Avalon Street



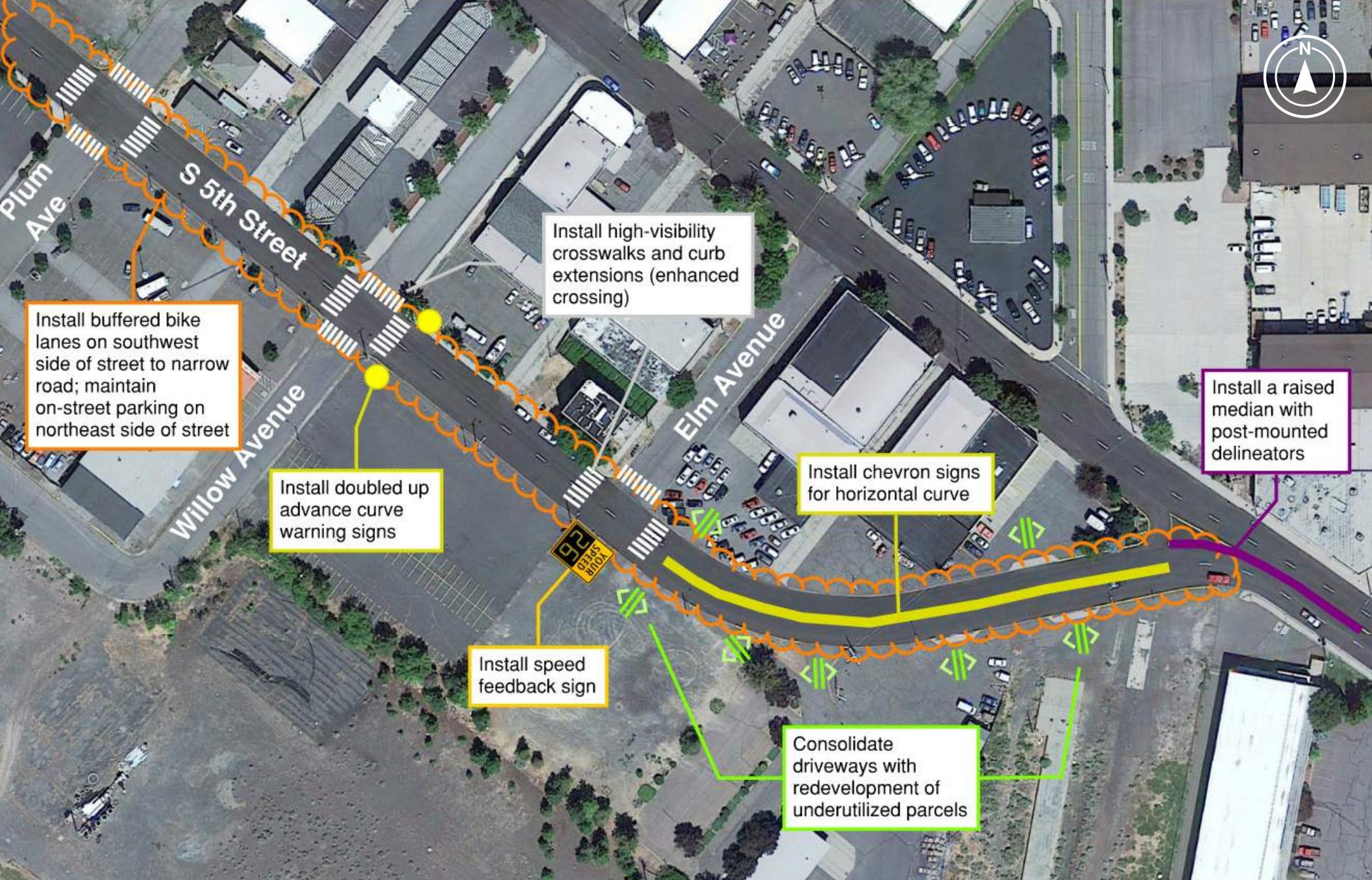
Transportation Safety Projects
Shasta Way/Avalon Street

Figure 13



Transportation Safety Projects
S 5th Street: Klamath Avenue to Plum Avenue

Figure 14A



Install high-visibility crosswalks and curb extensions (enhanced crossing)

Install buffered bike lanes on southwest side of street to narrow road; maintain on-street parking on northeast side of street

Install doubled up advance curve warning signs

Install speed feedback sign

Install chevron signs for horizontal curve

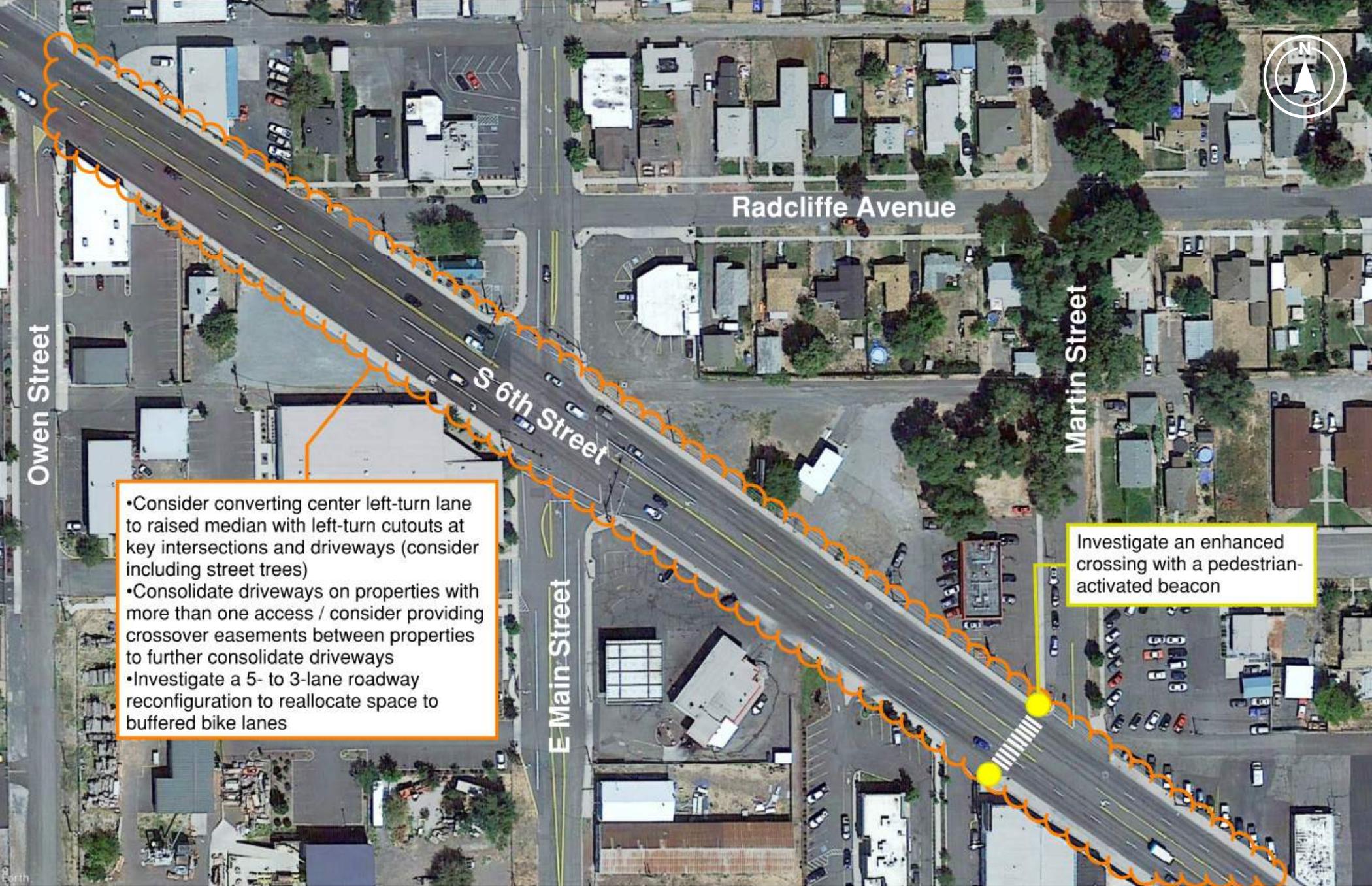
Consolidate driveways with redevelopment of underutilized parcels

Install a raised median with post-mounted delineators



Transportation Safety Projects
S 5th Street: Plum Avenue to S 6th Street

Figure 14B



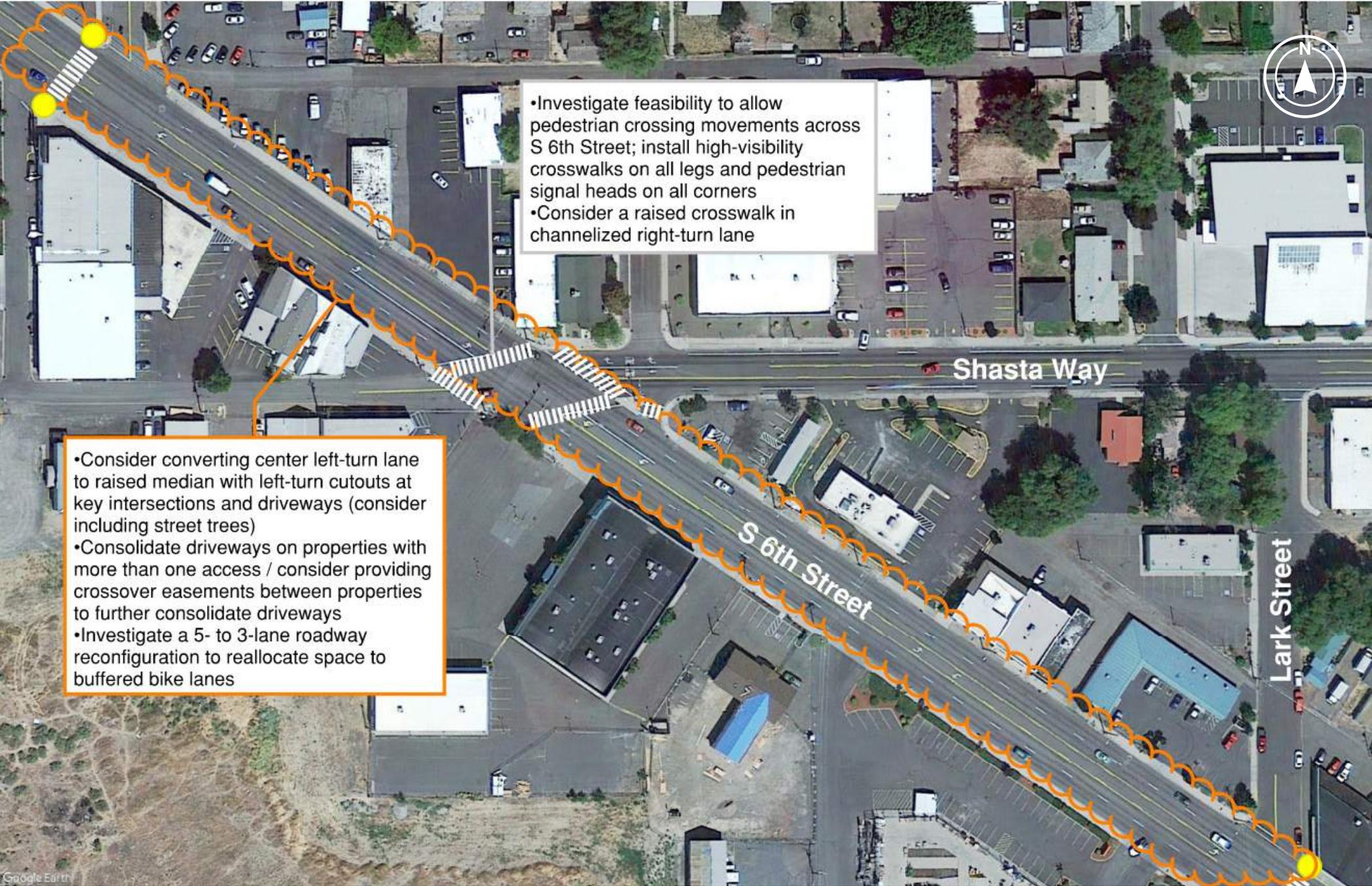
- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Investigate a 5- to 3-lane roadway reconfiguration to reallocate space to buffered bike lanes

Investigate an enhanced crossing with a pedestrian-activated beacon



Transportation Safety Projects
S 6th Street: Owen Street to Martin Street

Figure 15A



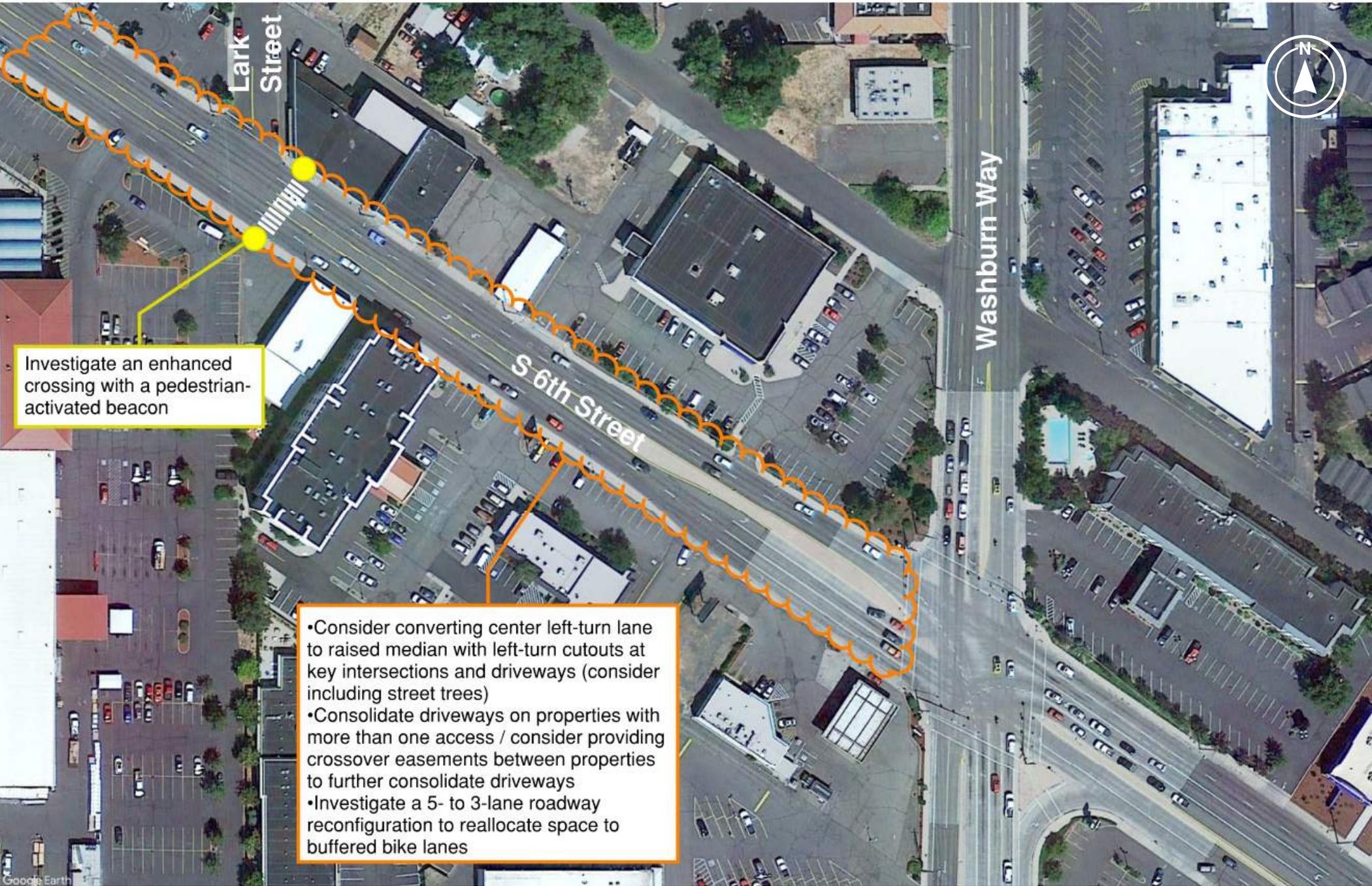
•Investigate feasibility to allow pedestrian crossing movements across S 6th Street; install high-visibility crosswalks on all legs and pedestrian signal heads on all corners
•Consider a raised crosswalk in channelized right-turn lane

•Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
•Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
•Investigate a 5- to 3-lane roadway reconfiguration to reallocate space to buffered bike lanes



Transportation Safety Projects
S 6th Street: Martin Street to Lark Street

Figure 15B



Investigate an enhanced crossing with a pedestrian-activated beacon

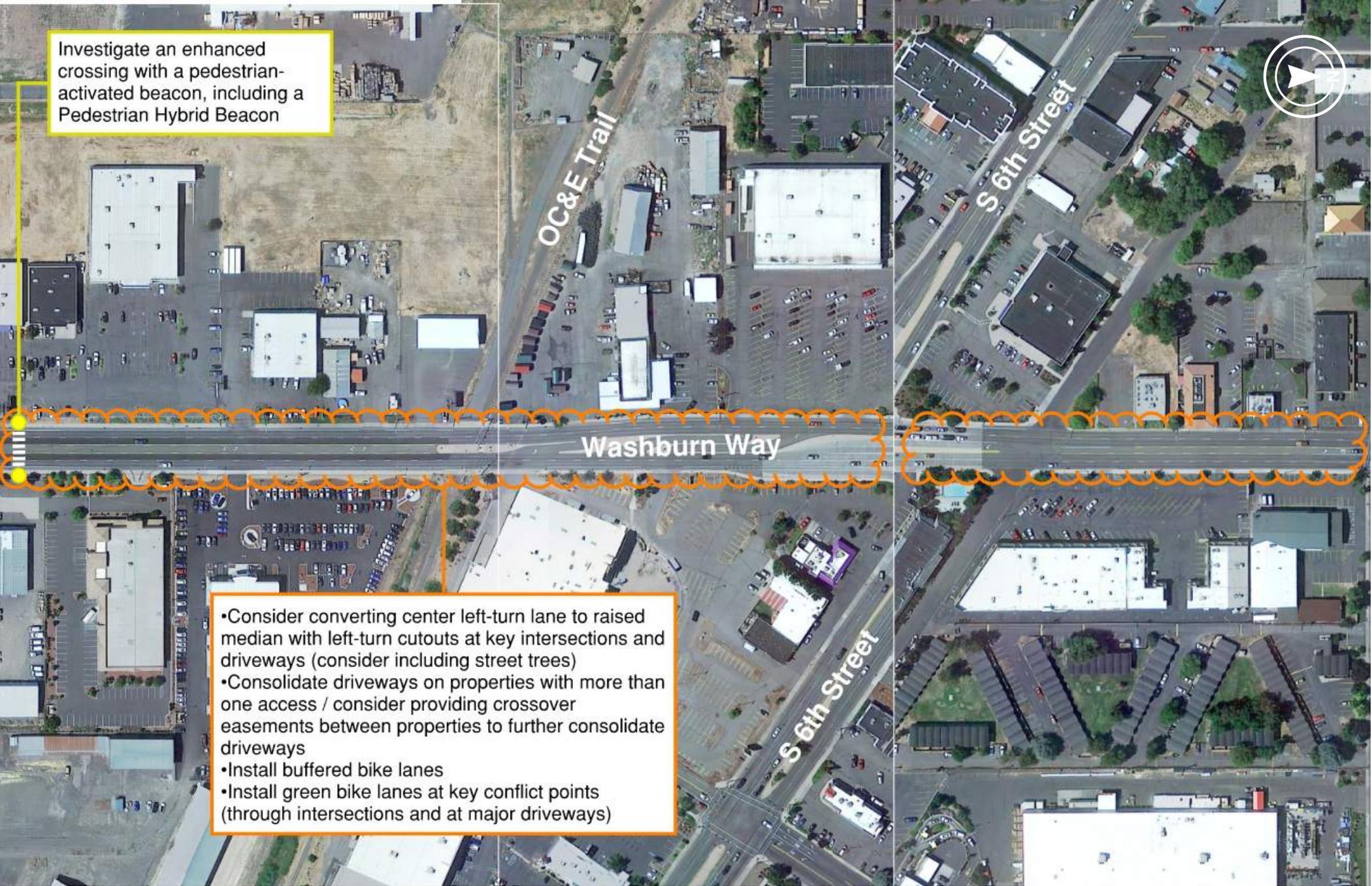
- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Investigate a 5- to 3-lane roadway reconfiguration to reallocate space to buffered bike lanes



Transportation Safety Projects
S 6th Street: Lark Street to Washburn Way

Figure 15C

Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon

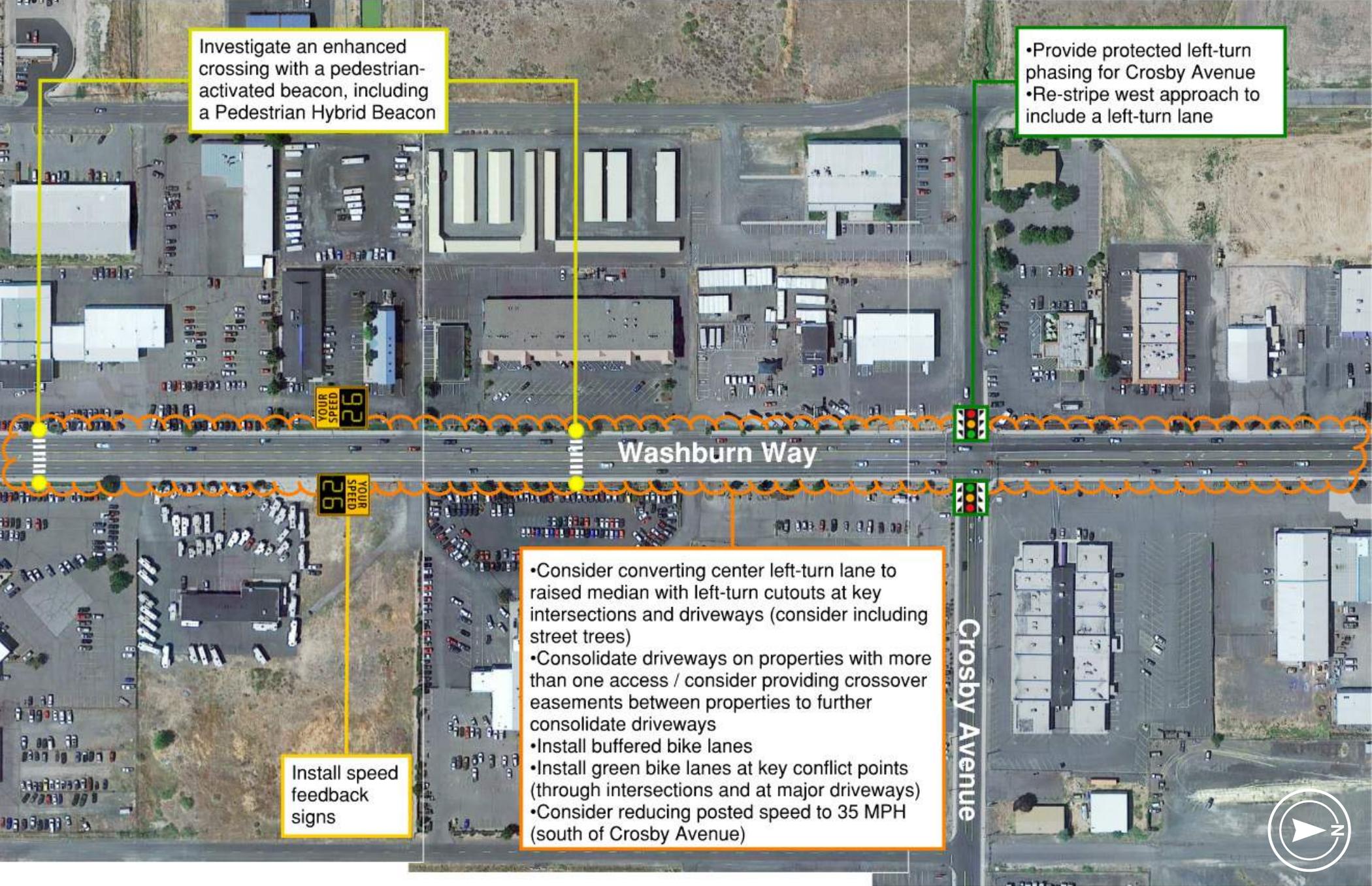


- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)



Transportation Safety Projects
Washburn Way: South of OC&E Trail
to Shasta Way

Figure 16A



Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon

•Provide protected left-turn phasing for Crosby Avenue
•Re-stripe west approach to include a left-turn lane

•Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
•Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
•Install buffered bike lanes
•Install green bike lanes at key conflict points (through intersections and at major driveways)
•Consider reducing posted speed to 35 MPH (south of Crosby Avenue)

Install speed feedback signs



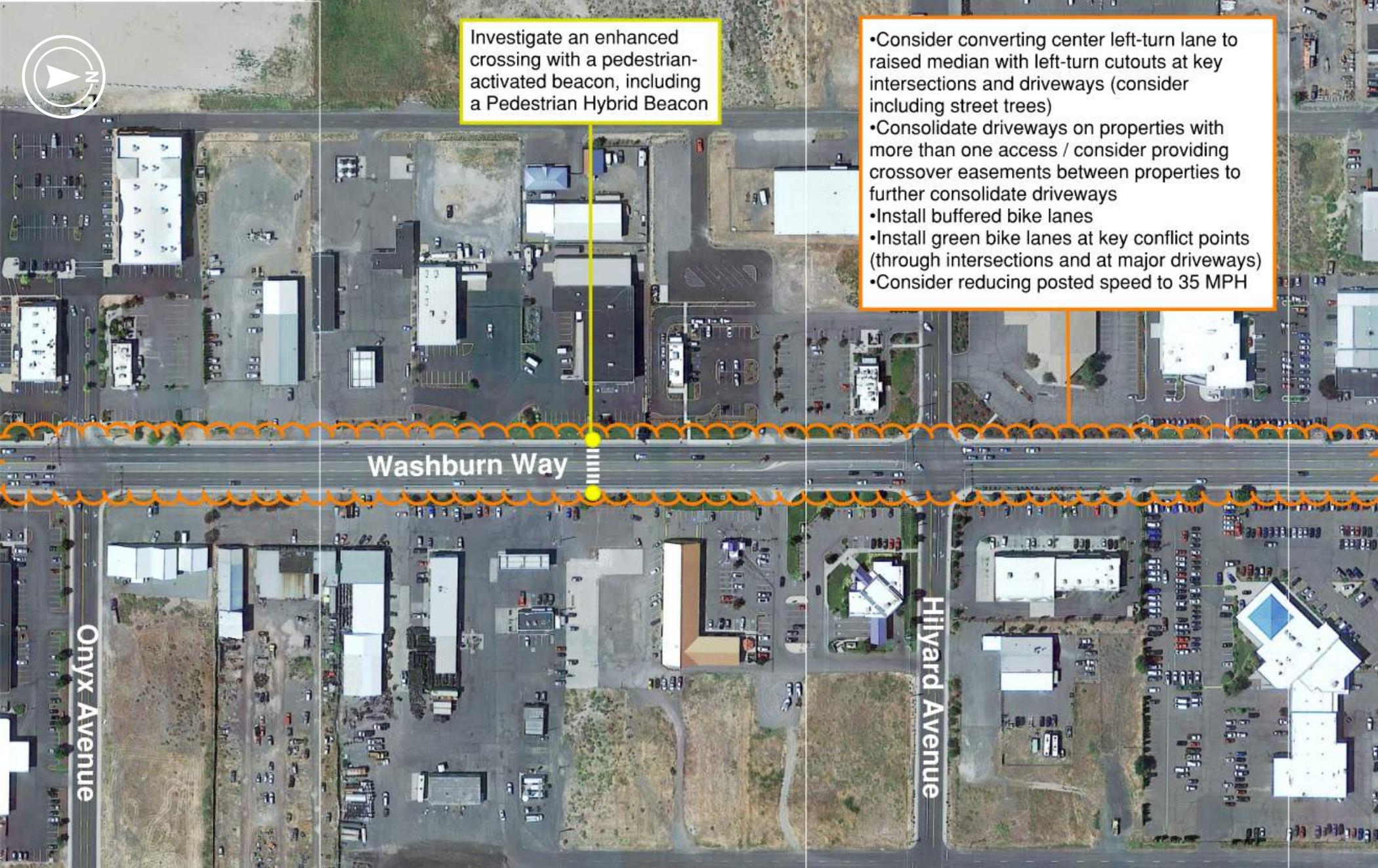
Transportation Safety Projects
Washburn Way: South of Crosby Avenue
to South of OC&E Trail

Figure 16B



Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon

- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)
- Consider reducing posted speed to 35 MPH



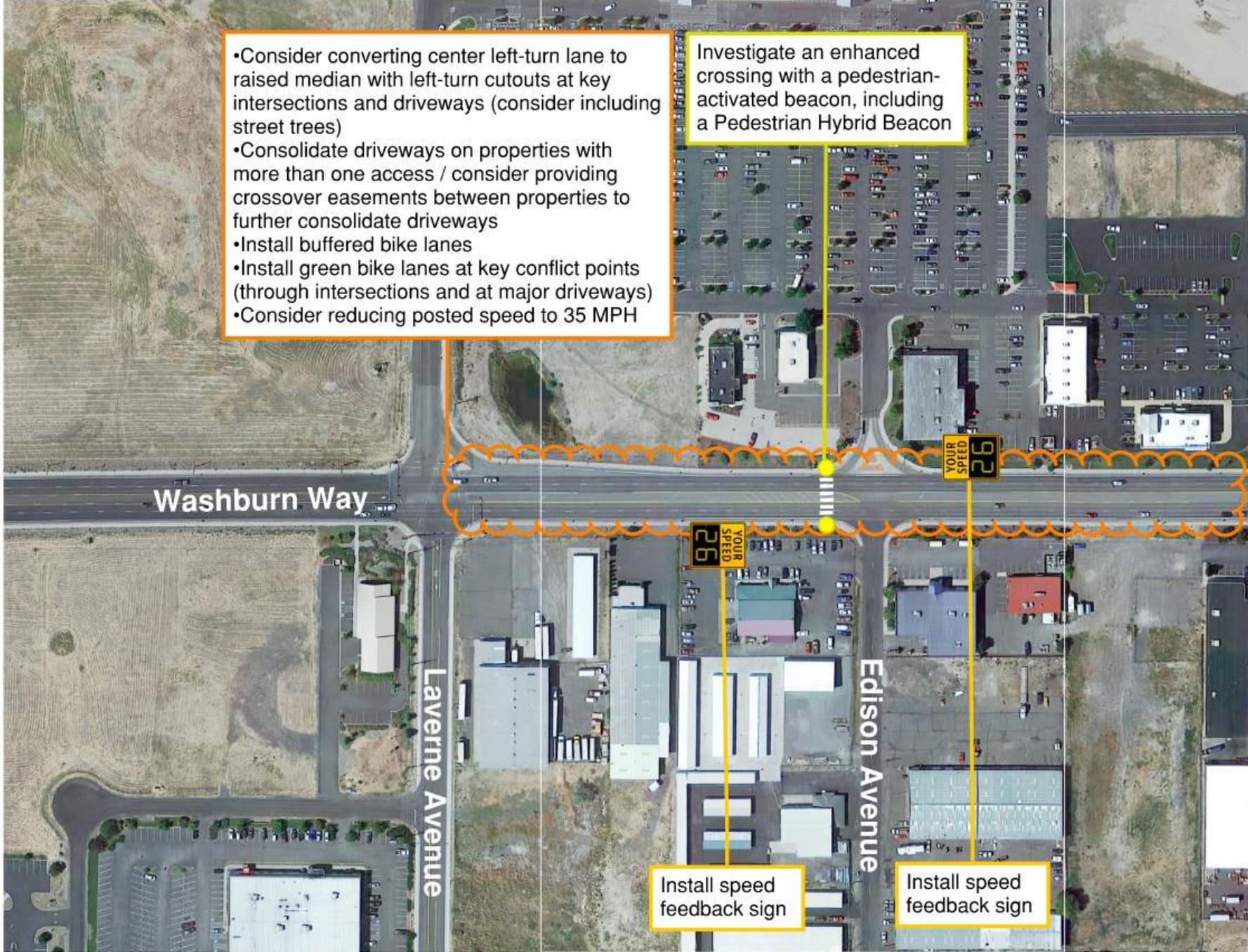
Transportation Safety Projects
Washburn Way: Onyx Avenue
to South of Crosby Avenue

Figure 16C



- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)
- Consider reducing posted speed to 35 MPH

Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon



Install speed feedback sign

Install speed feedback sign



Transportation Safety Projects
Washburn Way: Laverne Avenue to Onyx Avenue

Figure 16D

IMPLEMENTATION PLAN

The implementation plan presented in this section provides a roadmap for the City to develop and construct the high priority location projects according to a recommended timeline. These recommended timelines were determined by prioritizing each project based on the following criteria:

- Frequency and severity of crashes;
- Effects on transportation disadvantaged populations;
- Planning-level cost estimates;
- Community input;
- Potential environmental and right-of-way impacts; and,
- Previous planning decisions.

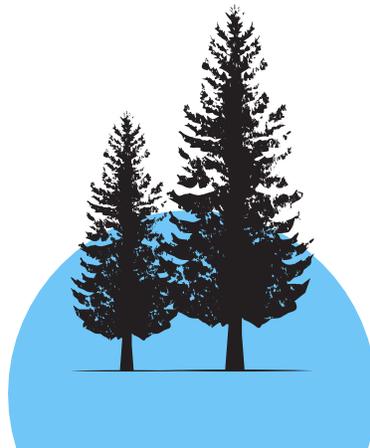
Given that intersections and street corridors differ in function, quantity of crashes, and implementation cost, these are prioritized separately from each other. The implementation plan is presented in Table 5. The cost estimates are planning level and do not account for design details such as right-of-way acquisition and environmental constraints. These should be identified through project development. The implementation timeframes are Near-Term (1-5 years), Mid-Term (5-10 years), and Long-Term (10-20 years). *Details on the prioritization process as well as the cost estimate worksheets are included in Appendix D.*

Table 5. High Priority Location Projects – Implementation Plan

Location	Types of Improvements	Planning-Level Cost	Implementation Timeframe
Main St / 3rd St	<ul style="list-style-type: none"> – All-Way Stop Control – Crossing Enhancements – Intersection Warning 	\$400K	Near-Term
Main St / 5th St	<ul style="list-style-type: none"> – Signal Upgrades – Crossing Enhancements – Intersection Warning – Turn Movement Restrictions 	\$450K	Near-Term
Pine St / 11th St	<ul style="list-style-type: none"> – Signal Upgrades – Crossing Enhancements – Intersection Warning – Turn Movement Guides 	\$450K	Near-Term
S 6th St / E Main St	<ul style="list-style-type: none"> – Signal Upgrades – Crossing Enhancements – Intersection Warning – Turn Movement Guides 	\$260K	Mid-Term
Washburn Way / Eberlein Ave	<ul style="list-style-type: none"> – Roundabout 	\$3.0-5.0M	Long-Term
Washburn Way /Radcliffe Ave	<ul style="list-style-type: none"> – Roundabout 	\$3.0-5.0M	Long-Term
Shasta Way / Avalon St	<ul style="list-style-type: none"> – Signal Upgrades – Crossing Enhancements – Intersection Warning – Protected Left Turn Movements 	\$700K	Mid-Term
S 5th St: Klamath Ave to S 6th St	<ul style="list-style-type: none"> – Access Control – Bike Lanes – Crossing Enhancements – Traffic Calming Measures – Curve Warning 	\$2.1M	Near-Term
S 6th St: Owen St to Washburn Way	<ul style="list-style-type: none"> – Access Control – Street Trees – Enhanced Pedestrian Crossings 	\$2.1M	Mid-Term
Washburn Way: Shasta Way to Laverne Ave	<ul style="list-style-type: none"> – Access Control – Street Trees – Enhanced Pedestrian Crossings – Buffered Bike Lanes – Green Bike Lanes – Reduced Posted Speed – Speed Feedback Signs 	\$5.5M	Long-Term

SECTION 6

**MULTIDISCIPLINARY
ACTION ITEMS**



Multidisciplinary Action Items

Table 6 through Table 10 present additional recommended action items that bring together multiple disciplines, agencies, and community organizations. These add another transportation safety layer to the capital improvements documented in Sections 4 and 5 to include policies and practices covering all five Safe System Approach Objectives.

Table 6: Safety Culture / Education Action Items

Safety Culture / Education Efforts
Create a Regional Multidisciplinary Transportation Safety Committee to coordinate on transportation safety, implement TSAP Action Items, and identify new actions needed based on more recent crash history.
Develop a fatal and serious injury crash review task force .
Formalize rideshare sites in downtown, areas with multiple restaurants and bars, and in locations that host special events (e.g., the rodeo, fair, etc.) to encourage greater use of rideshare options. Coordinate with local bars and businesses to offer a program that discounts patron purchases for using rideshare after consuming alcohol. Partner with Klamath County on this action item.
Implement actions from the five non-engineering E’s identified in the Klamath Falls Safe Routes to School Master Plan.
Expand safety culture about safe driving between families of senior drivers , health care professionals, and community groups. Support training sessions through AARP, AAA, and insurance companies to help seniors maintain driving skills.
Partner with local Bicycle and Pedestrian advocates or committees when implementing transportation infrastructure changes so that pedestrian and bicycle safety is incorporated
Create a Klamath Falls Safety Communications Plan , including an educational and public outreach system, to promote a roadway safety culture by emphasizing respect for red lights at traffic signals and stop / yield signs, posted speed limits, bicycles on the roadway, and pedestrians in crosswalks, and driving sober and undistracted.
Develop a plan for recurring educational programs throughout the year, including at community events. Coordinate this action item with Klamath County. Various options include the following: <ul style="list-style-type: none"> - Provide educational materials to visitors through partnerships with Discover Klamath and local hotels/resorts; educational materials to residents through partnerships with major employers, schools, and the Klamath Tribes; and educational materials to college students through partnerships with OIT and KCC. - Develop an educational campaign to promote sober and undistracted driving (posters, social media posts, and public service announcements) that shares crash statistics and the consequences of impaired and distracted driving. - Conduct targeted outreach to motorcyclists that encourages them to practice safe riding, including educational posters, social media posts, and placards that inform on the consequences of motorcycle crashes and promote safe riding practices, safety equipment, gear choices, sober driving, and motorcycle handling skills and maintenance. - Include transportation safety in public health education programming. - Conduct pedestrian and bicycle outreach for all ages, including adults, to educate on safe crossing practices and the use of new pedestrian/bicycle infrastructure. Implement outreach in the SRTS Master Plan. - Educate drivers and bicyclists about bicycle transportation, including proper driver and bicyclist behavior and rules of the road for bicyclists (e.g., when to dismount, how to use sidewalks and crosswalks, how to ride through roundabouts, common crash types, etc.). - Begin driver safety education before young people are of age, as early as preschool. Partner with groups such as school districts.

Safety Culture / Education Efforts
<ul style="list-style-type: none"> - Support driver education and transportation safety programs for younger drivers. Support peer-based safe driving marketing efforts and outreach programs in high schools to provide driver and non-motorized travel safety training. Support family-based driver education to leverage parental influence. - Seasonally educate drivers about proper driving behavior and vehicle preparations for winter conditions.

Table 7: Engineering Action Items

Engineering
Implement a “roundabouts first” policy for new construction and for upgrades to existing intersections.
Develop a speed management program to implement best practices in setting design speeds and speed limits, such as reducing design speed standards (for local streets to 20 mph, for collectors to 25 mph, and for arterials to 30 mph), a funded program for citizens to submit concerns about speeding, implementing traffic calming features, and deploying radar speed feedback signs and sharing data with the police and sheriff departments, County and City staff, and the community.
Design roadways to integrate pedestrian and bicycle safety by providing appropriate infrastructure, encouraging slower vehicle speeds, and minimizing conflict points between them and motorists (e.g., sidewalks, pathways, physical barriers, enhanced roadway crossings, shared lane markings, wayfinding, traffic calming treatments, enhanced striping).
Develop and promote a bicyclist wayfinding system to communicate information about the network and to encourage use of lower stress routes instead of higher stress routes. This includes the recommendation from the Klamath Falls Urban Trail Master Plan to develop a program that installs and maintains wayfinding signage at all trailheads and trail crossings of public streets.
Implement various transportation plans to close gaps in the sidewalk system and provide appropriate crossing treatments, working toward a long-term goal of completing the urban area sidewalk system. Prioritize locations of underserved communities.
Provide transportation options for seniors through infrastructure that allows for riding transit, walking, and mobility devices. Partner with transportation assistance programs to promote transportation options other than driving.
Monitor advancements in technology and identify opportunities for the City to use emerging technology to improve transportation safety (e.g., variable speed limits for nighttime or inclement weather conditions, variable message signs warning of hazardous conditions, etc.) and understand perceived safety issues (e.g., traffic volume, near-misses, and other data).
Evaluate opportunities or pilot studies to use automated enforcement .
Install raised crosswalks in channelized turn lanes.

Table 8: Post-Crash Care / Emergency Medical Service (EMS) Action Items

Post-Crash Care / EMS Coordination
Purchase battery powered extrication tools for the Fire District’s apparatus (at least two full sets) for the engines that respond to emergencies within City limits. Provide additional specialized EMS training to the Fire District and assisting agencies.
Provide community bystander training courses to educate residents on how to respond in an emergency event. Coordinate this action item with Klamath County.

Table 9: Enforcement Action Items

Enforcement
Increase enforcement for impaired driving through data-driven saturation patrols and providing officers with Drug Recognition Expert Training and standardized field sobriety test training.
Increase enforcement presence during times of greatest risk , based on reported crash data patterns.
Increase enforcement presence at locations within the High Injury Network , based on reported crash data.
Implement an unmarked car distracted driving program to increase compliance with distracted driving rules.
Install speed safety cameras in areas with regular speeding complaints by residents.
Consider lowering the allowed Blood Alcohol Content level to below the standard 0.08.
Consider enacting random breath and drug testing of transportation users, especially motor vehicle drivers.
Consider evaluating opportunities to increase fines for violations .
Develop repeat DUII driver offender programs to treat the causes of DUII.

Table 10: Equity Action Items

Enforcement
Require an “equity” project prioritization criterion on all transportation projects, including when developing Capital Improvement Plans.
Consider the needs of underserved populations in project development and in public outreach efforts.
Develop a Budget Equity Tool that integrates explicit considerations of racial and economic equity into decisions, including policies, practices, programs, and ultimately, the departmental budgets. The City of San Antonio has developed this tool that could provide guidance.

SECTION 7

POTENTIAL FUNDING SOURCES



Potential Funding Sources

The TSAP recommends projects that are located on streets under the jurisdiction of the City of Klamath Falls, Klamath County, and ODOT. Projects may be funded through a different combination of federal, state, County, City, or private resources. A detailed list of funding sources that are applicable to the TSAP is included in Appendix E. The list of funding sources in Appendix E is not exhaustive and funding sources change over time, so the City will need to monitor them.

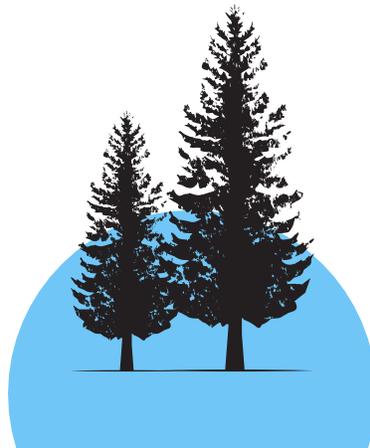
The most pertinent of these sources for the City to focus pursuits are summarized in Table 11.

Table 11: Potential Funding Sources to Implement TSAP – Most Pertinent

State and Federal Grants	Description	Potential Application
Safe Streets and Roads for All (SS4A) Program	SS4A is a five-year program of the Infrastructure Investment and Jobs Act (IIJA) that will allocate \$5 billion to safety action plan and implementation programs to prevent roadway deaths and serious injuries for cities, counties, and MPOs. Equitable outreach and an Action Plan backed by the community and elected officials are critical elements of this program.	Planning and capital projects to eliminate fatal and serious injury crashes from roadways. Funds can be used on all public roadways for all surface transportation modes.
All Roads Transportation Safety Program (ARTS)	The federal Highway Safety Improvement Program is administered as ARTS in Oregon. ARTS provides funding to infrastructure and non-infrastructure projects that improve safety on all public roads. ARTS requires a data-driven approach and prioritizes projects in demonstrated problem areas.	Areas of safety concerns within the city, as identified in its TSAP, and consistent with Oregon’s Transportation Safety Action Plan.
Safe Routes to School (SRTS)	SRTS, administered by ODOT, focus on infrastructure and non-infrastructure programs to improve access and safety for children to walk, roll, and/or bike to school.	Pedestrian and bicycle-related projects within the vicinity of local schools, including projects identified in the Klamath Falls SRTS Master Plan.
Oregon Parks and Recreation Local Government Grants	Oregon Parks and Recreation Department administers this program using Oregon Lottery revenues. These grants can fund acquisition, development, and major rehabilitation of public outdoor parks and recreation facilities. A match of at least 20 percent is required.	Trails and other recreational facility development or rehabilitation.
Community Paths Program	This is a State of Oregon program focused on helping communities create and maintain connections through shared-use paths.	Shared-use paths.

SECTION 8

PERFORMANCE MONITORING AND UPDATING



Performance Monitoring and Updating

This section presents recommendations on how to monitor the performance of the TSAP, including implementation of its actions and progress toward a goal of zero fatalities and serious injuries, as well as guidance on when to update this plan.

PERFORMANCE MONITORING

Performance measures are used to evaluate progress in completing the projects and actions identified in the TSAP and in achieving its desired outcomes. The Oregon TSAP identifies two general types of performance measures:

- **Effectiveness Performance Measures** track the results of a program or activity. For example, they track how many fatalities or injuries occurred, or number of non-motorist fatalities.
- **Efficiency Performance Measures** track effort and output. For example, they track how many activities were conducted, or miles of treatment were installed.

Given that the City's goal is to eliminate serious crashes from its urban area transportation system, it is recommended that effectiveness measures are used to track outcomes.

Effectiveness Performance Measures

Effectiveness performance measures that the City could use include:

- Total number of fatal and serious injury crashes within the UGB
- Number of fatal and serious injury crashes on all streets by the following categories:
 - Intersection crashes (includes turning movement, angle, and rear-end crashes)
 - Pedestrian-involved crashes
 - Bicyclist-involved crashes
 - Crashes involving speeding in excess of the speed limit or too fast for conditions (e.g., weather)
 - Impaired driving crashes involving alcohol and/or drugs
 - Motorcyclist-involved crashes
 - Crashes involving drivers over age 65

Serious crashes should be reported annually, and performance should be based on the latest five-year annual average number of crashes to help account for random fluctuations in crashes each year.

Performance for the Klamath Falls urban area between 2017 and 2021 is summarized in Table 12.

Table 12: Klamath Falls TSAP Effectiveness (Outcome) Performance Measures

Performance Measure	Number of Reported Serious Crashes (2017-2021)
Fatal and Serious Injury Crashes	113
<i>Fatal or Serious Injury Crashes Involving:</i>	
Intersections	69
Pedestrians	13
Bicyclists	4
Speed	33
Impaired Driving	35
Motorcyclists	9
Drivers Aged 65+	33

UPDATING THE TSAP

Implementing the TSAP actions should result in measured decreases in fatal and serious injuries for the identified emphasis areas. Measuring safety benefits will require that the City annually monitor the TSAP’s performance of its implementation and by re-examining crash data. Every five years, the City should re-evaluate actions in the TSAP to determine if it the plan should be updated or the City should change course based on the most current crash data and how plan implementation is proceeding, followed by updating programs to meet emerging safety performance needs.

APPENDIX A

PUBLIC INVOLVEMENT RESULTS





KLAMATH FALLS TRANSPORTATION SAFETY ACTION PLAN

HELP MAKE STREETS IN KLAMATH FALLS SAFER!

The City of Klamath Falls is creating a transportation safety plan and we need your help! The goal of the plan is to eliminate fatal and serious injury crashes from Klamath Falls streets. Whether you walk, roll, bike, or drive a vehicle, the City wants you to reach your destination safely. Navigate to the website below to tell us how you think streets could be safer in Klamath Falls!

Please provide your input by Friday, December 22.

<https://arcg.is/18CTTi0>



KLAMATH FALLS TRANSPORTATION SAFETY ACTION PLAN

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Please provide your input by Friday, December 22.

<https://arcg.is/18CTTi0>

Facebook

Join the conversation for safer streets in Klamath Falls! The City of Klamath Falls is crafting a Transportation Safety Action Plan to help eliminate fatal and serious crashes from its streets. We want YOUR input to help determine streets in the community that need the most help. 

Participate in our virtual open house at the website below to voice your thoughts on how you think streets could be safer in Klamath Falls! Please provide your input by Friday, December 22nd. 

Whether you walk, roll, bike, or drive, we want you to reach your destination safely because someone is waiting for you at home. 

<https://arcg.is/18CTTi0>

Instagram

We want YOU to help shape safer streets in Klamath Falls! 

The City is working on a Transportation Safety Action Plan to eliminate crashes from its streets, and your input matters to us! Tap into our virtual open house (link in bio) to share your thoughts on how to make our community safer. Act now, the deadline is Friday, December 22nd! 

<https://arcg.is/18CTTi0>

Twitter

We want YOU to help shape safer streets in Klamath Falls by sharing your thoughts at our virtual open house!  The deadline is Dec. 22! The City has plans to eliminate crashes & whether you walk, roll, bike, or drive, we want you to reach your destination safely because someone is waiting for you at home.



<https://arcg.is/18CTTi0>

Facebook

¡Únete a la conversación por calles más seguras en Klamath Falls! La ciudad de Klamath Falls está elaborando un Plan de Acción de Seguridad Vial para eliminar las muertes y las lesiones graves ocasionadas por accidentes de tráfico en sus calles. Queremos TU opinión para determinar las calles de la comunidad que necesitan más ayuda. 

¡Participa en nuestra jornada virtual de acceso abierto en la siguiente página web para expresar tu opinión sobre cómo crees que las calles podrían ser más seguras en Klamath Falls! Por favor proporciona tu opinión antes del día viernes 22 de Diciembre. 

Ya sea que camines, patines, andes en bicicleta o conduzcas, queremos que llegues a tú destino de manera segura porque alguien te espera en casa.   

<https://arcg.is/18zvWD>

Instagram

¡Queremos que nos ayudes a crear calles más seguras en Klamath Falls! 

La Ciudad está trabajando en un Plan de Acción de Seguridad Vial para eliminar los accidentes de tráfico en sus calles, ¡y tú opinión es importante! Ingresa a nuestra jornada virtual de acceso abierto (enlace en la biografía) para compartir tus ideas sobre cómo hacer que nuestra comunidad sea más segura. ¡Actúa ahora, la fecha límite para comentarios es el día viernes 22 de Diciembre! 

<https://arcg.is/18zvWD>

Twitter

¡Queremos que nos ayudes a crear calles más seguras en Klamath Falls compartiendo tus ideas en nuestra jornada virtual de acceso abierto!  ¡La fecha límite es el día viernes 22 de Diciembre! La Ciudad tiene planes para eliminar los accidentes de tráfico y ya sea que camines, ruedes, andes en bicicleta o conduzcas, queremos que llegues a tu destino de manera segura porque alguien te espera en casa.   <https://arcg.is/18zvWD>



1001 SW Emkay Drive, Suite 140
Bend, OR 97702
P 541.312.8300

Virtual Open House #1 Press Release

December XX, 2023

For more information:
Mark Willrett, City Public Works Director
(541) 883-5316
Willrett@klamathfalls.city

City of Klamath Falls Encourages Community Input on Transportation Safety Action Plan at a Virtual Open House

KLAMATH FALLS – Join the conversation for safer streets in Klamath Falls! The City of Klamath Falls is crafting a Transportation Safety Action Plan to help eliminate fatal and serious crashes from its streets. We want YOUR input to help determine streets in the community that need the most help.

Participate in our virtual open house at the website below to voice your thoughts on how you think streets could be safer in Klamath Falls! Please provide your input by Friday, December 22nd.

Whether you walk, roll, bike, or drive, we want you to reach your destination safely because someone is waiting for you at home.

Virtual Open House: <https://arcg.is/18CTTi0>

Virtual Open House #1 Press Release

December XX, 2023

La ciudad de Klamath Falls incentiva la opinión de la comunidad sobre el Plan de Acción de Seguridad Vial en nuestra jornada virtual de acceso abierto

KLAMATH FALLS – ¡Únase a la conversación por calles más seguras en Klamath Falls! La ciudad de Klamath Falls está elaborando un Plan de Acción de Seguridad Vial para ayudar a eliminar las muertes y las lesiones graves ocasionadas por accidentes de tráfico en sus calles. Queremos que SU opinión nos ayude a determinar las calles de la comunidad que necesitan más ayuda.

¡Participe en nuestra jornada virtual de acceso abierto en el sitio web a continuación para expresar su opinión sobre cómo cree que las calles podrían ser más seguras en Klamath Falls! Por favor proporcione su opinión antes del día Viernes 22 de Diciembre.

Ya sea que camine, ruede, ande en bicicleta o conduzca, queremos que llegue a su destino de manera segura porque alguien te espera en casa.

Jornada Virtual De Acceso Abierto: <https://arcg.is/18zvWD>



Klamath Falls Transportation Safety Action Plan (TSAP)



Klamath Falls Transportation Safety Action Plan (TSAP)

Help make streets in Klamath Falls safer!

Virtual Open House | December 8 - December 22, 2023

Project Background

**Welcome to the first open house for the Klamath Falls
TSAP!**

This virtual open house provides you with a brief background on the plan. After reading this background, please take a moment to complete our survey and let us know where and how you think Klamath Falls could become a safer place to drive, walk, bike, or roll!

Why is this plan needed?

Between 2017 and 2021, 113 crashes were reported in Klamath Falls that resulted in fatal or serious (potentially life-changing) injuries. The primary goal of the Klamath Falls TSAP is to eliminate these serious crashes from Klamath Falls streets. To do this, the Klamath Falls TSAP will identify the following:

- Contributing factors (e.g., age, driver behavior, physical characteristics of a street or intersection);
- Types of crashes resulting in fatal or serious injuries;
- Locations where fatal and serious injury crashes are most concentrated in Klamath Falls;
- Recommended physical changes to streets and intersections and recommended action items for the City to carry out with its various partners (e.g., schools, medical offices, emergency response teams); and,
- Funding sources that can support implementing the recommendations.

The TSAP is a roadmap for the City of Klamath Falls to accomplish its goal of eliminating fatal and serious injury crashes from its streets. This plan is needed to:

- Improve transportation safety in Klamath Falls;
- Reduce the impact that fatal and serious injury crashes have on the community;
- Provide the City with justification to apply for state and federal funding to implement the recommendations; and,
- Establish methods to monitor how the recommendations are performing and if the City is reaching its goal.

How can YOU help with this plan?

We would like to hear about your experiences related to transportation safety in Klamath Falls! You can help us by doing the following:

- Identify locations within the comment map below where you don't feel safe or see behaviors that you think should be addressed (see instructions below);
- Fill out the survey at the end of this virtual open house; and,
- Practice safe behaviors on streets in Klamath Falls!

Commenting Map

In the map below, please identify locations around Klamath Falls where you have concerns about walking, rolling, biking, and/or driving and tell us why!

Klamath Falls TSAP

Survey

English VOH Map Comments

How can a child or adult bicycle safely from Klamath Falls to Southview or Stewart Lennox. Negotiating the 140/97 underpass is not an easy task.
No sidewalk making crossing the road unsafe. Ideal would be to have a sidewalk up and down Campus Drive and
Need a safe route (sidewalk) on Hope Street from Amberview to Peterson School
Poor visibility due to library right on the corner and cars parked right up to the intersection. Cars speeding and not stopping for pedestrians cross Klamath Avenue. Still no crosswalk after repairs were made last spring. GET RID OF THE SLANT PARKING TO IMPROVE VISIBILITY!!!! Put in a crosswalk flashing light, you have one to the mission, why
Poor visibility for cars and pedestrians due to slant parking behind the courthouse, cars speed down Klamath Ave due to no traffic control from 97 all the way to 5th street. More speed enforcement please!!!
No sidewalk along this stretch, not ADA accessible or safe passage between veteran's park and the Klamath Ave sidewalk. Wheelchairs/strollers/walkers have to go into the street for 50 yards to avoid the rough terrain
Definitely need sidewalks between pheasant run neighborhood and Peterson School.
People traveling on Pacific Terrace ignore the yield signs and I almost get hit, traveling up Esplanade on a weekly
People run the red light at 11th and Main on a regular basis. People turning from 11th onto Main change lanes while turning on a regular basis. Both of these actions lead to most of the wrecks at this intersection.
Yoooo kids goin' to school (Ponerosa) walking down this street almost die like every morning.
This is a dangerous turn to make when going north on Esplanade toward hwy 97 here. It is hard to see traffic from either direction because of the parked cars on the north side and because of the curve of the road on the south side. Luckily, speeds here are generally pretty slow, but I have made this turn many times and always feel pretty stressed
There used to be rumble strips heading south on East Main right next to the Elementary School, and I think putting those back in would be great. I know there have been lots of people running the stop signs, but the restaurant nearby I've seen multiple people just run right through this stop sign at considerable speed. Very dangerous. Maybe a speed
This intersection is way too busy for a two way stop. This has become a main route for traffic coming from the south on 97, using joe wright and washburn as a way to bypass the 97/140 interchange. Both google and apple recommend this route. Add in the base traffic and the fact that many of the out of towners using these apps seem to anticipate a 4
There is a high volume of pedestrian traffic along Avalon street, yet no sidewalks on either side. Also, this street is supposed to be 25 mph but there is significant speeding on this road, especially in the evenings.
the protected bike lane should continue here to Moore Park
Lakeshore is dangerous for pedestrians and cyclists. Id love to see it widened, or at least a button you can press to warn drivers that there is currently a cyclist or pedestrian on the road.
Pavement is all over the place, many have tripped here.
Parking lot is dark, grates are missing. Someone will get hurt.
the small section where you can turn left off of the off ramp onto Payne Alley. Blind spot to the Left, unable to see
It would be a lot safer is there was a 3 way traffic light here, it's really hard to turn left onto south 6th with all the traffic and traffic coming down the bridge seems to be going faster
This is a very busy intersection and people get in a hurry. My son was in a vehicle crash here a few years ago. He was driving on hwy 39 and a vehicle pull out in front of him from the Southside bypass.
Very difficulty intersection where the off ramp meets to be able to see oncoming traffic from the East. More difficult due to the construction blocking view.
This street feels narrow where the bike lane poles are up and the poles seem a bit distracting to me when I try to concentrate on not hitting them and then on coming traffic comes at me.

Ferguson School Intersection- I have watched multiple "almost accidents" due to people not slowing down in the school zone, turning the wrong way while exiting the school or people going around the line going into the school and colliding with people in the turn lane to go to the school (my husband had a car hit the car in front of him and it was pushed into him) a traffic light like what is at Mazama would be very helpful
This chunk of Esplanade feels blind due to center islands and parked cars. High traffic generated in the mornings from KU exaggerate this problem. I've never seen an accident occur here, but have seen near misses with pedestrians (crossing Esplanade and Wall) and other cars attempting to navigate from the parking lots.
If you are turning left from Shallock onto Daggett, you can not see the cars coming up the hill due to the electrical box and the shrub in front of Abby's
There is a lot of cross traffic from south 6th particularly in the early morning and on the drive home. A light would help the traffic trying to get across
There are no crosswalks or signs warning drivers of pedestrian crossing, yet this road is crossed on foot by hundreds of people every day. Would love to see a safe way to cross Daggett that is closer to the hospital than the traffic circle.
Too busy of an intersection- Stop light would be helpful.
we need a cross walk or stop sign at the corner of Daggett Ave and Bryant Williams Dr. When we have to walk over to the hospital for procedures it is not safe cars don't always stop. I have personally almost got hit a few times while crossing. I know of other employees that this has happened too.
Difficult to navigate this corner at speed without cutting across the lane next to you.
Slant parking in front of library, impossible to see to back up safely out of parking space.
This seems like an ideal candidate for a roundabout It would force drivers to slow down going 39 North, but would allow traffic from 140 to safely get onto 39
A light would be great- apparently people can't use a 4 way stop.
This intersection definitely needs a crosswalk
People drive much faster than the posted 25 mph on this stretch of Eldorado.
The intersection between Pine and Main/Eldorado, when turning Left (east) onto Main/Eldorado, can be very tricky, due to the line of parked cars - on the North side of the street - blocking view of Main/Eldorado. It would be nice if we can free up just a few spots, so visibility and safety can be improved.
The crossing of Summers over Hwy. 140 has been closed for quite some time and it makes it impossible for traffic to cross the highway without going west to Washburn or east to Homedale, as the Altamont crossing is also
Visibility after coming off this off ramp is extremely difficult primarily due to the construction underneath the bridge.
No safe crossing for children at this intersection.
Depending on the amount of parked cars on Klamath, backing up to leave the parking spots in front of the hospital can be really challenging, due to poor visibility,
Cars rarely stop when turning right from Spring St to Main St making this a hard corner to navigate when walking. Also I think the electric box shocks my dogs when we walk on it on that corner.
There is no highway only route to get from Crater Lake Pkwy to 97 South, this U-turn is the only way
On a flat map it's difficult to tell, but the hill here limits visibility for drivers on Daggett to see pedestrians crossing Bryant Williams until they are at that intersection.
This section of Eldorado is more than wide enough to be a 35 yet has the safety measures of the 25 it's marked as. Drivers will naturally speed down this road creating unsafe conditions
"There are no crosswalks or signs warning drivers of pedestrian crossing, yet this road is crossed on foot by hundreds of people every day. Would love to see a safe way to cross Daggett that is closer to the hospital than the traffic circle." I ALSO 100% AGREE WITH THIS COMMENT. CARS DRIVE UP REALLY FAST UP ON DAGGETT AND THERES NOT
mark employee parking spots

<p>This "intersection", with a double left merge, a right exit escape lane into Pilot, and a far-too short left exit and turnaround to either get onto southbound 97 or onto Coli and Quarry Street, and a blind merge for northbound 97 is the worst I have ever seen. Whoever designed this interchange needs therapy. I live on Quarry Street and I usually divert down Bein Street and Lakeport to avoid this mess. I have seen several crashes here.</p>
<p>This intersection is difficult to traverse when going towards or away from holiday market. A four way stop would help tremendously both for car and pedestrian traffic. Also crosswalks in general need to be enforced by law enforcement</p>
<p>Storage container parked near the intersection of N.2nd and High St. Blocking view of vehicles coming down N. 2nd</p>
<p>No one stops at these stop signs. Having a four way stop or blinking lights might help. I almost get t-boned here at least once a day.</p>
<p>Turning left onto Daggett from Shallock is very difficult. You cannot see cars coming up the hill due to the large no lighting in lot. heavy foot traffic all hours.</p>
<p>Angle parking behind the Cerulean Hotel across from the bank on Klamath Ave blocks the view of vehicles coming</p>
<p>Continual high accident intersection. Vehicles rush lights and collide often, causing injuries and damage to adjacent buildings. Higher accident area.</p>
<p>Crosswalk has serious visibilty issues. Vehicles rarely stop for pedestrians. High use area for workers and tourist</p>
<p>Poor visibility, regular wrong way drivers. Winter - dangerous intersection with ice build up and no city maintenance.</p>
<p>Would recommend some sort of indicator that bikers are on the road - perhaps flashing yellow lights that a pedestrian could activate for 5 minutes or soemthing?</p>
<p>High speeding corridor, especially between hours of 2pm to 5:30 pm. Crosswalk at 6th x Oak dangerous. Few cars</p>
<p>There was an old plan to add trees and bike paths to south 6th and washburn. can we revist that plan?</p>
<p>There was an old plan to add trees and bike paths to south 6th and washburn. can we revisit that plan?</p>
<p>Dangerous intersection for vehicles crossing Crater Lake Parkway - Consistent running of red lights by north and</p>
<p>Love the bike lane! it slows down traffic to actually meet the speed limit. would recommend narrower streets anywhere you want to promote foot traffice, like downtown.</p>
<p>replace all the stop lights with stop signs. so much safer for pedestrians.</p>
<p>Poor design of lane marking since street angles strangely in this location. Confuses drivers who merge into incorrect</p>
<p>Many comments by families of proximity of park to busy intersection. Access for children to wander into roadway too easy. Some form of safety barricade between park and roadway might be wise.</p>
<p>Regular issues with vehicles parking on road edges on Pacific Terrace causing road blockage and subsequent median damage from vehicles trying to pass. Issues on entire lengths of Terrace, both directions.</p>
<p>Desperately in need of a stop light or some type of stop. Big rigs get tired of waiting an just pull out. Very dangerous</p>
<p>Speeding is a serious problem this stretch of Homedale. It's posted as 25mph however, many people drive 35-45mph. A sidewalk would provide a significant increase in safety for people like myself who love to walk. Multiple deer are killed along here annually as well due to inattention and driving too fast!</p>
<p>Confusing lane markings on new roadway. Bike lane should be right of traffic.</p>
<p>Unsafe left turn. Need a cloverleaf south of Turtle cove community</p>
<p>Traffic turning left onto 140 east is very difficult, A cloverleaf south of 140 east of 97 would solve this</p>
<p>Needs a light. Too busy</p>
<p>People stop at the yield even when thereâ€™s no other traffic</p>
<p>Agreed with the four way stop comment. People don't seem to understand how to do a four way stop. A Stoplight</p>
<p>This intersection desperately needs a crosswalk with lights. Heavy pedestrian traffic all hours of the day.</p>

<p>This corner has had many fatalities within a few years. I've live by here for 5 years and have had seen 13 serious accidents and 3-5 fatalities of those weeks. There is no guard rail, no signal that there is sharp corners either way and there isn't a great response time for emergency services at this location</p>
<p>Accidents on this corner are very common. We have witnessed over a dozen incidents in the last 5 years. Most are serious and require medical assistance which includes fatalities. There is no signage either direction showing the turn or speed limits. There are no guardrails installed on either side of the highway with 10-25ft drops and no</p>
<p>There are numerous crossroads without a stop or yield sign in any direction. Some assumptions have been made by those of us that live locally but pacific terrace and all crossroads would benefit from signage to clarify right-of-way</p>
<p>This spot is extremely dangerous for those live in the apartments on this corner and are attempting to pull out, you cannot see anything around the bend.</p>
<p>I'm tired of yahoos speeding down the S curve and crashing into my fence, especially in winter. Ever since that darn bike path, it's hit and run central. Bikers are healthy. Divert them and widen the road for traffic.</p>
<p>During school start and end times this intersection is dangerous - you have cars turning or going straight, kids trying to cross the road, and many blind spots due to the trees and bushes (which I love) on each side of the intersection. The sun many times is also very bad right there - and that is not something that can change.</p>
<p>This would be a very good spot for a traffic light!!</p>
<p>I live near this intersection. Very many accidents trying to navigate the 4-way. A stoplight would work, but a round about would keep traffic flowing. Thank you!</p>
<p>I live right here on Shasta Way. Lots of traffic and lots of speeding. Not sure how to remedy this, but some way to manage traffic control would be appreciated. Thank you</p>
<p>The sidewalks up and down California Ave are in such bad condition that it is sometimes hard to walk on them. I would try to walk my dog up and down this street and I would have to walk in the road and just watch for cars because the sidewalks are dangerous in places. This is the same for almost all sidewalks in the residential areas bordering downtown and I see many people walking in the streets also as opposed to the sidewalks. Having these sidewalks</p>
<p>S. 6th is very dark. Street lights needed.</p>
<p>North 9th traffic is horrible. Speeding is rampant and anything can happen on the unprotected bike lane.</p>
<p>this road has huge pot holes</p>
<p>A crosswalk is needed here. It's very dangerous to go from Daggett to the hospital & CHC building. Cars zoom around the corner & down the hill. In icy conditions it's even more dangerous. Almost hit many times & have fallen</p>
<p>There is a lot of foot traffic crossing in this area. It is VERY VERY dark and someone is going to get hit. Adding a street light and/or a crosswalk with flashing lights would make it safer.</p>
<p>Many park over here and it is too narrow, DARK and cars coming to fast. Street lights would help. Or a walkway/ side walk put in on the Plumb Ridge side in front of cars would keep pedestrians safer when walking to hospital.</p>
<p>Traffic coming across from Biehn and 97 tend to "merge" over too soon here into the exit lane. Maybe add better signage or solid yellow line here.</p>
<p>A light or turning lanes needed here. This has become a horrible spot for getting across 6th.</p>
<p>New speed limit radar sign was put in which is great but people come around this bend at like 35+ MPH still and there are kids playing in the street.</p>
<p>Please continue the sidewalk here so that people don't have to walk on the curb or street.</p>
<p>People coming across from Biehn have a very hard time if they need to turn right at the fire station as traffic usually is continually heading up the hill. People end up stopping in the middle of the hill waiting to merge and that backs up</p>
<p>Traffic on Klamath avenue turns right on red frequently when there is oncoming traffic on 5th St. I've never figured out why, but am always cautious driving through that intersection.</p>
<p>Traffic on Crater Lake Parkway often runs the red light, endangering traffic or pedestrians on Shasta Way</p>

Past Moore Park, Lakeshore drive is narrow, without good shoulder or walk/bike path. Very dangerous to
Please add additional lighting to this area
Add a flashing sign pedestrian crossing in this area at either Fargo or on Gary
ALL school speed zones should be noted with a speed limit sign that has flashing lights around it that activates when traffic approaches. Solar power is amazing.
there is no stop sign coming off of n eldorado from auburn street and people ignore the yield sign coming from the opposite side of eldorado turning onto esplanade so it can be difficult even to walk across the street from eldorado park without feeling like you'll be run down by a car coming off of eldorado
There is NO stop sign at Cross St. and Monclaire. I have lost track of the times my vehicle with children in it, has
Not many people in this town can navigate a 4 way stop correctly. Place a stop light.
Re-open the south end of Summers lane that connects to the Brett Way Expansion. We shouldn't have to go east or west on the Southside Expy to be able to go to work.
Place a light here. Those traveling east/west on Joe Wright, do NOT slow down enough to be able to safely turn. Also make an actual turn lane on Joe Wright to be able to turn North onto Washburn w/o the fear of being hit from behind.
The entrance into the Henley complex should have a better turning lane that is marked in white with more reflective paint at a minimum. I would prefer a full traffic light in order to make this area safer but I understand the cost.
The speed that drivers drive is beyond the 30 miles an hour posted. Some drivers drive 60 to 80 miles an hour. Early morning 630am to Noon & 5pm to 9pm are the worst hours. Patrol cars are needed.
There isn't a sidewalk down this road to get to the bike path. We normally go from Walton to Kane St. (my husband and I) because Homedale people race and unfortunately when I have my children I cant even go down Walton due to people speeding and no sidewalk. I drive my kids to wired part to hop on the bike path. No safe space for walking and this intersection is confusing which makes it dangerous, this should be a 4 way stop.
This is currently a two way stop, however people think that this is a four way stop and in assuming that it is one, will pull out in front of you. This needs to be changed to add a sign that states "Through traffic does not stop" as well as adding flashing lights to indicate so. If this is not an option then we really need to consider changing it to a four way
Parking here creates a blocked view. I have almost been T Boned here just trying to pull out and not noticing
makes no sense to have a double bike lane and car lane is not wide enough. Traffic hazard. Never see bikes.
The pavement on this road has large cracks needing repair. The gaps are large and require more than just
Bike/walk path crossing Washburn is confusing with suggested crossing not at bike path.
Bike/walk path crossing 6th street. Dangerous confusing intersection with cars crossing cross walk from multiple directions. Cars do not normally stop when making a right from Summers onto 6th.
No crosswalk on the north side intersection.
No safe bike/walk path adjacent to the road. Very dangerous, especially now that they have cut the bus schedule.
Blind intersection for traffic turning left onto Riverside from Lindley.
Washburn only has an intermittent bike lane through this section.
Too narrow with parked cars, large trucks. The bike lane is nice but does not need 2 way lanes. One lane should be sufficient to provide a bit more clearance when driving.
speed bumps every quarter mile along 35 mph patterson/foothill will deter speeding and deter "by-pass" traffic in
A sign is needed for southbound traffic on Avalon St
turning left (east) onto Shasta Way to let people know they need to yield to oncoming northbound traffic, and to those turning right (east) onto Shasta Way. It is unclear.
Need another round about, light or drop 140 speed to 45. Residents and Cross Point traffic trying to get in and out of neighborhood. Traffic also can back up to this point with train traffic. Similar issues at Summers and 140.
Need turn lanes and lights. Left turns extremely difficult and trying to access Summers with train traffic extremely

Limited line of sight from Bristol trying get onto Summers. Need mirrors or clear lines of sight.
Limited line of sight from Bristol trying get onto Summers. Need mirrors or clear lines of sight.
There is a lot of foot and bicycle traffic on this road near UPS and towards the lake. The road is quite narrow without a shoulder, bike path, or shoulder.
This is one of most unsafe intersections I have encountered when attempting to run left from Biehn onto Oregon Ave. Cars come from multiple parking lots and Lakeview avenue. There are too many possible ins/outs all within too short
make this intersection a flashing red light
Make this intersection a flashing red light since there is a high volume of pedestrian traffic.
Make this intersection a flashing red light.
Make this intersection a flashing red light to better consider bike lane and pedestrian traffic.
Turn this intersection into a traffic circle.
Speed on Pacific Terrace is and always has been a high risk for walkers and children. SPEED BUMPS in 25 MPH zones would slow down everyone.
Needs to be a sidewalk here. Lots of pedestrian traffic and vehicles can't always see well as they crest the hill. Also, vegetation is not maintained and it overhangs into the street.
Intersection of South Sixth & Arthur Street *the high traffic distracts drivers of Pedestrians especially those in electric wheel chairs. Arthur Street DOES NOT HAVE SIDEWALKS and is an area of low income families, as well as many Senior citizens, some as myself with limited vision. Having sidewalks would eliminate the risk of vehicles hitting children, young parents with strollers, elderly folks taking a stroll and hitting other vehicles as we go onto the oncoming lane in our attempt to go around Pedestrians.
Easily one of the most congested intersections in town and a complete nightmare in the morning/early evening
Four way stop here please.
I think a round-about would help solve the congestion. If the one at the intersection of the Southside bypass and homedale as anything to show, one here would work great as well (provided people actually use their blinker when
Change the TIMING of lights to slow traffic on Main Street through Downtown. You don't have to change the speed limit (and piss people off). You don't have to change signals to flashers (and piss people off). Just make small (3-5 second) subtle changes to the timing of these lights (from 9th to 2nd) to DISINCENTIVISE high speed travel. As is, the timing of the lights ENCOURAGES drivers to go fast! As is, if you want to make it down the Main Street corridor w/o hitting another red, you need accelerate quickly to 25 mph and hold it there. Signals should be reprogrammed to discourage rapid acceleration and encourage slower avg. speeds 15-20. Signals should be reprogrammed so that if you drive fast, you will end up stopping/slowing and waiting for lights to turn green. As is, drivers who accelerate slowly and maintain 15-20 mph speeds are actually punished for their calm driving habits by hitting more red lights. They didn't "make it in time". As is, calm drivers/cyclists experience many red light stoppages. Aggressive drivers experience fewer red lights on Main Street.
I would be happy to help figure out the timing needs. I spend a lot of time (multiple times per day, every day)
It's simple. The current signal timing on Main Street encourages aggressive driving and cyclist running red lights. Change/slow the timing and you will see less of this undesired behavior. You don't have to change the speed limit (and piss people off). You don't have to change signals to flashers (and piss people off). You don't even have to spend effort and expense on curb extensions (though I'm supportive of that kind of infrastructure). Just change the timing.
I would be happy to help figure out the timing needs. I spend a lot of time (multiple times per day, every day) travelling on main by car and by bicycle and would love to see this simple and elegant change made. It is the ultimate

Main Street's signaling is fine as is. Previously the chief issue with using 4 and 2 way stops all the way down Main was that it no longer protected pedestrians and gave them a time to cross the street knowing that traffic would not be

When the lights on Main Street (9th to 2nd Streets) turn from red to green, they turn in quick succession. It's like being at the starting end of a drag strip. The timing says, "Go, Go, GO!!". Once you're up to speed, you know a red light is coming so the timing encourages you to go faster, Faster, FASTER!

Just fix the timing.

Just make small (3-5 second) subtle changes to the timing of these lights (from 9th to 2nd) to DISINCENTIVISE high speed travel. I bet hardly anyone will even notice if you are strategic about the roll-out of your changes. Change the timing of one or two signals at a time, with maybe a month in between changes. Yes, it will take you a few months to see it through, but maybe then City Council won't have to shut you down. Humans are much better at accepting and adapting to small incremental changes over time. Humans hate large and sudden changes. I think the city staff learned this the hard way during the traffic study this summer when they did the right thing (changing signals to 4-way stops downtown) but went about it all wrong by making lots of changes all at once. Had those changes been

Sure, "signals" are fine. But change the timing to DISINCENTIVISE high speed travel and aggressive driving. You don't have to change signals to flashers (and piss people off). You don't have to change the speed limit (and piss people off). You don't even need to build curb extensions (and piss off business owners because that kind of infrastructure eats into our abundant parking). Don't get me wrong I'm a fan of 4-ways downtown and curbextensions to improve pedestrian safety. But I also value low cost, high impact solutions that don't get a bunch of pushback.

Just change the timing of the signals

Signals should be reprogrammed so that if you accelerate quickly and drive fast, you will end up stopping/slowing and waiting for lights to turn green. As is, drivers who accelerate slowly and maintain 15-20 mph speeds are actually punished for their calm driving habits by hitting more red lights. They didn't "make it in time" and the agro-drivers get to speed through downtown, rewarded by a chain of tenuously green-lit lights, downtown businesses just a fuzzy blur in their rearview, pedestrians catching a burst of windthrow from hood of the lifted pickup as it races to catch the next about-to-expire green light window of passage. Meanwhile, the calm drivers/cyclists back at the red light, waiting for (almost) no one to cross, will almost certainly experience at least one more red light stoppage, because, alas, they just aren't quick enough off the line. There are almost certainly an agro driver or two behind them. These are the winners, stuck behind the taillights of a loser, who will probably make an evasive maneuver to speed around the calmer traffic, lest they get caught up in the same sad, frustrating, slow, unnecessary string of stoppages that occurs on a road which is supposedly programmed for 25 miles an hour, but only if you can go from zero to 25mph in 1.5 seconds and then hold it at 25 while dodging delivery vehicles, parallel parkers, cross traffic turning right on red and pedestrians who stopped to support a local business opening their car door. In Downtown K Falls, aggressive drivers win, and it's all because of the timing. As a self-proclaimed "loser" who rides my bike (sometimes with my

Change the TIMING of lights to slow traffic on Main Street through Downtown. I spend a lot of time (multiple times per day, every day) travelling on main by car and by bicycle and would love to see this simple and elegant change made. It is the ultimate "easy lift" for calming traffic through downtown and making the Main Street corridor safer.

DISINCENTIVISE high speed travel by changing the timing of the lights along Main Street. You don't have to change the speed limit (and piss people off). You don't have to change signals to flashers (and piss people off). Just make small (3-5 second) subtle changes to the timing of these lights (from 9th to 2nd) to DISINCENTIVISE high speed travel. As is, if you want to make it down the Main Street corridor w/o hitting another red, you need accelerate quickly to 25 mph and hold it there. Signals should be reprogrammed to discourage rapid acceleration and encourage slower avg.

There would be fewer T-bones if traffic moved more slowly. Traffic would move more slowly if the signal timing was adjusted to discourage aggressive driving (fast acceleration, high avg. speed). Just change the signal timing to slow down traffic. It's not a total fix, but it's an easy fix and good start.

<p>This just needs to be a 4-way stop. I support bike lane infrastructure (and use this lane almost every week sometimes almost every day), but the signalling here with the bike lane is a mess. Get rid of the mess! Get rid of the signal. Put up 4-way stop signs. Apparently theres a lot of people in town who can't grasp the flashing red, so just turn it off and</p>
<p>I think some of the accidents here actually relate to the signalling at Pine & 11th. Vehicles heading NW) on 11th and approaching Main are already concerned about making the green light they can see up at 11th and Pine. They see the green light a block ahead and run the red light at Main in order to make it through. Making both of these intersections 4-way stops would certainly help with this, but locals sentiment towards 4-ways downtown, is, um, well, you know, mixed? at the moment. You could also change the timing of the 11th and Pine signal. If 11th/Pine turns red BEFORE</p>
<p>I agree that this is a tough intersection for both pedestrians and cross traffic on 8th. Seems like a great place to pilot a small roundabout downtown. I know, that's a longshot and an expensive fix, but there seems to be enough space.</p>
<p>Just begs for a roundabout. Not a huge deal when I'm driving, but terrible as a cyclist/pedestrian. I'm a pretty brave cyclist and this intersection feels really dicey.</p>
<p>I love the beautiful median landscaping, but it does block sight lines. Keep the beautiful stuff, but make it a 4-way</p>
<p>I'm curious. Based on data the last 2-years, is there a more dangerous intersection in Klamath County? Every third time I go to my storage unit (Security Mini Storage) there's either a smashed car waiting to be towed or first</p>
<p>Intersection at Esplande and Crater Lake Parkway. I run across this area frequently with my two young children. There are always people blatantly running RED lights. It is unsafe for cars, pedestrians, and bikes.</p>
<p>Traffic on Eldorado Ave has increased significantly throughout the years. So has speeding cars. The implementation of the flashing traffic signs have helped but more needs done. There are many cyclists and kids that live on and use this street for school and walking. Speeding happens more where the road is wider (northern part). The implementation of the blurbs with the sidewalk instillation has not helped this situation. Cars continually speed. I</p>
<p>Add a light or a median so you cannot make a left turn off of Fargo. I have seen so many near misses and collisions.</p>
<p>Turning left on to Esplanade from Earle Street has some difficult visibility. You have to drive into Esplanade pretty far to be able to see traffic from both directions.</p>
<p>I believe it is the northside sidewalk on Main Street and West of Michigan Ave that is blocked off right now. One has to cross over the southside sidewalk and there is no cross walk on this side to safely cross Michigan Ave/East Main St and continue walking east on Main Street. It encourages pedestrians to J Walk in order to cross and continue walking</p>
<p>There should be a 2-way bike lane on Main Street. I bike this route to and from downtown every day. I often see bikers on the sidewalk here because there is no way to safely bike on Main Street in either direction.</p>
<p>Roundabout would be great here, or just simple put some lights in, this is a very dangerous spot, and it's slick in the winter, we also have bikers going trough and that adds to the stressfulness of driving this road</p>
<p>this road going up hill in the winter it becomes very slick, if this road could be maintained better, and maybe allow the light to stay green longer, because usually only a few cars can drive past this before it turns red, especially first thing in the morning during child drop off to ponderosa.</p>
<p>this Stretch of this road is super Bumby and slick in the wintertime.</p>
<p>Need brighter street lighting at this intersection, library staff use it at 8 pm year round and parking lot across the street needs brighter lights also, low visibility when crossing this at night.</p>
<p>This area needs a roundabout, so backed up on highway before 8am during school year</p>
<p>cars parked along Daggett Ave make for a dangerous route for bicycle riders to share the road with 2 way traffic</p>
<p>Vehicle parked too close to intersection blocking view.</p>
<p>Vehicle parked in middle of intersection.</p>
<p>Vehicle parked on sidewalks forcing pedestrian into street.</p>
<p>General statement that vehicles should not be parked so close to intersections.</p>
<p>Give more than a week notice for input to truly get information.</p>

Get rid of all the concrete medians or at least put a reflective paint on them.
This intersection is needs realigned between Crater Lake Parkway, South 6th Street, and Summers Lane. The east bound left turning lane from South 6th on to Crater Lake Parkway is very short and does not stay green long enough for the small amount of cars that can squeeze between the Summers Lane intersection and Crater Lake Parkway intersection to make the light during busy times. The lights between these intersections for east/west bound traffic
This is a busy 4 way stop. Drivers aren't sure if its their turn to go. I witnessed and accident here. A driver pulled out into the intersection when there was already a car in the intersection.
I witnessed an accident here. Someone coming from the north crossing traffic to get to Dutch bros collided with another driver. Also, the line from Dutch Bros, often extends onto south sixth street, affecting flow of traffic.
Many cars parking in the bicycle lane.
Stop light would be safer than a roundabout, intersection too busy.
Very difficult to see coming off of ramp. Especially when people think it's a two lane ramp all the way down it.
Very unsafe turning on to or off of this road. Store needs an alternative entrance.
Just as dangerous if not more so than Hwy 39/140 intersection.... Traffic light would be super beneficial.
Desperately needs better foot traffic crossings. Even possibly lower speed limit, speed bumps or rumble strips..
Adding parking in the second lane of this road was dumb, if there is a delivery truck delivering much needed supplies to these businesses it blocks the traffic that needs to get through.
Highway 39 is, much like many other streets and roads in Klamath Falls, is poorly illuminated, reducing visibility of vehicles, pedestrian, and also animals that often cross the highway.
Homedale Rd is a heavily-utilized path for vehicles and pedestrians. Its poor, non-existent illumination poses major risks at night and in inclement weather.
The parking along Daggett Ave just east of the roundabout is dangerous in that the parked cars obstruct a driver's view of the many pedestrians crossing Daggett in this area.
The lack of sidewalks on Daggett Ave create a safety issue as pedestrians must walk on the road.
The speed of many vehicles on N Eldorado Ave are significantly higher than the posted speed which creates a safety
The bulb-outs (curb extensions) along N Eldorado Ave force cyclists to share the lane with motor vehicles (which
Vehicles travel in excess of the speed limit on Foothills Blvd creating a safety hazard.
The lack of a bike/pedestrian link along Foothills from Homedale Rd. to Church Hill Rd. / Harvey Dr makes it very unsafe for non motorized traffic.
The bike lanes along Nevada St. (west of the protected lanes at Biehn St.) are far too narrow - it makes it very unsafe
Self-powered, throttled, motorized bikes and scooters (both electric and gasoline) travel very fast on this bike/ped trail creating an unsafe situation for pedestrians, especially children!
This hill is very dangerous during winter hours. During Pondo dismissal children cross the street without looking, it is extremely unsafe for both pedestrians and drivers.
I see many people trying to cross and vehicle don't stop. My biggest concern is at night when pedestrians are wearing dark colors. There needs to be more street lights.
The edge of the road needs to be excavated. It is a good idea to have a designate bike lane but this one was not planned to consider safety of drivers or residents. Large vehicles do not fit. With KU nearby and it being a popular route to the hospital, one of our most popular parks/nature trails, and HWY access, safety and vehicle mobility
Roundabout here please! I see someone else suggested flashing red lights. Perhaps just stop controlled?
The various turning movements and the speed of through traffic makes this a particularly challenging intersection to
The biggest issues with this intersection are the business access points to the south, which force unrealistic turning movements like a right only exit from Tres Reyes that no one adheres to.

BTS cut bus service schedule times which means no bus service for working folks. First bus is at 7:50 am and that doesn't work for 8-5 people. They also cut the 4:50 pm and 5:50 PM so nothing past 3:50 to get up this dangerous hill. There is also no foot path which makes this extremely dangerous.

There is a lot of foot traffic coming down the hill here both directions. With sharp corners and steep declines, it can be dangerous as cars may not see pedestrians so a walking path/sidewalk along the road would be a welcomed

In conjunction with walk-way down the hill, a safe place for pedestrians to cross Crater Lake Pkwy to access the already existing bike/walking path on the other side of the road would reduce pedestrians walking along Crater Lake

A protected or separated bike lane across the overpass would be great here. Lots of people use the sidewalk and a bike simply doesn't fit on such a narrow space. There is a significant amount of this kind of traffic right here due to the Gospel Mission. This is already a pretty dangerous spot for bikes due to people accelerating up the grade while turning. A protected lane for bikes would protect both cyclists and peds.

The bike lane is a great portal to downtown, but this end has some work to do. Wayfinding signage, signage on how to use the lane (specifically how to exit/enter its current configuration), and what usage is allowed would be nice. Narrower streets force cars to slow down, which has been very nice on this busy corridor.

More wayfinding signage for bike/ped. Link river can be a great access to downtown without being on motor use

Networking with State parks to make this a trailhead for the OC&E. This area is over-run with transient camps. More official use would help self-police this. Paving the short section of trail between the end of E Main Street/Shasta Way, adding trailhead signage (including no camping signs), and maybe even adding a small 3-4 car parking lot would hopefully create enough positive space to displace the dis-use that we see out here.

Connecting the non-motorized use trails from veterans park to the other side of the train tracks on the OC&E trail would open up a large amount of access to bike/ped traffic. Even a short section of protected or separated bike land on 6th st. (using the existing overpass), would really help connect this vital artery.

A-canal trail can serve as a very useful artery for Bike/peds, but is in major disrepair. Most bike traffic avoids this piece of infrastructure due to the expansion cracks, putting more of that traffic on other roads.

Washburn has very little consideration for bike/ped, but there are a significant amount of meaningful destinations

The lack of stop signs in this neighborhood is nice visually but for those who aren't from the area it can present a real liability. At some point, someone is going to assume the right of way at intersections like this one and get hit by

Lots of vehicles speed through this stretch, the speed limit is 25 but rarely is it followed, I have seen children playing in this area and would hate for something to happen. This stop sign helps some but people use it to race. I also think there needs to be more indication that this road is a one-way. I've seen vehicles go all the way to high street before vehicles parking on the side of road make this very difficult for busses to navigate often resulting in the bus having to stop in the middle of road to let other vehicles to get through.

Lots of pedestrians try to cross here to get the bottle drop and there is a crosswalk. Maybe a button activated light like at fredmeyer would be helpful here

This is a very dangerous intersection. I come from the North every day and try to turn onto Dan Obrien Way and the truckers are constantly creeping out into the lane making it very difficult to turn. On the way out of Dan Obrien going North on 97 the same thing happens. The trucks headed left out of Dan Obrien pull up so far you can't see around

Washburn Way is frequently affected by black ice during winter, especially near the bridge over the RR tracks. Please allocate resources to spread sand or cinders all along Washburn to provide some type of traction to avoid accidents

Pretty often there are people biking down Main Street on either the road or the sidewalk. They're harder to see than pedestrians because they're moving much faster than walking speed, so it feels more dangerous to turn off of Main Street. They ignore the signs to walk their wheels, and that would be really inefficient either way. I would really like for Main Street to have a 2-way bike lane on one side of the street, connected to the 9th street bike lane, with a small concrete strip a few inches tall separating it from the street. Or being risen up to sidewalk level. This could go in place of the parking spaces on one side of the road, which would cost about 100 spots downtown, but there are several parking lots with the capacity to make up for it. These bikes can follow the same traffic rules as the cars driving that direction, and it would be much easier for drivers to see them. It would make drivers and cyclists feel safer downtown and make a more complete cycling route for the city, linking up with 9th street (and maybe even

A roundabout here would and at Altamont would make me feel much safer.

I would feel much safer having a roundabout here and at Summers. Maybe even slowing down this section of the highway between 39 and Washburn.

Pullout lanes for school buses and flammable transport trucks to stop for the railroad without stopping traffic

A roundabout here would make me feel much safer and make it more easy to turn left off of 140

Connecting the 9th street bike lane to OIT safely would be amazing

There are no sidewalks on most streets around campus, especially on the campus side. There also isn't a good way to cross Campus Drive from the West side of it before the turn. This intersection would be great for a roundabout.

There's a really unnecessary turn lane here that goes directly into the parking lot. I think this space could be used better since it's accessible from the roundabout too.

Washburn and South Sixth both need more control for the middle turn lane. The ones that have been put in for new business are great, but for old businesses I feel like I'm going to be crashed into anytime I try to use the turn lane.

having a bike lane between 9th street and the OC&E trail would be amazing for connectivity. A lot of people bike this already and it feels very unsafe. Having it protected by either being risen to sidewalk level or at least protected by a

Desperately needs a roundabout. High traffic intersection with business entrances right on top of the intersection.

Traffic merges left to right too early coming up the Campus Drive hill, creating a dangerous interaction with cars turning right at the yield on 97. Would recommend a physical median here to prevent this from occurring.

Light timing here is terrible. It can be a long wait on Biehn or Campus and the light changes so quickly for those cars. A traffic circle would make more sense given the relatively high volume of traffic. It would also slow traffic on 97 down more effectively than the light as cars routinely come into town going 65+ mph.

This intersection needs to be a 4-way stop, either with lights or stop signs. I regularly use the bike lane going both directions, often with my children on bikes. Both directions, but especially coming from Main Street towards Holiday is very difficult on the bike lane because there is no light for traffic going that direction.

Please consider making this barricade bike/stroller friendly on one or both sides.

This street needs a sidewalk. There is a lot of pedestrian traffic and the vehicle traffic drives fast over the hill both directions (often not stopping at the stop sign at the top of the hill) The vegetation on the cemetery side grows out

This would be a great place for a roundabout!

The railing on the bridge over the canal is not safe for kids

No railing on bridge.. the log on the side of the bridge has rotted and is disappearing

There is a serious speeding problem on 9th that seems to go completely unchecked. In the past year multiple vehicles have lost control (in dry conditions) at the corner of 9th and prospect where I live. I believe that there should be some sort of speed control effort made on the Oregon ave/9th street corridor. To me, this might look like increased attention from law enforcement, radar speed signs, speed enforcement cameras, or even full width speed bumps. No matter what it is, something should be done about this before someone is seriously injured or killed on

Amtrak station isn't fully utilized. Getting to and from the station is sketchy and car dependent. It is close to downtown, so why not take advantage of that and connect these locations better?

Spanish VOH Map Comments

It's so hard to see cars coming down Klamath on this road due to the parking. I've seen a few cars almost hit each other on here multiple times

Due to the bus stop, so many cars stop here way to long because they can't see the cars coming down pine st

This should be a stop sign, or yield sign, cars coming this way almost always almost get into accidents from cars

This should be a one way only street going out into south 6th, it's such a busy street and people get stopped for long periods of time trying to go forwards Washburn here



Klamath Falls TSAP

Your feedback is an important part of the Klamath Falls TSAP so that the City can understand where to prioritize safety improvements. This survey should take 3 minutes to fill out.

1. Select how often you do the following to get around Klamath Falls.

	Frequently (Multiple times per week)	Rarely (once per week or less)	Never
Drive alone in personal car, truck, van, or motorcycle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carpool with others (car or van)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Take the bus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ride a bike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use wheelchair/mobility aid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Initial analysis has identified the following priority areas for the City to address. Please rank the following according to your experience, from highest to lowest priority to improve safety, with 1 being the highest priority.

- ☰ Intersections
- ☰ Pedestrians
- ☰ Bicyclists
- ☰ Motorcyclists
- ☰ Speeding
- ☰ Impaired Driving

3. If there are any other areas you think the City should prioritize, please specify:



Klamath Falls TSAP

About You

The following questions will help City staff ensure that people throughout Klamath Falls and from different backgrounds are participating in the Plan. Your responses are optional.

4. What is your zipcode?

5. What is your age?

- 5-14 years old
- 15-24 years old
- 25-44 years old
- 45-64 years old
- 65+ years old
- Prefer not to respond

6. What is your gender identity?

7. How do you identify your race/ethnicity?

8. Do you have a motor vehicle available for your use?

- Yes
- No



Klamath Falls TSAP

Additional Feedback

9. Please share any other feedback you have on safety in Klamath Falls. As a reminder, you can give additional feedback in the commenting map above this survey.

10. Please provide your email if you would like to receive project updates.



TSAP de Klamath Falls

Sus comentarios son importantes para el desarrollo del TSAP de Klamath Falls y para que la ciudad pueda entender dónde priorizar las mejoras de seguridad vial. Esta encuesta toma aproximadamente 3 minutos para completar.

1. Selecciona con qué frecuencia haces lo siguiente para movilizarte por Klamath Falls. Si nunca usas un modo de transporte en la lista, puedes dejar esa fila en blanco.

	Frecuentemente (varias veces por semana)	Rara vez (una vez por semana o menos)	Nunca
Conduce solo en coche, camión, furgoneta o moto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comparte el coche con otras personas (coche o furgoneta)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Toma el autobús	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monta en bicicleta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Camina a pie	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utiliza una silla de ruedas/ayuda para la movilidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Otro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. El análisis inicial del Plan ha identificado las siguientes áreas a priorizar que la Ciudad debe tratar. Clasifique las siguientes áreas según su experiencia, de mayor a menor prioridad para mejorar la seguridad, siendo 1 la máxima prioridad.

-  Intersecciones viales
-  Peatones
-  Ciclistas
-  Motociclistas
-  Exceso de velocidad
-  Conducir bajo los efectos del alcohol o drogas

3. Si hay otras áreas que cree que la Ciudad debería priorizar, inclúyalas aquí:



TSAP de Klamath Falls

Acerca de ti

Las siguientes preguntas ayudarán al personal de la Ciudad a garantizar cobertura de la población en Klamath Falls y de diferentes orígenes participen en el Plan. Tus respuestas son opcionales.

4. ¿Cuál es tu código postal?

5. ¿Cuál es tu edad?

- 5-14 años
- 15-24 años
- 25-44 años
- 45-64 años
- 65+ años
- Prefiero no responder

6. ¿Cuál es tu identidad de género?

7. ¿Cómo identificas tu raza/etnicidad?

8. ¿Tienes un vehículo motorizado disponible?

- Sí
- No



TSAP de Klamath Falls

Comentarios Adicionales

9. Comparta cualquier otro comentario que tenga sobre la seguridad vial en Klamath Falls. Como recordatorio, puede brindar comentarios adicionales en el mapa de comentarios que se encuentra encima de esta encuesta.

10. Proporcione su correo electrónico si desea recibir actualizaciones del proyecto.

English Survey Results

Select how often you do the following to get around Klamath Falls.						
Drive alone in personal car, truck, van, or motorcycle	Carpool with others (car or van)	Take the bus	Ride a bike	Walk	Use wheelchair/mobility aid	Other
Frequently (Multiple times per week)	Never	Never	Frequently (Multiple times per week)	Frequently (Multiple times per week)	Frequently (Multiple times per week)	
Frequently (Multiple times per week)				Rarely (once per week or less)		
Frequently (Multiple times per week)		Never	Rarely (once per week or less)	Frequently (Multiple times per week)	Never	Never
Frequently (Multiple times per week)	Never	Never	Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	Never
Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	Never	Never	Never	Never
Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	Never
Rarely (once per week or less)	Never	Never	Never	Never	Frequently (Multiple times per week)	
Frequently (Multiple times per week)	Rarely (once per week or less)	Rarely (once per week or less)	Rarely (once per week or less)	Rarely (once per week or less)	Never	Never
Frequently (Multiple times per week)	Never	Never	Never	Never	Never	Never
Frequently (Multiple times per week)	Rarely (once per week or less)	Never	Rarely (once per week or less)			
Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	Never
Frequently (Multiple times per week)	Rarely (once per week or less)	Never	Frequently (Multiple times per week)	Frequently (Multiple times per week)	Rarely (once per week or less)	Rarely (once per week or less)
Rarely (once per week or less)	Frequently (Multiple times per week)	Never	Never	Never	Never	Never
Frequently (Multiple times per week)	Never	Never	Rarely (once per week or less)	Frequently (Multiple times per week)	Never	Never
Rarely (once per week or less)	Never	Never	Never	Never	Never	Never
Frequently (Multiple times per week)	Rarely (once per week or less)	Never	Frequently (Multiple times per week)	Frequently (Multiple times per week)	Never	
Frequently (Multiple times per week)	Never	Never	Rarely (once per week or less)	Frequently (Multiple times per week)	Never	Never

Initial analysis has identified the following priority areas for the City to address. Please rank the following according to your experience, from highest to lowest priority to improve safety, with 1 being the highest priority.

Intersections	Pedestrians	Bicyclists	Motorcyclists	Speeding	Impaired Driving	Drivers over age 65	Cyclists under age 18
3	1	2	4	5	6		
4	2	1	5	3	6		
4	5	6	2	1	3		
3	2	5	4	1	6		
3	2	1	4	5	6		
1	2	3	4	5	6		
1	5	6	4	3	2		
3	4	6	5	1	2		
3	1	2	4	5	6		
2	5	6	3	1	4		
1	2	3	4	6	5		
1	5	3	6	4	2		
3	1	2	6	5	4		
2	3	4	5	6	1		
3	5	6	4	1	2		
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4	1	5	6	2	3		

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1	4	5	6	2	3		
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2	1	3	5	4	6		
2	4	6	3	5	1		
1	2	3	4	5	6		
1	2	3	4	5	6		
2	1	4	5	3	6		
2	1	3	5	6	4		
1	2	4	6	3	5		
3	2	1	4	5	6		
3	1	2	5	6	4		
3	4	5	6	2	1		
2	1	6	5	4	3		
4	6	1	5	2	3		
1	3	4	5	2	6		
1	5	4	6	3	2		
1	4	5	6	2	3		
3	2	1	5	4	6		

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2	5	6	4	1	3		
4	1	5	6	2	3		
1	4	2	5	3	6		
6	1	2	3	5	4		
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2	1	6	5	3	4		
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4	1	2	3	5	6		
1	4	6	3	2	5		
1	3	2	4	5	6		
2	1	5	6	4	3		
2	3	4	6	1	5		

If there are any other areas you think the City should prioritize, please specify:	What is your zipcode?	What is your age?	What is your gender identity?
Open-Ended Response	Open-Ended Response	Response	Open-Ended Response
Consider vehicle free corridors for pedestrian/bicycle use only.	97603	25-44 years old	Male
People talking on cell phones and not paying attention to lights changing. A lot of speeders on Homedale	97603	45-64 years old	Female
	97601	45-64 years old	Male
	97601	25-44 years old	female
Fix the roads that we pay you to fix	98601	25-44 years old	
	97601	25-44 years old	Male
	97601	65+ years old	Female
I think making the city safer for cyclists and pedestrians would help revitalize downtown and make it easier for kids to get to and from school without needing a ride from their parents (especially if the bus doesn't go there or they want to take part in after school activities)	97603	15-24 years old	Male
	97603	65+ years old	Female
Black ice treatment and ice control during winter months.	97601	45-64 years old	
Bypass and Washburn. Dangerous intersection.	97601	45-64 years old	Male
Sidewalks around the hospital area	97601	45-64 years old	F
I think a round about should be put in at the bypass and 39	97603	25-44 years old	Female
City police do almost zero traffic inforcement	97601	65+ years old	Male
Keep the lights, don't do changes	97601	45-64 years old	Female
We could use a bike lane from OIT / Hospital to Harbor Isles along Lakeport Blvd. There appears to be plenty of room for a bike lane. Currently cars drive too fast there and it is dangerous on a bike for sure.	97601	65+ years old	male
Proper lighting	97603	45-64 years old	Female

Overall lighting across town. Extremely poor illumination except for parts of 6th Street, Washburn Way, and Campus Drive.	97603	45-64 years old	Male
	97601	45-64 years old	
The stop signs at Pine & 3rd. These are frequently confusing for drivers. It seems the natural inclination is for Pine St traffic to assume they have the right of way and therefore fail to stop. This occurs for both directions of travel on Pine St. I have witnessed MANY crashes at this intersection since moving to a home adjacent to this intersection. My recommendation is that the stop signs are either changed to a 4 way stop or the stop signs are placed on 3rd St.	97601	45-64 years old	
	97601	45-64 years old	
Don't change traffic lights without public input!	97601	65+ years old	Female
Highway 39/ 140 intersection needs stop light.	97601	25-44 years old	Female
	97603	25-44 years old	female
Summers Lane, South 6th, and Crater Lake Parkway intersection	97601	45-64 years old	Male
	97601	45-64 years old	Female
crater lake parkway and areas around it need better lighting. Places on Eldorado have limited lighting.	97601	25-44 years old	female
Better lighting in most areas	97601	45-64 years old	female
remove existing bike line on Oregon Avenue - not against bike lines, just think this one is too confusing (parking in middle of street) and makes it difficult to drive (would suggest putting it in a different place, utilize existing canals for bike/trail access)	97601	45-64 years old	female
	97601	25-44 years old	Woman
Redo the main roads. Don't add any more useless medians and wasting money redoing the same sidewalks.	97601	25-44 years old	Male
	97603	45-64 years old	female
	97601	25-44 years old	Male
Better traffic coordination during large events on Main Street. Residents in the downtown area that have to drive past Main Street, Klamath Avenue, and Pine Street have a rough time getting around.	97601	25-44 years old	Male
N/A	97603	25-44 years old	Male
Highway 97 headed to Chiloquin. There are so many fatalities and accidents that occur all year around. It really should be a two lane highway with a divider in the center.	97603	25-44 years old	Female
Lane lines need to be visible, currently if it is dark or the weather is poor, you cannot see the lanes at all. Reflectors would be helpful.	97603	25-44 years old	Female
condition of streets (infrastructure) - many downtown area streets are in terrible condition	97601	25-44 years old	male

I'm not sure where roundabouts and street bumps could be installed, but I believe they encourage others to slow down and be more cautious.	97603	25-44 years old	Female
Potholes	97601	45-64 years old	Male
The sidewalks are terrible. I trip several times a week from broken sidewalks. Homeowners/renters need to trim bushes and trees because thorny branches have raked my face. Besides feeling threatened by crime, hazardous sidewalks make living in Klamath falls worse than a third world country. I know because I have lived in them. If Klamath falls wants to improve, then those people with "pride" in this area should put muscle and money in improvements. The only way for improvement is code enforcement, volunteer work, and responsible landlords who start sacrificing for their communities. . local people who rent their home to put their dollars back into the community for the future of our children in Klamath falls and the future of America.	97601	45-64 years old	Male
n/a	97601	25-44 years old	f
Homelessness on the sidewalks.	97603	25-44 years old	Male
	97601	25-44 years old	Female
The police need to enforce traffic laws! There are so many people racing, on phones, and driving fast while distracted it is crazy	97603	45-64 years old	Male
Running red lights and stop signs	97603	65+ years old	Female
signage of street names and intersection operations	97702	25-44 years old	female
	97601	45-64 years old	Female
	97603	25-44 years old	female
Lakeshore Dr	97601	65+ years old	
Visibility at intersections. it is often limited or obscured.	97603	45-64 years old	Male
Pot holes. Too many traffic lights	97601	25-44 years old	Female
	97603	25-44 years old	Female
Street conditions (pot holes, significant cracking)	97601	25-44 years old	female
speed bumps discourages speeding	97603	45-64 years old	male
Riverside drive is very unsafe and there is no safe way of passage to downtown. The bus routes have also been cut in that area.	97601	45-64 years old	F
People drive very, very fast on the neighborhood roads. It will probably take a child getting killed before something is done about it.	97603	65+ years old	F
Get the Stoners out of all vehicles	97603	45-64 years old	Male

The noise pollution from vehicles from modified exhaust is rampant, illegal and unfair to all of us who have to hear it day and night. Myself and other neighbors have contemplated selling our homes and leaving because this noise is unbearable. These vehicles are not being warned or cited. K Falls police and Klamath county sheriff's office has been contacted about this several times. Sheriff's office said this violation should be enforced but I don't see it happening. These vehicles ride around undisturbed and the noise is so loud it has become unbearable and does not make life enjoyable. There is no corner of town you cannot hear it. A lot of tax payers here feel unheard and it is time this city takes action to at least attempt to earn these people that the noise emitted from these vehicles is illegal. Enough is enough!!!!	97602	25-44 years old	Female
sidewalks near schools, trails connecting parks	97601	45-64 years old	male
		65+ years old	Male
	97603	25-44 years old	Male
	97603	45-64 years old	Female
All of Klamath Falls, especially neighborhoods, need streetlights! Why are there practically no streetlights in Klamath Falls? Lighting is a huge concern, it helps drivers see pedestrians, road obstacles, and it's a proven fact that well lit areas reduce crime.	97603	25-44 years old	Male
	97601	25-44 years old	Female
More Jay walking enforcement. Pedestrians walk against lights in non intersections in front of cars and don't look.	97603	45-64 years old	Male
Lots of pedestrians being hit and killed, but they're also not using crosswalks correctly.			
Having public bathrooms in the downtown area.	97601	45-64 years old	F
	97601	25-44 years old	Male
	97601	25-44 years old	M
Increasing walkability downtown. I actually preferred the 4-way stops and felt safer as a pedestrian.	97603	25-44 years old	
The county, as in, turn the streetlights on.	97603	25-44 years old	I'm a GIRL. Why does this matter?
I think it is everyone's responsibility to drive walk or bike and be aware of what is going on around you. I think the police should be more diligent on stopping people running red light and speeding.	97603	45-64 years old	female
Lighting in accident-prone areas. FLASHING signs where speed limits slow or in school zones. It's not always the driver's fault, as pedestrians and cyclist need to follow the rules/laws as well.	97603	Prefer not to respond	NA
	97603	65+ years old	biologic female
	97603	45-64 years old	F
	97603	25-44 years old	female
	97601	25-44 years old	

Traffic lights at homedale and Bristol so kids can get to and from school safely more street lights	97603	45-64 years old	Female
	97603	45-64 years old	man
	97603	25-44 years old	Female
More lighting	97603	45-64 years old	female
I ranked Bicyclists first because I think that bicycling should be prioritized not because it is a safety issue.	97601	45-64 years old	Male
	97601	45-64 years old	Female
Enforcement of traffic laws, especially yielding to pedestrians	97601	65+ years old	male
The corner of Main St and Laguna is particularly scary in the morning hours when students are walking to Ponderosa. This is especially bad at times with a low angle Sun making it difficult to see. Pedestrians do not have a safe walking path along Hwy 97 north of campus Drive. People walking to the mobile home parks have no safe walking path. Years ago a student was hit and killed in this area.	97601	65+ years old	Female
		25-44 years old	Male
More police presence	3	45-64 years old	WTF really!
It can be terrifying to walk with the speeding and texting while driving. Please help to make our city more walkable and pedestrian friendly.		25-44 years old	female
Need to start ticketing J-walkers on south 6th	97603	65+ years old	Male
	97634	25-44 years old	female
	97601	25-44 years old	F
	97601	65+ years old	Female
	97601	25-44 years old	Female
	97601	25-44 years old	Female
	97601	25-44 years old	Female
	97603	25-44 years old	female
	97601	45-64 years old	Female
	97603	65+ years old	male
	1	15-24 years old	m

homeless encampments around downtown and along the lake, I like to run and cant due to safety issues and being approached everywhere I go by multiple homeless people. Also i dont go to thunderbird or walmart do to the homeless population.	97601	25-44 years old	I am Male
	97601	25-44 years old	Female
	97603	45-64 years old	Female
I think the city should make it illegal to give any aid to illegal aliens, create a local law to make pan handling inside klamath county illegal and hire more police patrol officers. when more illegals and transients come crime and drug use increase substantially.	97603	25-44 years old	Male
I think mapping where accidents occur will help determine where areas are unsafe. I feel like South 6th has lots of businesses, and traffic, making it hard for people to process all the variables to negotiate.	97601	45-64 years old	Female
	97603	25-44 years old	female
	97603	25-44 years old	female
	97603	25-44 years old	f
Snow Plowing and winter road management needs to improve, especially in neighborhoods and side streets.	97601	15-24 years old	Female
Snow plowing should start earlier in the morning so that the roads are clear by the time the work/school commute starts.	97627	25-44 years old	Female
I think you need not screw with the Stop lights anymore. Both my wife and I never felt safe downtown so we avoided it as much as possible!		45-64 years old	Male
Lakeshore drive - there is a great deal of speeding, and lots of wildlife, which is not a good combination	97601	45-64 years old	Female
	97603	25-44 years old	Female
	97603	45-64 years old	female
street lights. drive around and its dark in a lot of areas that it shouldnt be	97603	45-64 years old	white
	97603	45-64 years old	Male
Lighting on walking/bike paths. Specifically Foothills.	97603	25-44 years old	F
140 and 66 intersection by Cardlock	98601	45-64 years old	F
	97601	45-64 years old	female
a crosswalk from urhmann to the hospital- many skylakes employees have to cross without a cross walk plenty employees have nearly been hit, or actually have.	97603	25-44 years old	
Schools/preschools should implement teaching regarding proper/safe behavior while on the street. Not only what traffic lights means but also how to safely cross the street, walk on the side of the street with or without sidewalk, bicycle safety (walking & riding a bike).	97603	25-44 years old	f
Ferguson intersection- I have watched multiple kids almost get hit and watched multiple almost accidents. There needs to be a traffic light. People do not go the speed limit or follow the signs that are posted with traffic directions. A light would negate all those issues.	97601	25-44 years old	Female
	97603	65+ years old	female

Gettle Intersection into South 6th street. There have been near misses every day as well as crashes and pedestrians ran over	97603	45-64 years old	Why?
		25-44 years old	Female
walkability downtown and from downtown into recreation corridors	97601	45-64 years old	m
	97603	25-44 years old	FEMALE
	97603	45-64 years old	
	97601	25-44 years old	Female
Sidewalks	97601	25-44 years old	Female
	97603	25-44 years old	Female
	97603	25-44 years old	female
NOBODY USES THE BIKE LANE ON OREGON AVE. GET RID OF IT.	97603	25-44 years old	FEMALE
The road between the tap house on Campus and Abby's pizza. People park on both sides, making it unsafe for pedestrians and driving. Especially at night!!	97603	25-44 years old	Female
Fix the roads	97601	15-24 years old	F
	97601	25-44 years old	FEMALE
Downtown area and neighborhoods (Terrace)	97601	45-64 years old	female
	97601	25-44 years old	Female
protected bike lanes and the complete streets approach would do wonders to improve the economy of the downtown.			
The speeding in downtown is terrible. I miss the old blinking lights, felt safer to walk as people seemed to have slowed down.	97603	25-44 years old	Female
People REALLY need to stop running stop signs constantly!!	97601	45-64 years old	Female
Eliminating sweeping right turns that allow cars to turn without slowing, cars running red lights, cyclists riding on sidewalks and riding against traffic (except on the awful bike lane).	97601	45-64 years old	Female
	97601	25-44 years old	F
	97603	25-44 years old	Female
	97601	25-44 years old	Male
Lighting and safety (wearing light clothing, lights on bikes, ect.)	97601	25-44 years old	F
	97601	25-44 years old	
Parking near crosswalks	97601	65+ years old	male
Near Sky Lakes and Oregon Tech lots of pedestrians but no sufficient sidewalk infrastructure. Downtown speeding leave lights on Main.	97603	45-64 years old	Female
Downtown speeding & lack of yielding to pedestrians at crosswalks, especially on Klamath Ave by the library and courthouse	97601	25-44 years old	Female

How do you identify your race/ethnicity?	Do you have a motor vehicle available for your use?	Please share any other feedback you have on safety in Klamath Falls. As a reminder, you can give additional feedback in the commenting map above this survey.
Open-Ended Response	Response	Open-Ended Response
White/Caucasian	Yes	I literally do not understand the lack of sidewalks surrounding parks, schools and transit stops. Making adults suffer through poor urban development choices is normal, but kids shouldn't need to walk in the gutter to make it where they need to go. Also, a majority of the so-called "bike lanes" in town are insane. They are usually less than the legally required width, have dangerous pavement height transitions, and are protected from high speed traffic by a strip of faded paint. Wow, I'm soooo surprised that people don't bike at all or choose to bike on sidewalks.
Caucasian	Yes	More police patrol. I see OSP and Sheriff's, but rarely see city police out and about
White	Yes	We need speed bumps on 9th North heading into downtown. Maybe one per block. People drive exceedingly fast down 9th. I'd hate to see someone hurt or gravely injured due to unnecessary recklessness.
Caucasian	Yes	
	Yes	
Caucasian	Yes	We have too many stop lights and not enough roundabouts and traffic circles. There are a paucity of sidewalks in neighborhoods and on busy streets with lots of pedestrian traffic.
White	Yes	More aggressively enforce low speed limit(s) on Lakeshore Drive especially near Moore Park. Drivers are understandably distracted by all the deer, but are driving too fast to react to their skittish movements. This distraction also endangers children at/near school bus stops, Moore Park recreationists/hikers, etc. Biehn Street and Oregon Avenue needs a traffic light!
White	Yes	The city has great biking infrastructure in terms of the OC&E trail and 9th street. I think that linking these two together, as well as directly to OIT and KCC, would help make the system much more incentivizing for people to use. People don't feel safe riding in bike lanes painted along regular roads in one direction. We feel much safer with small concrete strips between us and cars or even having cycling lanes raised up to sidewalk level.
White	Yes	
	Yes	
White/mixed	Yes	Bad intersections coupled with many drivers impaired, mostly vaping cannabis makes for a bad scenario.
W	Yes	Concern about homeless camps along bike path
White	Yes	
Caucasian	Yes	K-Falls is is a absolute raceway if anyone gets a speeding ticket it's from the state police passing through
Native American	Yes	There were so many problems with the stop signs. Speeding, running the signs, people not following the laws of use... please keep the lights.
White	Yes	
White	Yes	Street lighting, for cars and pedestrians, is terrible. It is simply too dark to see properly. With deer and many people walking, it is very dangerous to have such dark roads.

Asian	Yes	Improved illumination for visibility.
	Yes	
	Yes	There is a marked increase in violent and aggressive behavior by unhoused individuals and residents of Crater Hotel.
	Yes	People routinely park too close to intersections, blocking the view of incoming vehicles and pedestrians. Also people routinely park over the sidewalk (where there are sidewalks) forcing pedestrians into the streets and this includes areas around the schools. Zoning needs to require sidewalks. There are many areas (particularly the richer areas) where there are no sidewalks requiring people to walk in the streets.
White	Yes	Must have dedicated walk cycles. Enforcement of vehicle infractions - including emissions.
White	Yes	
	Yes	
American Indian/White	Yes	
Caucasian	Yes	
white	Yes	
caucasian	Yes	
don't	Yes	
White	Yes	
White	Yes	Speeding is a huge issue in Mills Addition. Drivers frequently drive 35mph+ on East Main St.
hispanic/american	Yes	
Caucasian	Yes	
Asian	Yes	
White/Caucasian	Yes	
Hispanic	Yes	
Caucasian	Yes	Some intersections in residential areas do not have any yield or stop signs on either side. This is incredibly dangerous.
white	Yes	Pedestrian and bicycle safety was greatly improved this summer when the downtown lights were flashing red. I realize that many people complained due to (perceived) traffic flow, but the data from our community and similar communities supports stop signs in such situations. It is frustrating that the city pandered to the loud whines of a few rather than taking the time to educate the general public. Maybe a good compromise is to make the lights on Pine Street flashing red lights and make the light on Main and 11th a flashing red. East Main and Esplanade could also be flashing red. Another suggestion, different topic, is to install a traffic circle at Crater Lake Parkway and Biehn.

Hispanic/Latino	Yes	I'm not sure where roundabouts and street bumps could be installed, but I believe they encourage others to slow down and be more cautious.
White	Yes	Easier to see reflective lines.
	Yes	I have advanced degrees and have worked overseas, and after I take walks in Klamath falls I return home and lock the doors and tell my family to stay inside because of speeding cars, threatening crime, and homeless people. Perhaps if the mayor and his associates would walk around, knock on some doors, and see the sidewalk walk hazards and threatening people, we wouldn't need a survey and more city fund to solve the problems because people would care from the heart and practice genuine "Christian" ethics.
non-hispanic	Yes	I believe mental health issues contribute greatly to my personal sense of safety, especially while walking downtown. I recognize that is probably beyond the scope of this project, but worth mentioning as it does make me feel it is unsafe to walk with my young kids in the downtown areas, including Veteran's park.
White	Yes	Trash and the homeless encampments to be addressed on south sixth and Washburn. People don't feel safe on public sidewalks and are often forced into the street to get around the homeless treasure carts.
white	Yes	
White	Yes	Seems like there are too many transients and mentally ill people on the streets. I know the state restricts the police, but that is part of the problem.
Caucasian	Yes	
white	Yes	
White	Yes	
hispanic	Yes	
	Yes	Few people pay any attention to stop signs. They think they're just suggestions. The mess downtown this summer was a disaster!!!!
American	Yes	Please do something at the intersection of the Bypass/Expressway and Highway 39. This is a deathtrap. I suggest another large traffic circle.
White	Yes	Better street lighting would be great too
Caucasian	Yes	In such a small town I'm always surprised at how much of a hurry drivers are in. They're racing to get thru the stop lights, often running the red. Going the speed limit or slightly above isn't fast enough and they are taking unnecessary risks to get around you.
Caucasian	Yes	
human	Yes	
White	Yes	
W	Yes	
Caucasian	Yes	The police need more unmarked cars & trucks to catch buzzed drivers from the roadways. This should be a top priority. I see far too many people smoking pot while driving around Klamath Falls.

White	Yes	Start enforcing violations from loud exhaust noises. It is out of coof control. alot of people are selling home because of this problem. We have had enough of it. It is a code violation. it is so loud you can hear it from every corner of this city day and night.
Klamath Falls	Yes	
White	Yes	
White	Yes	
White	No	
White	Yes	
Whie	Yes	I wish downtown was stop signs and not flashing red lights or the current stoplight situation. I felt much safer walking downtown when people were stopping at every intersection.
Hispanic	Yes	Criminalizing drugs will solve Oregons problem
W	Yes	Timing the red lights so you can drive a safe speed and get several green at a time.
White	Yes	The light at Esplanade and 97 is an accident waiting to happen. Coming from Pacific Terrace neighborhood on Esplanade towards the downtown area, the left turn signal is just a plain green light, and people new to the area or visiting may become confused at this intersection, which could lead to hesitation and potentially to accidents.
W	Yes	
	Yes	
Why does this matter?	Yes	All roads should be well lit, but most of the streetlights are off past Washburn. Why don't you put reflectors in the road so you can see what lane you're in? We hardly get snow anymore so that's not a good reason. When we do get snow, why isn't the roads leading to the hospital not kept 100% clear all of the time? It's on a hill and is the largest employer in town and has the college with all the students next to it.
n/a	Yes	
NA	Yes	
human	Yes	speeding on all roadways
W	Yes	
white	Yes	
	Yes	

White	Yes	The bus stop above main street blocks any view of on coming traffic if busses are parked there. Need traffic lights there. Also the Oregon avenue bike lane is much to wide.
white	Yes	more street lights
White	Yes	
Caucasian	Yes	
White	Yes	
White	Yes	
Klamath Falls	Yes	Very unsafe for pedestrians. strict enforcement of safety regulations
White	Yes	
Mixed	Yes	
This is BS!!	Yes	A bigger policy presence would deter alot of these issues. Need to ticket Jay walkers.
caucasian	Yes	
White	Yes	south 6th has too many J-walkers after dark wearing dark clothing.
hispanic	Yes	
W	Yes	
Caucasian	Yes	In my opinion, intersections should not have cars parked within a specific distance so you can see further. The intersections/areas where cars are parked at angles is one of my biggest concerns. You have to back out so far, and by then someone has to swerve around you, hit you, or you slam on your brakes and try try again. Also areas like the library when you are trying to cross Klamath Avenue there is is so hard to see if cars are coming. Another area is where you turn to go into KU. I LOVE our trees on the median there, BUT as I take my kids to school there are so many almost wrecks there. Moving the first set of trees/bushes out would be great. That intersection by the time you have cars turning left or right, straight and then the kids trying to get to school is really a nightmare those 2 times of day.
White	Yes	Intersections are the worst. Everybody is running red lights at high speeds. It causes accidents regularly. We need red light cameras to issue tickets, and more action taken by police.
White	Yes	
White	Yes	
white	Yes	
White	Yes	I don't like the homeless that hang out right outside a business entrance. They make me feel unsafe. I won't use the OC&E trail because of their encampments proximity to the trail and they congregate along those paths making me feel unsafe to utilize it with outdoor activities.
Caucasian	Yes	Remove the Bike Lane from Oregon Avenue and 9th Street. This path is a serious diving hazard and needs to be returned to a normal street configuration.
w/h	Yes	

Black	Yes	
White/hispanic	Yes	
Caucasian	Yes	The bike lanes that took over a car lane downtown are useless.
Hispanic	Yes	I live between hwy 39 and Homedale. People use Harlan as a speed way to bypass traffic on the main roads. I have been passed on Harlan many times due to people believing Harlan is a freeway. Unacceptable. Remove illegals remove transients and klamath will be a better place. Where is the tax money for the Marijuana tax? Since a new mayor has taken over the roads have never been this terrible in my 40 years of living here. Lastly, have the elected officials of klamath falls take a stand against salem and Portland to stand for the constitution not only for orwgon but especially the United States constitution.
White	Yes	Age is a factor in cases I see at the hospital- either young and inexperienced and older people who are making mistakes or struggling to with complex situations. Lack of transportation for seniors is likely contributing, as is limited drivers education for children.
white	Yes	Speeding is a significant concern as well as disregard for bicyclists and pedestrians.
	Yes	
hispanic	Yes	
White	Yes	I think the high traffic intersections are the highest priority all over Klamath. Better road upkeep could also help.
White	Yes	
	No	My biggest complaint was when you messed up the traffic lights. Don't know who's bright idea that was but they should be fired!
Caucasian	Yes	I appreciated your turning the stoplights back on downtown!
White	Yes	
white	Yes	
KLAMATH FALLS	Yes	street lights ,intersection lights and homeless condition
Caucasian	Yes	
White	Yes	Safer places to be active.
	Yes	Roundabouts work.
white	Yes	
	Yes	
	Yes	Maybe, just maybe, once a wile a little refresher like a test from basic traffic rules and regulations would make people be more aware of their driving habits. Mybe they would discover turn signals, learn difference between left and right lane, or what is the right of way rule for a start...
White	Yes	More cross walks on S6th. Pedestrians aimlessly cross and it is dangerous at dark. More traffic lights on S6th- it is hard to get across. Hwy 39 and 140 bipass needs a light. Hard to get on the highway
caucasian	Yes	

Why?	Yes	
White	Yes	
w	Yes	need better and MORE bike lanes on key thoroughfares and around lakeshore drive
WHITE/NATIVE AMERICAN	Yes	
	Yes	
White	Yes	
White	Yes	NA
White	Yes	
white	Yes	
DECLINE TO ANSWER	Yes	
Caucasian	Yes	Traffic on Altamont and Southside Bypass. Turning left is absolutely dangerous and people pull out in front of highest speeds all the time.
Mixed	No	A lot of people don't use their blinkers. Roads are pretty bad, feels like there's priority towards Pacific Terrace and Downtown only when other parts of the town need to be addressed.
WHITE	Yes	
white	Yes	
White	Yes	The roads/sidewalks are really really icy and dangerous in the winter and the streets and sidewalks are rarely salted (in my experience).
Hispanic	Yes	
White	Yes	People run stop signs CONSTANTLY!!! It is horrifically rampant in this town.
Caucasian	Yes	
White	Yes	
Caucasian	Yes	
Hispanic	Yes	
W	Yes	Adding street lights to areas people have been hit before. Providing safety clothing to homeless or other people who walk at night.
	Yes	Bikes need to use the Bike Path and stay off the streets. They do not follow traffic laws and cause more problems than any other group.
Italian	Yes	On street parking is given too much priority .
White	Yes	During the downtown light experiment our 17 year old who walks home from KU had multiple near miss strikes by motor vehicles.
White	Yes	

Spanish Survey Results

Selecciona con qué frecuencia haces lo siguiente para movilizarte por Klamath Falls. Si nunca usas un modo de transporte en la lista, puedes dejar esa fila en blanco.				
Conduce solo en coche, camión, furgoneta o moto	Comparte el coche con otras personas (coche o furgoneta)	Toma el autobús	Monta en bicicleta	Camina a pie
Frecuentemente (varias veces por semana)	Rara vez (una vez por semana o menos)	Nunca	Nunca	Rara vez (una vez por semana o menos)

		El análisis inicial del Plan ha identificado las siguientes Áreas a priorizar que la Ciudad debe tratar. Clasifique las siguientes Áreas según su experiencia, de mayor a menor prioridad para mejorar la seguridad, siendo 1 la máxima prioridad.					
Utiliza una silla de ruedas/ayuda para la movilidad	Otro	Intersecciones viales	Peatones	Ciclistas	Motociclistas	Exceso de velocidad	Conducir bajo los efectos del alcohol o drogas
Nunca	Nunca	5	2	4	6	3	1

		Si hay otras Áreas que cree que la Ciudad debería priorizar, inclúyalas aquí:-	¿Cuál es tu código postal?	¿Cuál es tu edad?	¿Cuál es tu identidad de género?
Drivers over age 65	Cyclists under age 18	Open-Ended Response	Open-Ended Response	Response	Open-Ended Response
			97601	45-64 años	Hombre

¿Cómo identificas tu raza/etnicidad?	¿Tienes un vehículo motorizado disponible?	Comparta cualquier otro comentario que tenga sobre la seguridad vial en Klamath Falls. Como recordatorio, puede brindar comentarios adicionales en el mapa de comentarios que se encuentra encima de esta encuesta.
Open-Ended Response	Response	Open-Ended Response
Hispano	Sí-	Incentivar la población de caminar más o andar en bicicleta cerrando el centro durante fines de semana para mejorar la salud, el consumo de productos locales y socializar.



KLAMATH FALLS TRANSPORTATION SAFETY ACTION PLAN

HELP MAKE STREETS IN KLAMATH FALLS SAFER!

The City of Klamath Falls is creating a transportation safety plan and we need your help! Initial project recommendations have been developed based on crash analysis and input we heard from you back in December. The goal of these projects is to eliminate fatal and serious injury crashes from Klamath Falls streets. Navigate to the website below to review the projects and tell us what you think of them!

Please provide your input by Wednesday, February 28.

<https://arcg.is/18CTTi0>

Facebook

Join the conversation for safer streets in Klamath Falls! The City of Klamath Falls is crafting a Transportation Safety Action Plan to help eliminate fatal and serious crashes from its streets. We want YOUR input on the transportation safety projects that the team has developed. 

Participate in our virtual open house at the website below to voice your thoughts on our recommendations! Please provide your input by Wednesday, February 28th. 

Whether you walk, roll, bike, or drive, we want you to reach your destination safely because someone is waiting for you at home. 

<https://arcg.is/18CTTi0>

Instagram

We want YOU to help shape safer streets in Klamath Falls! 

The City is working on a Transportation Safety Action Plan to eliminate crashes from its streets, and your input matters to us! Tap into our virtual open house (link in bio) to share your thoughts on the transportation safety projects that the team has developed. Act now, the deadline is Wednesday, February 28th! 

<https://arcg.is/18CTTi0>

Twitter

We want YOU to help shape safer streets in Klamath Falls by sharing your thoughts at our virtual open house!  The deadline is Feb. 28! The City has plans to eliminate crashes & whether you walk, roll, bike, or drive, we want you to reach your destination safely because someone is waiting for you at home.

 <https://arcg.is/18CTTi0>



1001 SW Emkay Drive, Suite 140
Bend, OR 97702
P 541.312.8300

Virtual Open House #2 Press Release

February XX, 2024

For more information:
Mark Willrett, City Public Works Director
(541) 883-5316
Willrett@klamathfalls.city

City of Klamath Falls Encourages Community Input on Transportation Safety Action Plan at a Virtual Open House

KLAMATH FALLS – Join the ongoing conversation for safer streets in Klamath Falls! The City of Klamath Falls is crafting a Transportation Safety Action Plan to help eliminate fatal and serious crashes from its streets. We want YOUR input on the projects that are recommended to reach this goal.

Participate in our virtual open house at the website below to voice your thoughts on these projects! Please provide your input by Wednesday, February 28th.

Whether you walk, roll, bike, or drive, we want you to reach your destination safely because someone is waiting for you at home.

Virtual Open House: <https://arcg.is/18CTTi0>



Klamath Falls Transportation Safety Action Plan (TSAP)



Klamath Falls Transportation Safety Action Plan (TSAP)

Help make streets in Klamath Falls safer!

Virtual Open House | Available Through February 28, 2024

Project Background

Welcome to the second open house for the Klamath Falls TSAP!

This virtual open house presents transportation safety projects that have been recommended based on crash data and the input you provided this past December. These projects are aimed at reducing all crashes on Klamath Falls streets but are especially focused on bringing the 113 fatal and serious injury crashes reported in Klamath Falls (2017-2021) to zero. The projects are organized into two categories: systemic treatments for the urban area and capital improvements at

priority sites. Please review them and take a moment to complete our survey to let us know what you think!

Systemic Treatments

These are lower-cost projects that can be applied across the Klamath Falls transportation network to reduce and prevent crashes. The recommended systemic treatments are focused on reducing crashes at intersections as well crashes with pedestrians and bicyclists.

Intersections

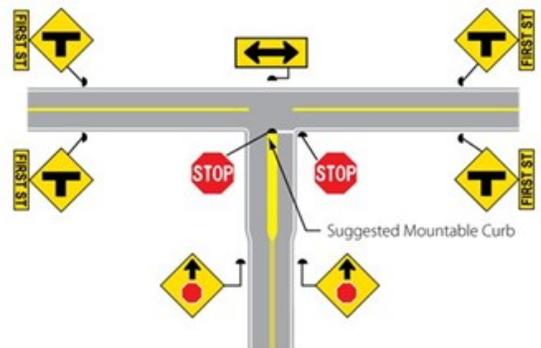
Stop-Controlled / Uncontrolled Intersections account for:

- 62% of intersection crashes
- 61% of fatal/serious injury crashes at intersections

Recommended Treatment

Increase intersection warning of stop-controlled intersections (3-leg or 4-leg intersections), illustrated in the image below.

- **Potential crash reduction = 20-30%** for all crash types and all crash severities; more treatments result in greater reduction
- Treatments can include: 'Stop Ahead' pavement markings, 'Stop Ahead' signs, larger signs, additional stop signs, and other intersection warning / regulatory signs



Stop-Controlled Intersection Warning Devices

Pedestrians and Bicyclists

Intersections account for:

- 65% of pedestrian crashes / 61% of bicyclist crashes
- 69% of pedestrian crashes / 75% of bicyclist crashes resulting in fatal/serious injuries

Recommended Treatment

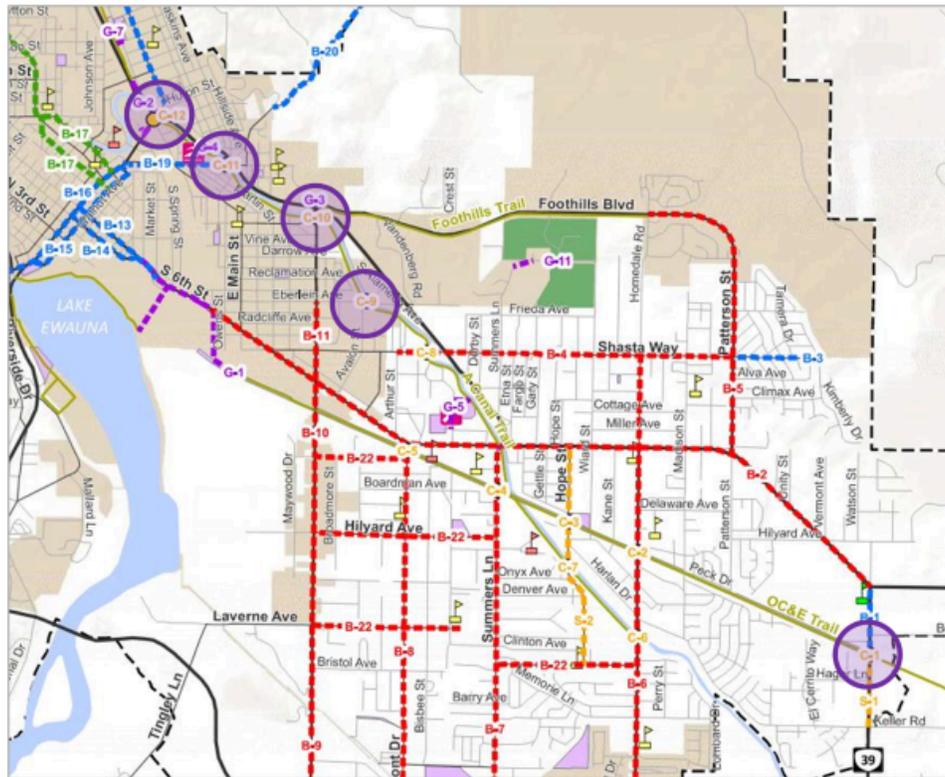
Implement crossing projects identified in the Klamath Falls Urban Trail Master Plan and in the Klamath Falls Safe Routes to School Master Plan. Many of the projects include the treatments below, which illustrate their potential crash reduction for pedestrian and bicyclist crashes of all severities.



Treatments for reducing pedestrian and bicyclist crashes at intersections

Urban Trail Access Treatments

Focus implementation on the high and medium priority crossing projects in the Urban Trails Plan. Some projects require further study to identify the final crossing treatments.

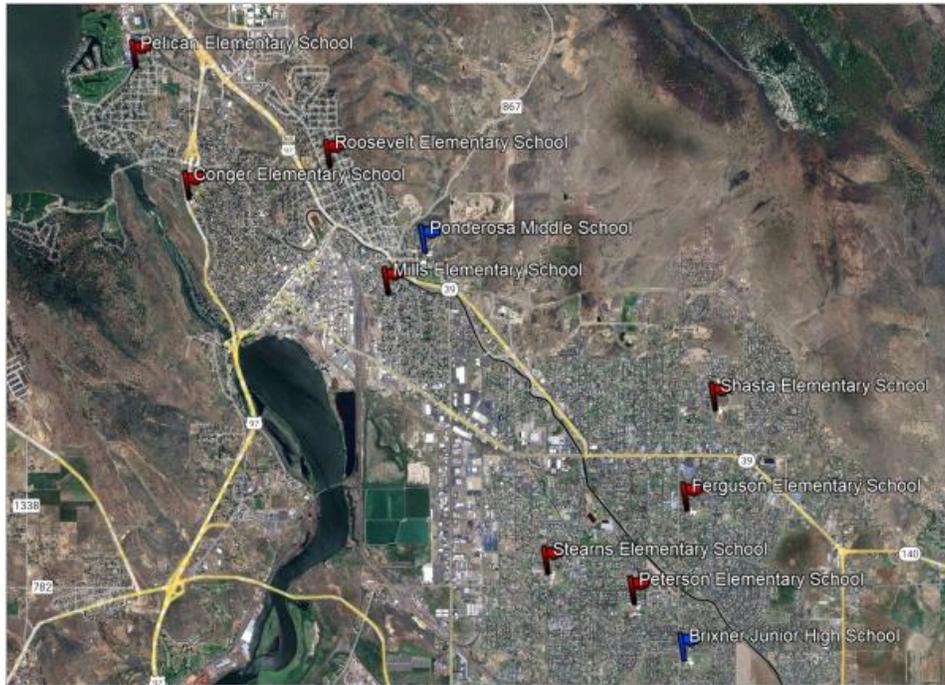


Urban Trails Plan

Safe Routes to School Treatments

Focus implementation on the high priority crossing projects.

- **29 High Priority Crossing Projects**
 - High-visibility marked crosswalks
 - Actuated / passive beacons
 - Warning signs
 - "School Crossing" pavement markings
- Klamath Falls City Schools: Conger, Mills, Pelican, Roosevelt, and Ponderosa
- Klamath County Schools: Ferguson, Peterson, Shasta, Stearns, and Brixner



Klamath Falls City Schools and Klamath County Schools

Systemic Treatments Survey Questions:

Your feedback is an important part of the Klamath Falls TSAP so that the City can understand where to prioritize safety improvements. This survey should take 2 minutes to fill out.

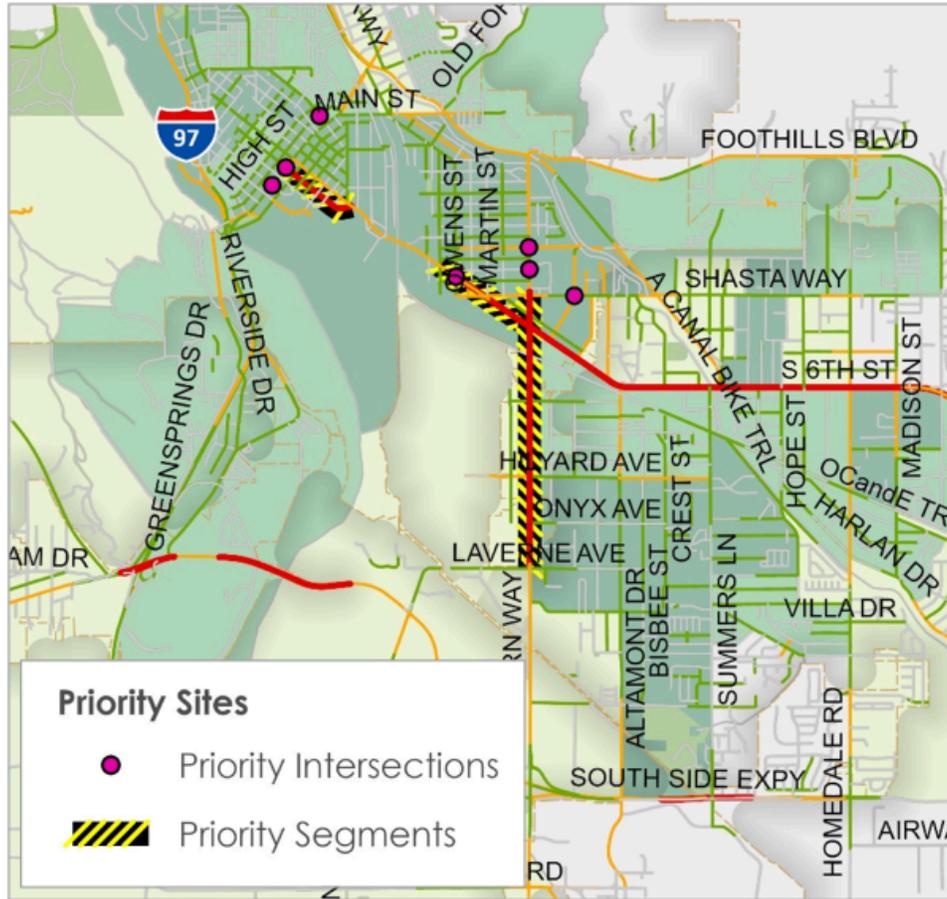


Klamath Falls

Klamath Falls TSAP - VOH #2 - Systemic Treatments

Capital Projects for Priority Sites

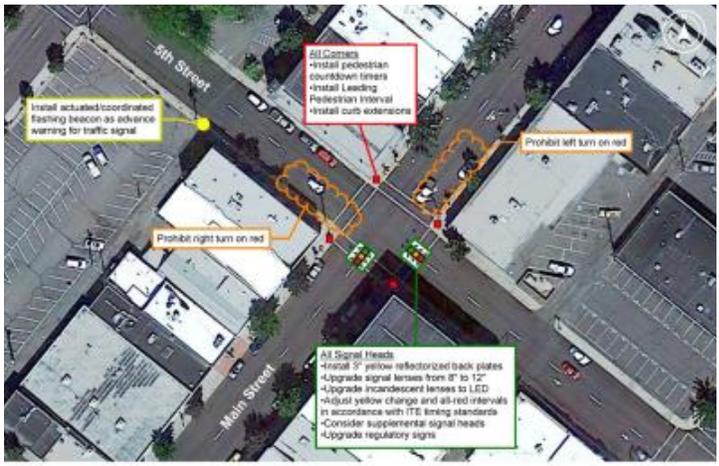
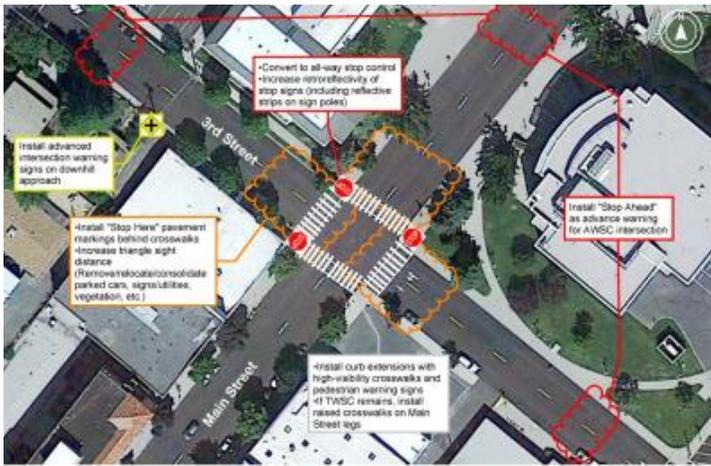
These are higher-cost projects that are identified at 7 City intersections and along 3 City roadway corridors – highlighted in the map – to address locations in Klamath Falls with some of the most frequent and severe crashes. Streets shown in red have the most frequent and severe crashes. Streets shown in green have the least frequent and severe crashes.



Priority Intersections and Segments for Capital Projects in Klamath Falls

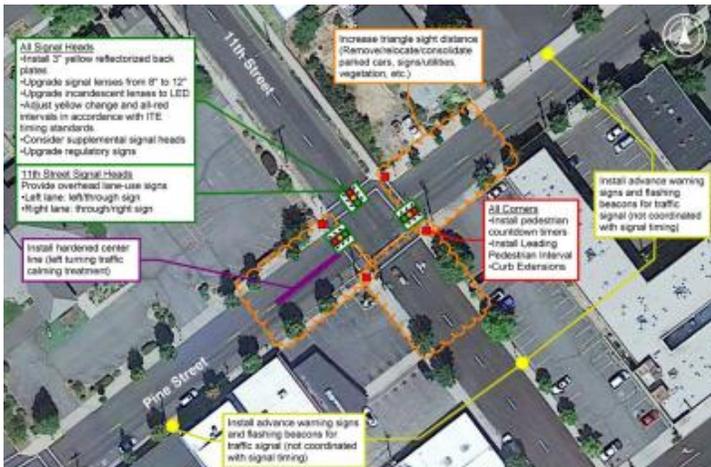
Recommended Treatments

The treatments recommended at the following priority sites are based on a detailed review of the crash history at each location. Click on each image below to expand it and read about the recommendations.



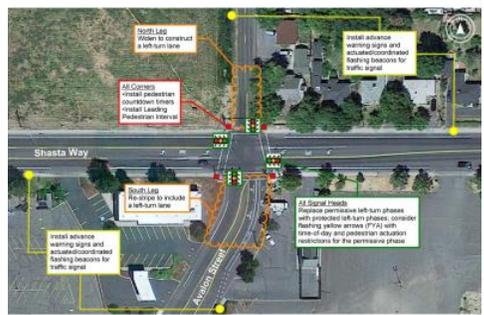
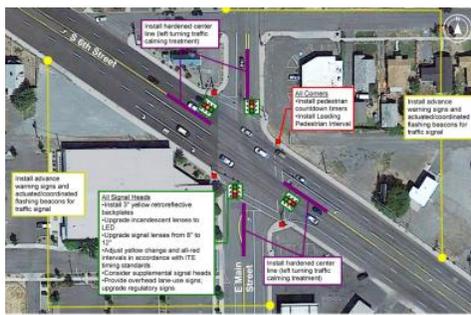
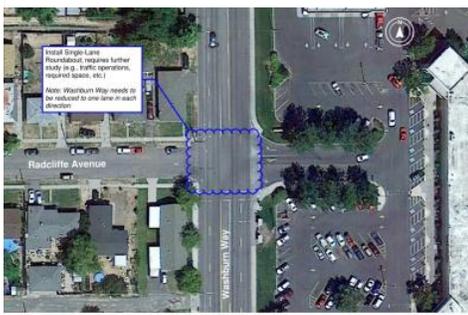
KITTELSON & ASSOCIATES Transportation Safety Projects Main Street/3rd Street

KITTELSON & ASSOCIATES Transportation Safety Projects Main Street/5th Street



KITTELSON & ASSOCIATES Transportation Safety Projects Pine Street/11th Street

KITTELSON & ASSOCIATES Transportation Safety Projects Washburn Way/Eberlein Avenue



KITTELSON & ASSOCIATES Transportation Safety Projects Washburn Way/Radcliffe Avenue

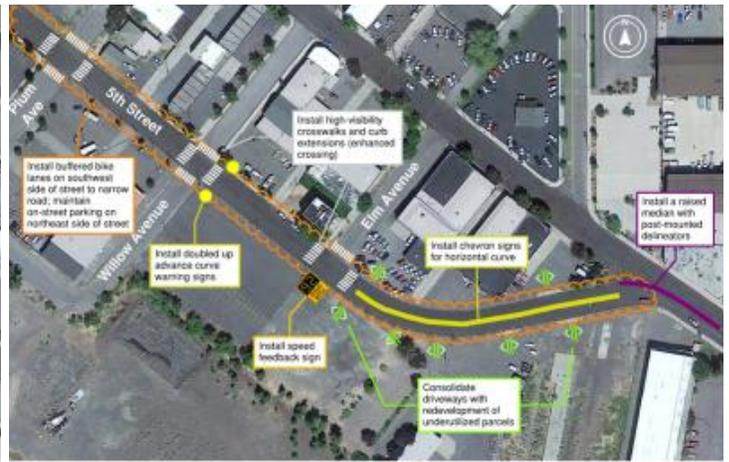
KITTELSON & ASSOCIATES Transportation Safety Projects 6th Street/E Main Street

KITTELSON & ASSOCIATES Transportation Safety Projects Shasta Way/Avalon Street

Intersection Treatments



KITTELSON & ASSOCIATES
 Transportation Safety Projects
 5th Street: Klamath Avenue to Plum Avenue



KITTELSON & ASSOCIATES
 Transportation Safety Projects
 5th Street: Plum Avenue to S 6th Street



KITTELSON & ASSOCIATES
 Transportation Safety Projects
 S 6th Street: Owen Street to Martin Street



KITTELSON & ASSOCIATES
 Transportation Safety Projects
 S 6th Street: Martin Street to Lark Street



KITTELSON & ASSOCIATES
 Transportation Safety Projects
 S 6th Street: Lark Street to Washburn Way



KITTELSON & ASSOCIATES
 Transportation Safety Projects
 Washburn Way: South of OC&E Trail to Shasta Way



KITTELSON & ASSOCIATES

Transportation Safety Projects

Washburn Way: South of Crosby Avenue to South of OC&E Trail



KITTELSON & ASSOCIATES

Transportation Safety Projects

Washburn Way: Onyx Avenue to South of Crosby Street



KITTELSON & ASSOCIATES

Transportation Safety Projects

Washburn Way: Laverne Avenue to Onyx Avenue

Segment Treatments

Priority Sites Survey Questions:

Your feedback is an important part of the Klamath Falls TSAP so that the City can understand where to prioritize safety improvements. This survey should take 4 minutes to fill out.



Klamath Falls

Klamath Falls TSAP - VOH #2 - Priority Sites



Klamath Falls TSAP - VOH #2 - Systemic Treatments

1. How well does the recommended systemic intersection treatment align with your safety goals for intersections in the community? 5 means it aligns very well and 1 means it doesn't align. You can either drag the circle along the bar or enter a numeric answer into the small box.

0 5

A horizontal slider bar with a circle at the 0 position and a small box for input on the right. The bar is labeled with 0 on the left and 5 on the right.

2. How well do the recommended urban trail access treatments align with your safety goals for walking and biking in the community? 5 means they align very well and 1 means they do not align. You can either drag the circle along the bar or enter a numeric answer into the small box.

0 5

A horizontal slider bar with a circle at the 0 position and a small box for input on the right. The bar is labeled with 0 on the left and 5 on the right.

3. How well do the recommended safe routes to school treatments align with your safety goals for walking and biking in the community? 5 means they align very well and 1 means they do not align. You can either drag the circle along the bar or enter a numeric answer into the small box.

0 5

A horizontal slider bar with a circle at the 0 position and a small box for input on the right. The bar is labeled with 0 on the left and 5 on the right.

4. Are there other measures you would prioritize instead to improve intersection, pedestrian, or bicycle safety? Please provide your input in the comment box below.

<p>How well does the recommended systemic intersection treatment align with your safety goals for intersections in the community? 5 means it aligns very well and 1 means it doesn't align. You can either drag the circle along the bar or enter a numeric answer into the small box.</p>	<p>How well do the recommended urban trail access treatments align with your safety goals for walking and biking in the community? 5 means they align very well and 1 means they do not align. You can either drag the circle along the bar or enter a numeric answer into the small box.</p>	<p>How well do the recommended safe routes to school treatments align with your safety goals for walking and biking in the community? 5 means they align very well and 1 means they do not align. You can either drag the circle along the bar or enter a numeric answer into the small box.</p>
Open-Ended Response	Open-Ended Response	Open-Ended Response
4	3	4
3	3	5
1	1	1
4		4
5	5	5
3	1	5
4	4	4
5	4	4
2	5	5
2	3	2
3	3	3
5	5	5
5	5	5
3	1	4
3	4	4
5	3	
1	1	1
1	3	2
5	5	5
0	0	0
4	4	4
5	5	5
5	5	5
4	4	3
4	4	3
1	1	1
4	4	5

5	5	5
3	5	4
3	5	4
2	1	2
2	4	4
1	1	1
2	3	2
4	4	3
4	5	5
4	4	5
3	4	3
5	5	5

Are there other measures you would prioritize instead to improve intersection, pedestrian, or bicycle safety? Please provide your input in the comment box below.

Open-Ended Response

I wouldn't put them above but turning arrows should be added to some on the stoplights

Put the Eberline/Washburn way to a 4 way stop with stop signs instead of a roundabout. Do not make Washburn way into one lane streets, this will significantly increase traffic on this street making it even more difficult to cross the street to turn across the lanes.

Flashing lights for school zones during school hours is most important. Proper lighting at cross walks is definitely a good choice. Has any consideration been given to automated retractable safety bollards? Having seen videos and documentation of their use in other countries leads me to believe they could be a viable option for use at crosswalks that are shown to have high vehicle-pedestrian accident rates. I don't know what the estimated costs to install and maintain such systems are, but if certain intersections are having high injury/fatality rates, it may be worth the cost.

I like roundabouts for slowing down traffic but at the same time allowing movement of traffic, decreasing congestion. Are roundabouts being considered? Does the data show benefits to traffic safety when roundabouts are used?

Adding sidewalks and street lights on Clinton Ave by Peterson Elementary. Not really a priority but a much needed.

Larger stop signs. Clearing of trees and shrubs that block sign at intersections.

More traffic law enforcement, especially speed enforcement. Some violators are driving in excess of 60 plus in residential areas listed as 25 mph. California off of Oregon Avenue / Lakeshore Drive is a prime example.

Stop motorcycles riding between vehicles to be able to get to their destination quicker.

I like the idea to prohibit a left turn on red on onto one way streets as that's confusing for some, but I would not like to see no right turn on red, because in general I don't think most people will follow that anyways, making an unsafe environment where some people follow signs of the road and others do not

Educate pedestrian and bicyclist to wear light clothing. They can't be seen at night especially in bad weather

Start cutting back the trees that block a large number of our stop signs and street signs. It's dangerous when you can't see a stop sign until you're at the intersections themselves because of overgrown flora. It's also frustrating having to slow at corners because the street signs are blocked as well as any cross traffic coming out of those streets.

More traffic stops of specific drivers that drive in an unsafe manner. Don't waste money to dumb down intersections for everyone. Instead focus on improving the roads by fining poor drivers who aren't going to respond to intersection enhancements. Would also raise money for the city and county. Focus on the problem which are piss poor drivers.

The two-lane bikeway already installed on Oregon Avenue solve a safety issue for bikes while making it less safe for drivers. The car lanes are TOO NARROW. Reduce the bikeway to one lane that will still allow bikes to pass one another safely. Drivers will be safer thereby.

Pedestrian bridges- especially Portland street

Enforcement of speed limits in residential areas should be a HIGH priority. Hope Street has no enforcement of ton any given he 25 mph speed limit.the The average average speed of traffic

I would love to see more bicycle lanes connected to the main Oregon Ave to downtown bike lane. I use it all the time for my commute to work and would be thrilled to see us become a more bike-able place that could allow others to do the same. These measures are encouraging that we are taking safety seriously and looking into expanding our access for pedestrians using the roadways!

For people that ride from the East side of town to the West side of town we need a lane or something after East Main besides side walks. Summers Lane and S 6th is dangerous.

Red light cameras at intersections especially the Crater Lake Parkway and Main street light. I see cars running the red light every day and there is heavy school pedestrian traffic in the morning and again around 3-3:30 pm.

Rethink some of the crossings. The one by Albertsons causes a traffic hazard and should have incorporated moving driveway(s) or other forms of mediation the would increase pedestrian safety without decreasing safe access.

more sidewalks near schools, especially near Pelican School

The crosswalks are great, but what about the actual trails themselves and the safety involved with walking on them? I don't know the statistics, but I personally do not feel safe walking on the OC&E trail from Esplanade all the way to Washburn. That stretch in particular feels troublesome.

In the plan it does not have anything about crosswalk safety measures for those that are blind. For example textured rectangles to mark a crosswalk, auditory stimuli, or additional lights.

Highway 39 and South side expressway needs stop lights. Extra signage and changing speed limits is great, but people don't pay attention and/or they just don't care. Sky lakes campus needs extra pedestrian safety measures.

Expanded series of bike and walking lanes throughout the city limits.

I believe even with the failed traffic light experiment in downtown, there are still opportunities to make downtown more welcoming for pedestrians and cyclists. Please consider additional bump outs, curb extensions, etc. in the downtown corridor.

High visibility flashing lights when people are in the street. Don't make the cars sit there for an extended time like at Washburn Way and OCE trail because that makes drivers frustrated and "run" the light.

People know they are supposed to stop, but they run stop signs & red lights CONSTANTLY. It is truly horrifying how few people actually come to a complete stop at a stop sign & that many either don't know, or don't care, about who has the right of way. More signs, etc are not going to stop this or make people have the driving knowledge that they do not seem to have. It is actually scary to drive in this town, I can't even imagine having to be a pedestrian near these horrible drivers. More CAMERAS that are followed up with TICKETS might be an actual deterrent because the police don't seem to be doing anything unless you are speeding. I know cameras would cost more, but these drivers will keep doing this if there are no consequences. The money from those tickets could be used to pay for the cameras & when some don't pay, they can lose their drivers license instead.



Klamath Falls TSAP - VOH #2 - Priority Sites

1. How well do the priority sites that we've identified for capital improvements align with your safety goals for the community? 5 means they align very well and 1 means they do not align.

0 5

2. Are there other treatments that we should consider at these locations? Please provide your input in the comment boxes below.

Main Street / 3rd Street

Main Street / 5th Street

Pine Street / 11th Street

Washburn Way / Eberlein Avenue

Washburn Way / Radcliffe Avenue

S 6th Street / E Main Street

Shasta Way / Avalon Street

5th Street Corridor

S 6th Street Corridor

Washburn Way Corridor



Klamath Falls TSAP - VOH #2 - Priority Sites

About You

The following questions will help City staff ensure that people throughout Klamath Falls and from different backgrounds are participating in the Plan. Your responses are optional.

3. What is your zipcode?

4. What is your age?

- 5-14 years old
- 15-24 years old
- 25-44 years old
- 45-64 years old
- 65+ years old
- Prefer not to respond

5. What is your gender identity?

6. How do you identify your race/ethnicity?

7. Do you have a motor vehicle available for your use?

- Yes
- No

8. Please share any other feedback you have on safety in Klamath Falls.

9. Please provide your email if you would like to receive project updates.

How well do the priority sites that we've identified for capital improvements align with your safety goals for the community? 5 means they align very well and 1 means they do not align.	Are there other treatments that we should consider at these locations? Please provide your input in the comment boxes below.		
Open-Ended Response	Main Street / 3rd Street	Main Street / 5th Street	Pine Street / 11th Street
0			
1			
3			
5			
5			
3			
4			Too many trees coming up to the light. Should be a 4 way stop.
2			
5	Visible signs	Visible signs	Slow down
5			
5	Two way traffic on main street	Two way traffic on main street	Raised crossings and more trees along 11th street
4			
4			
4			
4			
5			
4			
5			
4			

1			
0	Do not see problem	Better visual	I thought problem was main and 11th
4			
4			
4	no need for flashing beacons; these lights just add to light pollution and become obnoxious	no need for flashing beacons; these lights just add to light pollution and become obnoxious	Just make this a 4-way stop with stop signs. The traffic volume doesn't seem to warrant lights.
3			

Washburn Way / Eberlein Avenue	Washburn Way / Radcliffe Avenue	S 6th Street / E Main Street	Shasta Way / Avalon Street
	roundabouts on Washburn are a fantastic idea and much safer		
Too many trees along Washburn, they need to be trimmed. It's very hard to make a L turn onto Washburn, off eberlein in the summer. The trees block visibility both ways in the summer.			Make all turn lanes protected. No more L turn on blinking yellow on both directions, people don't yield!
Slow down /flashing lights	Not sure	Brighter cross lights	Cross walks brighter
More street trees on Washburn way	Nope, I like the proposed treatments	Sidewalk widening, 90-degree crosswalks, and eliminating right turn lanes.	Protected bicycle signal
Needs a 4-way stop	Needs a stop light		

? On issue	? On issue	? On issue	Didn't know this was an issue
			Is there a reason this wouldn't function as a roundabout? It seems like a good spot for one.

5th Street Corridor	S 6th Street Corridor	Washburn Way Corridor
		Reduce speed limit
	<p>Make all turn lanes with lights protected and consistent. Every intersection has a different light configuration. Some have blinking yellow in the L turn lane, like Avalon and s sixth. Others are protected like Homedale and s 6th. Accidents happen where people don't yield in unprotected L turn lanes.</p>	<p>Make all turn lanes with lights protected. No more L turn on blinking yellow on both directions, people don't yield !. I've seen to many near accidents at Crosby and Washburn.</p>
Slow down	Slow down	Brighter cross lights
More Street trees and a road diet	More Street trees and a road diet	More Street trees and a road diet
		reduce to one lane each way will be a nightmare for backup
		<p>If you make Washburn one lane each direction, I hope you have a lot of turn lanes, both right and left. If not, you are going to create more frustrated drivers who will run more red lights.</p>

	There is no bike lane after East Main. Will not ride on bike path, do not have a death wish. Also corner of S 6th and Summers will one day get hit people just turn onto S 6th from Summers Lane and do not look.	
Never saw an issue	What is the issue?	
LOVE the suggestions for Plum to So 6th Street		

What is your zipcode?	What is your age?			
Open-Ended Response	5-14 years old	15-24 years old	25-44 years old	45-64 years old
97601				45-64 years old
97601			25-44 years old	
97603			25-44 years old	
97603			25-44 years old	
97601				
97601				45-64 years old
97601				45-64 years old
97601			25-44 years old	
97601				
97603			25-44 years old	
97601				
97601				
97601				
97601			25-44 years old	
97601				45-64 years old

97603				45-64 years old
97601				
97601				45-64 years old
97603				45-64 years old
97601			25-44 years old	
97601				45-64 years old
97601			25-44 years old	

		What is your gender identity?	How do you identify your race/ethnicity?	Do you have a motor vehicle available for your use?	
65+ years old	Prefer not to respond	Open-Ended Response	Open-Ended Response	Yes	No
		Male	White	Yes	
		Woman	White	Yes	
		Female	Caucasian	Yes	
		Female	White	Yes	
	Prefer not to respond			Yes	
		Female	Blessed	Yes	
		Male	White	Yes	
			White	Yes	
65+ years old		M	White	Yes	
		male	white	Yes	
65+ years old		m	Sky Lakes Medical Center		
65+ years old		F	Caucasian	Yes	
65+ years old		Female	White	Yes	
		Male	White	Yes	
		Female	White	Yes	

		no ones business	why does this matter?	Yes	
65+ years old		Female	White	Yes	
		female	white	Yes	
		Male	White	Yes	
		male	white	Yes	
		Female	White	Yes	
		Male	Hispanic	Yes	

Please share any other feedback you have on safety in Klamath Falls.

Open-Ended Response

Traffic safety enforcement has really declined. Speeding is rampant throughout town but especially on the edges of the City Boundary. Downtown mitigates most speeding due to multiple intersections and traffic lights. But crater lake parkway is treated like a race track. Outlying streets like California off of Oregon Avenue / Lakeshore Drive has people occasionally traveling twice to three times the speed limit.

Better street lights would greatly improve safety. We have very dark streets.

My husband and I have both been hit when people ran red lights down town. The biggest issue here is inconsistency in intersections. It's confusing. The biggest issue I see is people not yielding on blinking yellow turn lights. People just assume it's their right away not that two opposite lines of traffic have different signals, like Washburn and onyx, sixth and Avalon.

Fix the roads. Swerveing to miss a crater is a big problem. And quit trying to make us like Bend with the dumb roundabouts and changing lights downtown. I'm pretty sure that message should have been received loudly.

People stay off phone's and slow down

The intersection of Pacific terrace and esplanade needs something other than yield signs which are often ignored. Maybe flashing signs or stops?

Concern with the population's general disregard for posted speed limits and road safety in general. Consider the possibility of increasing police presence for ticketing. Many of these changes will likely do nothing to address the accidents if people are still driving 20 mph over the speed limit, intentionally doing stupid stunts in their vehicles on icy roads, and driving drunk from the bar.

As the only through street without stop signs in the Mills Addition, speed bumps on Vine Ave between E. Main and Washburn should also be considered. Too many cars speed through at 40+ mph on a daily basis.

No more roundabouts. At hospital daily and people do not understand right of way. Put up signs at current one on how to use. Corner of Crater lake Parkway and Main warning signs and flashing lights needed to let drivers know who are doing 70 by this intersection that they will need to stop at light. Cannot tell you how many every day go straight through their red light.

As much as I am not a fan of big brother, photo enforced traffic tickets would not be a bad idea at several main intersections. We have way too many people running red lights in this town, they don't even make an effort to slow down, much less stop.

Riding to work is a take your life in your own hands, kind of situation. There is nowhere to ride after East Main on S 6th. Riding on our bike path is out, unless you want mugged or killed.

I have never seen where 113 accidents have been fatal. Fatal to me means death. These changes appear that the city needs to use the grant money given to remove traffic signals. Much more important issue in Klamath Falls. Better safety to citizens from Drugs and homeless vandalism.

Love these ideas! Do people obey the Activated Beacons? Yes to 35 mph on Washburne. Love the buffered and green bike lanes. And making sure all sidewalks are accessible as well as functional and present is crucial for pedestrian use. Thanks for all your work on this!

Continue to advocate for more and safer multimodal transportation options, despite the naysayers.

Please change all the traffic lights on Pine Street to 4 way stops with stop signs. This is a simple, cost effective solution that will benefit pedestrians and cyclists with very low impact to motor vehicles and traffic flow.

The bike line running down Oregon Ave to 9th is a major hazard, especially when the poles go up. I realize you got stuck with it, everyone hates it except that one bicyclist who complains cars almost hit him. Should have picked a route with less traffic.

I realize adding more protected bike lanes is a much bigger project, but even some green painted bike lanes downtown or connecting the downtown area with Altamont shopping areas (Natural Grocers, south on Washburn) would be beneficial.

APPENDIX B

EXISTING SAFETY CONDITIONS MEMO



Technical Memorandum

September 6, 2023

Project# 28624.0

To: Project Advisory Committee (PAC)

From: Poppy Yang, Grace Carsky, Miranda Barrus, PE, Karen Swirsky, AICP, and Nick Foster, AICP, RSP

Project: Klamath Falls Transportation Safety Action Plan (TSAP)

RE: Existing Safety Conditions Summary Memo

INTRODUCTION

Kittelison & Associates, Inc. (Kittelison) is supporting the City of Klamath Falls in developing a Transportation Safety Action Plan (TSAP) for its urban area. The purpose of the TSAP is to help the City eliminate fatal and serious injury crashes through site-specific and systemic countermeasures. This memorandum summarizes the history and patterns of crashes on City, Klamath County, and Oregon Department of Transportation (ODOT) roadway facilities within the Klamath Falls Urban Growth Boundary (UGB). This memorandum also describes a network screening analysis of the urban transportation network that identifies specific locations where crashes may be concentrating. The results of this screening will help identify crash emphasis areas (e.g., speeding, substance use, age related) as well as specific locations that could be prioritized for individual safety projects.

Study Area

Located in south central Oregon, Klamath Falls is an incorporated city with a UGB containing roadways maintained by the City, Klamath County, and ODOT. This TSAP will examine all public roads within the Klamath Falls UGB to identify safety needs but will prioritize capital project recommendations on City roadway facilities. Safety projects for Klamath County or ODOT roads may be addressed through the upcoming Klamath Falls Urban Area Transportation System Plan (TSP) update. The study area for the Klamath Falls TSAP is shown in Figure 1.

Data Overview

The existing safety conditions analysis is based on the most recent five years of reported crash data (January 1, 2017, to December 31, 2021). It uses the primary datasets summarized in Table 1 to conduct a network safety screening analysis and to assess City-wide trends.

Table 1. Data Inventory

Data	Source
Primary Data	
Roadway Functional Classification	Klamath Falls TSP, Klamath County Data Portal
Traffic Control	City of Klamath Falls, Kittelison
Crash Data (2017 – 2021)	ODOT

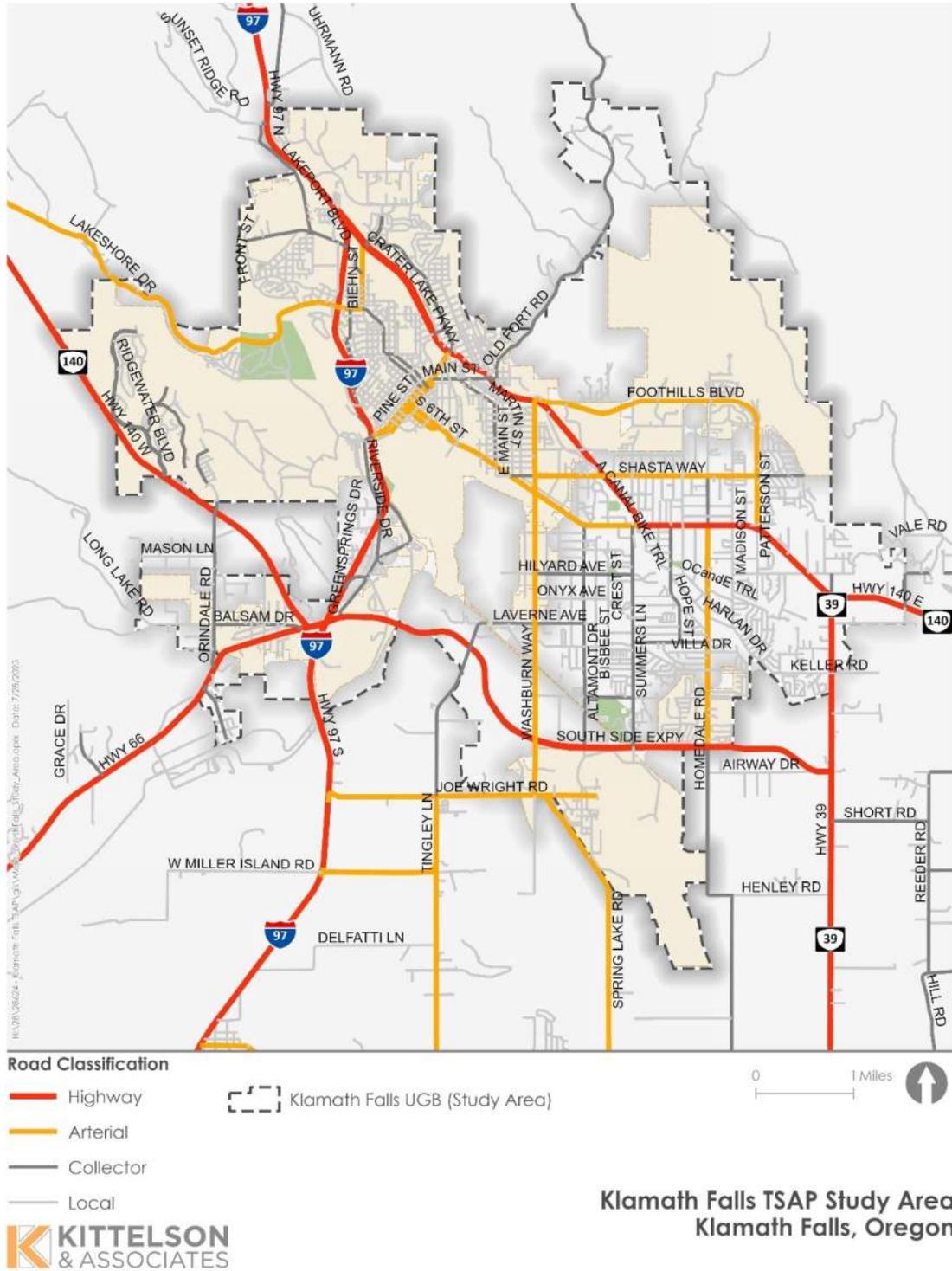


Figure 1. Klamath Falls Roadway Network and Study Area

CRASH DATA ANALYSIS

The crash data analysis summarized in the following sections includes an evaluation of historical crash patterns within the study area, including crash severity and location, temporal trends, crash type and contributing factors, roadway characteristics, behavioral characteristics, and vulnerable road users.

Crash Severity and Location

Crash patterns by severity and location are presented below; first according to intersection and segment crashes and then based on City, County, and ODOT roadways.

Intersection and Segment Crashes

Between 2017 and 2021, there were 2,544 total crashes on roadways within the Klamath Falls UGB, including 113 fatal and serious injury crashes (4%). Intersection crashes accounted for the majority of all reported crashes (62%) and fatal and serious injury crashes (61%) during this period. Of all crashes, approximately 95% involved only motor vehicles, followed by crashes involving people walking (2%), biking (2%), and riding motorcycles (1%). In addition, over half of intersection crashes (62%) occurred at unsignalized intersections (Figure 2).

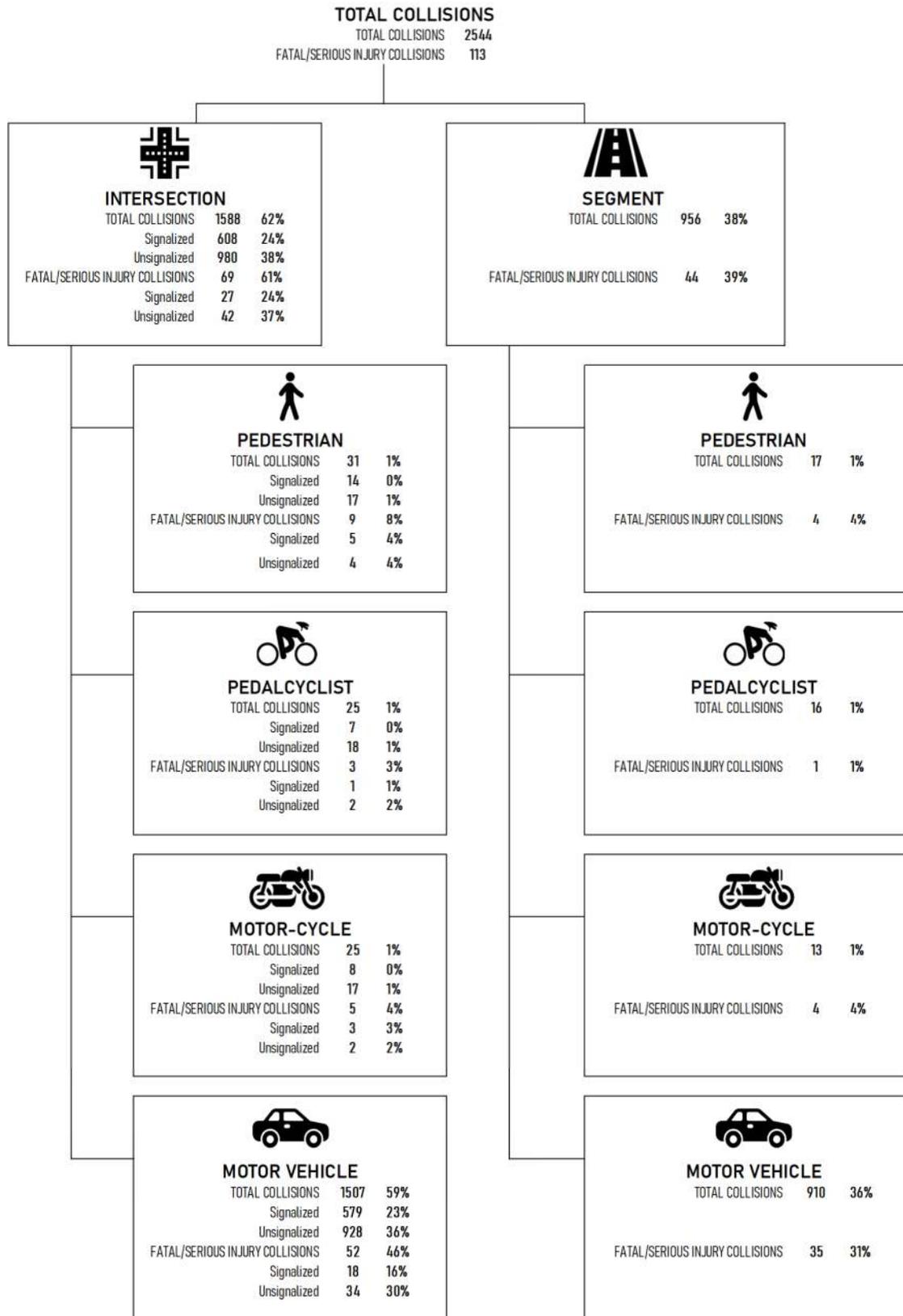


Figure 2. Reported Crashes (2017-2021) by Intersections and Segments

Crashes involving people walking, biking, or riding motorcycles were more likely to result in fatalities and injuries than crashes involving only motor vehicles. Pedestrian and motorcycle crashes were especially likely to lead to fatal or serious injuries. All pedestrian and bicyclist crashes resulted in injuries, along with 87% of motorcycle crashes. In contrast, around half of crashes involving solely motor vehicles resulted in property damage only (Figure 3).

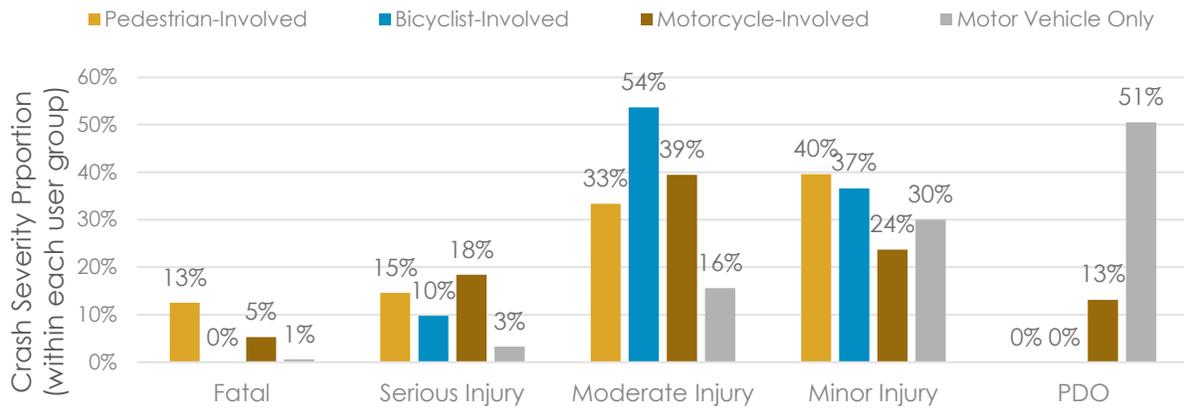


Figure 3. Crash Proportions by Road User (2017-2021)

City, County, and ODOT Roadways

Approximately 38% of intersection crashes and 47% of segment crashes occurred on roadways under full or partial jurisdiction by ODOT (Table 2 and Table 3). Most of the remaining occurred on roadways under City or County jurisdiction.

Table 2. Intersection Crash Count by Severity and Maintenance Jurisdiction (2017-2021)

Crash Severity	Road Maintenance Jurisdiction				Total
	State	County	City	Other/Unknown	
Fatal	6	2	5	0	13
Serious Injury	30	9	17	0	56
Moderate Injury	117	63	101	1	282
Minor Injury	218	122	172	1	513
Property Damage Only (PDO)	230	197	294	3	724
Total	601	393	589	5	1,588
%	38%	25%	37%	0%	100%

Table 3. Segment Crash Count by Severity and Maintenance Jurisdiction (2017-2021)

Crash Severity	Road Maintenance Jurisdiction				Total
	State	County	City	Other/Unknown	
Fatal	5	2	1	0	8
Serious Injury	16	5	15	0	36
Moderate Injury	74	35	30	0	139
Minor Injury	125	52	76	4	257
Property Damage Only (PDO)	225	138	146	7	516
Total	445	232	268	11	956
%	47%	24%	28%	1%	100%

Temporal Trends

The temporal crash trends summarized in the following sections include crashes by year, month, and time of day reported in the study area over the study period.

Crashes by Year

The number of fatal and serious injury crashes reported during the study period increased between 2019 and 2021. The proportion of fatal and serious injury crashes rose from 3% of total crashes in 2019 to 7% in 2021 (Figure 4). Additionally, the number of fatal crashes grew from two in 2018 to eight in 2021.

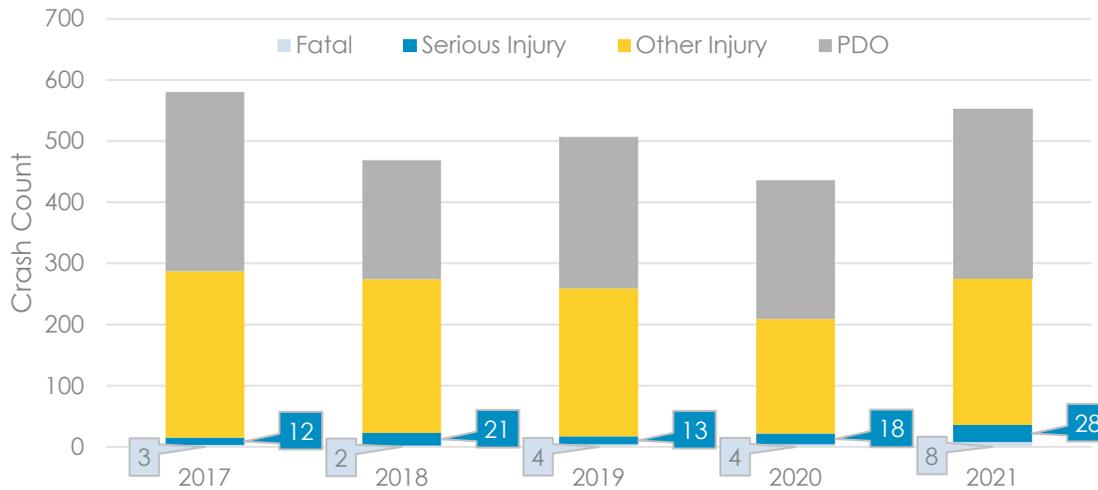


Figure 4. Crash Count by Crash Severity and Year (2017-2021)

Crashes by Month

Compared to the generally even distribution of total reported crashes throughout the year, the seasonal variation in fatal and serious injury crashes is more pronounced. The five-year crash data suggests that the fatal and serious injury crashes in Klamath Falls peaked during the summer months, between June and August, while the number of total crashes peaked in the fall and winter, between October and November (Figure 5)

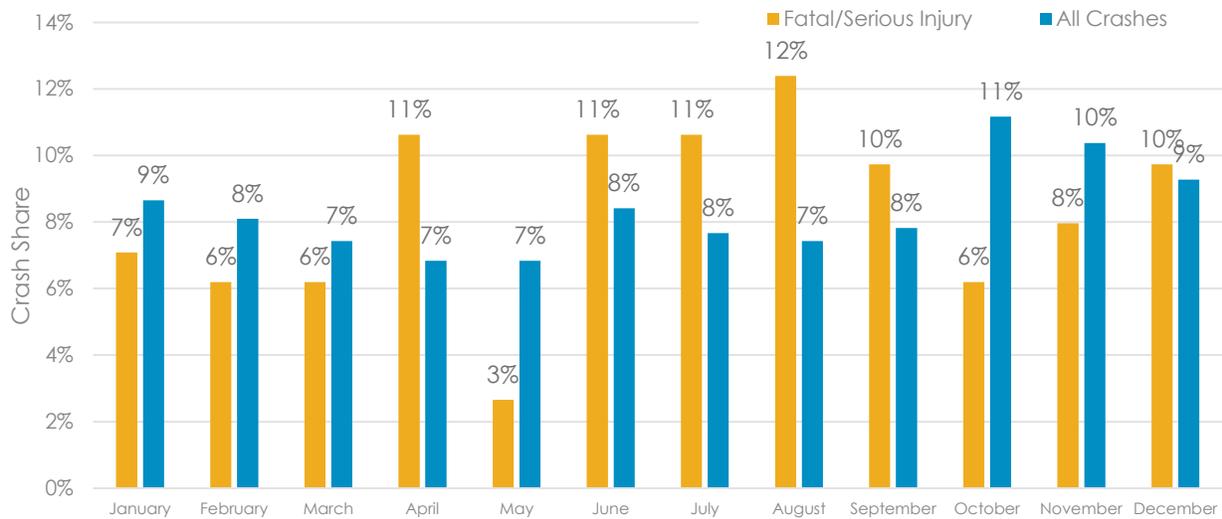


Figure 5. Crash Count by Month (2017-2021)

Crashes by Time of Day

The crash data (Figure 6) showed that the proportion of fatal and serious crashes reached a peak during PM peak hour periods on both weekdays and weekends. Specifically, 5 – 7 p.m. on weekends had the highest share of fatal and serious collisions. On weekdays, the proportion began rising after 9:00 AM and hit a daily peak around 6:00 PM in the evening. However, the difference between daytime and nighttime proportions was less pronounced on weekdays compared to weekends.

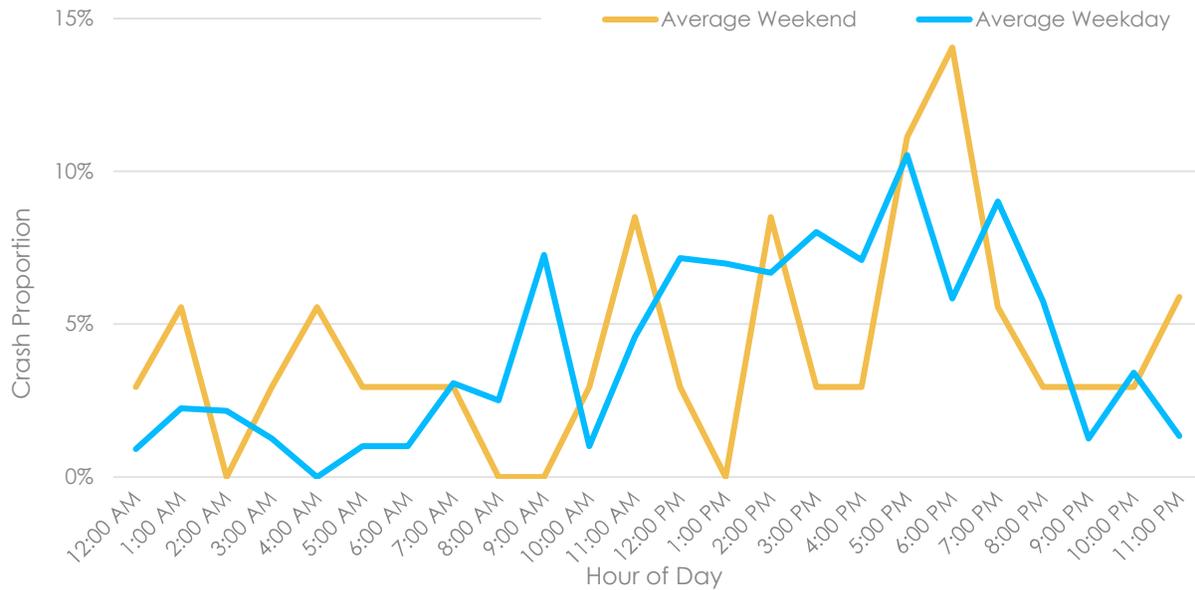


Figure 6. Fatal and Serious Injury Crash Share by Time of Day on an Average Weekday/Weekend (2017-2021)

Crash Type and Contributing Factors

The following sections summarize crash characteristics including crash type, contributing factors, and driving conditions for crashes reported in the study area over the study period.

Crash Type

Turning movement, rear-end, and angle crashes were the most prevalent crash types, as shown in Figure 7. These crash types also led to the most injuries. Pedestrian, cyclist, and head-on crashes were the most likely to result in a fatal or serious injury when they occurred. Non-collision¹ and low speed crashes (e.g. backing, parking maneuver) most often led to property damage rather than injuries.

¹ A crash reported as non-collision is a crash that includes one vehicle and no objects. The most common non-collision crash type is an overturn.

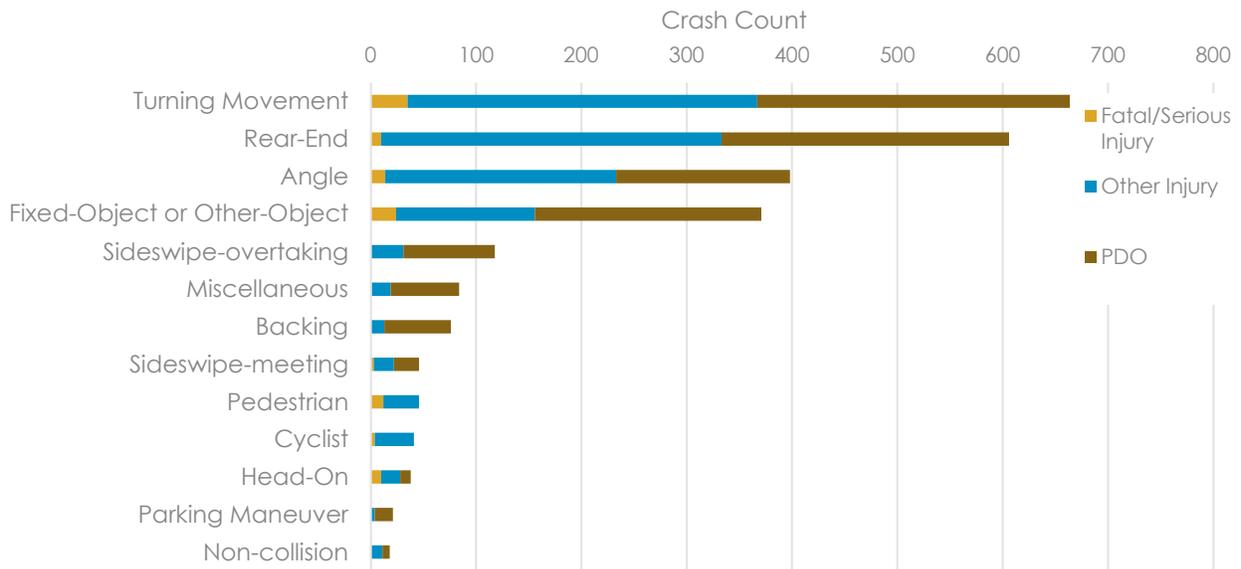


Figure 7. Crash Count by Crash Type and Severity (2017-2021)

Crash Cause

The leading causes for all crashes in Klamath Falls between 2017 and 2022 were “did not yield right-of-way” (35%), “failed to avoid vehicle ahead” (18%), and “inattention” (14%), as shown in Figure 8. The leading causes for fatal and serious injury crashes were “did not yield right-of-way” (44% of fatal and serious injury crashes), “speed too fast for conditions (Not exceeding limit)” (24% of fatal and serious injury crashes), and “made improper turn” (15% of fatal and serious injury crashes).

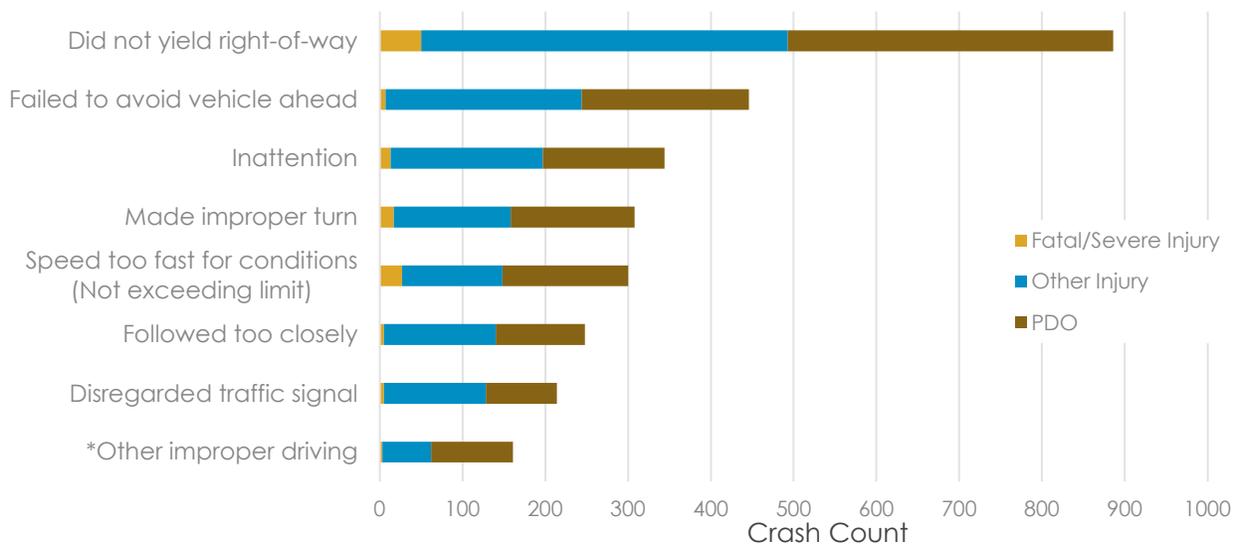


Figure 8. Crash Cause by Severity²

² Crash causes representing less than 5% of total crashes were not included in this figure.

Driving Conditions

Most crashes reported during the study period occurred on clear days and dry surfaces. However, wet road surfaces, smoke, fog, and sleet/freezing conditions contributed to crashes (Figure 9 and Figure 10).

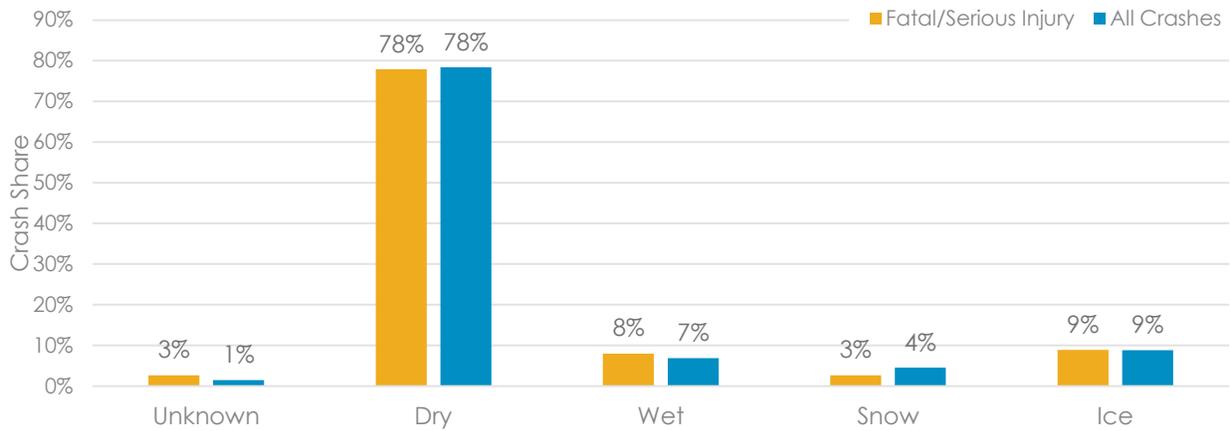


Figure 9. Crash Share by Road Surface Condition (2017-2021)

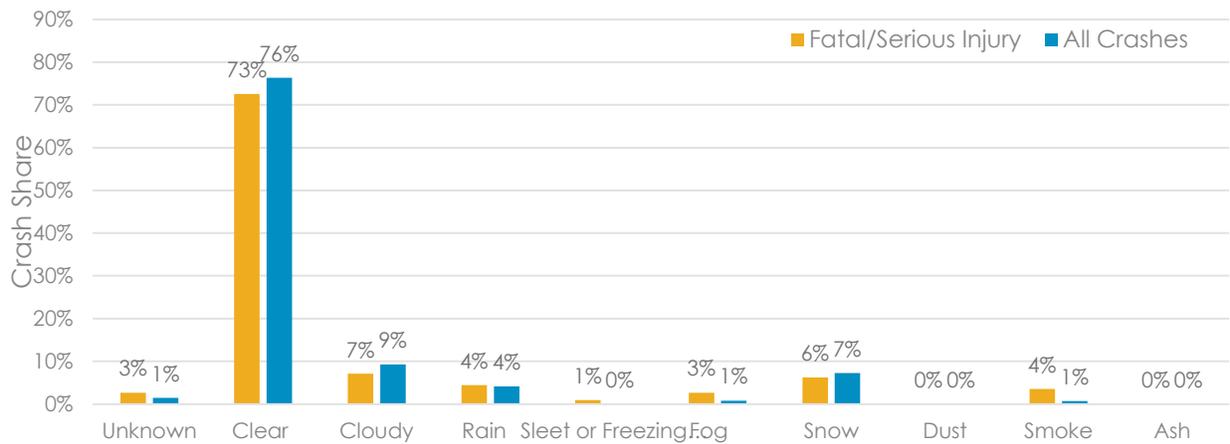


Figure 10. Crash Share by Weather Condition (2017-2021)

Roadway Characteristics

This section provides an overview of the features of study area roadways as they relate to crashes, including functional classification, traffic control devices, and lighting conditions at the time of crash occurrence.

Functional Classifications

The Klamath Falls UGB area is served by three major highways, as illustrated in Figure 11: US 97, OR 39, and OR 140. US 97 acts as the backbone of Klamath Falls' transportation network, running directly through the center of the city. This major north-south highway connects Klamath Falls to destinations in California, across Oregon, and north to Washington. Within city limits, US 97 includes a Business Route that follows

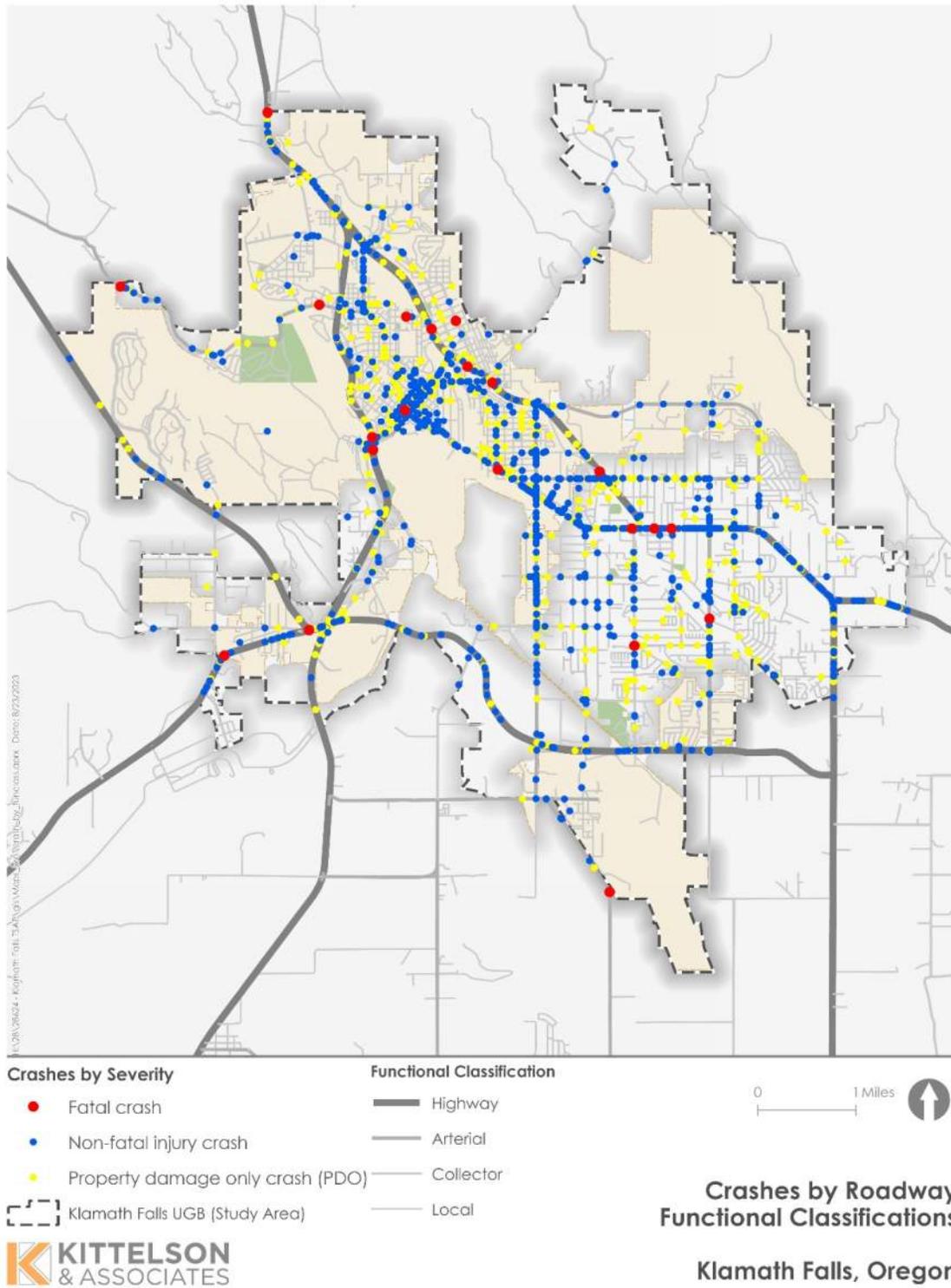


Figure 11. Crash Count by Roadway Functional Classifications (2017-2021)

Crater Lake Parkway to downtown via Esplanade Avenue, and Main Street and back to the primary highway at the southern end of downtown. OR 39, also known as S 6th Street and Crater Lake Parkway in Klamath Falls, travels diagonally from north to south through the city. OR 140 stretches east-west on the southern end of the city, linking Klamath Falls to Medford in the west and Lakeview and the Nevada border in the east.

The key arterials that connect different areas of the city include Lakeshore Drive, Esplanade Avenue, Main Street and Klamath Avenue, 6th Street, Washburn Way, Shasta Way, Foothills Boulevard, Patterson Street, and Homedale Road.

As shown in Table 4 and Table 5, arterials exhibited the greatest frequency of crashes at intersections and highways had the highest frequency for segment crashes.

Table 4. Intersection Crash Count by Roadway Functional Class and Crash Severity (2017-2021)

Crash Severity	Roadway Functional Class				Total
	Highway	Arterial	Collector	Local	
Fatal	5	5	1	2	13
Serious Injury	24	19	9	4	56
Moderate Injury	86	120	43	33	282
Minor Injury	161	208	71	73	513
PDO	155	321	119	129	724
Total	431	673	243	241	1,588
%	27%	42%	15%	15%	100%

Table 5. Segment Crash Count by Roadway Functional Class and Crash Severity (2017-2021)

Crash Severity	Roadway Functional Class					Total
	Highway	Arterial	Collector	Local	Ramp	
Fatal	5	2	1	0	0	8
Serious Injury	14	11	4	6	1	36
Moderate Injury	68	47	9	15	0	139
Minor Injury	103	90	20	41	3	257
PDO	194	137	46	130	9	516
Total	384	287	80	192	13	956
%	40%	30%	8%	20%	1%	100%

Traffic Control

The number of injury crashes (excluding fatalities) and PDO crashes at unsignalized intersections is significantly higher than the number of crashes at signalized intersections in Klamath Falls UGB (Table 6).

Table 6. Intersection Crash Count by Intersection Traffic Control (2017-2021)

Crash Severity	Unsignalized	%	Signalized	%	Total
Fatal	7	54%	6	46%	13
Serious Injury	35	63%	21	38%	56
Moderate Injury	174	62%	108	38%	282
Minor Injury	302	59%	211	41%	513
PDO	462	64%	262	36%	724
Total	980	62%	608	38%	1,588

Lighting Conditions

In comparison to all reported crashes, a higher proportion of fatal and serious injury crashes occurred in darkness, regardless of street lighting, as well as during twilight hours (Figure 12).

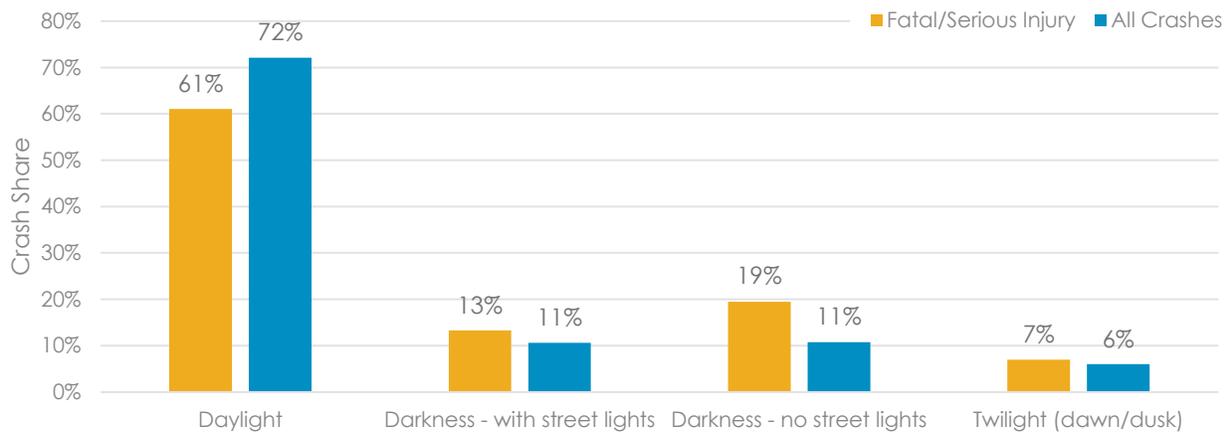


Figure 12. Crash Share by Light Condition (2017-2021)

Behavioral Characteristics

This section summarizes the characteristics of crashes reported over the study period related to driver behavior, including speeding and impaired and distracted driving. While engineering solutions can help address these factors, education and enforcement programs targeted at unsafe driving behaviors are also needed to help reduce crashes stemming from human error.

Speeding

Approximately 28% of fatal and serious injury crashes involved officers reporting speeds too fast for driving conditions (e.g., inclement weather, road surface, etc.) (24% of fatal and serious injury crashes) or over the posted speed limit (4% of fatal and serious injury crashes), which is more than twice as high as all reported crashes (13% of total crashes) (Figure 13). These numbers may not fully represent the role speed plays in all crashes since speed data is not obtained from each motor vehicle in every crash.

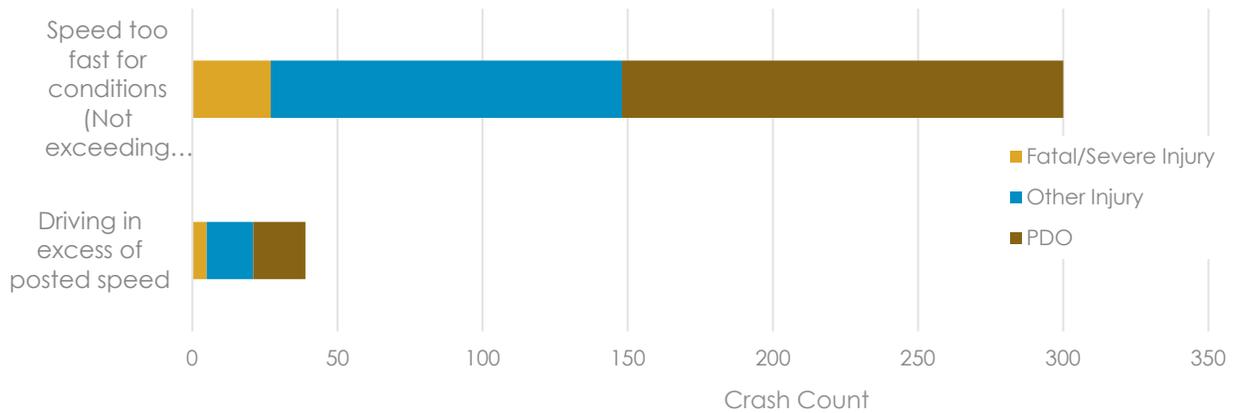


Figure 13. Speeding Crash Share (2017-2021)

Impaired Driving

Impaired driving usually means a driver operating a vehicle under the influence of alcohol and/or drugs; it also includes driving while experiencing some loss or diminishment of proper physical reaction times due to sleepiness, distractions (discussed below), or medical conditions. Over 30% of fatal and serious injury crashes involved impaired driving as compared to only six percent of total reported crashes involving an impaired driver (Figure 14).

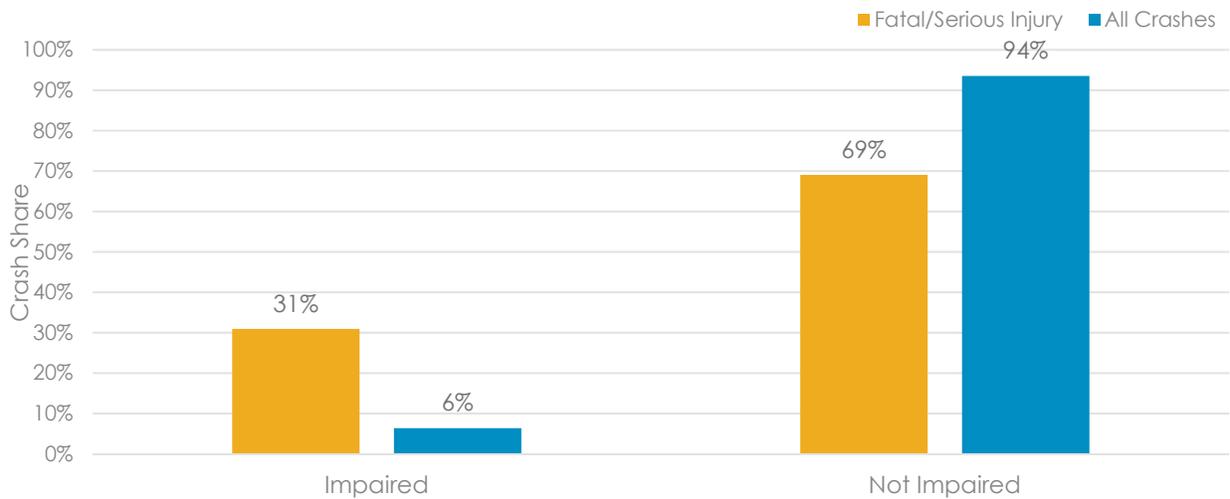


Figure 14. Impaired Driving Crash Share (2017-2021)

Distracted Driving

More than half of all crashes reported over the study period involved distracted driving, where 13% of fatal and serious injury crashes involved distracted driving (Figure 15).

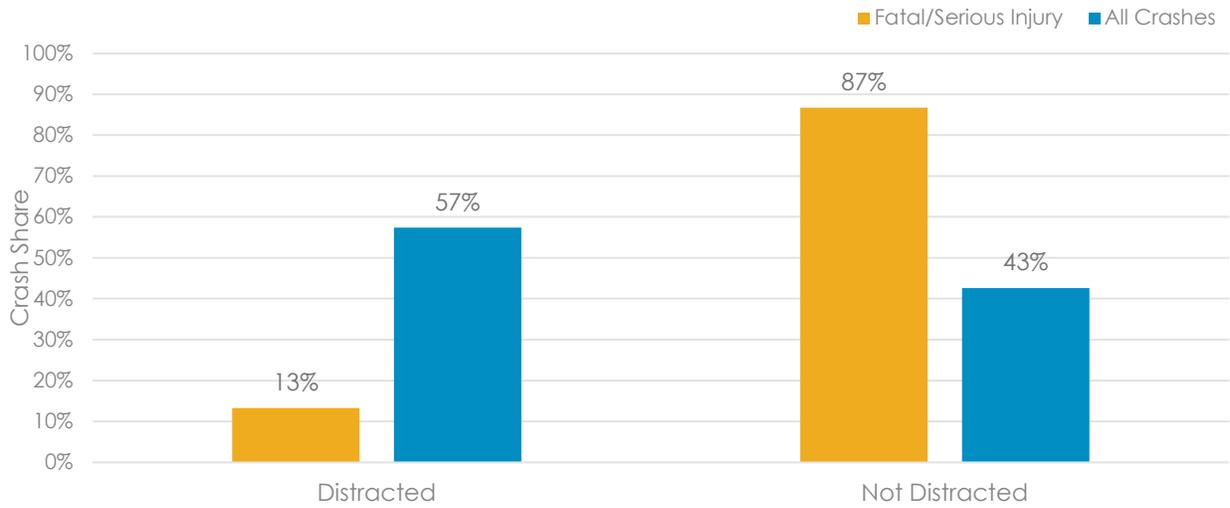


Figure 15. Distracted Driving Crash Share (2017-2021)

Vulnerable Road Users

Vulnerable road users, such as pedestrians, bicyclists, and motorcyclists, are exposed to higher risk of fatalities and injuries on roadways. Potential countermeasures to enhance the safety of these vulnerable groups rely on engineering solutions, along with education and enforcement initiatives.

Pedestrian Crashes

As presented in previous sections, pedestrian crashes make up a small fraction of the total crashes (2%) reported in the study area over the study period. However, around 27% of pedestrian crashes resulted in fatal or serious injuries. When pedestrians are struck by vehicles, they are more likely to be victim to fatal or serious injuries as compared to people that are in a vehicle (Figure 16).

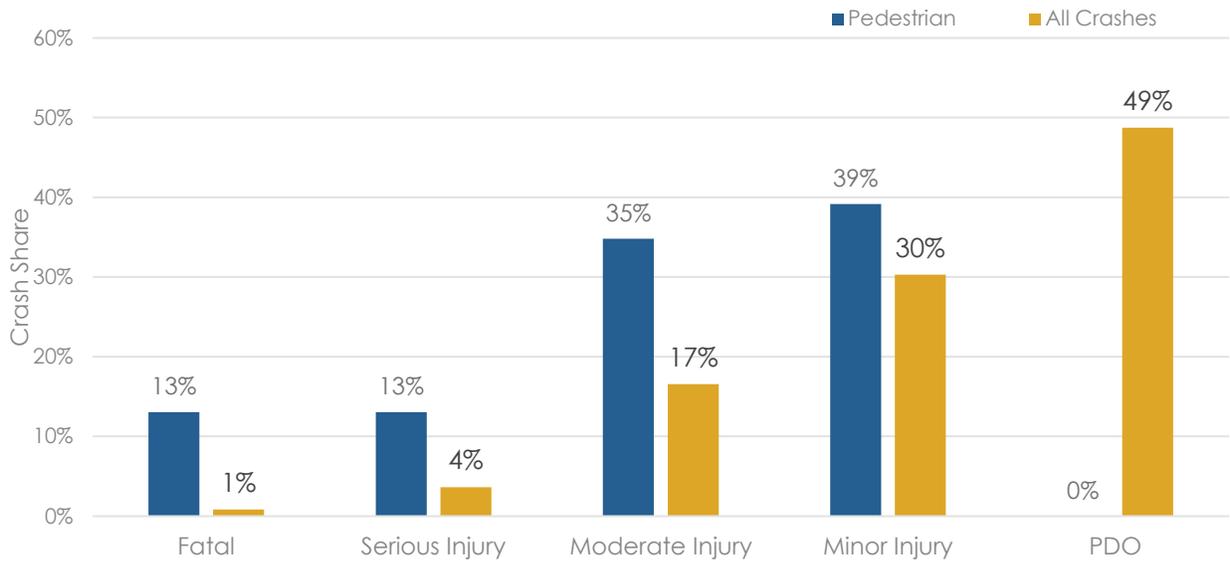
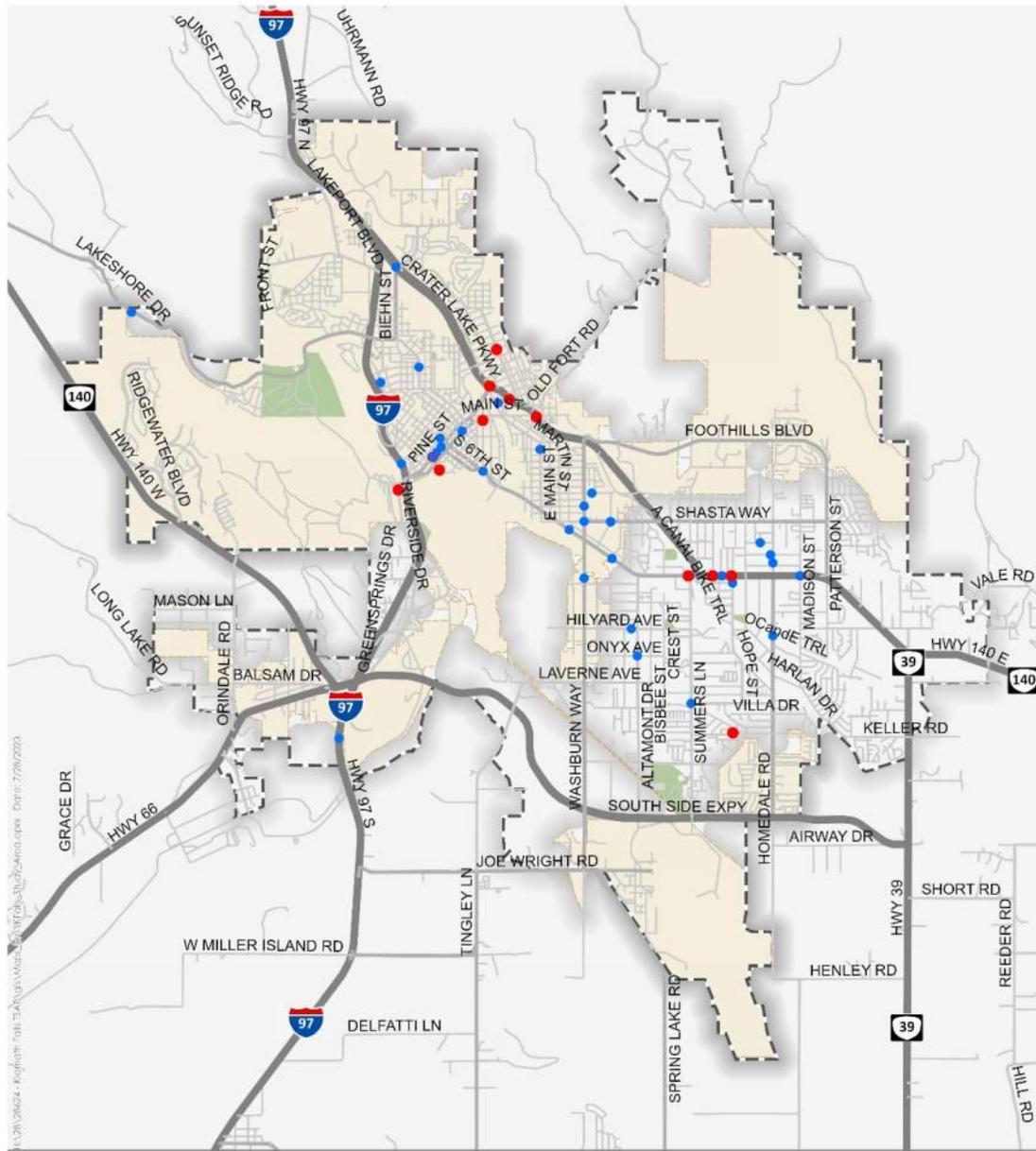


Figure 16. Pedestrian Crash Share by Crash Severity (2017-2021)

Of the 48 total pedestrian crashes, 15 occurred on State highways within the study area, including five fatal, two serious injury, four moderate injury, and four minor injury crashes. On the County roadway system, one serious injury, six moderate injury, and three minor injury pedestrian crashes were reported. The highest number of crashes were reported on City streets, with one fatal, four serious injury, six moderate injury, and twelve minor injury crashes (Figure 17).



Pedestrian Crashes Klamath Falls, Oregon

Figure 17. Locations and Severities of Pedestrian Crashes (2017-2021)

One-third of pedestrian crashes at signals and midblock locations were fatal or serious (Figure 18). Half of pedestrian crashes occurred at unsignalized intersections.

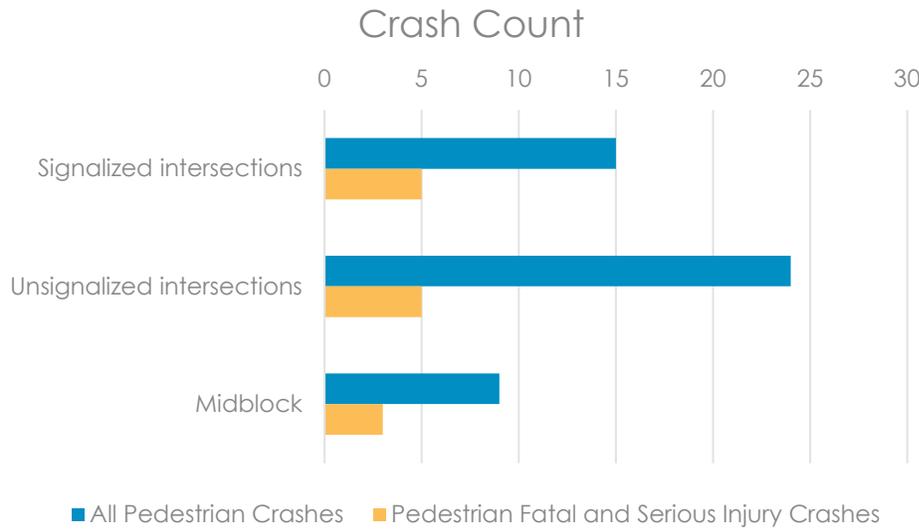


Figure 18. Pedestrian Crashes – Locations

Bicycle Crashes

Bicyclists also represent a portion of the vulnerable road user population. Bicyclist crashes accounted for 2% (41) of total crashes in the study area over the study period and approximately 3.5% (4) of fatal/serious crashes. Compared to other crashes, bicycle crashes are more likely to result in injury crashes (Figure 19). All reported bicycle crashes in the study area were injury crashes. Regarding the locations of bicycle crashes (Figure 20), ten were reported on state roadways, with one crash (10%) resulting in serious injury. Seven crashes occurred on the County roadway system, two of which (14%) had serious injuries. The City street network exhibited the most reported bicycle crashes, 24, though only two (8%) resulted in serious injuries.

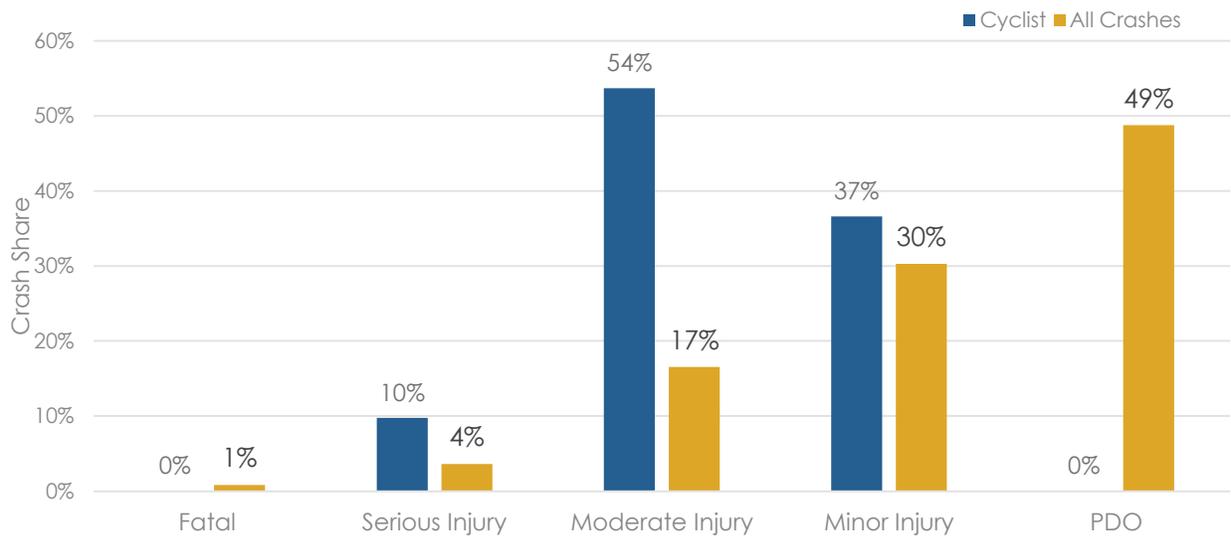


Figure 19. Bicycle Crash Share by Crash Severity (2017-2021)

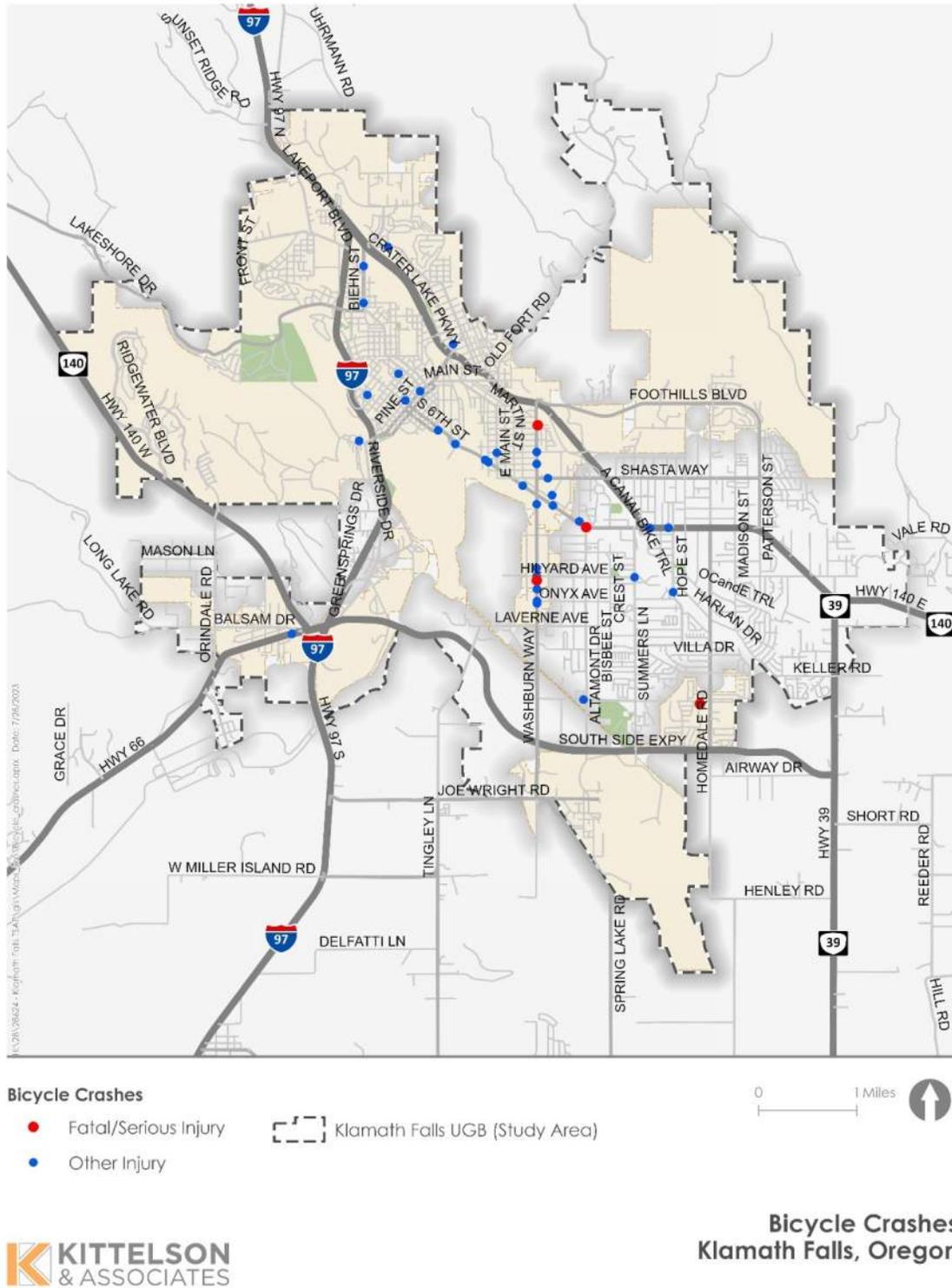


Figure 20. Locations and Severities of Bicycle Crashes (2017-2021)

More than 60% of bicycle crashes occurred at unsignalized intersections (Figure 21). Over 20% of bicycle crashes at signals were fatal or serious injury crashes.

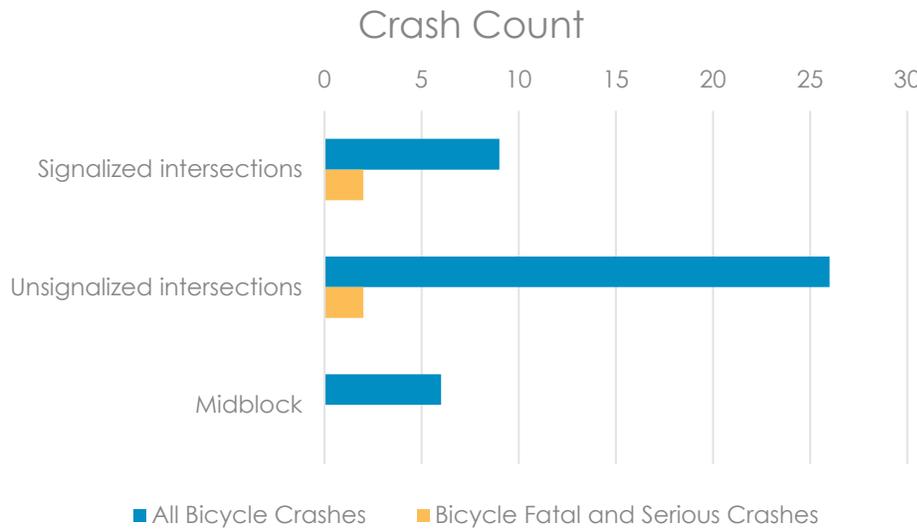


Figure 21. Bicycle Crashes – Locations

Motorcycle Crashes

Motorcycle fatal/serious crashes accounted for 8% of total fatal/serious injury crashes. Five occurred at intersections - three at signals and two at unsignalized intersections, and four occurred at roadway segments. In comparison, motorcycle crashes made up 1.5% of all collisions. Around 24% of motorcycle crashes resulted in fatal or serious injuries.

Age

Excluding crashes that do not report age information, the crash data in Figure 22 shows that the age group representing the most frequent crashes, whether as drivers or pedestrians, is 25 to 44 years old, accounting for 19% of vehicle crashes and 37% of pedestrian crashes. This is followed by the 45 to 64 age group at 14% (vehicle) of crashes and 32% (pedestrian) of crashes.

The age group most likely to be involved in bicycle crashes is younger individuals under 18 years old, accounting for 24% of such crashes. The 25 to 44 age group is also significantly represented, comprising 24% of bicycle crashes.

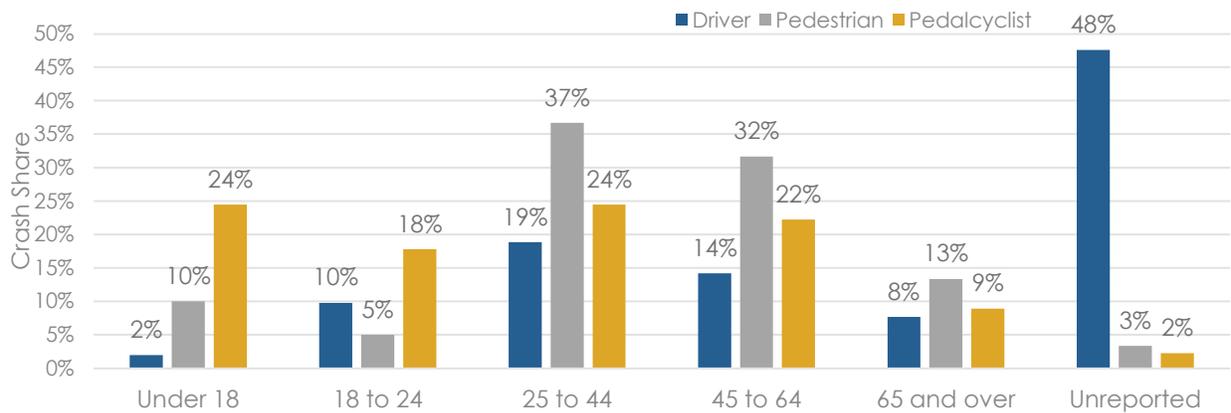


Figure 22. Crash Share by Age of Collision Party (2017-2021)

RISK FACTORS AND EMPHASIS AREAS

Based on the crash data and risk factors analysis summarized in the sections above, Kittelson has identified the following potential emphasis areas for the Klamath Falls TSAP:

- **Intersection Related Crashes:** Turning, rear-end, and angle crashes were the most common types in the study area.
- **Pedestrian, Bicycle, and Motorcycle Crashes:** Pedestrians, bicycle, and motorcycle crashes represented a small proportion of total crashes but had a higher risk of serious injuries or fatalities.
- **Crashes involving Speeding:** Speed was cited as a contributing factor in fatal and serious injury crashes at twice the rate as all crashes.
- **Crash involving impaired driving:** Over 30% of fatal and serious injury crashes involved impaired driving.
- **Crashes involving Drivers Over Age 65 and Cyclists Under Age 18:** 8% of reported vehicle crashes involved drivers aged 65 and over. 19% of reported bicycle crashes involved people aged 18 and under.

NETWORK SCREENING EVALUATION

The network screening evaluation helps to identify intersections and segments within the Klamath Falls transportation network with the greatest need for safety improvements based on two types of analyses:

1. The Equivalent Property Damage Only (EPDO) performance measure from the Highway Safety Manual (HSM) to locate intersections and segments within the entire system that have the highest overall crash severity; and,
2. The Critical Crash Rate analysis to identify which locations within a set of 60 intersections have the highest crash rates relative to one another.

The following sections describe both the EPDO and Critical Crash Rate analyses and later present their results. This information helps to inform locations within the Klamath Falls city limits that should be prioritized for capital improvements.

EPDO Network Screening

Kittelton performed the EPDO network screening for all public road facilities within the UGB, separating intersections from roadway segments. The EPDO performance measure is described below and is referred to as a crash severity score for the remainder of this memorandum.

A crash severity score is assigned to an individual crash and is weighted based on the severity of the crash (Table 7). Weights are relative to property-damage-only (PDO) crashes, with a PDO crash having the lowest cost to society (e.g., cost of infrastructure repair, medical costs, work-loss costs, and value of quality of life) and serious injury and fatal crashes having the greatest cost to society.³

Table 7. Crash Weights by Severity

Crash Severity	Crash Severity Score Weight
Fatal	100
Serious Injury	100
Major Injury	10
Minor Injury	10
PDO	1

Source: ODOT Safety Priority Index System (SPIS)

The weights prioritize fatal and serious injury crashes equally to recognize that a death versus a serious injury is often a function of the health of the individual involved or of emergency response time.

Intersections

Kittelton first identified the signalized and unsignalized intersections in the study area and then defined crashes as intersection or segment crashes. For this evaluation, an intersection crash is defined as any crash that occurred within 100 feet of the intersection or a crash within 250 feet of an intersection that is categorized in the data as an intersection crash. These crashes were spatially joined and summarized in ArcGIS to show the total number of crashes by severity at each intersection. Where intersections were less than 200-500 feet from each other, crashes were assigned to the nearest of the two intersections. Crashes occurring outside of these parameters were used in the segment analysis summarized in the next section.

Kittelton calculated the crash severity score for the intersections by multiplying each weight and the total crashes for the associated severity (by intersection type) and summing the results, as follows:

Crash Severity Score

$$\begin{aligned}
 &= (\text{Fatal Weight} \times \# \text{ of Fatal Crashes}) + (\text{Serious Injury Weight} \times \# \text{ of Serious Injury Crashes}) \\
 &+ (\text{Major Injury Weight} \times \# \text{ of Major Injury Crashes}) \\
 &+ (\text{Minor Injury Weight} \times \# \text{ of Minor Injury Crashes}) + (\text{PDO Weight} \times \# \text{ of PDO Crashes})
 \end{aligned}$$

³ National Highway Traffic Safety Administration. *The Economic and Societal Impact of Motor Vehicle Crashes, 2019* (Revised). <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813403>

Kittelson annualized the crash severity score by dividing it by the number of years (five) of crash data used in the analysis. The intersection EPDO network screening results are summarized and illustrated under 'High Priority Locations.'

Segments

Kittelson applied the crashes that occurred outside of the intersection boundaries described above to the roadway segment network screening. We used a Python script in ArcGIS to split the street network into overlapping half-mile segments, incrementing the segments by one-quarter (1/4) of a mile. After splitting the network, the Python script spatially joined non-intersection crashes to each segment. Similar to the intersection methodology above, we summarized the crashes by severity, and multiplied the crash totals by the crash severity weights for roadway segments. The weighted crash severity scores were totaled and annualized by the number of years of crash data (5) to generate an annualized crash severity score.

The segment EPDO network screening results are summarized and illustrated under 'High Priority Locations.'

Critical Crash Rate Analysis

Critical crash rates were calculated for 60 key intersections within the Klamath Falls UGB based on their traffic control (signalized or unsignalized), geometry (three or four intersection legs), and volume. The analysis requires that at least five of each intersection type (control and geometry) are present in order to evaluate the critical crash rate for the intersections of that type. Otherwise, the critical crash rate defaults to ODOT's 90th percentile crash rate for the intersection with the type lacking a sufficient reference population. The 90th percentile crash rate is a statewide rate developed from a study of 500 intersections in Oregon based on their environment (urban or rural), traffic control, and geometry. These critical or 90th percentile crash rates are then compared to the observed crash rate at the intersections.

The Critical Crash Rate analysis included the following reference populations:

- 11 urban three-leg stop-controlled intersections
- 20 urban four-leg stop-controlled intersections
- 3 urban three-leg signalized intersections
- 26 urban four-leg signalized intersections

Therefore, a critical crash rate could be calculated for all the intersections except for the three-leg signalized intersections. For these locations, their observed crash rate would be compared to the applicable 90th percentile crash rate.

The 60 key intersections and the Critical Crash Rate analysis results are presented in the next section.

HIGH PRIORITY LOCATIONS

This section presents the results of the EPDO network screening, highlighting the intersections and segments with the highest crash severity scores, as well as the results of the Critical Crash Rate analysis. From these results, City intersections with the highest severity scores and/or observed crash rates that exceed critical crash rates are consolidated. The sites presented in this section are provided for consideration by the City and partner agencies in prioritizing locations for potential capital improvement projects.

Intersection EPDO Network Screening Results

Table 8 presents the top 1% of intersections within the study area that resulted in the highest crash severity score. The table provides the intersection location, traffic control, jurisdiction, crash severity score, and the number of fatal/serious injury, other injury, and PDO crashes. The results of the intersection EPDO network screening are illustrated in Figure 23, including the top 1% sites identified in Table 8 below. Further, Table 9 lists the top-scoring 15 City intersections.

Table 8. Intersections with Highest Crash Severity Scores (Top 1% Sites)

Rank	Intersection	Traffic Control	Jurisdiction	Crash Severity Score	Total Crashes		
					Fatal/ Serious Injury	Major/ Minor Injury	PDO
1	S 6th St / Summers Ln ^{1,2,5}	Signalized	State; County	99	3	18	15
2	Crater Lake Parkway / S 6th St ^{1,5}	Signalized	State	91	2	24	15
3	Patterson St / S 6th St ^{1,5}	Signalized	State; County	72.4	2	15	12
4	Homedale Rd / Foothills Blvd ^{1,10}	Unsignalized	City; County	72	3	6	0
5	Crater Lake Parkway / Shasta Way ^{1,5}	Signalized	State; County	61	2	10	5
6	Biehn St-Campus Dr / Crater Lake Parkway ^{2,6}	Signalized	City; State	57	2	8	5
7	S 6th St / Hope St ^{1,5}	Signalized	State; County	56.8	2	8	4
8	South Side Expressway (OR 140) / Washburn Way ⁵	Unsignalized	State; County	53.2	2	6	6
9	Foothills Blvd-Washburn Way / Crater Lake Parkway ⁷	Signalized	City – County; State	52.8	2	6	4
10	Homedale Rd / S 6th St ^{1,5}	Signalized	County; State	52.8	1	15	14
11	South Side Expressway (OR 140) / Homedale Rd ^{3,5,8}	Unsignalized	State; County	51.4	1	15	7
12	Crater Lake Pkwy / Main St ^{9,11}	Signalized	State; City	51	2	5	5
13	Altamont Dr / S 6th St ⁵	Signalized	County; State	45.6	1	12	8
14	Bristol Ave / Summers Ln ^{5,13}	Unsignalized	County	44.6	2	2	3
15	Washburn Way / Eberlein Ave ^{1,12}	Unsignalized	City	38	1	8	10
16	Avalon St / Shasta Way	Signalized	City	37.4	1	8	7
17	Crater Lake Pkwy / Esplanade Ave ⁴	Signalized	State; City	36.8	1	8	4

Rank	Intersection	Traffic Control	Jurisdiction	Crash Severity Score	Total Crashes		
					Fatal/ Serious Injury	Major/ Minor Injury	PDO
18	Main St / N 5 th St ^{9,14}	Signalized	City	35.8	1	7	9
19	Radcliffe Ave – Fred Meyer Access/ Washburn Way ⁵	Unsignalized	City	32.6	1	6	3

¹ One or more approaches is an ODOT 2020 SPIS site
² 2012 Transportation System Plan (TSP) project to improve bicycle facilities at intersection
³ Roundabout constructed in 2022
⁴ 2012 TSP project to provide a bicycle crossing on Crater Lake Parkway
⁵ 2016 Urban Trail Master Plan (UTMP) identifies location for further study
⁶ 2016 UTMP project to connect Campus Trail to Biehn Street Bike lanes / sidewalks and modify intersection
⁷ 2016 UTMP project to connect "A" Canal Trail to Foothills Trail and tighten curb radius for northbound right-turn movements onto Crater Lake Parkway
⁸ 2016 UTMP project to construct shared-use path on OR 140
⁹ 2016 UTMP project to construct bike lanes
¹⁰ 2018 Safe Routes to School Master Plan (SRTSMP) project to construct sidewalks
¹¹ 2018 SRTSMP project to add yield signs to free right-turn lanes at intersection
¹² 2018 SRTSMP project to add actuated beacons to existing school crossing and continental crosswalks to all legs
¹³ 2019 Klamath Falls Traffic Calming Evaluation project to construct a mini roundabout at intersection
¹⁴ 2022 Klamath Falls Downtown Signal Conversion Study project to remove traffic signal and replacing it with stop control and installing curb extensions (bulb-outs)

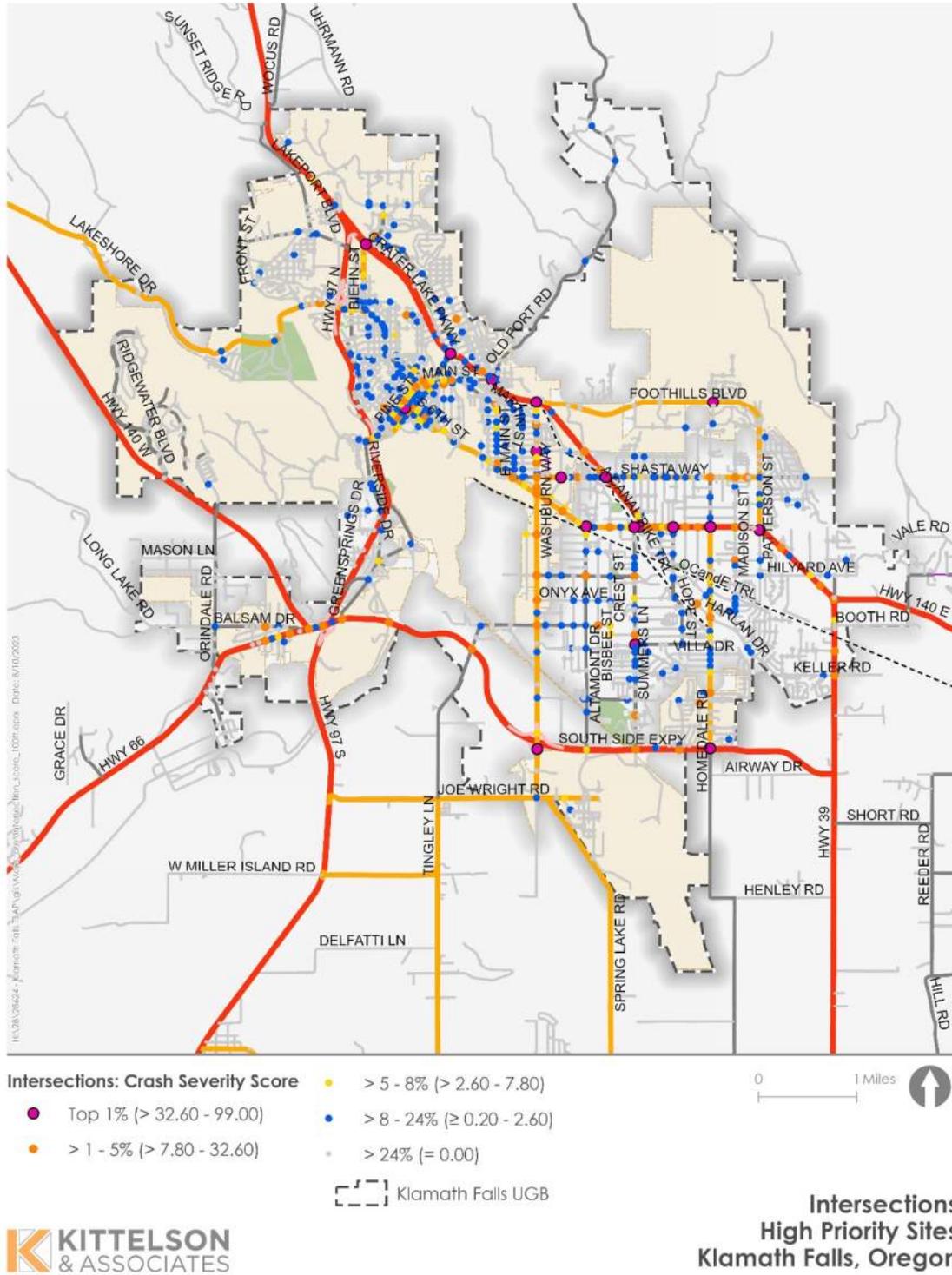


Figure 23. Intersection Crash Severity Scores

Table 9. Top 15 Intersections - City of Klamath Falls Facilities

Rank	Intersection	Traffic Control	Crash Severity Score	Total Crashes		
				Fatal/ Serious Injury	Major/ Minor Injury	PDO
1	Washburn Way / Eberlein Ave ^{1,2}	Unsignalized	38.0	1	8	10
2	Shasta Way / Avalon St	Signalized	37.4	1	8	7
3	Main St / N 5 th Ave ^{3,4}	Signalized	35.8	1	7	9
4	Washburn Way / Radcliff Ave ⁵	Unsignalized	32.6	1	6	3
5	Main St / Spring St ³	Signalized	32.2	1	6	1
6	Main St / 11 th St ^{3,4}	Signalized	30.4	0	14	12
7	Klamath Ave / N Broad St	Unsignalized	28.4	1	4	2
8	Klamath Ave / S 5 th St ^{3,4}	Signalized	28.2	0	13	11
9	N 11 th St / Pine St ⁴	Signalized	27.4	1	3	7
10	Main St / S 3 rd St ^{3,6}	Unsignalized	26.4	1	3	2
11	E Main St / S 6 th St ⁵	Signalized	25.0	1	2	5
12	Plum Ave / S 6 th St ³	Unsignalized	22.2	1	1	1
13	Balsam Dr / Cleveland Ave	Unsignalized	22.0	1	1	0
14	Biehn St / Oregon Ave ^{2,3,7}	Unsignalized	22.0	1	1	0
15	E Main St-Stukel St / Home Ave ⁸	Unsignalized	22.0	1	1	0

¹ One or more approaches is an ODOT 2020 SPIS site

² 2018 Safe Routes to School Master Plan (SRTSMP) project to add actuated beacons to existing school crossing and/or continental crosswalks to all legs

³ 2016 Urban Trails Master Plan (UTMP) project to construct bike lanes

⁴ 2022 Klamath Falls Downtown Signal Conversion Study project to remove traffic signal and replace it with stop control and installing curb extensions (bulb-outs) (remove right-turn lanes at Klamath Ave / 5th St)

⁵ 2016 UTMP identifies location for further study

⁶ 2022 Klamath Falls Downtown Signal Conversion Study project to convert intersection to all-way stop-control and construct curb extension.

⁷ 2012 Transportation System Plan (TSP) project to construct southbound left-turn lane

⁸ 2018 SRTSMP project to replace existing crosswalk with two separate crosswalks and add school crossing warning signs on Stukel Ave and Home Ave

Intersection Critical Crash Rate Analysis Results

Table 10 presents those intersections of the 60 sites whose observed crash rate exceeds its critical crash rate. The full list of 60 intersections and their performance in the Critical Crash Rate analysis is tabulated in Attachment A.

Table 10. Urban Area Intersection Crash Rates Exceeding Critical Crash Rates

Rank	Intersection	Traffic Control	Total Crashes	Intersection Crash Rate	Critical Crash Rate
1	Klamath Ave / S 5 th St	Signalized	24	1.49	0.82
2	Klamath Ave / S 6 th St	Signalized	19	1.17	0.81
3	OR 140 / Homedale Rd	Roundabout ¹	23	1.11	0.65
4	Shasta Way / Homedale Rd	Signalized	21	1.07	0.66
5	Main St / N 5 th St	Signalized	17	1.07	0.82
6	11 th St / Pine St	Signalized	11	0.98	0.89
7	Foothills Blvd / Homedale Rd	Unsignalized	9	0.90	0.78
8	Patterson St / S 6 th St	Signalized	29	0.89	0.71
9	S 6 th St / Summers Ln	Signalized	36	0.86	0.51 ²
10	S 6 th St / Crater Lake Pkwy	Signalized	41	0.84	0.51 ²
11	Madison St / S 6 th St	Signalized	26	0.77	0.71
12	OR 140 / Summers Ln	Unsignalized	17	0.74	0.64
13	Summers Ln / Bristol Ave	Unsignalized	7	0.46	0.40

¹ Roundabout constructed in 2022 after analysis period (2017-2021)

² 90th Percentile Crash Rate as default (insufficient reference populations)

Potential Priority Intersections

From the EPDO network screening and Critical Crash Rate analysis of intersections, Table 11 presents City intersections with the crash severity scores in the top 5% and/or City intersections that exceed their critical crash rate or 90th percentile crash rate. As shown, the following intersections trigger two of the three analysis categories:

- Foothills Boulevard / Homedale Road
- Main Street / 5th Street
- Klamath Avenue / 5th Street
- 11th Street / Pine Street
- S 6th Street / Washburn Way
- 6th Street / Klamath Avenue

It is possible that more intersections would trigger multiple categories but not all intersections that have top-ranking EPDO scores were selected for the critical crash rate analysis.

Table 11. Potential Priority City Intersections

Intersection	Traffic Control	EPDO Rank (Score)	Critical Crash Rate	90 th Percentile Crash Rate
Foothills Blvd / Homedale Rd^{1,2}	Unsignalized	Top 1% (72.0)	Over	Over
Washburn Way / Eberlein Ave ^{1,3}	Unsignalized	Top 1% (38.0)	N/A	N/A
Shasta Way / Avalon St	Signalized	Top 1% (37.4)	N/A	N/A
Main St / 5th St^{4,5}	Signalized	Top 1% (35.8)	Over	Over
Washburn Way / Radcliffe Ave ^{1,6}	Unsignalized	Top 5% (32.6)	N/A	N/A
Main St / Spring St ⁴	Signalized	Top 5% (32.2)	N/A	N/A
Main St / 11 th St ^{4,5}	Signalized	Top 5% (30.4)	N/A	N/A
Klamath Ave / Broad St	Unsignalized	Top 5% (28.4)	N/A	N/A
Klamath Ave / 5th St^{4,5}	Signalized	Top 5% (28.2)	Over	Over
11th St / Pine St⁵	Signalized	Top 5% (27.4)	Over	Over
S 6th St / Washburn Way⁶	Signalized	Top 5% (27.0)	-	Over
Main St / 3 rd St ^{4,7}	Unsignalized	Top 5% (26.4)	N/A	N/A
6 th St / E Main St ⁶	Signalized	Top 5% (25.0)	-	-
Plum Ave / S 6 th St ⁴	Unsignalized	Top 5% (22.2)	N/A	N/A
Biehn St / Oregon Ave ^{3,4,8}	Unsignalized	Top 5% (22.0)	-	-
Balsam Dr / Cleveland Ave	Unsignalized	Top 5% (22.0)	N/A	N/A
E Main St-Stukel St / Home Ave ⁹	Unsignalized	Top 5% (22.0)	N/A	N/A
6th St / Klamath Ave⁵	Signalized	Top 5% (16.4)	Over	-

Note: Intersections with "N/A" in crash rate cells not included in critical crash rate analysis as one of the 60 sites.

¹ One or more approaches is an ODOT 2020 SPIS site

² 2018 Safe Routes to School Master Plan (SRTSMP) project to construct sidewalks

³ 2018 SRTSMP project to add actuated beacons to existing school crossing and/or continental crosswalks to all legs

⁴ 2016 Urban Trails Master Plan (UTMP) project to construct bike lanes

⁵ 2022 Klamath Falls Downtown Signal Conversion Study project to remove traffic signal and replacing it with stop control and installing curb extensions (bulb-outs) (remove right-turn lanes at Klamath Ave / 5th St and Klamath Ave / 5th St)

⁶ 2016 UTMP identifies location for further study

⁷ 2022 Klamath Falls Downtown Signal Conversion Study project to convert intersection to all-way stop-control and construct curb extension.

⁸ 2012 Transportation System Plan (TSP) project to construct southbound left-turn lane

⁹ 2018 SRTSMP project to replace existing crosswalk with two separate crosswalks and add school crossing warning signs on Stukel Ave and Home Ave

Segment EPDO Network Screening Results

Table 12 presents the top 1% roadway segments within the study area that resulted in the highest crash severity score. Connecting segments were consolidated. The table provides the roadway segment location, functional classification, jurisdiction, the crash severity score range, and total number of fatal/serious injury, other injury, and PDO crashes for each consolidated segment. The results of the segment EPDO network screen are illustrated in Figure 24, including the top 1% sites identified in Table 12.

Table 12. Roadway Segments with the Highest Crash Severity Scores (Top 1% Sites)

Rank	Roadway Segment	Functional Classification	Total Mileage	Jurisdiction	Crash Severity Score	Total Crashes		
						Fatal/ Serious Injury	Major/ Minor Injury	PDO
1	Washburn Way: Laverne Ave to 100ft north of Washburn Way / Shasta Way ^{1,3}	Arterial	1.50	City	68.8 - 40.2	9	49	55
2	S 6th St: 160 ft west of E Main St to 165 ft east of Patterson St ^{1,2,3}	Arterial - Highway	2.93	State	68.4 - 37	9	140	140
3	S 5th St: Main St to S 6th St ^{1,4}	Arterial	0.44	City	49	2	4	5
4	US 97: 210 ft south of Wocus Rd to 1,930 ft south of Lakeport Blvd ⁶	Highway	0.50	State	34.6	1	7	3
5	OR 140: 1,500 ft east of Greensprings Dr to 1,960 ft west of Tingley Ln ¹	Highway	0.75	State	48.6 - 46.8	4	7	7
6	OR 140: Delap Rd to 140 ft east of Greensprings Dr ^{1,7}	Highway	0.30	State	33	2	12	10
7	OR 66 - Greensprings Dr: Ferrier Ave to 660 ft west of Granite St	Highway	0.50	State	32.4	1	6	2
8	OR 140: 1,150 ft east of Altamont Dr to 1,210 ft west of Glenwood Dr ⁵	Highway	0.50	State	31.8	1	5	9

¹ Segment contains at least one ODOT 2020 SPIS site

² 2012 TSP project to decrease number of driveways / increase access spacing

³ 2016 Urban Trail Master Plan (UTMP) identifies location for further study

⁴ 2016 UTMP project to construct bike lanes

⁵ 2016 UTMP project to construct shared-use path on OR 140

⁶ Klamath County TSAP (2020) and TSP (2021) project at US 97 / Wocus Road that could have implications for northern end of segment (convert to right-in / right-out and provide new highway connection to the north)

⁷ Klamath County TSAP (2020) and TSP (2021) project at US 97 / Delap Road that could have implications for western end of segment (realign Delap Road to connect with OR 140)



Figure 24. Segment Crash Severity Scores

NEXT STEPS

This memorandum documents the crash patterns, emphasis areas, and potential priority locations based on the most recent five-year crash history in Klamath Falls. Based on feedback by the Project Management Team (PMT) and Project Advisory Committee (PAC), as well as forthcoming traffic counts information, this memorandum will be refined and serve as the basis for developing systemic safety countermeasures to address the emphasis areas across the study area as well as potential project recommendations for the top ten priority locations that will be identified on City streets. Countermeasures will be developed from ODOT's crash reduction factor list to prepare for future funding through the All Roads Transportation Safety (ARTS) program.

Attachment A

Critical Crash Rate Analysis Results for 60 Intersections

Rank	Intersection	Traffic Control	Total Crashes	Intersection Crash Rate	Critical Crash Rate	Intersection Rate > Critical Rate?
1	Klamath Ave / S 5 th St	Signalized	24	1.49	0.82	Yes
2	Klamath Ave / S 6 th St	Signalized	19	1.17	0.81	Yes
3	OR 140 / Homedale Rd	Roundabout ¹	23	1.11	0.65	Yes
4	Shasta Way / Homedale Rd	Signalized	21	1.07	0.66	Yes
5	Main St / N 5 th St	Signalized	17	1.07	0.82	Yes
6	11 th St / Pine St	Signalized	11	0.98	0.89	Yes
7	Foothills Blvd / Homedale Rd	Unsignalized	9	0.90	0.78	Yes
8	Patterson St / S 6 th St	Signalized	29	0.89	0.71	Yes
9	S 6 th St / Summers Ln	Signalized	36	0.86	0.51 ²	Yes
10	S 6 th St / Crater Lake Pkwy	Signalized	41	0.84	0.51 ²	Yes
11	Madison St / S 6 th St	Signalized	26	0.77	0.71	Yes
12	OR 140 / Summers Ln	Unsignalized	17	0.74	0.64	Yes
13	Summers Ln / Bristol Ave	Unsignalized	7	0.46	0.40	Yes
14	OR 140 EB Terminal / Washburn Way	Signalized	14	0.77	0.79	No
15	3 rd St / Pine St	Unsignalized	3	0.71	1.02	No
16	Homedale Rd / S 6 th St	Signalized	30	0.68	0.68	No
17	6 th St / Pine St	Unsignalized	7	0.66	0.76	No
18	Altamont Dr / Hilyard Ave	Signalized	10	0.54	0.79	No
19	Altamont Dr / 6 th St	Signalized	21	0.53	0.69	No
20	9 th St / Pine St	Signalized	6	0.51	0.88	No
21	S 6 th St / Washburn Way	Signalized	27	0.46	0.65	No
22	Shasta Way / Crater Lake Pkwy	Signalized	17	0.45	0.70	No
23	Willow Ave / Commercial Ave	Unsignalized	1	0.43	0.87	No
24	Washburn Way / Crosby Ave	Signalized	17	0.42	0.69	No
25	Crater Lake Pkwy / Biehn St-Campus Dr	Signalized	15	0.41	0.70	No
26	Laverne Ave / Washburn Way	Signalized	11	0.38	0.73	No
27	OR 39-OR 140 / Western St	Signalized	8	0.34	0.76	No
28	11 th St / Klamath Ave	Unsignalized	4	0.34	0.74	No
29	11 th St / Crescent Ave	Unsignalized	3	0.32	0.79	No
30	Summers Ln / Hilyard Ave	Signalized	7	0.32	0.77	No

Rank	Intersection	Traffic Control	Total Crashes	Intersection Crash Rate	Critical Crash Rate	Intersection Rate > Critical Rate?
31	Crater Lake Pkwy / Esplanade Ave	Signalized	13	0.31	0.69	No
32	OR 140 / Altamont Dr	Unsignalized	7	0.30	0.35	No
33	US97 / Dan O'Brien Way	Unsignalized	6	0.29	0.37	No
34	Nevada St / California Ave	Unsignalized	3	0.29	0.46	No
35	6 th Street / Main St	Signalized	4	0.28	0.84	No
36	OR 140 / Tingley Ln	Unsignalized	6	0.28	0.64	No
37	Homedale Rd / Harlan Dr	Unsignalized	5	0.28	0.67	No
38	Shasta Way / Washburn Way	Signalized	9	0.27	0.71	No
39	Crater Lake Pkwy / Foothills Blvd-Washburn Way	Signalized	12	0.26	0.68	No
40	Crater Lake Pkwy / Main St	Signalized	12	0.26	0.68	No
41	Joe Wright Rd / Washburn Way	Unsignalized	3	0.25	0.74	No
42	6 th St (OR 39) / E Main St	Signalized	8	0.20	0.69	No
43	Hilyard Ave / S 6 th St		5	0.19	0.62	No
44	Main St / Klamath Ave-Conger Ave	Unsignalized	2	0.17	0.75	No
45	Main St / E Main St	Signalized	2	0.17	0.88	No
46	Laverne Ave / Altamont Dr	Signalized	2	0.17	0.88	No
47	US97 NB Ramp Terminal / Oregon Ave	Unsignalized	2	0.16	0.73	No
48	Oregon Ave / Upham St	Unsignalized	2	0.15	0.42	No
49	OR 140 WB Terminal / Washburn Way	Unsignalized	3	0.13	0.63	No
50	Biehn St / Oregon Ave	Unsignalized	2	0.12	0.39	No
51	Main St / Esplanade Ave	Signalized	1	0.09	0.51 ²	No
52	US97 SB Terminal / Main St	Unsignalized	1	0.09	0.44	No
53	Shasta Way / Patterson St	Unsignalized	1	0.07	0.71	No
54	Homedale Rd / Villa Dr	Unsignalized	1	0.06	0.68	No
55	Nevada St-Oregon Ave / Montelius St-US 97 SB On-Ramp	Unsignalized	0	0.00	0.71	No
56	US97 SB Off-Ramp / Nevada St	Unsignalized	0	0.00	0.43	No
57	11 th St / Upham St	Unsignalized	0	0.00	0.84	No
58	6 th St / Commercial St	Unsignalized	0	0.00	0.41	No

Rank	Intersection	Traffic Control	Total Crashes	Intersection Crash Rate	Critical Crash Rate	Intersection Rate > Critical Rate?
59	Commercial St / Oak Ave	Unsignalized	0	0.00	1.19	No
60	Homedale Rd / Maryland Ave	Unsignalized	0	0.00	0.39	No

¹ Roundabout constructed in 2022 after analysis period (2017-2021)

² 90th Percentile Crash Rate

APPENDIX C

SAFETY RECOMMENDATIONS MEMO



Technical Memorandum

March 3, 2024

Project# 28624.0

To: Project Advisory Committee (PAC)

From: Miranda Barrus, PE, Poppy Yang, and Nick Foster, AICP, RSP

Project: Klamath Falls Transportation Safety Action Plan (TSAP)

RE: Final Transportation Safety Recommendations Memo

INTRODUCTION

This memorandum presents recommended strategies for the Klamath Falls Transportation Safety Action Plan (TSAP) to reduce fatal and serious injury crashes on the Klamath Falls' transportation system (see study area in Figure 1). These strategies were developed to address the systemic trends and site-specific crash histories identified through previous technical analyses, summarized in the Existing Safety Conditions Memorandum, and community feedback. The recommended strategies include:

- Systemic treatments that can be applied across multiple locations;
- Capital projects to implement at 10 priority sites located on City-owned streets;
- Non-infrastructure countermeasures (e.g., education, enforcement, emergency response, equity);
- Street design standard changes; and,
- Projects with a safety element identified through previous planning efforts in Klamath Falls (included as an Attachment).

This memorandum also includes potential funding sources for the City and partner agencies to pursue in implementing the strategies above, as well as recommended performance measures to assess progress made toward the City's goal of zero fatalities and serious injuries caused by crashes on streets within the Klamath Falls Urban Growth Boundary (UGB).

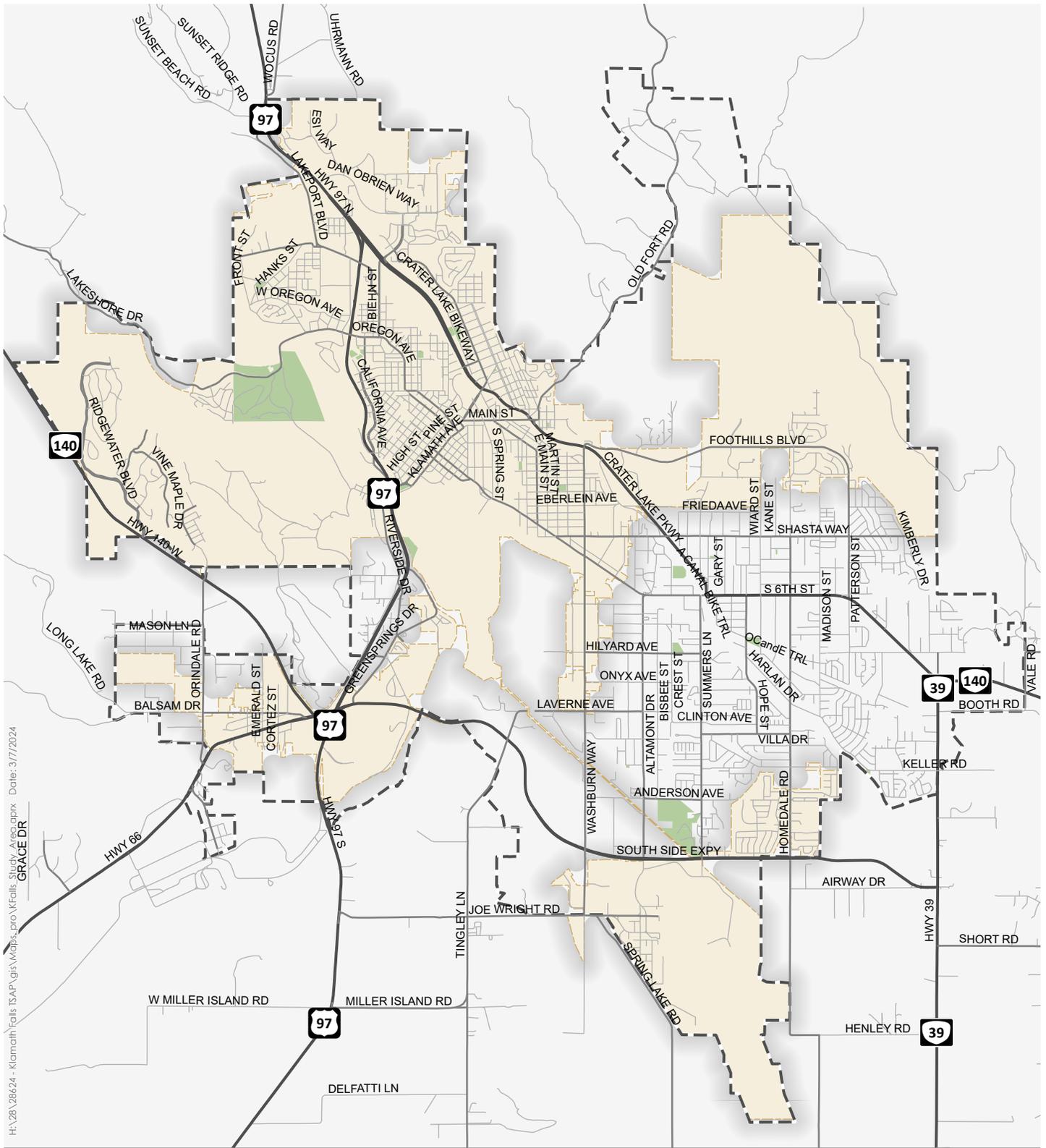
The information presented herein describes the intent behind the strategies and how they work together comprehensively to implement the Safe System Approach (see graphic at right) and improve safety culture in Klamath Falls. The recommended strategies will be refined based on feedback from the Project Advisory Committee (PAC) and carried into the draft TSAP for review by the community.



Safe System Approach Principles and Objectives (Source: FHWA)

SYSTEMIC TREATMENTS

The following section briefly revisits the emphasis areas that were identified for the study area, as previously described in the Existing Safety Conditions Memorandum. It also presents the systemic treatments recommended to address these emphasis areas.



H:\28\28624 - Klamath Falls TSAP\gis\maps\pro\Kfalls Study Area.aprx Date: 3/7/2024
GRACE DR

-  Highway
-  Arterial
-  Collector
-  Local Street
-  UGB (Study Area)



Figure 1
Study Area
Klamath Falls, Oregon

Emphasis Areas

The analysis summarized in the Existing Safety Conditions Memo revealed the following emphasis areas that can be addressed through systemic treatments:

- **Intersection Related Crashes:** Turning, rear-end, and angle crashes were the most common types in the study area.
- **Pedestrian, Bicycle, and Motorcycle Crashes:** Pedestrians, bicycle, and motorcycle crashes represented a small proportion of total crashes but had a higher risk of serious injuries or fatalities.
- **Crashes involving Speeding:** Speed was cited as a contributing factor in fatal and serious injury crashes at twice the rate as all crashes.

Public outreach also confirm that these areas are some of the community's top priorities.

Systemic Countermeasures and Locations

Fatal and serious injury crashes tend to be spread across the transportation network. In this regard, their locations can seem random, though the contributing factors to the crashes are predictable. Systemic treatments are intended to be lower-cost countermeasures that can be applied area-wide to address fatal and serious injury crash trends and proactively reduce the likelihood of future such crashes occurring. This section presents systemic treatments in two ways:

- **Three packages of systemic countermeasures** to address the emphasis areas identified previously. This includes:
 - Detail on the countermeasures themselves, in terms of crash reduction and cost of implementation; and,
 - Locations where the City could prioritize implementing them.
- **Additional resources on systemic countermeasures** for the City to have on hand when the need arises to implement other treatments than the three described in this section.

Countermeasures were developed from the Oregon Department of Transportation's (ODOT) crash reduction factor (CRF) list. This helps these projects to be eligible for future funding through ODOT's All Roads Transportation Safety (ARTS) program.

Systemic Intersection, Pedestrian, and Bicycle Crash Treatments

Based on the crash analysis and community input through public engagement, a package of countermeasures was developed for intersection related crashes, pedestrian crashes, and bicycle crashes. The following section summarizes how these countermeasures were identified and where their implementation could be prioritized.

In addition to the specific systemic countermeasures presented below, the City should also consider implementing these systemic treatments area-wide to address crash patterns for vulnerable users observed in the crash data:

- **Leading Pedestrian Intervals (LPI) and Accessible Pedestrian Signals (APS) at all traffic signals** to give pedestrians a head-start to enter the crosswalk before drivers receive a green indication and to provide pedestrians with visual impairments an audible indication for when to wait and when to cross.
- **Right turn arrows at all traffic signals that have dedicated right-turn lanes** to reduce right-turn permissive conflicts between turning vehicles and pedestrians and bicyclists in crosswalks. This treatment prohibits vehicles in the right lane to make their turn if they have a red arrow indication.
- **Green bike lanes at conflict points along roadways that have bike lanes**, including through signalized and unsignalized intersections and at key driveways (especially along S 6th Street and Washburn Way in conjunction with access consolidations recommended later in this memorandum).

Systemic Intersection Treatment

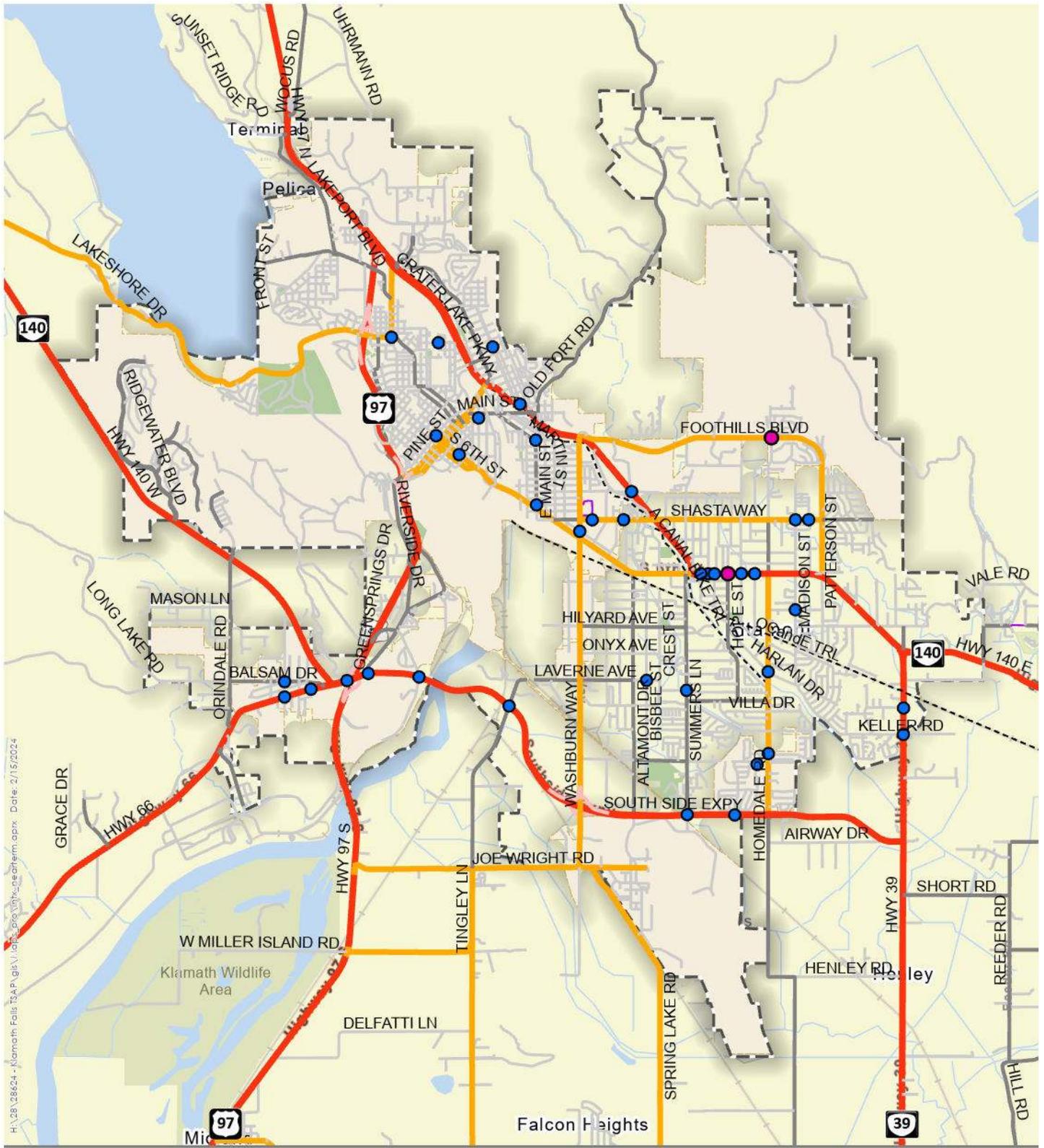
The intersection crash analysis showed that stop-controlled and/or uncontrolled intersections accounted for approximately 62 percent of all intersection crashes and approximately 61 percent of intersection crashes resulting in fatal and serious injuries. This is likely because there are significantly more unsignalized intersections than signalized, and therefore, unsignalized intersections were selected for a specific systemic treatment. The most frequently reported crash types at unsignalized intersections were turning movement (31 percent), angle (27 percent), and rear-end (19 percent). Additionally, of the 83 intersections that ranked in the top five percent of crash severity scores and exhibited these same crash types, 45 were unsignalized intersections. Many of these intersections have common characteristics such as:

- Two-way stop-control;
- The major street being multilane;
- Minimal traffic design features including only stop signs and no stop bars, and in some cases, no stop signs at all;
- Potentially limited sight distance; and,
- Limited to no lighting.

There's a mixture of four-leg and three-leg intersections, and in some cases, when the major street is only two lanes, it's a high-speed facility. Therefore, it is recommended that the intersection warning improvements, detailed below, be applied system-wide at unsignalized intersections with characteristics similar to those described above, and starting with the intersections identified in Figure 2 and Table 1.

Improve Intersection Warning (I21) ¹		
	Intersection Type	Unsignalized
	Intersection Context	Urban or Rural
	Crash Type	All
	Crash Severity	All
	Service Life	10 Years
	CRF	20% (1-2 treatments) 25% (3-4 treatments) 30% (5-7 treatments)
	Notes	Includes 'Stop Ahead' pavement markings, 'Stop Ahead' signs, larger signs, additional stop signs and/or other intersection warning or regulatory signs
	Implementation Cost	Varies: \$500 per new sign; \$800 per oversized sign; \$1,100 per 'Stop Ahead' legend

¹Countermeasure Number per ODOT's CRF List



Unsignalized Intersections

- Top 1% Crash Severity Score
- Top 5% Crash Severity Score

Klamath Falls UGB

▭ Klamath Falls UGB

0 1 Miles



Figure 2

Systemic Intersection Treatment Locations for Near-Term Implementation Klamath Falls, Oregon

Table 1: Intersections for Near-Term Implementation By Jurisdiction

City	County	ODOT
- Pershing Way / Washburn Way	- Shasta Way / Madison St ³	- OR 140 / Summers Ln ⁶
- Oregon Ave / Biehn St ¹	- Clinton Ave / Summers Ln	- OR 140 / Glenwood Dr ⁶
- Home Ave / E Main St / Stukel St ²	- Homedale Rd / Harlan Dr ⁴	- S 6th St / Fargo St
- Gatewood Dr / Golden Ct	- Homedale Rd / Bartlett Ave ⁵	- S 6th St / Gettle St
- Shelley St / Lancaster Ave	- Shasta Way / Arthur St	- S 6th St / Wiard St
- Pacific Terrace / Manzanita	- Delaware Ave / Madison St	- S 6th St / Kane St
- N 6th St / Pine St	- Bisbee St / Laverne Ave	- OR 39 / Keller Rd
- E Main St / Radcliffe Ave	- Shasta Way / Ogden St	- OR 140 / Memorial Dr
- Balsam Dr / Cleveland Ave	- Foothills Blvd / Homedale Rd	- OR 140 / Greensprings Dr
- Klamath Ave / S Broad St		- OR 140 / US 97 SB ramp
- Shasta Way / east Fred Meyer access		- S 6th St / Plum Ave
		- Crater Lake Pkwy / Herbert St
		- Crater Lake Pkwy / Eberlein Ave
		- S 6th St / Gary St
		- OR 66 / Agate St
		- OR 66 / Emerald St
		- OR 39 / Hager Ln

Sites where projects from other plans have been developed:

- ¹ Safe Routes to School (SRTS) crossing enhancements project.
- ² SRTS crossing enhancements project.
- ³ Traffic calming and SRTS crossing enhancement projects.
- ⁴ Intersection realignment safety project from Klamath County TSAP.
- ⁵ Traffic calming project to enhance crossings.
- ⁶ Trails Master Plan shared-use path project on OR 140.

Note that the following intersections that are identified in Figure 2 are also sites where projects from other plans have been developed (see later sections of this memo):

- Shasta Way / Madison Street: traffic calming and Safe Routes to School (SRTS) crossing enhancement projects.
- Homedale Road / Harlan Drive: intersection realignment safety project from Klamath County TSAP.
- Homedale Road / Bartlett Avenue: traffic calming project to enhance crossings.
- OR 140 / Summers Lane and OR 140 / Gatewood Drive: shared-use path project on OR 140.
- Oregon Avenue / Biehn Street: SRTS crossing enhancements project.
- Home Avenue / E main Street / Stukel Street: SRTS crossing enhancements project.

The City and County could consider applying for grant funding to implement the package of treatments recommended at these specific intersections through various studies including this TSAP.

Systemic Pedestrian and Bicycle Treatments

The pedestrian and bicycle crash analysis showed that intersections accounted for approximately 65 percent and 61 percent of all reported crashes involving pedestrians and bicyclists, respectively. Further, intersections also accounted for approximately 69 percent of pedestrian crashes and 75 percent of bicycle crashes that resulted in fatal or serious injuries. Therefore, the package of systemic treatments to address these crashes include Urban Trail Access Countermeasures and Safe Routes to School Countermeasures, given that many projects have already been identified throughout Klamath Falls at locations with pedestrian and bicycle activity.

Urban Trail Access Countermeasures

The 2016 Klamath Falls Urban Trail Master Plan is a guide for investing in the urban trail system and connections to nearby facilities and activity centers within the Klamath Falls UGB – inclusive of all pedestrian and bicycle facilities. This plan provides a summary of the projects, policies, programs, and

studies needed to complete the trail network and outlines priorities for the City and County to implement, including 12 crossing projects. The City should partner with the County, ODOT, and Oregon Parks and Recreation Department to implement these crossing projects to help address and prevent pedestrian and bicycle crashes at crossings, starting with the high priority projects summarized in Table 2. Following the countermeasures presented in Table 2 are their crash reduction details summarized in Table 3.

The locations of these crossing projects are also identified in Figure 3.

Table 2: Urban Trail Access Countermeasures – Crossing Projects

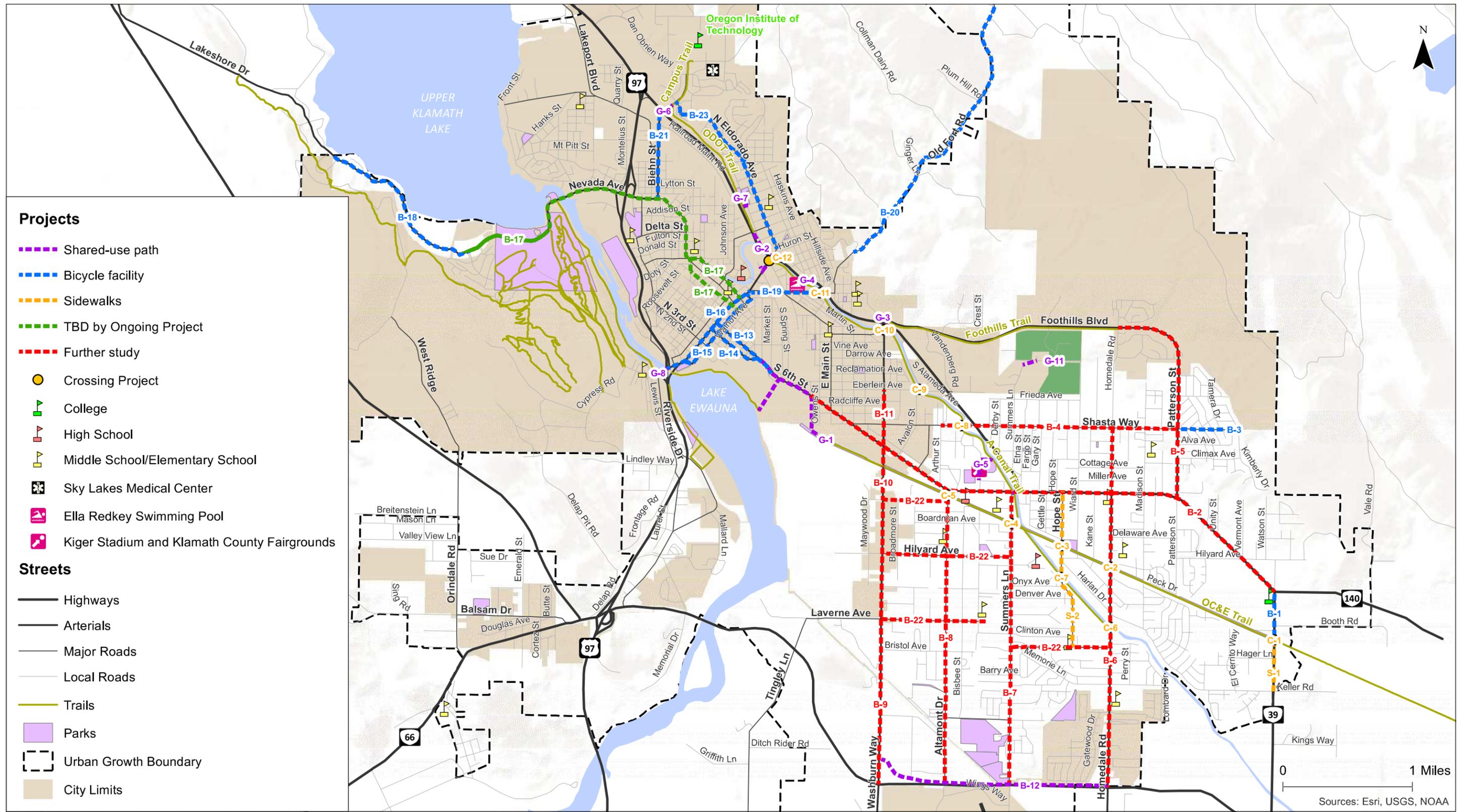
ID	Crossing Project Description	Priority	Cost
C-10	Conduct study to determine final crossing treatment for "A" Canal Trail at Washburn Way. Enhanced crossing treatments recommended and may include Rectangular Rapid Flashing Beacons (RRFB) with a pedestrian refuge island, connections to the Crater Lake Parkway traffic signal, or a grade-separated crossing of Washburn Way.	High	\$3,000-\$65,000
C-11	Conduct study to determine final crossing treatment for "A" Canal Trail at Main Street. Enhanced crossing treatments recommended and may include RRFBs with a pedestrian refuge island, connections to the Crater Lake Parkway traffic signal, or a grade-separated crossing of Main Street.	High	\$3,000-\$65,000
C-12	Conduct study to determine final crossing treatment for "A" Canal Trail at Esplanade Avenue. Enhanced crossing treatments recommended and may include RRFBs with a pedestrian refuge island using existing median, connections to the Crater Lake Parkway traffic signal to encourage crossings there, or a grade-separated crossing of Esplanade Avenue.	High	\$3,000-\$65,000
C-9	Conduct study to determine final crossing treatment for "A" Canal Trail at Eberlein Avenue. Enhanced crossing treatments recommended and may include RRFBs. Close proximity of Avalon Street may present issues.	Medium	\$3,000-\$65,000

Table 3. Urban Trail Access Countermeasures - Crash Reduction Details

Countermeasure	Crash Type ²	Crash Severity	Service Life	Context	CRF
Rectangular Rapid Flashing Beacon (2-Lane Roadway) (BP9)¹	Pedestrian	All	20 Years	Urban or Rural	10%
Rectangular Rapid Flashing Beacon without Median (3-Lane or More Roadway) (BP11)¹	Pedestrian	All	20 Years	Urban or Rural	10%
Pedestrian Refuge Island (BP8)¹	Pedestrian	All	20 Years	Urban or Rural	31%
Continental Crosswalk Markings and Advance Pedestrian Warning Signs (BP15)¹	Pedestrian	All	10 Years	Urban or Rural	15%
Intersection Lighting (Bike & Ped) (BP2)¹	Pedestrian and Bicycle (Night)	All Injuries (Excludes PDO)	20 Years	Urban or Rural	42%

¹Countermeasure number per ODOT's CRF List

²Bicyclists are typically considered 'pedestrians' at crossings given that they should dismount and walk their bikes through the crossing.



Plan Elements
Klamath Falls, Oregon

Figure
3

K:\H_Benford\file118974 - Klamath Falls Trail Master Plan\GIS\FinalReport\Figure 3-3 Plan Elements.mxd - egriffin - 9:01 AM 1/25/2016

Safe Routes to School Countermeasures

The 2018 Klamath Falls Safe Routes to School (SRTS) Master Plan identifies improvement projects and programs to promote safe walking and bicycling conditions to elementary and junior high/middle schools within the Klamath Falls UGB. The SRTS Master Plan prioritizes walking and biking routes within a one-mile radius of ten public elementary and middle schools within the UGB, including 53 crossing projects:

Klamath Falls City School District

- Conger Elementary School
- Mills Elementary School
- Pelican Elementary School
- Roosevelt Elementary School
- Ponderosa Middle School

Klamath County School District

- Ferguson Elementary School
- Peterson Elementary School
- Shasta Elementary School
- Stearns Elementary School
- Brixner Junior High School

The City should partner with the County to implement the high priority crossing projects summarized in Table 4 to help address and prevent pedestrian and bicycle crashes. Following the countermeasures presented in these tables are their crash reduction details summarized in Table 5. The locations of these high priority crossing projects are also identified in the maps contained in Attachment A.

Table 4: Safe Routes to School Countermeasures – High Priority Crossing Projects

ID	Location	Project Description	Cost
Mills Elementary School			
MI-10 ¹	E Main St / Stukel Ave / Home Ave	<ul style="list-style-type: none"> - Replace existing crosswalk with two separate crosswalks - Add school crossing warning and advanced warning signs on Stukel Ave and Home Ave 	\$17,900
Pelican Elementary School			
PL-22	McLean St / Harvard St	Add school crossing warning signs to north leg	\$9,500
PL-23	Hanks St / Harvard St	<ul style="list-style-type: none"> - Add continental crosswalks to west, south, and east legs - Add school crossing warning and advanced warning signs to east leg 	\$14,000
Roosevelt Elementary School			
RO-13	Fremont St / Eldorado Ave	<ul style="list-style-type: none"> - Add pavement striping on west leg - Upgrade east leg to ladder striping - Add school crossing advanced warning signs to north, east, and west approaches 	\$13,500
RO-14	Leroy St / Eldorado Ave	<ul style="list-style-type: none"> - Upgrade east and west legs to ladder striping - Add school crossing advanced warning signs to south and east approaches 	\$12,000
RO-15	Leroy St / Pacific Terrace	<ul style="list-style-type: none"> - Upgrade to ladder striping - Add pavement striping to south leg - Add sidewalk through grass median - Add school crossing warning and advanced warning signs on north and south legs - Add SCHOOL CROSSING pavement markings on north approach 	\$32,700
RO-16	Fremont St / Pacific Terrace	Add SCHOOL CROSSING pavement markings on south approach	\$9,100
RO-17 ²	Main St / Williams St	Add school crossing warning signs to west and south approaches	\$11,000
RO-18 ³	Main St / Laguna St	<ul style="list-style-type: none"> - Add school crossing warning and advanced warning signs to west approach - Add marked crosswalk to west leg 	\$14,300
Ponderosa Middle School			
PO-18	Main St / Williams St	Add school crossing warning signs to west and south approaches	\$11,000

ID	Location	Project Description	Cost
PO-19	Main St / Laguna St	<ul style="list-style-type: none"> - Add school crossing warning and advanced warning signs to west approach - Add marked crosswalk to west leg 	\$14,300
PO-20	Main St / Crater Lake Parkway	Add yield signs to free right-turn lanes	\$11,000
PO-21	E Main St / Stukel Ave / Home Ave	<ul style="list-style-type: none"> - Replace existing crosswalk with two separate crosswalks - Add school crossing warning and advanced warning signs on Stukel Ave and Home Ave 	\$17,900
Ferguson Elementary School			
FE-25	Independence Ave / Madison St	<ul style="list-style-type: none"> - Add actuated beacons to north leg - Add continental crosswalks to north and west legs 	\$40,900
FE-26	Maryland Ave / Homedale Rd	<ul style="list-style-type: none"> - Add continental crosswalk to north leg - Add actuated beacons to north leg 	\$40,400
FE-27	Mack Ave / Madison St	<ul style="list-style-type: none"> - Add actuated beacons to north leg - Add continental crosswalks to north and west legs 	\$40,900
Peterson Elementary School			
PT-15 ⁴	Bristol Ave / Meadows Dr	<ul style="list-style-type: none"> - Add actuated beacon to east leg - Add continental crosswalks to east leg - Add school crossing advanced warning signs to east leg - Add ADA ramp to north sidewalk 	\$51,300
PT-16 ⁵	Bristol Ave / Hope St	<ul style="list-style-type: none"> - Add continental crosswalks to west and north legs - Add actuated beacons to west leg 	\$40,900
PT-17 ⁶	Homedale Rd, south of Sturdivant Ave	<ul style="list-style-type: none"> - Add actuated beacons - Refresh SCHOOL CROSSING pavement markings 	\$39,800
PT-18 ⁷	Homedale Rd / Bartlett	<ul style="list-style-type: none"> - Add continental crosswalk to north leg - Add actuated beacons to north leg - Add school crossing warning and advanced warning signs to north and south legs 	\$50,400
PT-19 ⁸	Bristol Ave, west of Hope St	<ul style="list-style-type: none"> - Add continental crosswalk - Add actuated beacons to crosswalk - Add warning signs to crosswalk 	\$58,400
Shasta Elementary School			
SH-14	Shasta Way / Madison St	<ul style="list-style-type: none"> - Update SCHOOL CROSSING pavement markings - Add continental crosswalks to all legs - Add passive beacons to warning signs on east and west legs 	\$43,800
SH-15	North of Bryant Ave / Madison St	<ul style="list-style-type: none"> - Update SCHOOL CROSSING pavement markings - Upgrade to continental crosswalk - Add actuated beacons to signs on Madison - Add ADA ramps to crosswalk 	\$57,200
Stearns Elementary School			
ST-25	Laverne Ave / Crest St	<ul style="list-style-type: none"> - Update SCHOOL CROSSING pavement markings - Add continental crosswalks to all legs - Add school crossing warning sign and plaque to west leg stop sign 	\$13,100
Brixner Junior High School			
BR-28	Homedale Rd, south of Sturdivant Ave	<ul style="list-style-type: none"> - Add actuated beacons - Refresh SCHOOL CROSSING pavement markings 	\$39,800
BR-29	Bristol Ave / Hope St	<ul style="list-style-type: none"> - Add continental crosswalks to west and north legs - Add actuated beacons to west leg 	\$40,900
BR-30	Bristol Ave / Meadows Dr	<ul style="list-style-type: none"> - Add actuated beacon to east leg - Add continental crosswalks to east leg - Add school crossing advanced warning signs to east leg - Add ADA ramp to north sidewalk 	\$51,300

ID	Location	Project Description	Cost
BR-31	Homedale Rd / Bartlett	<ul style="list-style-type: none"> - Add continental crosswalk to north leg - Add actuated beacons to north leg - Add school crossing warning and advanced warning signs to north and south legs 	\$50,400
BR-32	Bristol Ave, west of Hope St	<ul style="list-style-type: none"> - Add continental crosswalk - Add actuated beacons to crosswalk - Add warning signs to crosswalk 	\$58,400

¹Same as Ponderosa MS crossing project PO-21.

⁵Same as Brixner JHS crossing project BR-29.

²Same as Ponderosa MS crossing project PO-18.

⁶Same as Brixner JHS crossing project BR-28.

³Same as Ponderosa MS crossing project PO-19.

⁷Same as Brixner JHS crossing project BR-31.

⁴Same as Brixner JHS crossing project BR-30.

⁸Same as Brixner JHS crossing project BR-32.

Table 5. Safe Routes to School Countermeasures – Crash Reduction Details

Countermeasure	Crash Type	Crash Severity	Service Life	Context	CRF
Flashing Beacons as Advance Warning to Intersections (I15) ¹	All	All	10 Years	Urban or Rural	13%
Pedestrian Activated Beacon at Intersection (BP10) ¹	Pedestrian and Bicycle	All	20 Years	Urban	10%
Pedestrian Activated Beacon Midblock (BP13) ¹	Pedestrian and Bicycle	All	20 Years	Urban	10%
Pedestrian Activated Beacon with Median and Stop Bar (BP14) ¹	Pedestrian and Bicycle	All	20 Years	Urban	56%
Continental Crosswalk Markings and Advance Pedestrian Warning Signs (BP15) ¹	Pedestrian	All	10 Years	Urban or Rural	15%
Advance Pedestrian / Bicycle Warning Signs	Pedestrian and Bicycle	All	10 Years	Urban or Rural	5%
Sidewalk	Pedestrian	All	20 Years	Urban or Rural	20%

¹Countermeasure number per ODOT's CRF List

Additional Systemic Countermeasure Resources

In addition to the three systemic countermeasures presented previously, there are several more that could benefit the Klamath Falls urban area, including addressing various community concerns, and that the City and other jurisdictions in the area could implement as needs, opportunities, and funding arise. Two primary sources for the City to reference include:

- ODOT's Crash Reduction Factor Manual currently housed on its ARTS Program web page: <https://www.oregon.gov/odot/engineering/pages/arts.aspx>; and,
- The Federal Highway Administration's (FHWA) Proven Countermeasure list found on its Highway Safety Programs web page: <https://highways.dot.gov/safety/proven-safety-countermeasures>.

Countermeasures within these resources cover streets and intersections, rural and urban facilities, and all surface transportation modes (driving, walking, rolling, and biking). Of note, FHWA's countermeasure list provides "speed management" treatments, including Speed Safety Cameras, which are now allowed by state law to be implemented in Klamath Falls.

Some treatments included in these resources have already been identified in previous plans and studies, which are summarized in a later section of this memorandum and will be incorporated into the Draft TSAP.

SITE-SPECIFIC CAPITAL PROJECTS

The Existing Safety Conditions Memorandum established what is referred to as the study area's High Injury Network (HIN), which includes the locations with the highest concentration of fatal and serious injury crashes. From that evaluation and input from the community, the following 10 City-owned streets were selected for capital projects that are higher cost than the systemic treatments presented previously.

- Main Street / 3rd Street
- Main Street / 5th Street
- Pine Street / 11th Street
- S 6th Street / E Main Street
- Washburn Way / Eberlein Avenue
- Washburn Way / Radcliffe Avenue
- Shasta Way / Avalon Street
- S 5th Street from Klamath Avenue to S 6th Street
- S 6th Street from Owen Street to Washburn Way
- Washburn Way from Shasta Way to Laverne Avenue

Based on their crash history, these sites could be candidates for ARTS funding given the benefit that they could bring in terms of crash reduction. As such, these priority sites are identified in Figure 4 as they relate to the HIN in Klamath Falls. Furthermore, these sites and the HIN overlay social equity data in the study area obtained from ODOT, demonstrating that these projects also have a strong equity component and can benefit all users, including those that may be considered transportation disadvantaged. The "transportation disadvantaged populations index" indicates where the greatest concentration of potentially transportation disadvantaged populations reside with Klamath Falls, including demographics like income, disability, age, access to personal vehicles, etc. In Figure 4, the HIN is generally represented by red and orange streets, which are streets that have had the most frequent and serious crashes. Green streets have the least frequent and serious crashes and are outside of the HIN.

Projects for other street segments and intersections located on the High Injury Network, owned by the County and ODOT, will be identified in the ongoing Klamath Falls Urban Area Transportation System Plan (TSP) Update.

The following sections present a brief summary of the crash characteristics at these sites and the recommended changes to reduce their crash frequencies and severities. The recommended changes are guided by these intersection design principles, which are rooted in the Safe System Approach:

- Reducing the number of conflict points (between all users)
- Improving (reducing) conflict angles
- Reducing speeds
- Improving visibility
- Separating different modes of transportation

All recommendations are for City consideration and require additional evaluation for project development.

Main Street / 3rd Street

The intersection of Main Street and 3rd Street is located in downtown Klamath Falls near the Klamath County Courthouse. This is a two-way stop-controlled intersection of a one-way street – Main Street – and two-way street – 3rd Street, where both streets have two travel lanes and 3rd Street is the minor, stop-controlled street. The crash history at this intersection is summarized in Table 6. The serious-injury pedestrian crash was reported in the southern crosswalk on Main Street.

Table 6: Main Street / 3rd Street Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	-	-	-	1	1	2
Rear-End	-	-	-	1	1	2
Pedestrian	-	1	-	1	-	2
Total	-	1	-	3	2	6

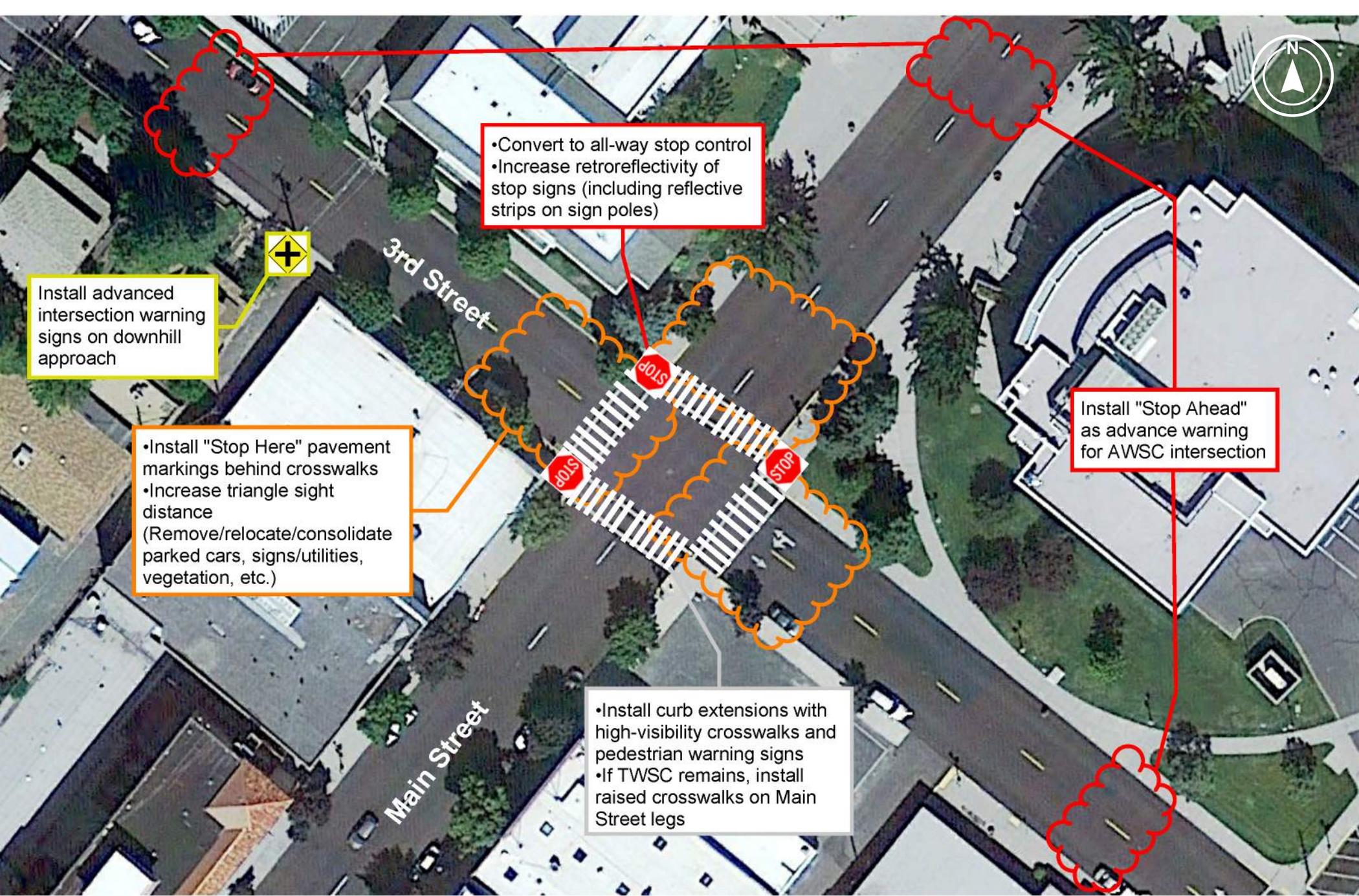
The recommended modifications to address the crash history at this intersection are identified in Table 7, including countermeasure crash reduction factors, and illustrated in Figure 5.

Table 7: Main Street / 3rd Street Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Convert two-way stop control to all-way stop control (AWSC) (H20)	18-75%	Angle	All
Increase retroreflectivity of stop signs (including reflective strips on sign poles) (I23)	7%	Angle	All
Improve intersection warning by installing "Stop Ahead" pavement markings as advance warning for AWSC intersection, "Stop Here" pavement markings behind crosswalks, and an advanced intersection warning sign on 3 rd Street (downhill approach) (I21)	20% for 1-2 25% for 3-4 30% for 5-7 (11-55%)	All	All
Increase triangle sight distance (remove/relocate/ consolidate parked cars, signs/utilities, vegetation, etc.) (I17)	11-56%	All	All Injury
Install curb extensions with high-visibility crosswalks and pedestrian warning signs (BP16)	37%	Pedestrian	All
<i>If TWSC remains, install raised crosswalks across Main Street (BP28)</i>	30%	Ped/Bike	All

A few considerations for these countermeasures:

- The 2016 Klamath Falls Urban Trails Master Plan identifies a bike lane project down Main Street. If and when that project is implemented, green bike lanes should be painted through this intersection along Main Street.
- The recommended countermeasures are consistent with the projects identified through various studies that have been conducted for downtown intersections.
- The recommended curb extensions can include bioswales and vegetation to reduce impervious surfaces, capture stormwater, and provide a more aesthetic option. An example from FHWA is provided in Exhibit 1 following Figure 5.
- Raised crossings may cause challenges during times of snow removal.
- The planning-level cost estimate for these improvements is approximately \$381,000.



- Convert to all-way stop control
- Increase retroreflectivity of stop signs (including reflective strips on sign poles)

Install advanced intersection warning signs on downhill approach

- Install "Stop Here" pavement markings behind crosswalks
- Increase triangle sight distance (Remove/relocate/consolidate parked cars, signs/utilities, vegetation, etc.)

Install "Stop Ahead" as advance warning for AWSC intersection

- Install curb extensions with high-visibility crosswalks and pedestrian warning signs
- If TWSC remains, install raised crosswalks on Main Street legs



Transportation Safety Projects
Main Street/3rd Street

Figure 5



Exhibit 1: Example Bioswale and Vegetation near Curb Ramp

Main Street / 5th Street

The intersection of Main Street and 5th Street is located in downtown Klamath Falls near Black Dog Billiards, Mermaid Garden Café, and other businesses. This is a signalized intersection of two one-way streets, where both streets have two travel lanes. The crash history at this intersection is summarized in Table 8. A majority of the angle crashes were reported near the southwest corner of the intersection, including the one resulting in serious injuries.

Table 8: Main Street / 5th Street Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	1	-	3	3	4	11
Turning	-	-	-	-	3	3
Parking Maneuver	-	-	-	-	2	2
Pedestrian	-	-	-	1	-	1
Total	1	-	3	4	9	17

The recommended modifications to correct the crash history at this intersection are identified in Table 9, including countermeasure crash reduction factors, and illustrated in Figure 6.

Table 9: Main Street / 5th Street Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Prohibit right turn on red (I29)	9%	All	All
Install actuated/coordinated flashing beacon on 5 th Street (downhill approach) as advance warning for traffic signal (I16)	36-62%	Rear End	All
Install pedestrian countdown timers for pedestrian signal heads (BP1)	0-70%	Pedestrian	All
Install Leading Pedestrian Interval at traffic signal (BP3)	37-45%	Pedestrian	All
Install curb extensions at all corners (I33)	30%	All	All
Improve signal hardware by installing 3" yellow reflectorized back plates, upgrading signal lenses from 8" to 12" and incandescent bulbs to LED, adjusting yellow change and all-red intervals in accordance with ITE timing standards, considering supplemental signal heads, and upgrading regulatory signs (I2)	20% for 2 25% for 3-4 30% for 5-6 (0-46%)	All	All

A few considerations for these countermeasures:

- The 2016 Klamath Falls Urban Trails Master Plan identifies a bike lane project down Main Street. If and when that project is implemented, green bike lanes should be painted through this intersection along Main Street.
- The recommended curb extensions are consistent with the projects identified through various studies that have been conducted for downtown intersections. They can include bioswales and vegetation to reduce impervious surfaces, capture stormwater, and provide a more aesthetic option. See Exhibit 1 for the FHWA example.
- The recommended traffic signal countermeasures are also consistent with a downtown ARTS project that is in process with ODOT.
- The planning-level cost estimate for these improvements is approximately \$410,000.

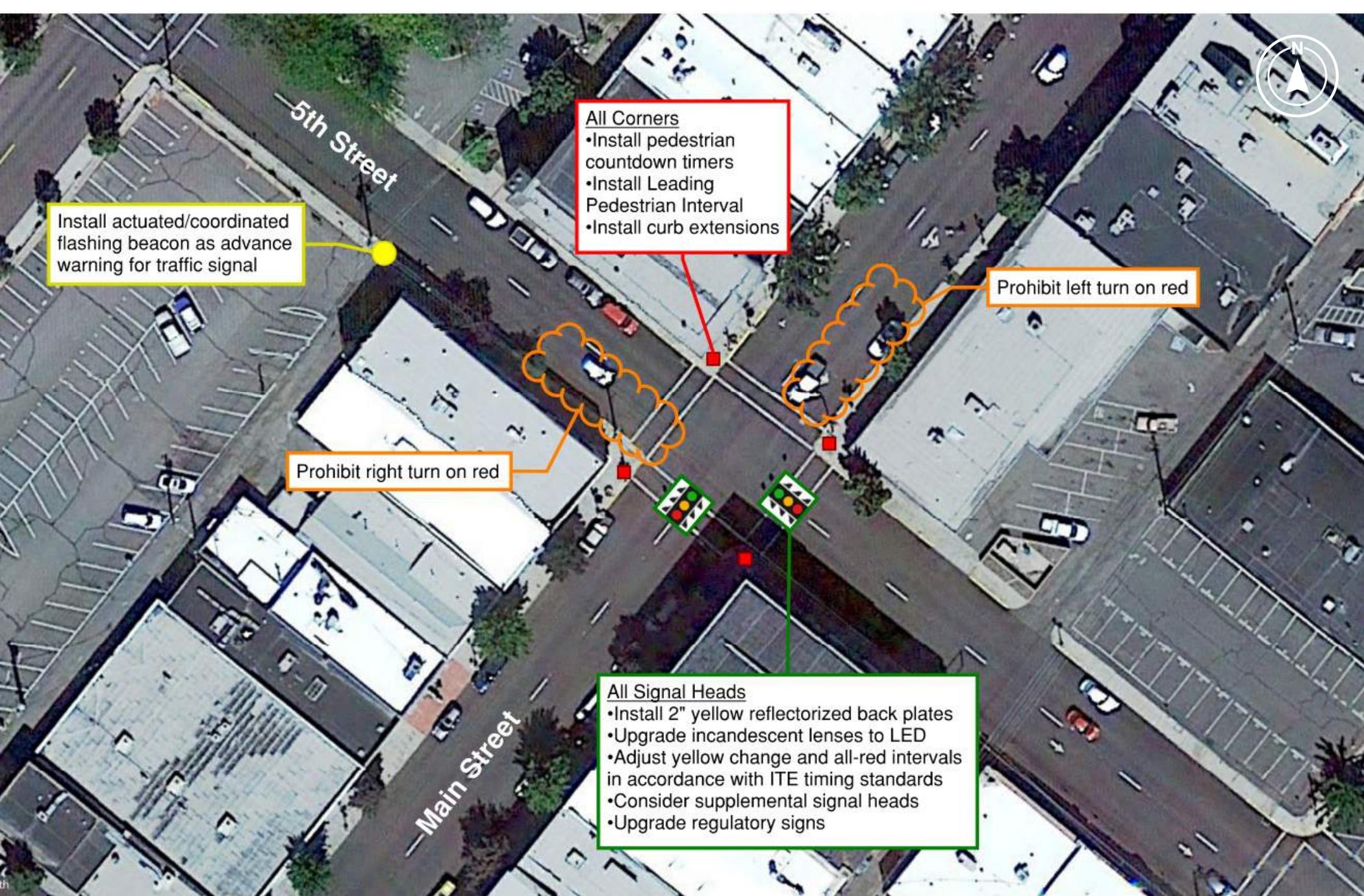
Pine Street / 11th Street

The intersection of Pine Street and 11th Street is located in downtown Klamath Falls near Express Employment Professionals. This is a signalized intersection of a one-way street – 11th Street – and a two-way street – Pine Street, where both streets have two travel lanes. The crash history at this intersection is summarized in Table 10. Most of the angle crashes were reported near the south side of the intersection, including the serious-injury angle crash.

Table 10: Pine Street / 11th Street Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	-	-	1	1	5	7
Turning	-	1	1	-	2	4
Total	-	1	2	1	7	11

The recommended modifications to correct the crash history at this intersection are illustrated in Figure 7 and identified in Table 11, including countermeasure crash reduction factors.



Install actuated/coordinated flashing beacon as advance warning for traffic signal

All Corners
•Install pedestrian countdown timers
•Install Leading Pedestrian Interval
•Install curb extensions

Prohibit left turn on red

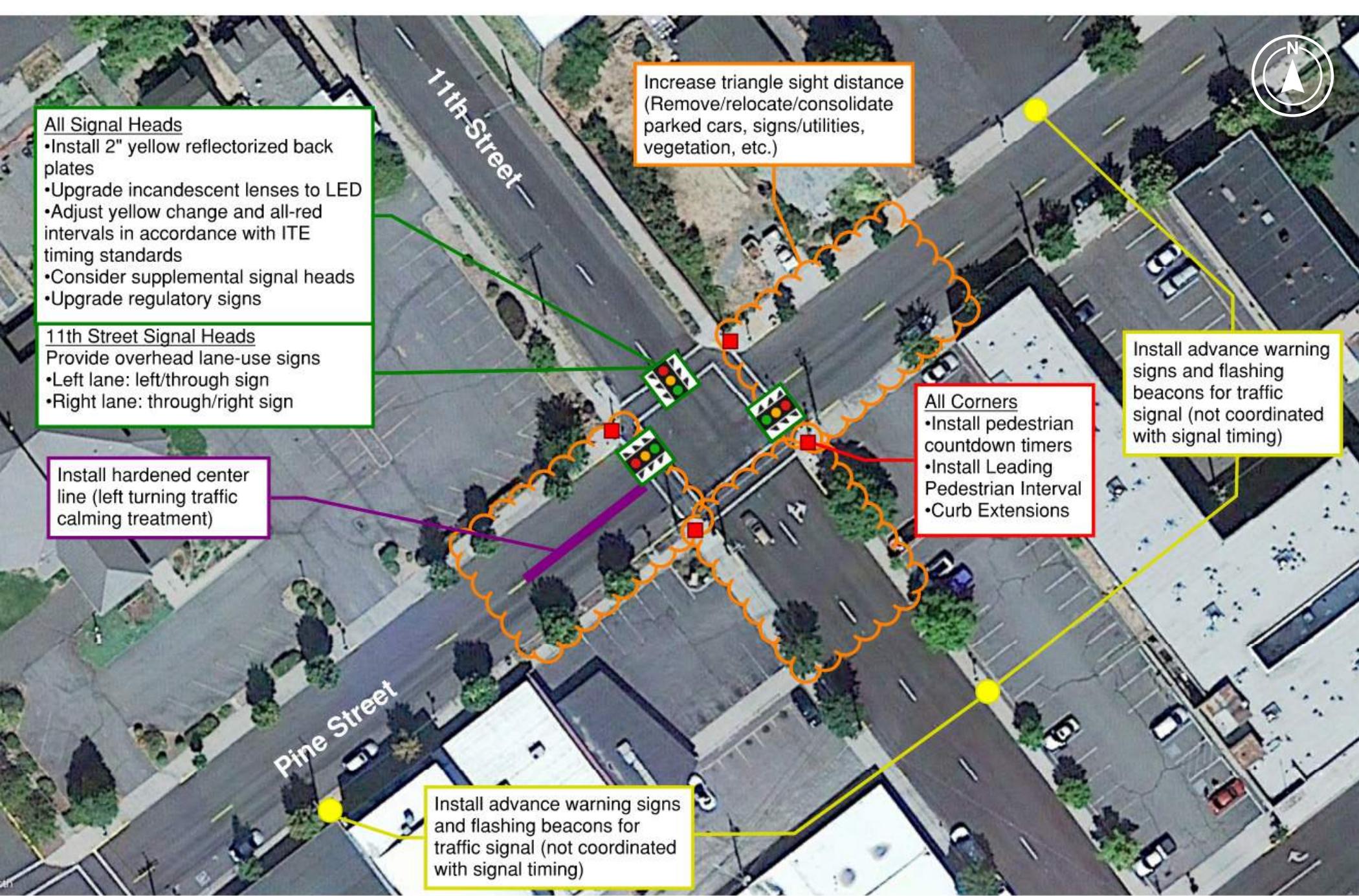
Prohibit right turn on red

All Signal Heads
•Install 2" yellow reflectorized back plates
•Upgrade incandescent lenses to LED
•Adjust yellow change and all-red intervals in accordance with ITE timing standards
•Consider supplemental signal heads
•Upgrade regulatory signs



Transportation Safety Projects
Main Street/5th Street

Figure 6



All Signal Heads

- Install 2" yellow reflectorized back plates
- Upgrade incandescent lenses to LED
- Adjust yellow change and all-red intervals in accordance with ITE timing standards
- Consider supplemental signal heads
- Upgrade regulatory signs

11th Street Signal Heads

Provide overhead lane-use signs

- Left lane: left/through sign
- Right lane: through/right sign

Install hardened center line (left turning traffic calming treatment)

Increase triangle sight distance (Remove/relocate/consolidate parked cars, signs/utilities, vegetation, etc.)

All Corners

- Install pedestrian countdown timers
- Install Leading Pedestrian Interval
- Curb Extensions

Install advance warning signs and flashing beacons for traffic signal (not coordinated with signal timing)

Install advance warning signs and flashing beacons for traffic signal (not coordinated with signal timing)



Transportation Safety Projects
Pine Street/11th Street

Figure 7

Table 11: Pine Street / 11th Street Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Install hardened center line on south leg of Pine Street (I20)	10%	Left Turning	All
Install advance warning signs for traffic signal on all approaches (I22)	35%	Angle	All
Install flashing beacons for traffic signal on all approaches (I15)	10.2-13.3%	All	All
Increase triangle sight distance (remove/relocate/consolidate parked cars, signs/utilities, vegetation, etc.) (I17)	11-56%	All	All Injury
Install pedestrian countdown timers for pedestrian signal heads (BP1)	0-70%	Pedestrian	All
Install Leading Pedestrian Interval at traffic signal (BP3)	37-45%	Pedestrian	All
Install curb extensions at all corners (I33)	30%	All	All
Improve signal hardware by installing 3" yellow reflectorized back plates, upgrading signal lenses from 8" to 12" and incandescent bulbs to LED, adjusting yellow change and all-red intervals in accordance with ITE timing standards, considering supplemental signal heads, and upgrading regulatory signs (I2)	20% for 2 25% for 3-4 30% for 5-6 (0-46%)	All	All
Provide overhead lane-use signs for 11 th street (left lane: left/through sign; right lane: through/right sign) (I31)	10%	Rear End	All

A few considerations for these countermeasures:

- The recommended curb extensions are consistent with the projects identified through various studies that have been conducted for downtown intersections. They can include bioswales and vegetation to reduce impervious surfaces, capture stormwater, and provide a more aesthetic option. See Exhibit 1 for the FHWA example.
- The recommended traffic signal countermeasures are also consistent with a downtown ARTS project that is in process with ODOT.
- The planning-level cost estimate for these improvements is approximately \$416,000.

Washburn Way / Eberlein Avenue

The intersection of Washburn Way and Eberlein Avenue is located on a commercial corridor near Cadence Academy Preschool, BottleDrop Redemption Center, the eastern end of the Mills Edition neighborhood, and other residences. This is a two-way stop-controlled intersection of two-way streets where Eberlein Avenue is the minor, stop-controlled Street. Eberlein Avenue has a two-lane cross section and Washburn Way has a three- to four-lane cross section. The crash history at this intersection is summarized in Table 12. Most of the rear-end crashes were reported on Washburn Way and a majority of the angle crashes were reported on the west side of the intersection.

Table 12: Washburn Way / Eberlein Avenue Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	-	1	1	2	5	9
Turning	-	-	1	2	1	4
Rear-End	-	-	1	-	4	5
Fixed-Object	-	-	-	1	-	1
Total	-	1	3	5	10	19

The recommended modifications to correct the crash history at this intersection are identified in Table 13, including countermeasure crash reduction factors, and illustrated in Figure 8.

Table 13: Washburn Way / Eberlein Avenue Countermeasures

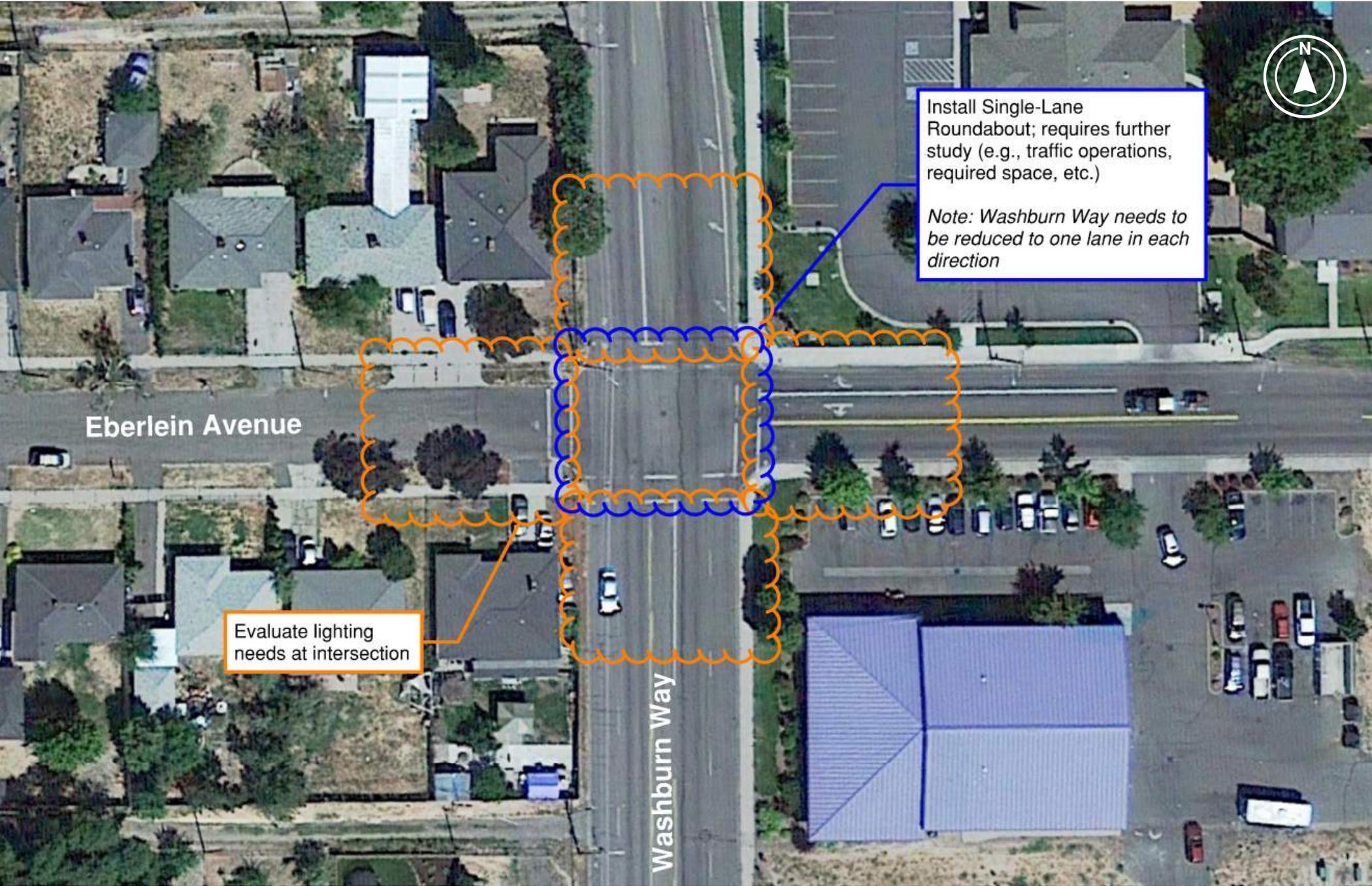
Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Convert the TWSC intersection to a single-lane roundabout (H18)	19-82%	All	All Injury
Evaluate lighting needs at intersection (I1 / BP2)	31-38% / 42%	Night / Pedestrian & Bicycle (Night)	All Injury

A few considerations for these countermeasures:

- Further study of this treatment is required to identify intersection traffic operations, required space, etc.
- A traffic signal could also be considered if it met signal warrants in the Manual on Uniform Traffic Control Devices and the City's signal spacing guidelines.
- One or more approaches to this intersection is a site on ODOT's 2020 Safety Priority Index System (SPIS) list.
- The 2018 Safe Routes to School Master Plan identifies actuated beacons and continental crosswalks for the TWSC intersection. These treatments can still be incorporated into a roundabout intersection if necessary.
- The planning-level cost estimate for these improvements is approximately \$3-5 million.

Washburn Way / Radcliffe Avenue

The intersection of Washburn Way and Radcliffe Avenue is located on a commercial corridor near Fred Meyer and the eastern end of the Mills Edition neighborhood. This is a two-way stop-controlled intersection of two-way streets and the Fred Meyer Driveway on the east side, where Radcliffe Avenue and the Fred Meyer driveway are the minor, stop-controlled approaches. Radcliffe Avenue has a two-lane cross section and Washburn Way has a four-lane cross section. There are also Rapid Rectangular Flashing Beacons (RRFBs) across Washburn Way on the south side of the intersection. The crash history at this intersection is summarized in Table 14. All the turning movement crashes appear to be related to the Fred Meyer driveway.



Install Single-Lane Roundabout; requires further study (e.g., traffic operations, required space, etc.)
Note: Washburn Way needs to be reduced to one lane in each direction

Evaluate lighting needs at intersection



Transportation Safety Projects
Washburn Way/Eberlein Avenue

Figure 8

Table 14: Washburn Way / Radcliffe Avenue Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	-	-	-	1	-	1
Turning	-	1	2	1	1	5
Rear-End	-	-	1	-	1	2
Fixed-Object	-	-	-	-	1	1
Pedestrian	-	-	1	-	-	1
Total	-	1	4	2	3	10

The recommended modifications to correct the crash history at this intersection are identified in Table 15, including countermeasure crash reduction factors, and illustrated in Figure 9.

Table 15: Washburn Way / Radcliffe Avenue Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Convert the TWSC intersection to a single-lane roundabout (H18)	19-82%	All	All Injury

A few considerations for these countermeasures:

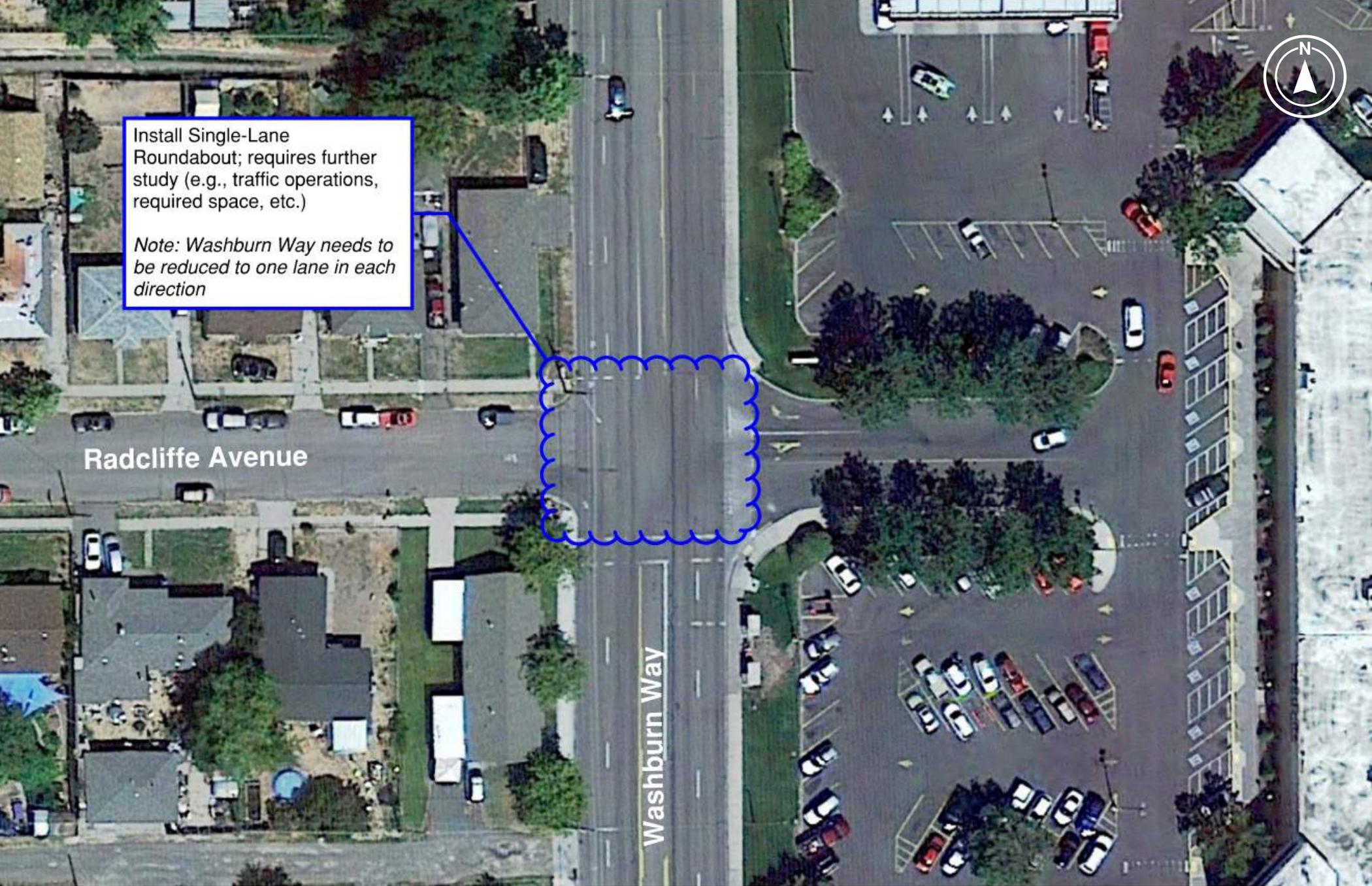
- A traffic signal could also be considered if it met signal warrants in the Manual on Uniform Traffic Control Devices and the City's signal spacing guidelines.
- One or more approaches to this intersection is a site on ODOT's 2020 Safety Priority Index System (SPIS) list.
- Further study of this treatment is required to identify intersection traffic operations, required space, etc.
- The existing RRFBs could be preserved and incorporated into the roundabout design.
- The planning-level cost estimate for these improvements is approximately \$3-5 million.

S 6th Street / E Main Street

The intersection of S 6th Street and E Main Street is located on a 6th commercial corridor just east of downtown Klamath Falls near Klamath Health Partnership, other businesses, and the southern end of the Mills Edition neighborhood. This is a signalized intersection of two-way streets; E Main Street has a two-lane cross section and S 6th Street has a five-lane cross section. The crash history at this intersection is summarized in Table 16.

Table 16: S 6th Street / E Main Street Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	-	-	-	-	2	2
Turning	1	-	-	1	1	3
Rear-End	-	-	-	1	1	2
Sideswipe	-	-	-	-	1	1
Total	1	-	-	2	5	8



Install Single-Lane Roundabout; requires further study (e.g., traffic operations, required space, etc.)

Note: Washburn Way needs to be reduced to one lane in each direction

Radcliffe Avenue

Washburn Way



Transportation Safety Projects
Washburn Way/Radcliffe Avenue

Figure 9

The recommended modifications to correct the crash history at this S 6th Street / E Main Street are identified in Table 17, including countermeasure crash reduction factors, and illustrated in Figure 10.

Table 17: S 6th Street / E Main Street Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Improve signal hardware by installing 3" yellow reflectorized back plates, upgrading signal lenses from 8" to 12" and incandescent bulbs to LED, adjusting yellow change and all-red intervals in accordance with ITE timing standards, considering supplemental signal heads, and upgrading regulatory signs (I2)	20% for 2 25% for 3-4 30% for 5-6 (0-46%)	All	All
Install hardened center lines on all approaches (20)	10%	Left Turning	All
Install advance warning signs for traffic signal on all approaches (I22)	35%	Angle	All
Install actuated/coordinated flashing beacons on all approaches as advance warning for traffic signal (I16)	36-62%	Rear End	All
Install pedestrian countdown timers for pedestrian signal heads (BP1)	0-70%	Pedestrian	All
Install Leading Pedestrian Interval at traffic signal (BP3)	37-45%	Pedestrian	All

A few considerations for these countermeasures:

- The recommended traffic signal countermeasures are also consistent with a downtown ARTS project that is in process with ODOT, given the proximity of this traffic signal to downtown.
- The planning-level cost estimate for these improvements is approximately \$255,000.

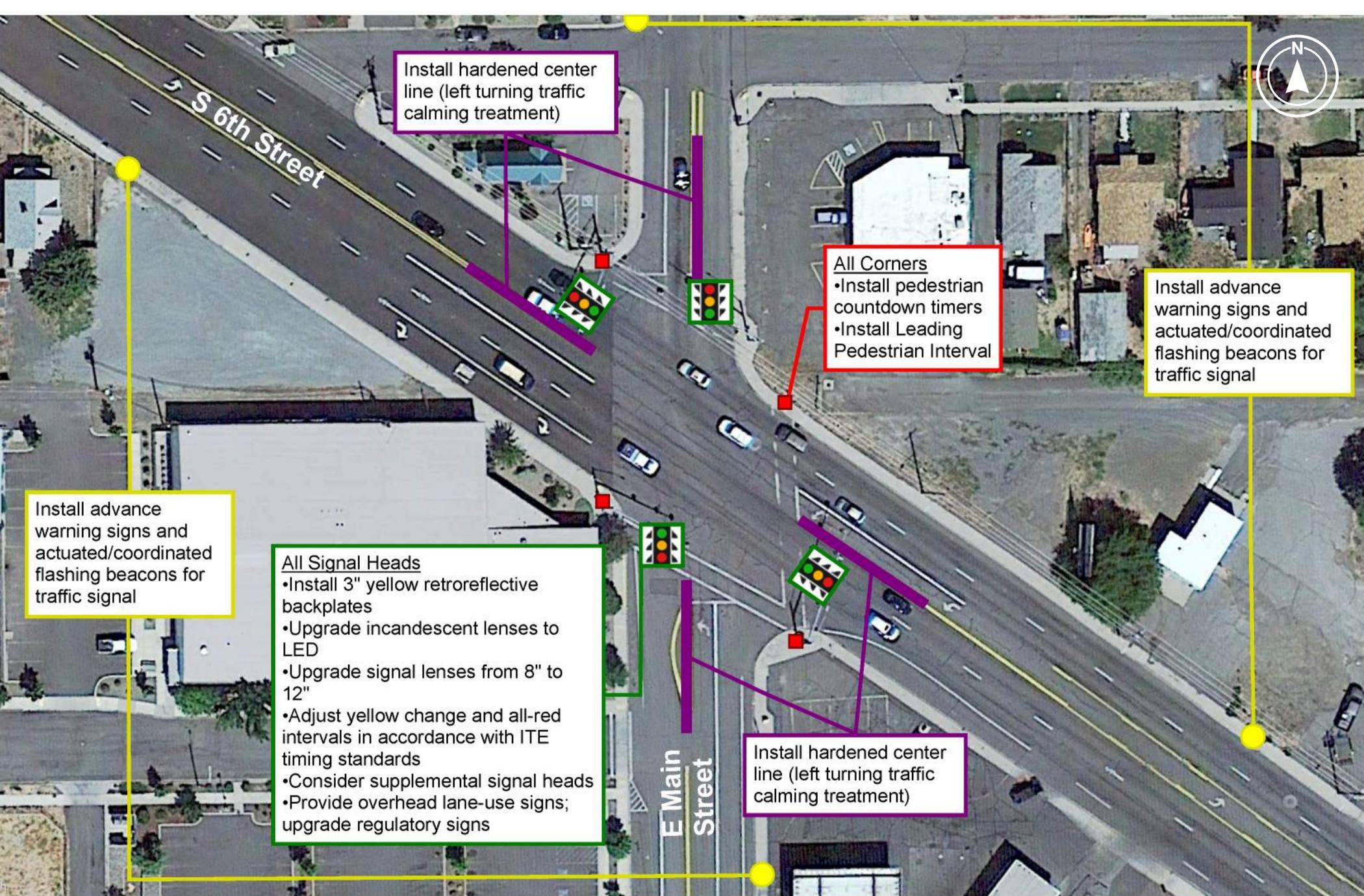
Shasta Way / Avalon Street

The intersection of Shasta Way and Avalon Street is located near Coastal, other businesses, and residential neighborhoods. This is a signalized intersection of two-way streets; Shasta Way and the south leg of Avalon Street have three-lane cross sections and the north leg of Avalon Street has a two-lane cross section. The crash history at this intersection is summarized in Table 18.

Table 18: Shasta Way / Avalon Street Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Angle	-	-	1	3	4	8
Turning	-	1	-	1	3	5
Pedestrian	-	-	-	2	-	2
Fixed Object	-	-	-	1	-	1
Total	-	1	1	7	7	16

The recommended modifications to correct the crash history at this intersection are illustrated in Figure 11 and identified in Table 19, including countermeasure crash reduction factors.



Install hardened center line (left turning traffic calming treatment)

All Corners
•Install pedestrian countdown timers
•Install Leading Pedestrian Interval

Install advance warning signs and actuated/coordinated flashing beacons for traffic signal

Install advance warning signs and actuated/coordinated flashing beacons for traffic signal

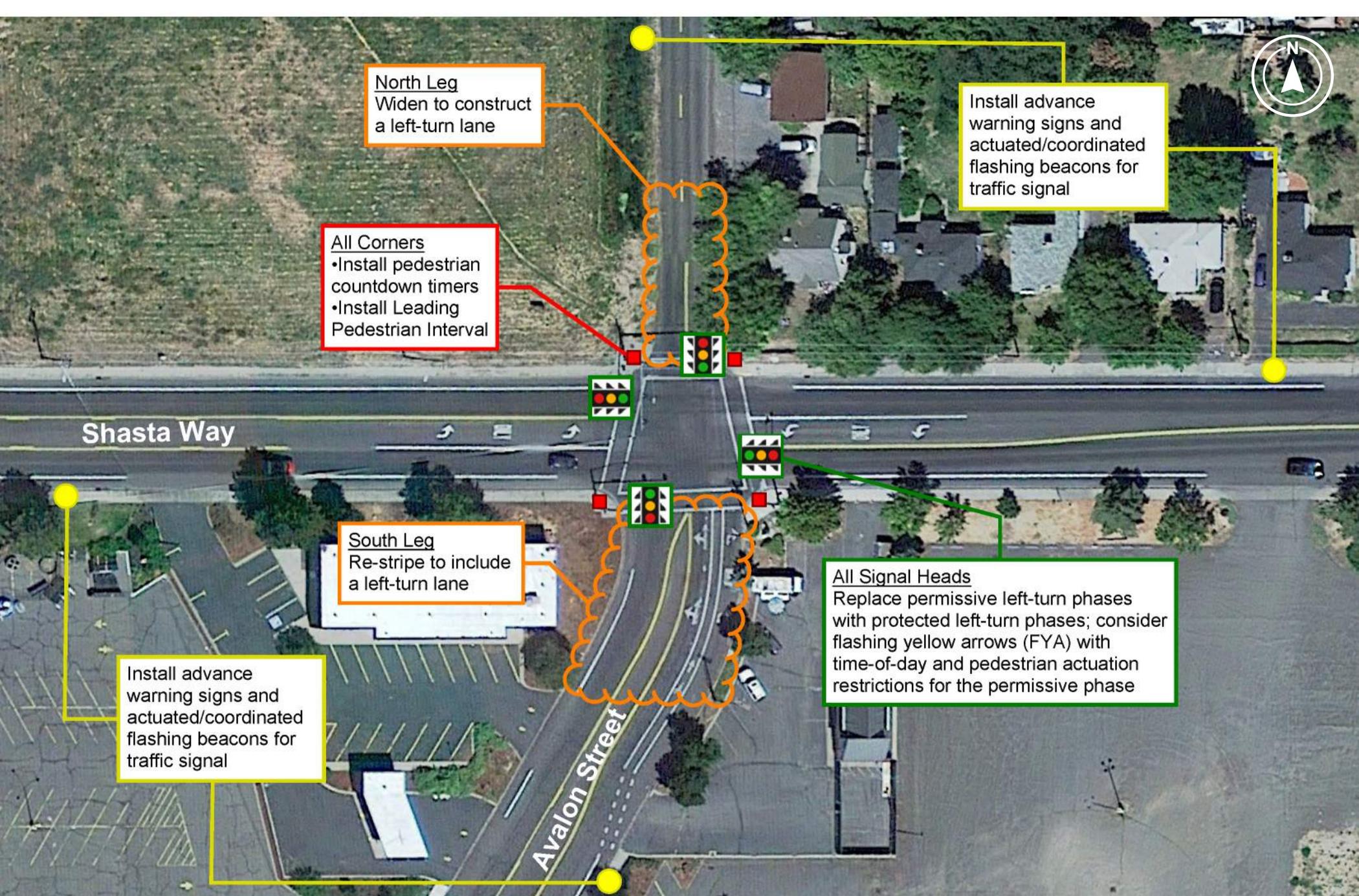
All Signal Heads
•Install 3" yellow retroreflective backplates
•Upgrade incandescent lenses to LED
•Upgrade signal lenses from 8" to 12"
•Adjust yellow change and all-red intervals in accordance with ITE timing standards
•Consider supplemental signal heads
•Provide overhead lane-use signs; upgrade regulatory signs

Install hardened center line (left turning traffic calming treatment)



Transportation Safety Projects
S 6th Street/E Main Street

Figure 10



Transportation Safety Projects
Shasta Way/Avalon Street

Figure 11

Table 19: Shasta Way / Avalon Street Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Replace permissive left-turn phases with protected/permissive left-turn phases for all signal heads (I11)	6-99%	Left Turning	All Injury
Install advance warning signs for traffic signal on all approaches (I22)	35%	Angle	All
Install actuated/coordinated flashing beacons on all approaches as advance warning for traffic signal (I16)	36-62%	Rear End	All
Install pedestrian countdown timers for pedestrian signal heads (BP1)	0-70%	Pedestrian	All
Install Leading Pedestrian Interval at traffic signal (BP3)	37-45%	Pedestrian	All

A few considerations for these countermeasures:

- The property immediately northwest of the intersection is vacant and has potential to be developed. This may present a funding opportunity to implement these treatments. Further, sufficient right-of-way should be retained for the north leg of the intersection.
- ODOT's CRF List includes the addition of left-turn lanes on the major street approaches at signalized intersections as a countermeasure – with a 19 percent crash reduction factor – but advises that this CRF only be used for the major street, which is Shasta Way in this case.
- The final lane configurations with the inclusion of left-turn lanes require traffic analysis and depend on available right-of-way and how the roadway is widened.
- The planning-level cost estimate for these improvements is approximately \$657,000.

S 5th Street: Klamath Avenue to S 6th Street

The segment of S 5th Street from Klamath Avenue to S 6th Street is primarily a commercial corridor with two lanes for one-way travel. The corridor is posted at 30 miles per hour (mph) but is wide, measuring approximately 46 feet between curbs, to allow on-street parking in some locations. There are not dedicated bike facilities and sidewalks are discontinuous. One set of marked crosswalks are present at Walnut Avenue, but not at any other intersection in the corridor. Periodic street lighting is provided along the street's southwest side and street trees are located on some properties on both sides of the street. Multiple access points are provided directly onto the street, and in some cases, more than one access per property, particularly within the curve on the south end of the corridor. All intersections in the corridor are two-way stop-controlled, allowing continuous flow of traffic down S 5th Street.

The crash history for this corridor is summarized in Table 20. All crashes that resulted in moderate or serious injuries were all reported in the curve between Elm Avenue and S 6th Street.

Table 20: S 5th Street: Klamath Avenue to S 6th Street – Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Turning	-	1	1	1	1	4
Parking Maneuver	-	-	-	1	-	1
Fixed Object	-	1	-	1	4	6
Total	-	2	1	3	5	11

The recommended modifications to correct the crash history in this corridor are identified in Table 21, including countermeasure crash reduction factors, and illustrated in Figure 12A and Figure 12B.

Table 21: S 5th Street: Klamath Avenue to S 6th Street – Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Install buffered bike lane on southwest side of the street (BP24)	47% / 30% ¹	Bicycle / All ¹	All Injury
Consolidate driveways to less than 10 per mile (H36)	25-31%	All	All Injury
Install curb extensions with high-visibility crosswalks and pedestrian warning signs at all intersections (BP16)	37%	Pedestrian	All
Install doubled up advance curve warning signs before the horizontal curve (RD8)	20%	Run Off the Road	All
Install speed feedback sign before the horizontal curve (RD12)	10%	All	All
Install chevron signs in the horizontal curve (RD7)	16%	Run Off the Road	All Injury
Install raised median (RD25) with post-mounted delineators (RD14)	30% / 0-30%	All / Curve Crashes at Night	All Injury / All
Sidewalk	20%	Pedestrian	All

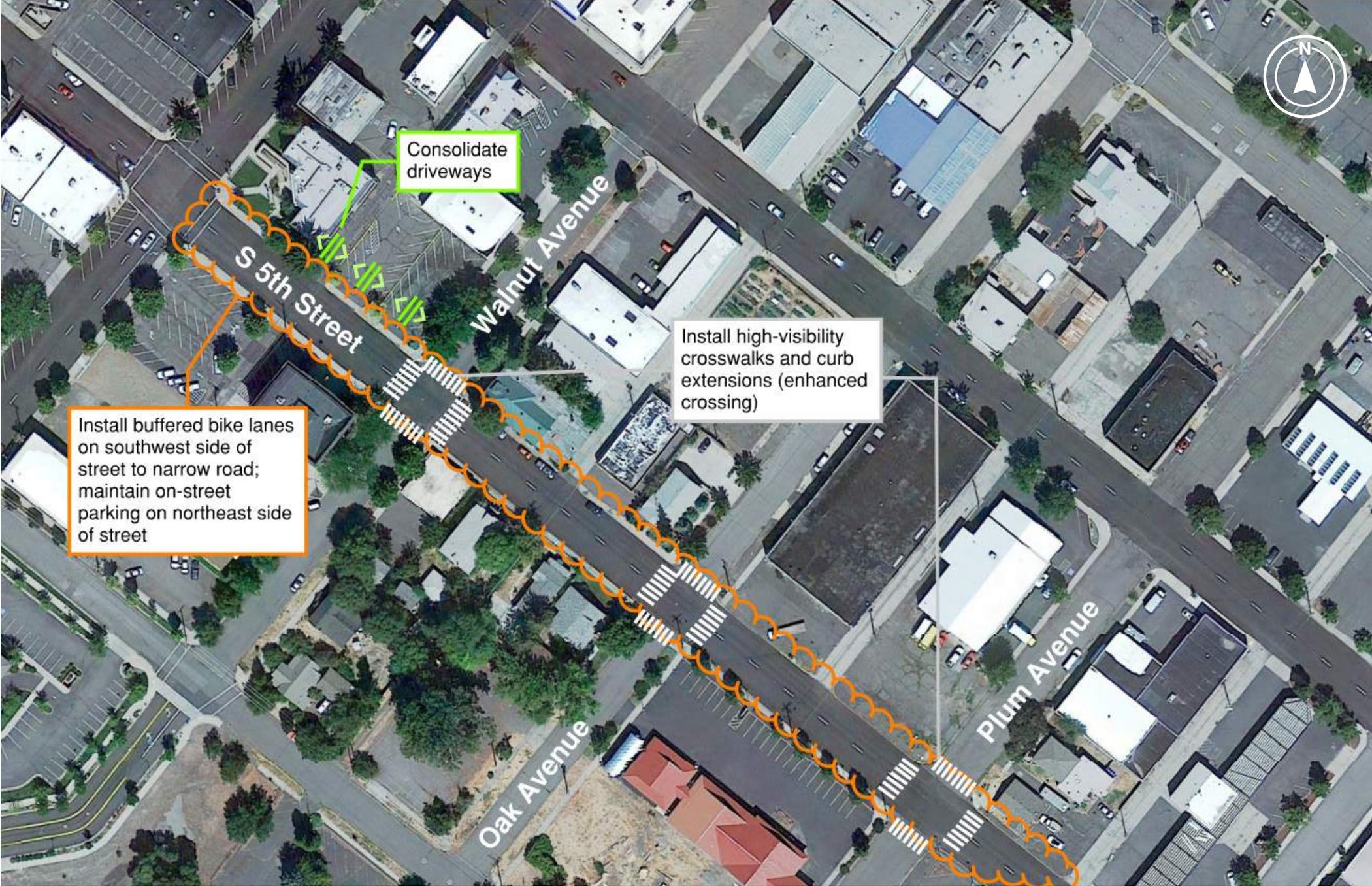
¹This crash reduction and crash type are from FHWA's proven countermeasure and applies to total crashes on urban two-lane undivided collectors and local roads with the addition of new bike lanes; the crash reduction can be up to 49% for urban four-lane undivided collectors and local roads.

A few considerations for these countermeasures:

- This section of S 5th Street is part of a one-way couplet with 6th Street, and therefore, the recommendations for this corridor could also be applied to the 6th Street corridor that is parallel.
- The recommended curb extensions can include bioswales and vegetation to reduce impervious surfaces, capture stormwater, and provide a more aesthetic option. See Exhibit 1 for the FHWA example.
- Consider investigating the need for additional lighting along the northeast side of the street.
- The recommendations are consistent with the 2016 Klamath Falls Urban Trails Master Plan to construct bike lanes in the one-way couplet.
- Buffered bike lanes typically increase the distance between motorists and cyclists with additional striping, as opposed to protected bike lanes that provide a vertical deflection like tubular markers. The City will likely need to identify a temporary method to transition bicyclists from the recommended bike lane on S 5th Street to no bike lanes on S 6th, until they are feasible to install in that corridor, such as shared-lane markings and signage that the bike lane has ended.
- The corridor contains at least one site on ODOT's 2020 SPIS list.
- The planning-level cost estimate for these improvements is approximately \$2 million.

S 6th Street: Owen Street to Washburn Way

The segment of 6th Street from Owen Street to Washburn Way is a commercial corridor with five lanes, including a center left turn lane, for two-way travel. The corridor is posted at 35 mph and is generally 60 feet wide between curbs. The road widens in specific locations where right turn lanes are provided at intersections. On-street parking is allowed in front of select businesses but is not continuously available through the corridor. Sidewalks are provided on both sides of the street, but dedicated bike facilities are not. The only protected crossing movement that is available across S 6th Street is at the E Main Street traffic signal, requiring pedestrians to cross at nearby unmarked intersections or travel between 1,000 feet and a ½ mile to the next protected crossings. Street lighting is present on both sides of the street but is located more frequently on the southeast side as compared to the southwest. There are little to no street trees throughout the corridor.



Consolidate driveways

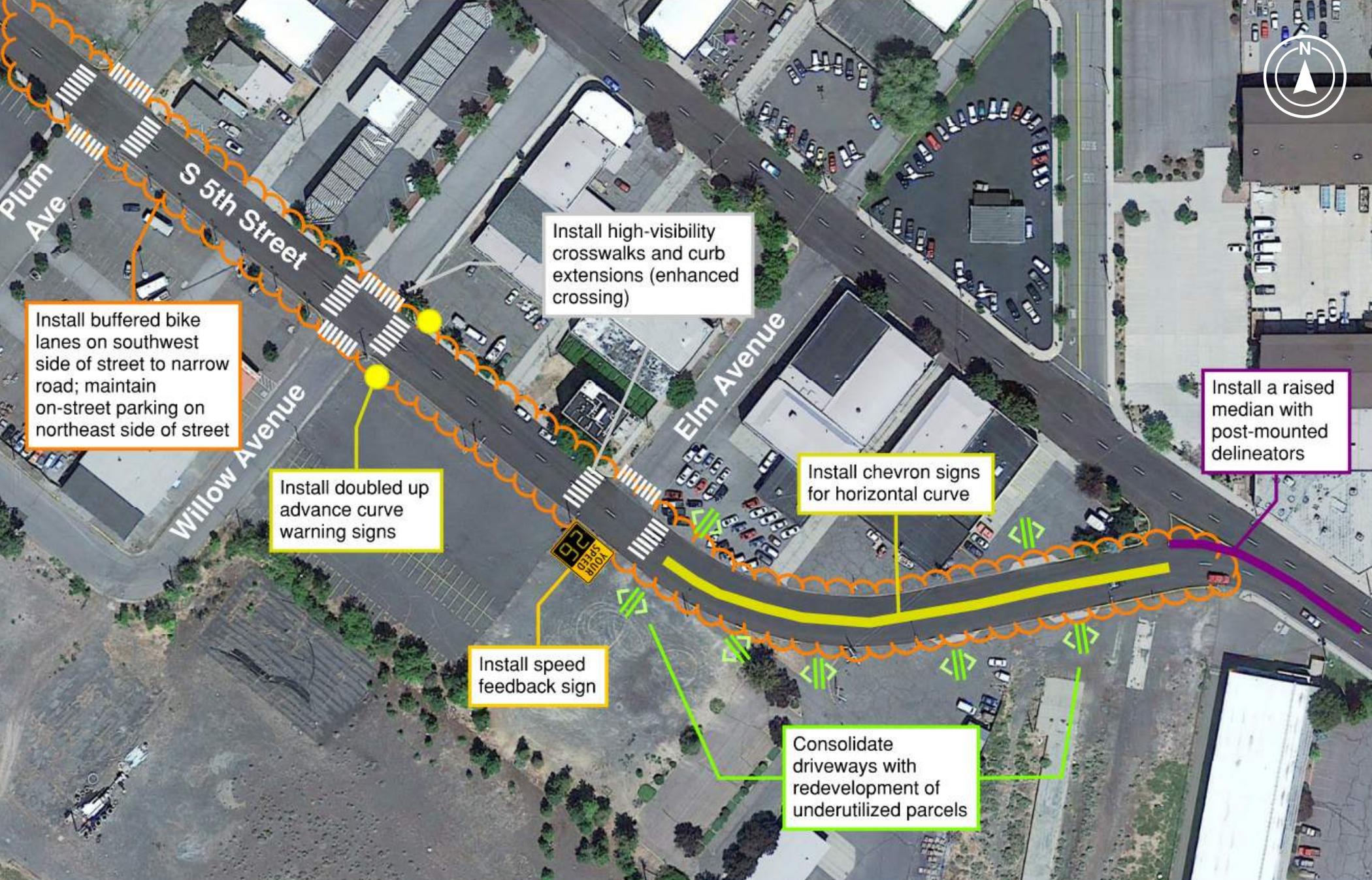
Install high-visibility crosswalks and curb extensions (enhanced crossing)

Install buffered bike lanes on southwest side of street to narrow road; maintain on-street parking on northeast side of street



Transportation Safety Projects
S 5th Street: Klamath Avenue to Plum Avenue

Figure 12A



Install buffered bike lanes on southwest side of street to narrow road; maintain on-street parking on northeast side of street

Install doubled up advance curve warning signs

Install speed feedback sign

Install high-visibility crosswalks and curb extensions (enhanced crossing)

Install chevron signs for horizontal curve

Consolidate driveways with redevelopment of underutilized parcels

Install a raised median with post-mounted delineators



Transportation Safety Projects
S 5th Street: Plum Avenue to S 6th Street

Figure 12B

Multiple access points are located directly on the street, and in some cases, more than one access per property. There are two traffic signals at E Main Street and Shasta Way; all other intersections in the corridor are two-way stop controlled.

The crash history for this corridor is summarized in Table 22. Fourteen of the reported crashes were driveway related, which accounts for all but one turning movement crash, and both the pedestrian and bicyclist crashes. Both serious-injury crashes were reported between Shasta Way and Washburn Way.

Table 22: S 6th Street: Owen Street to Washburn Way – Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types					Total
	Fatal	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	
Turning	-	1	1	6	5	13
Rear-End	-	-	-	1	2	3
Side-Swipe	-	-	-	-	2	2
Pedestrian	-	-	1	-	-	1
Fixed Object	-	1	1	-	1	3
Total	-	2	3	7	10	22

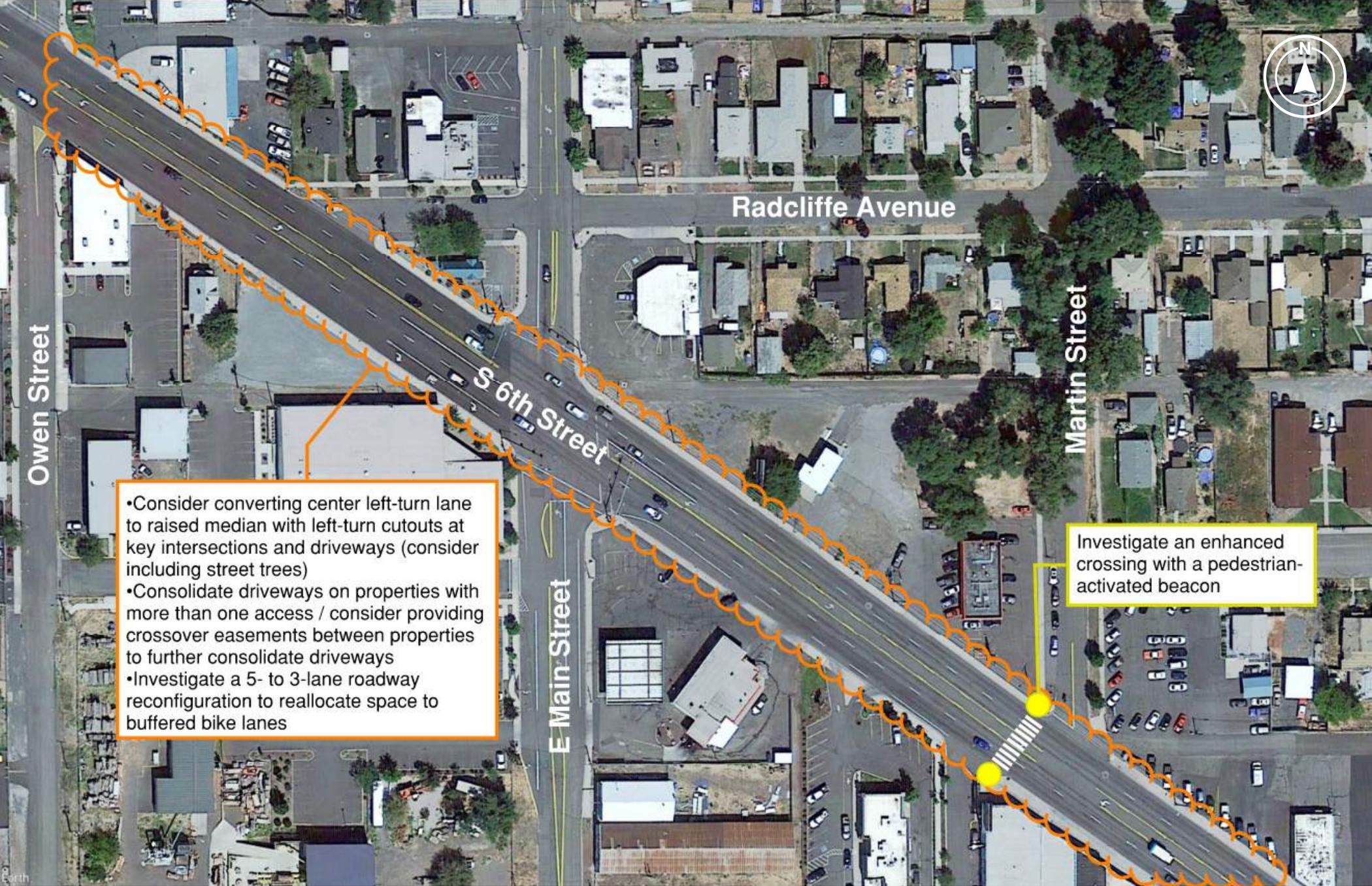
The recommended modifications to correct the crash history in this corridor are identified in Table 23, including countermeasure crash reduction factors, and illustrated in Figure 13A through Figure 13C.

Table 23: S 6th Street: Owen Street to Washburn Way – Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Consolidate driveways to 10-24 per mile (H35)	25-31%	All	All Injury
Investigate enhanced crossing with pedestrian-activated beacons near Main Street and Lark Street (BP14 / BP15)	56% / 15%	Pedestrian & Bicycle	All
Convert the center left-turn lane to raised median with key left-turn cutouts (H64)	47%	All	All
Consider including street trees in the raised medians (BP31)	10%	All	All
Consider a raised crosswalk in the channelized right-turn lane at the S 6 th St / Shasta Way traffic signal (BP28)	30%	Pedestrian & Bicycle	All
Consider reallocating travel lane space to installing buffered bike lanes (BP24)	47%	Bicycle	All Injury

As demonstrated in the crash history, there was a bicyclist crash reported in this corridor of S 6th Street. However, at least two more bicyclist crashes were reported immediately west of the project limits, making evident that bicyclists use S 6th Street despite the lack of dedicated bike facilities. This is an important route for accessing businesses and connecting across Klamath Falls. Last, the 2016 Klamath Falls Urban Trail Master Plan identified this corridor for further study. While the primary focus of the corridor recommendations is aimed at minimizing turning movement crashes, the City should also consider a street reconfiguration project to enhance bicyclist and pedestrian safety and connectivity.

Street reconfigurations could include reallocating the outside travel lanes to create space for dedicated bike facilities, such as buffered bike lanes, or reconstructing sidewalk on one side to be a raised, paved sidepath that's wide enough for pedestrians and bicyclists (similar to a shared-use path but not as separated from the street and vehicular traffic). The current traffic volumes along S 6th Street – 10,000-15,000 average daily traffic – makes this corridor a good candidate for reducing travel lanes to make space for bike lanes, according to FHWA. Further study would be needed to identify the final configuration.

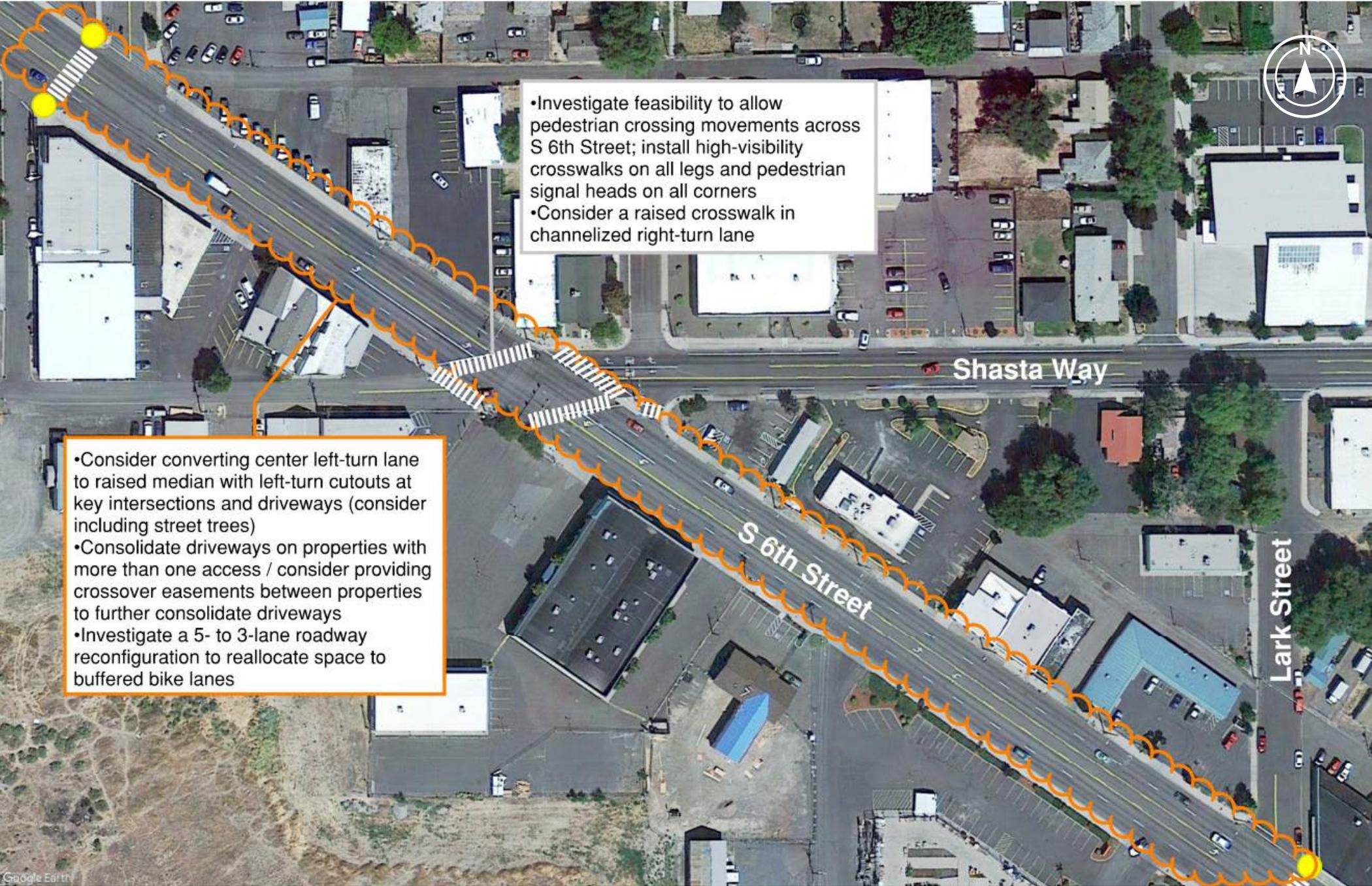


- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Investigate a 5- to 3-lane roadway reconfiguration to reallocate space to buffered bike lanes



Transportation Safety Projects
S 6th Street: Owen Street to Martin Street

Figure 13A



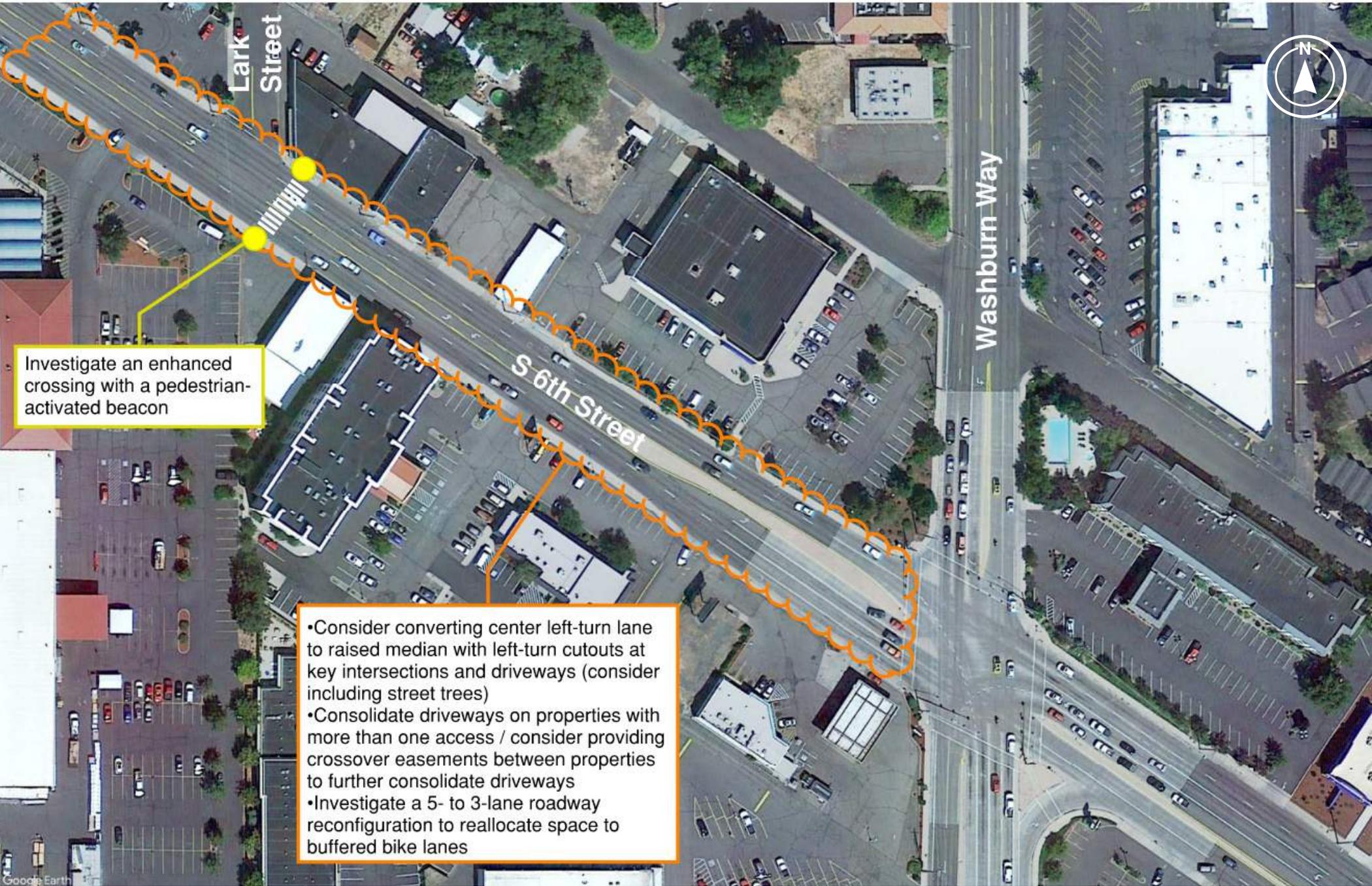
- Investigate feasibility to allow pedestrian crossing movements across S 6th Street; install high-visibility crosswalks on all legs and pedestrian signal heads on all corners
- Consider a raised crosswalk in channelized right-turn lane

- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Investigate a 5- to 3-lane roadway reconfiguration to reallocate space to buffered bike lanes

Transportation Safety Projects
S 6th Street: Martin Street to Lark Street

Figure 13B





Investigate an enhanced crossing with a pedestrian-activated beacon

- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Investigate a 5- to 3-lane roadway reconfiguration to reallocate space to buffered bike lanes



Transportation Safety Projects
S 6th Street: Lark Street to Washburn Way

Figure 13C

A few other considerations for the corridor:

- The 2012 Klamath Falls Urban Area Transportation System Plan identifies the need to address the number of driveways and increase access spacing in this corridor.
- The corridor contains at least one site on ODOT's 2020 SPIS list.
- Final treatments in this corridor require further study, including how to incorporate continuous bicycle facilities, identifying the appropriate enhanced crossing treatments, and determining the optimal location for raised medians and which driveways to consolidate.
- The planning-level cost estimate for these improvements is approximately \$2 million.

Washburn Way: Shasta Way to Laverne Avenue

The segment of Washburn Way from Shasta Way to Laverne Avenue is a commercial corridor with five lanes, including a center left turn lane, for two-way travel. The corridor is posted at 25 mph between Shasta Way and the OC&E Trail Crossing, 35 mph between the OC&E Trail Crossing and Crosby Avenue, and 45 mph from Crosby Avenue to the south. The roadway is generally 65 feet wide between curbs, south of S 6th Street, and less than 60 feet wide north of S 6th Street. On-street parking is prohibited. Sidewalks and bike lanes are provided on both sides of the street south of S 6th Street, but only discontinuous sections of sidewalk are present north of S 6th Street and no dedicated facilities are available. The only protected crossing movements that are available across Washburn Way are located at the traffic signals at Shasta Way, Washburn Way, the OC&E Trail, Crosby Avenue, Hilyard Avenue, Onyx Avenue, and Laverne Avenue, requiring pedestrians to cross at nearby unmarked intersections or travel up to four tenths of a mile between protected crossings. Street lighting is generally distributed evenly throughout the corridor south of S 6th Street but is limited north of S 6th Street. Street trees are present along select properties. Multiple access points are located directly on the street, and in some cases, more than one access is provided per property. Other than the traffic signals mentioned previously, all other intersections in the corridor are two-way stop controlled.

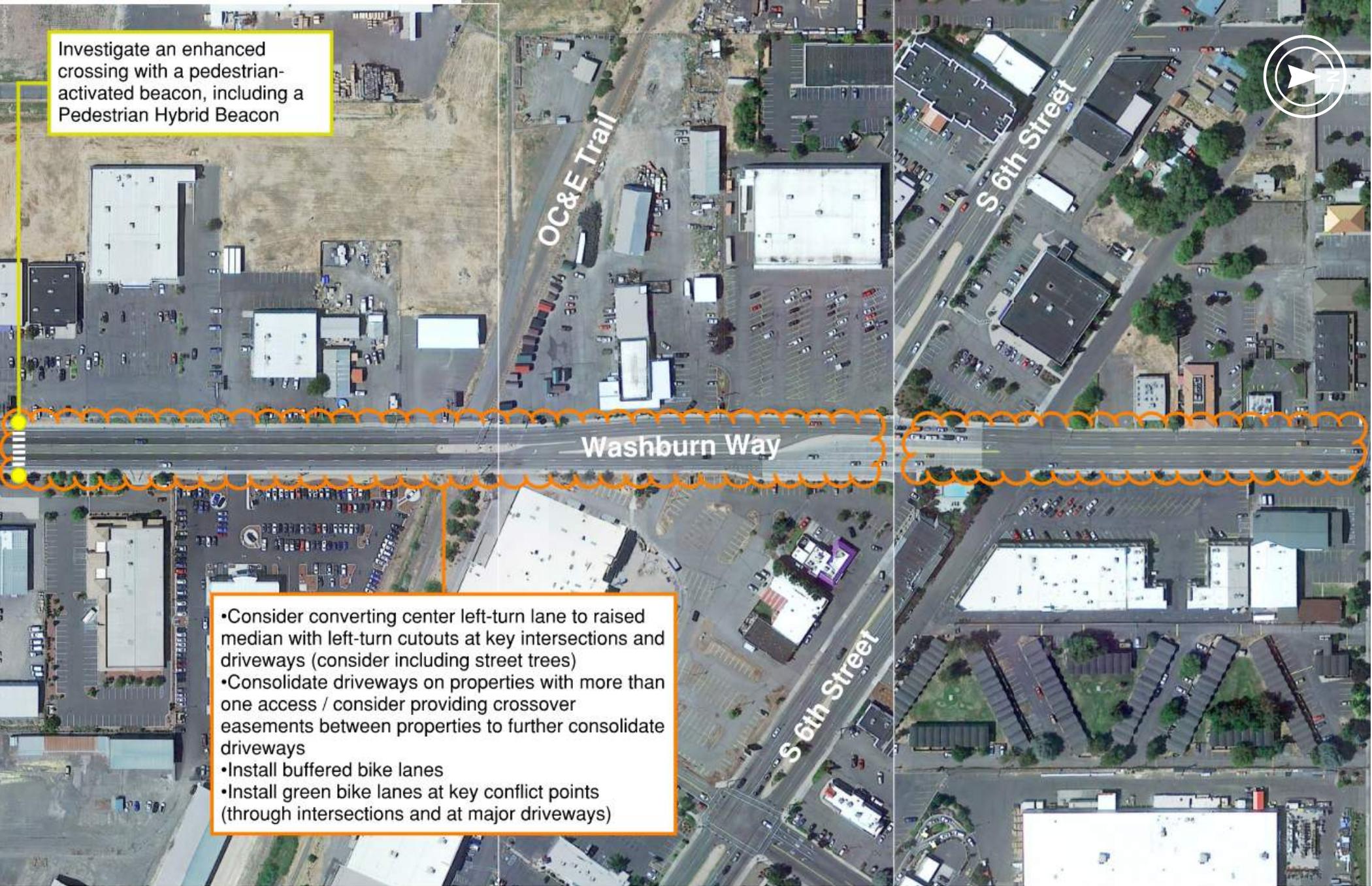
The crash history for this corridor is summarized in Table 24. Regarding vulnerable users, four turning movement crashes and one of the head-on crashes involved bicyclists; the head-on bicyclist crash resulted in moderate injuries. The pedestrian crash was with a person in a wheelchair. Thirty-four crashes were driveway related, which accounts for all of the turning movement crashes, four of the five crashes involving bicyclists, and the pedestrian crash.

Table 24: Washburn Way: Shasta Way to Laverne Avenue – Reported Crash History (2017-2021)

Crash Type	Severity of Crash Types				
	Serious Injury	Moderate Injury	Minor Injury	Property Damage Only	Total
Head-On	1	1	-	-	2
Turning	2	4	10	15	31
Rear-End	-	2	5	9	16
Side-Swipe	-	-	2	5	7
Pedestrian	-	-	1	-	1
Fixed Object	2	1	1	2	6
Total	5	8	19	31	63

The recommended modifications to correct the crash history in this corridor are illustrated in Figure 14A through Figure 14D and identified in Table 25, including countermeasure crash reduction factors.

Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon

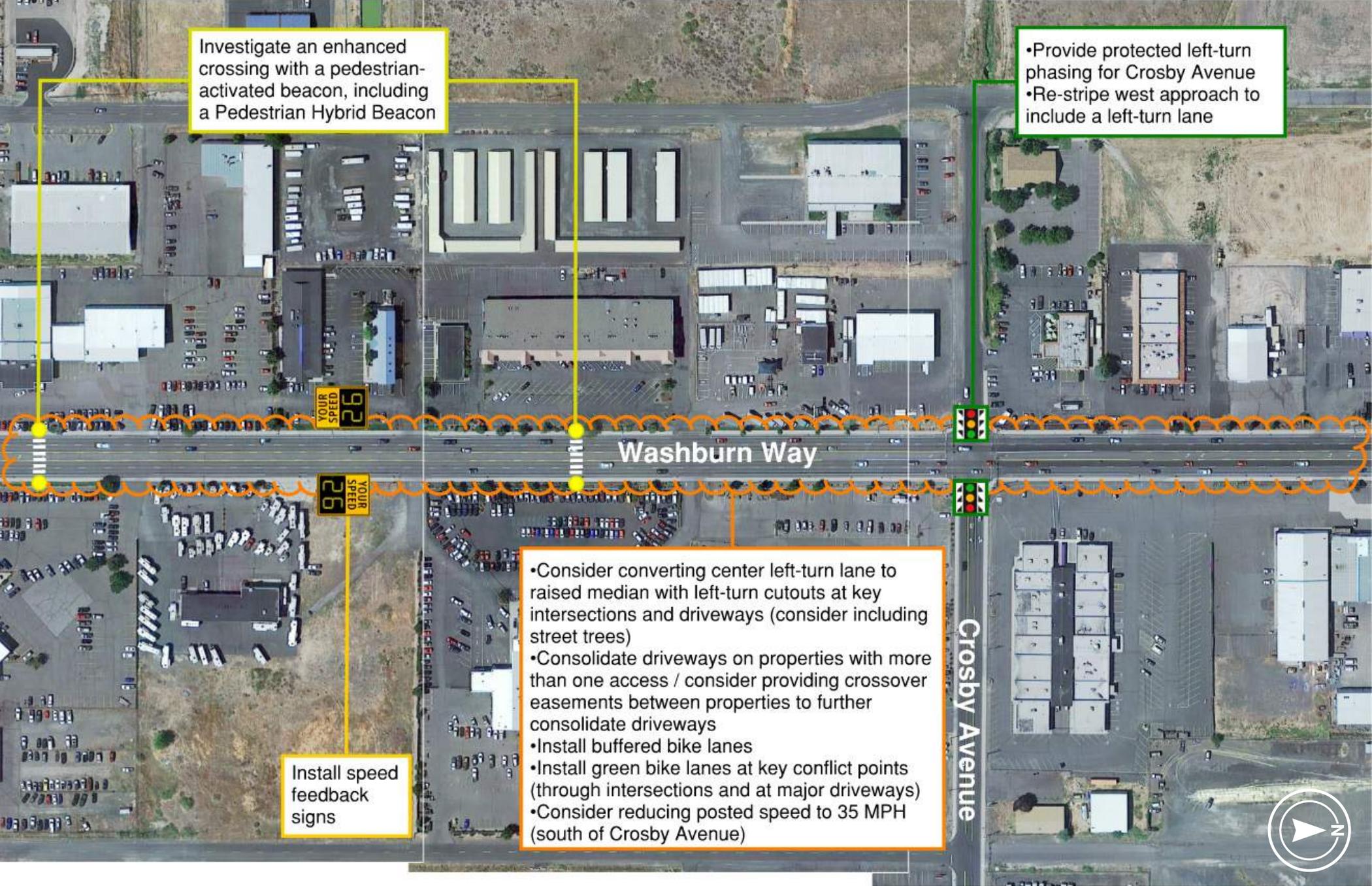


- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)



Transportation Safety Projects
Washburn Way: South of OC&E Trail
to Shasta Way

Figure 14A



Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon

•Provide protected left-turn phasing for Crosby Avenue
•Re-stripe west approach to include a left-turn lane

- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)
- Consider reducing posted speed to 35 MPH (south of Crosby Avenue)

Install speed feedback signs



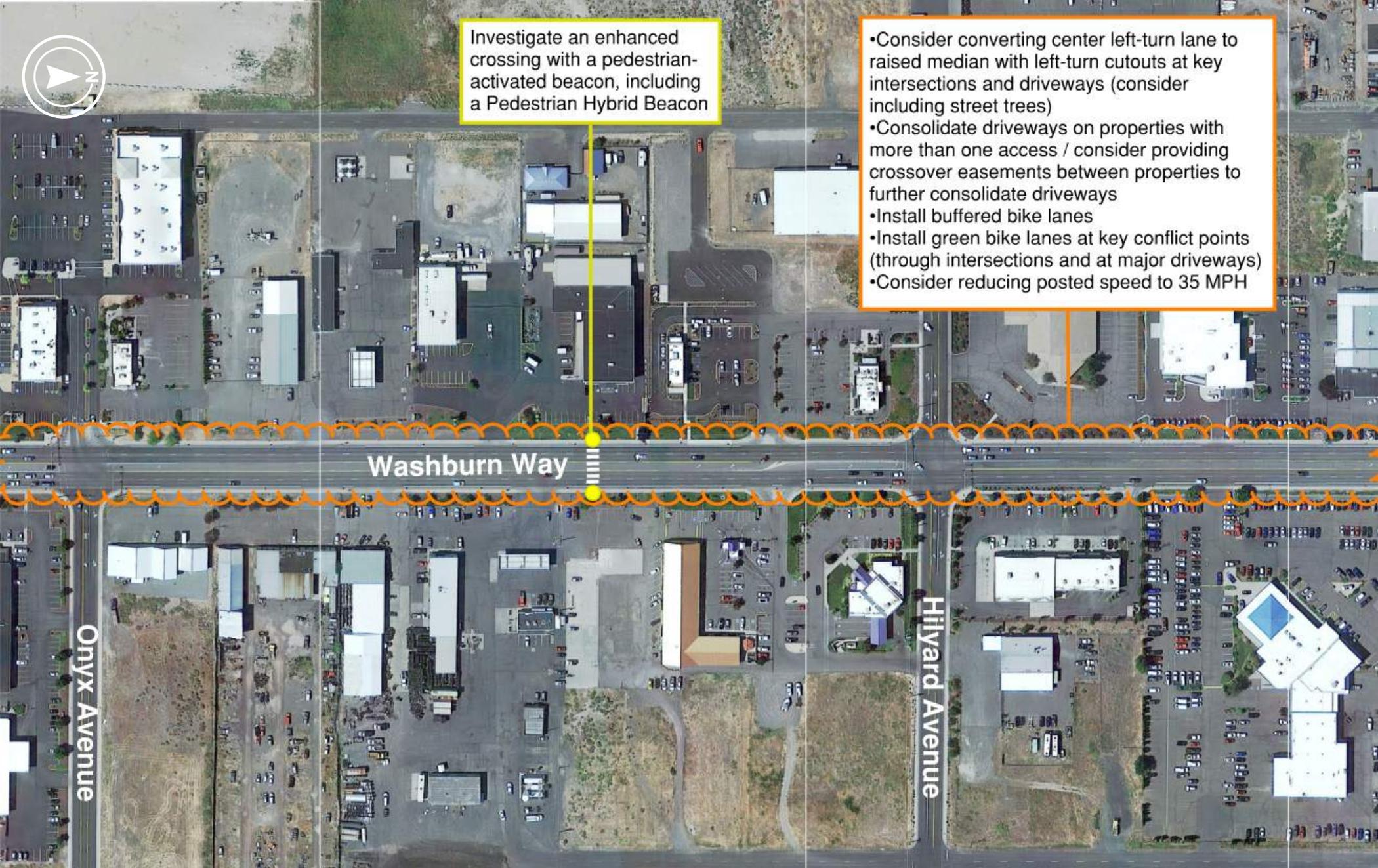
Transportation Safety Projects
Washburn Way: South of Crosby Avenue
to South of OC&E Trail

Figure 14B



Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon

- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)
- Consider reducing posted speed to 35 MPH



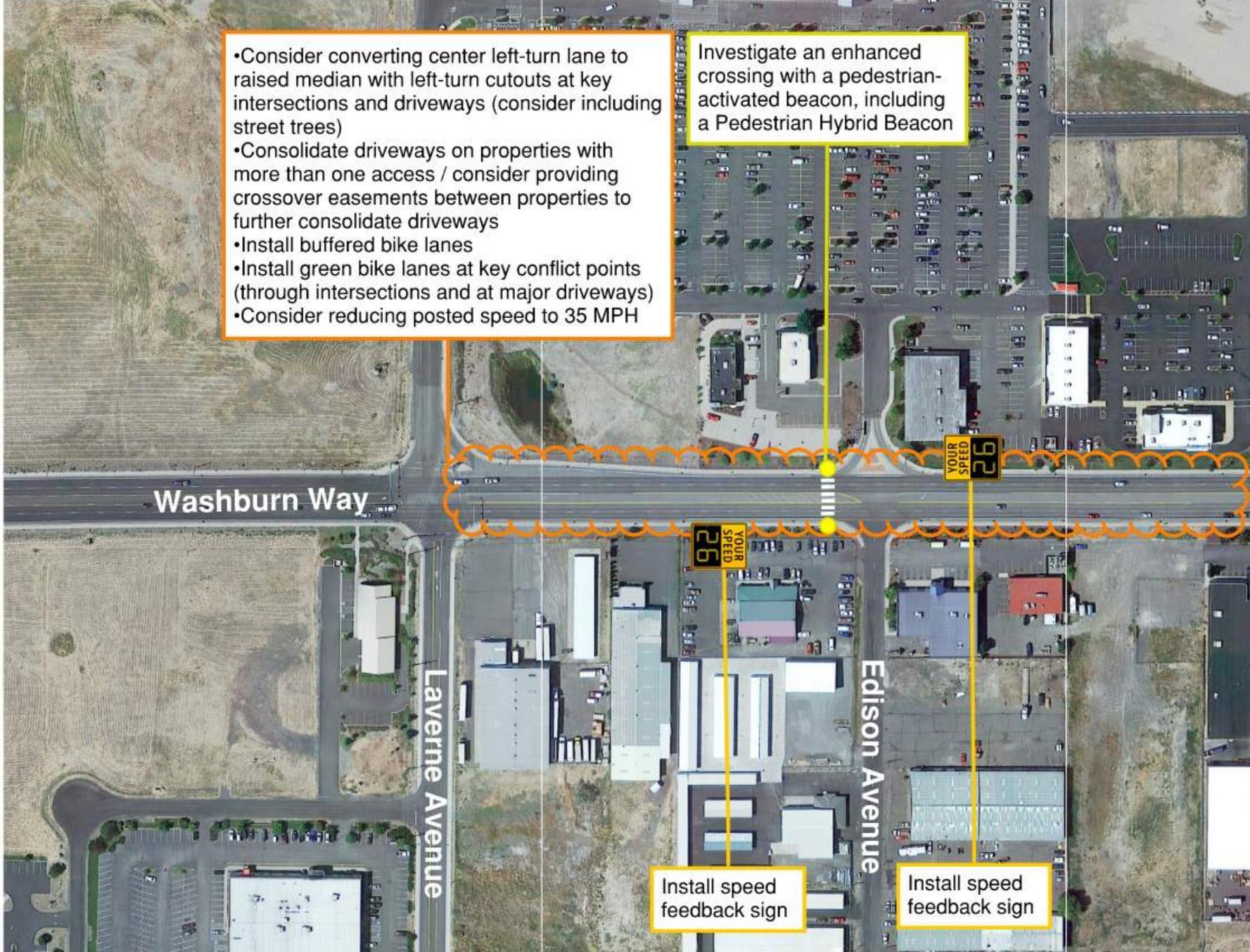
Transportation Safety Projects
Washburn Way: Onyx Avenue
to South of Crosby Avenue

Figure 14C



- Consider converting center left-turn lane to raised median with left-turn cutouts at key intersections and driveways (consider including street trees)
- Consolidate driveways on properties with more than one access / consider providing crossover easements between properties to further consolidate driveways
- Install buffered bike lanes
- Install green bike lanes at key conflict points (through intersections and at major driveways)
- Consider reducing posted speed to 35 MPH

Investigate an enhanced crossing with a pedestrian-activated beacon, including a Pedestrian Hybrid Beacon



Install speed feedback sign

Install speed feedback sign



Transportation Safety Projects
Washburn Way: Laverne Avenue to Onyx Avenue

Figure 14D

Table 25: Washburn Way: Shasta Way to Laverne Avenue – Countermeasures

Countermeasure (ARTS #)	CRF	Crash Type	Crash Severity
Consolidate driveways to 10-24 per mile (H35)	25-31%	All	All Injury
Convert the center left-turn lane to raised median with key left-turn cutouts (H64)	47%	All	All
Consider including street trees in the raised medians (BP31)	10%	All	All
Install buffered bike lanes on both sides of the street (BP24)	47%	Bicycle	All Injury
Install green bike lanes at key conflict points (through intersections and driveways) (BP6)	39%	Bicycle	All
Investigate enhanced pedestrian crossings with pedestrian-activated beacons, including a Pedestrian Hybrid Beacon, between the OC&E Trail and Crosby Ave, Crosby Ave and Hilyard Ave, Hilyard Ave and Onyx Ave, and Onyx Ave and Laverne Ave (BP14 / BP15)	56% / 15%	Pedestrian & Bicycle	All
Provide protected left-turn phasing for Crosby Ave (I9)	6-99%	Left Turning	All
Install speed feedback signs between Crosby Ave and Hilyard Ave and Onyx Ave and Laverne Ave (RD12)	10%	All	All

A few considerations for these countermeasures:

- The countermeasures also include a consideration to reduce the posted speed to 35 MPH through the entire corridor.
- ODOT's CRF List includes the addition of a left-turn lane on the major street approach at signalized intersections as a countermeasure – with a 10 percent crash reduction factor – but advises that this CRF only be used for the major street, which is Washburn Way in this case.
- The 2012 Klamath Falls Urban Area Transportation System Plan identifies the need to address the number of driveways and increase access spacing in this corridor.
- Buffered bike lanes typically increase the distance between motorists and cyclists with additional striping, as opposed to protected bike lanes that provide a vertical deflection like tubular markers.
- Final treatments in this corridor require further study, including identifying the appropriate enhanced crossing treatments and determining the optimal location for raised medians and which driveways to consolidate
- The corridor contains at least one site on ODOT's 2020 SPIS list.
- The planning-level cost estimate for these improvements is approximately \$5 million.

OTHER COUNTERMEASURES AND ACTION ITEMS

The following section touches on the remaining emphasis areas described in the Existing Safety Conditions Memorandum and other countermeasures and action items to address them, including those related to policy, practices, and coordination with other organizations.

Emphasis Areas

As presented in the Existing Safety Conditions Memo, the analysis summarized in that document revealed the following emphasis areas that can be addressed through policies and strategies:

- **Crash involving impaired driving:** Over 30% of fatal and serious injury crashes involved impaired driving.
- **Crashes involving Drivers Over Age 65 and Cyclists Under Age 18:** 8% of reported vehicle crashes involved drivers aged 65 and over. 24% of reported bicycle crashes involved people aged 18 and under.
- **Crashes involving Speeding:** Speed was cited as a contributing factor in fatal and serious injury crashes at twice the rate as all crashes.

Action Items

This section presents recommended action items that bring together the multidisciplinary efforts needed to apply the Safe System Approach in Klamath Falls. These add another transportation safety layer to the capital improvements documented above and require collaboration between City and County staff, elected officials, law enforcement, educators, emergency responders, and public health providers. Many of these strategies also align with the Klamath County TSAP to promote consistent safety actions and messaging throughout the Klamath Basin and to help coordinate efforts. Strategies are presented in Table 26.

Table 26: Multidisciplinary Action Items

Multidisciplinary Action Items
Safety Culture / Education Efforts
Create a Regional Multidisciplinary Transportation Safety Committee to coordinate on transportation safety, implement TSAP Action Items, and identify new actions needed based on more recent crash history.
Develop a fatal and serious injury crash review task force .
Formalize rideshare sites in downtown, areas with multiple restaurants and bars, and in locations that host special events (e.g., the rodeo, fair, etc.) to encourage greater use of rideshare options. Coordinate with local bars and businesses to offer a program that discounts patron purchases for using rideshare after consuming alcohol. Partner with Klamath County on this action item.
Implement the five non-engineering E's identified in the Klamath Falls Safe Routes to School Master Plan.
Expand safety culture about safe driving between families of senior drivers , health care professionals, and community groups. Support training sessions through AARP, AAA, and insurance companies to help seniors maintain driving skills.
Partner with local Bicycle and Pedestrian advocates or committees when implementing transportation infrastructure changes so that pedestrian and bicycle safety is incorporated
Create a Klamath Falls Safety Communications Plan , including an educational and public outreach system, to promote a roadway safety culture by emphasizing respect for red lights at traffic signals and stop / yield signs, posted speed limits, bicycles on the roadway, and pedestrians in crosswalks, and driving sober and undistracted.

Multidisciplinary Action Items

Develop a plan for **recurring educational programs** throughout the year, including at community events. Coordinate this action item with Klamath County. Various options include the following:

- Provide **educational materials to visitors** through partnerships with Discover Klamath and local hotels/resorts; **educational materials to residents** through partnerships with major employers, schools, and the Klamath Tribes; and **educational materials to OIT and KCC students** through partnerships with the colleges.
- Develop an **educational campaign to promote sober and undistracted driving** (posters, social media posts, and public service announcements) that shares crash statistics and the consequences of impaired and distracted driving.
- Conduct **targeted outreach to motorcyclists** that encourages them to practice safe riding, including educational posters, social media posts, and placards that inform on the consequences of motorcycle crashes and promote safe riding practices, safety equipment, gear choices, sober driving, and motorcycle handling skills and maintenance.
- Include **transportation safety in public health** education programming.
- Conduct **pedestrian and bicycle outreach for all ages**, including adults, to educate on safe crossing practices and the use of new pedestrian/bicycle infrastructure. Implement outreach in the SRTS Master Plan.
- Educate drivers and bicyclists about **bicycle transportation**, including proper driver and bicyclist behavior and rules of the road for bicyclists (e.g., when to dismount, how to use sidewalks and crosswalks, how to ride through roundabouts, common crash types, etc.).
- Begin **driver safety education before young people are of age**, as early as preschool. Partner with groups such as school districts.
- Support **driver education and transportation safety programs for younger drivers**. Support peer-based safe driving marketing efforts and outreach programs in high schools to provide driver and non-motorized travel safety training. Support family-based driver education to leverage parental influence.
- Seasonally educate drivers about **proper driving behavior and vehicle preparations for winter conditions**.

Engineering

Implement a “**roundabouts first**” **policy** for new construction and for upgrades to existing intersections. Roundabouts are an effective intersection treatment for reducing and prevent fatal and serious injury crashes (up to an 82% reduction).

Develop a **speed management program** to implement best practices in setting design speeds and speed limits, such as reducing design speed standards (for local streets to 20 mph, for collectors to 25 mph, and for arterials to 30 mph), a funded program for citizens to submit concerns about speeding, implementing traffic calming features, and deploying radar speed feedback signs and sharing data with the police and sheriff departments, County and City staff, and the community.

Design roadways to **integrate pedestrian and bicycle safety** by providing appropriate infrastructure, encouraging slower vehicle speeds, and minimizing conflict points between them and motorists (e.g., sidewalks, pathways, physical barriers, enhanced roadway crossings, shared lane markings, wayfinding, traffic calming treatments, enhanced striping).

Develop and promote a **bicyclist wayfinding system** to communicate information about the network and to encourage use of lower stress routes instead of higher stress routes. This includes the recommendation from the Klamath Falls Urban Trail Master Plan to develop a program that installs and maintains wayfinding signage at all trailheads and trail crossings of public streets.

Implement various transportation plans to **close gaps in the sidewalk system** and provide appropriate crossing treatments, working toward a long-term goal of completing the urban area sidewalk system. Prioritize locations of underserved communities.

Provide **transportation options for seniors** through infrastructure that allows for riding transit, walking, and mobility devices. Partner with transportation assistance programs to promote transportation options other than driving.

Monitor advancements in technology and identify opportunities for the City to use emerging technology to improve transportation safety (e.g., variable speed limits for nighttime or inclement weather conditions, variable message signs warning of hazardous conditions, etc.) and understand perceived safety issues (e.g., traffic volume, near-misses, and other data).

Evaluate opportunities or pilot studies to use **automated enforcement**.

Install **raised crosswalks** in channelized turn lanes.

Post-Crash Care / Emergency Medical Service (EMS) Coordination

Purchase **battery powered extrication tools** for the Fire District’s apparatus (at least two full sets) for the engines that respond to emergencies within City limits. Provide additional specialized EMS training to the Fire District and assisting agencies.

Provide **community bystander training courses** to educate residents on how to respond in an emergency event. Coordinate this action item with Klamath County.

Multidisciplinary Action Items

Enforcement

Increase **enforcement for impaired driving** through data-driven saturation patrols and providing officers with **Drug Recognition Expert Training** and standardized field sobriety test training.

Increase **enforcement presence during times of greatest risk**, based on reported crash data patterns.

Increase **enforcement presence at locations within the High Injury Network**, based on reported crash data.

Implement an **unmarked car distracted driving program** to increase compliance with distracted driving rules.

Install **speed safety cameras** in areas with regular speeding complaints by residents.

Consider evaluating opportunities to **increase fines for violations**.

Develop **repeat DUII driver offender programs** to treat the causes of DUII.

Equity

Require an **“equity” project prioritization criterion** on all transportation projects, including when developing Capital Improvement Plans.

Consider the **needs of underserved populations** in project development and in public outreach efforts.

DESIGN STANDARD RECOMMENDATIONS

FHWA has recently published its Safe System Roadway Design Hierarchy¹ that provides “engineering and infrastructure-related countermeasures to effectively reduce roadway fatalities and serious injuries.” Their safe system roadway design hierarchy consists of four tiers:

1. Remove Severe Conflicts
2. Reduce Vehicle Speeds
3. Manage Conflicts in Time
4. Increase Attentiveness and Awareness

Tier 1 specifically recommends eliminating high-risk conditions by separating road users moving at different speeds or different directions, including physical separation between motorized and non-motorized users. Based on this recommendation, the City might consider updating its roadway cross section standards to require separated bike lanes for its arterial streets and buffered bike lanes for its major collector streets. The current standard for both is six-foot bike lanes, and multiuse paths are optional.

PROJECTS FROM PREVIOUS PLANNING EFFORTS

As presented in the Background Information Memorandum for the TSAP, several planning efforts have been completed in the Klamath Falls urban area that include capital projects with safety elements. It is recommended that the City of Klamath Falls and Klamath County partner to implement these capital projects with safety elements – to strengthen the countermeasures developed in this document – that are identified in the Klamath Falls Urban Trail Master Plan, Klamath Falls Safe Routes to School Master Plan, the Klamath County TSAP, the Klamath Falls Traffic Calming Evaluation, and ARTS-funded treatments in Downtown. Details on those projects are provided in Attachment A. Typically, any safety projects also identified in the Klamath Falls Urban Area Transportation System Plan (TSP) would also be incorporated into the TSAP, but the TSP is in the process of being updated and will in turn incorporate the safety project recommendations from the TSAP.

POTENTIAL FUNDING SOURCES

The Klamath Falls TSAP recommends countermeasures that are located on streets under the jurisdiction and ownership of the City of Klamath Falls, Klamath County, and the state, as well as some that include privately owned property. Countermeasures may be funded through a different combination of federal, state, County, City, or private resources. A detailed list of funding sources applicable to the TSAP is included in Attachment B. The most pertinent of these sources for the City to focus pursuits are summarized in Table 27.

¹ https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-01/Safe_System_Roadway_Design_Hierarchy.pdf

Table 27: Potential Funding Sources to Implement TSAP - Most Pertinent

Funding Source	Description	Potential Application
Potential State and Federal Grants		
Safe Streets and Roads for All (SS4A) Program	SS4A is a five-year program of the Infrastructure Investment and Jobs Act (IIJA) that was allocated \$5 billion to safety action plan and implementation programs to prevent roadway deaths and serious injuries for cities, counties, and MPOs. The IIJA was signed into law on November 15, 2021. Equitable outreach and an Action Plan backed by the community and elected officials are critical elements of this program.	Planning and implementation projects to eliminate fatal and serious injury crashes from roadways.
All Roads Transportation Safety Program (ARTS)	The federal Highway Safety Improvement Program is administered as ARTS in Oregon. ARTS provides funding to infrastructure and non-infrastructure projects that improve safety on all public roads. ARTS requires a data-driven approach and prioritizes projects in demonstrated problem areas.	Areas of safety concerns within the city, as identified in its TSAP, and consistent with Oregon's Transportation Safety Action Plan.
Safe Routes to School (SRTS)	SRTS, administered by ODOT, focus on infrastructure and non-infrastructure programs to improve access and safety for children to walk, roll, and/or bike to school.	Pedestrian and bicycle-related projects within the vicinity of local schools, including projects identified in the Klamath Falls SRTS Master Plan.

PERFORMANCE MEASURES

Performance measures are used to evaluate progress in completing the projects and actions identified in the TSAP and in achieving its desired outcomes. The Oregon TSAP identifies two general types of performance measures:

- **Effectiveness Performance Measures** track the results of a program or activity. For example, they track how many fatalities or injuries occurred, or number of non-motorist fatalities.
- **Efficiency Performance Measures** track effort and output. For example, they track how many activities were conducted, or miles of treatment were installed.

The City's goal is to eliminate fatal and serious injury crashes from its urban area transportation system, and therefore, it is recommended that effectiveness measures are used to track outcomes. The use of effectiveness measures is also consistent with Klamath County's performance measures in its TSAP.

Effectiveness Performance Measures

Effectiveness performance measures the City could use to evaluate the ongoing success of its TSAP in reducing fatal and serious injury crashes in the urban area include:

- Total number of fatal and serious injury crashes within the Urban Growth Boundary (UGB)
- Number of fatal and serious injury crashes on all streets by the following categories:
 - Intersection crashes (includes turning movement, angle, and rear-end crashes)
 - Pedestrian-involved crashes
 - Bicyclist-involved crashes
 - Crashes involving speeding
 - Impaired driving crashes
 - Motorcyclist-involved crashes
 - Crashes involving drivers over age 65

Fatal and serious injury crashes should be reported annually, and performance should be based on the latest five-year annual average number of crashes to help normalize for random fluctuations in crashes each year. Crash data are available to the public through two primary avenues: making direct requests to ODOT or downloading the data from their public site (Crash Analysis Reporting Unit).

Performance for the Klamath Falls urban area between 2017 and 2021 is summarized in Table 28 below.

Table 28: Klamath Falls TSAP Effectiveness (Outcome) Performance Measures

Performance Measure	Number of Reported Fatal/Serious Injury Crashes (2017-2021)
Fatal and Serious Injury Crashes	113
<i>Fatal or Serious Injury Crashes Involving:</i>	
Intersections	69
Pedestrians	13
Bicyclists	4
Speed	33
Impaired Driving	35
Motorcyclists	9
Drivers Aged 65+	33

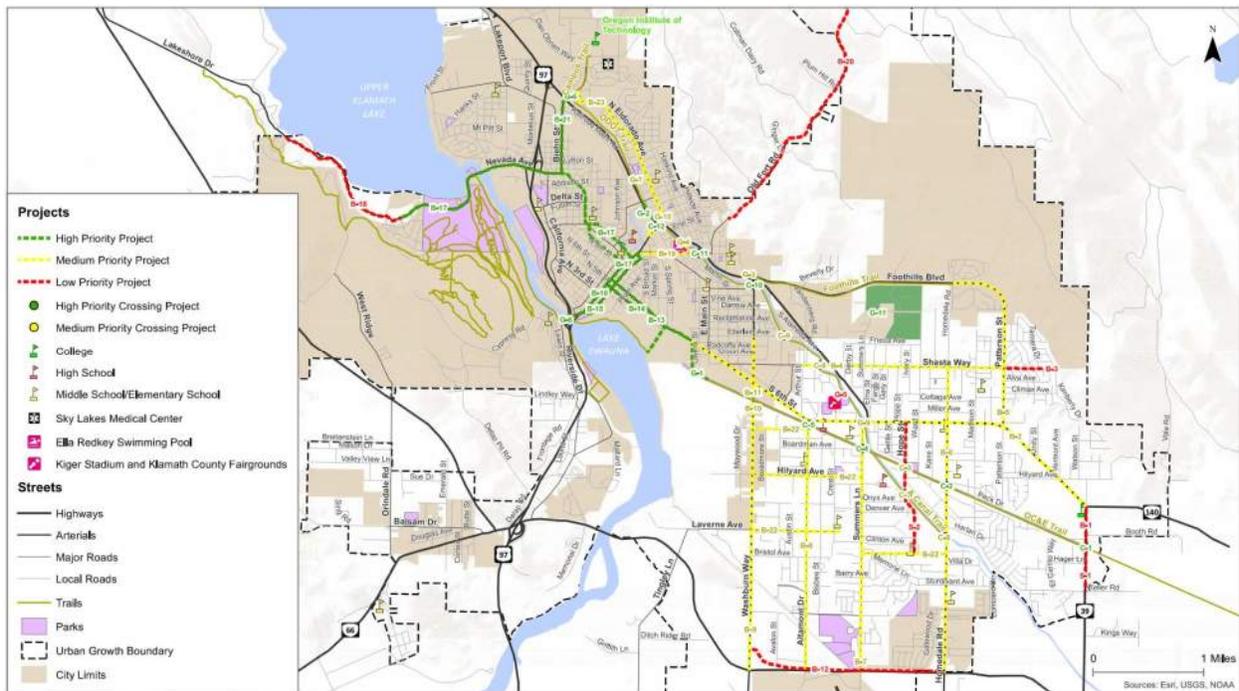
NEXT STEPS

This memorandum documents recommended strategies and performance measures for reducing fatal and serious injury crashes in Klamath Falls. Based on feedback received from the Project Management Team (PMT) and Project Advisory Committee (PAC), this memorandum will be refined and serve as the basis for developing the Draft TSAP. The Draft TSAP will then be presented to the community for additional input before taking it to the Klamath Falls City Council and Klamath County Board of Commissioners in early spring to consider for adoption.

ATTACHMENT A: PROJECTS FROM OTHER PLANS

Klamath Falls Urban Trail Master Plan Projects

The 2016 Klamath Falls Urban Trail Master Plan includes 11 trail system projects, 18 on-street bikeway projects, 12 crossing projects, two sidewalk projects, and five policies and programs. These projects are identified in Figure 3 and detailed below, including the implementation priorities that have been assigned to them. These projects are being included into the TSAP by reference and can help address the emphasis area of crashes involving pedestrians and bicyclists.



Project Description	Priority
Trail System Projects	
Connect OC&E Trail to downtown via 6 th Street bridge (widen sidewalk for a shared-use path) and provide a connection to Lake Ewauna trail.	High
Connect "A" Canal Trail to ODOT Trail (widen sidewalks for a shared-use path).	High
Connect Campus Trail to Biehn Street bike lanes and sidewalk (widen southern Campus Drive sidewalk to complete shared-use path connection). Possible modifications to Crater Lake Parkway intersection.	High
Connect Veteran's Park to Link River Trail (widen northern Main Street sidewalk for a shared use path). Install Main Street crossing to support connection. Sharrows could be an interim solution.	High
Formalize connections between Summers Lane and Steens Sports Park (southern connections).	High
Connect "A" Canal Trail to Foothills Trail (widen eastern bridge sidewalk for a shared use path between intersection and "A" Canal trail). Tighten southeast curb radius at intersection.	Medium

Project Description	Priority
Connect "A" Canal Trail to Ella Redkey Swimming Pool (shared-use path between parking lot/front entrance and existing "A" Canal Trail).	Medium
Connect ODOT Trail to Kit Carson Park (connection between trail and parking lot or existing sidewalk connecting the street and park).	Medium
Connect "A" Canal Trail to signalized crossing at SW 6 th Street (widen southern SW 6 th Street sidewalk).	Medium
Connect "A" Canal Trail to Klamath Union High School (widen northern Esplanade Avenue sidewalk for a shared-use path).	Medium
Connect "A" Canal Trail to Kiger Stadium and Klamath County Fairgrounds (pave existing informal service road). Install shared use path along west side of Crest Street from Kiger Stadium Parking lot to Fairgrounds.	Low
On-Street Bikeway Projects	
Install bike lane on 6 th Street between Market Street and Main Street.	High
Install bike lane on 5 th Street between Main Street and 6 th Street.	High
Install bike lanes on Klamath Avenue between Conger Avenue and Commercial Street.	High
Install bike lanes on Main Street between Esplanade Avenue and Mill Street.	High
Bicycle facility between Moore Park and downtown TBD by an ongoing project.	High
Widen bike lanes on Biehn Street between Crater Lake Parkway and Oregon Avenue (restripe roadway).	High
Identify parallel route to 6 th Street between railroad bridge and OR 39 that provides greater comfort.	Medium
Identify alternate routes to or traffic calming measures along Shasta Way between Patterson Street and Crater Lake Parkway.	Medium
Conduct study to determine final bicycle facility treatment on Patterson Street between 6 th Street and Foothills Boulevard. Candidates include buffered bike lanes or a shared-use path.	Medium
Conduct study to determine north-south bike routes in southeast area of UGB and the appropriate treatments.	Medium
Install bike lanes on Main Street between Esplanade Avenue and Crater Lake Parkway.	Medium
Conduct study to identify which east-west routes should receive shared lane markings, wayfinding, and/or traffic calming in southeast area of UGB.	Medium
Install sharrows and traffic calming on N Eldorado Avenue. Sidewalks should be considered as a traffic calming measure.	Medium
Install protected or buffered bike lanes on OR 39 between OC&E Trail and OR 140.	Low
Install sharrows and traffic calming on Shasta Way between Patterson Street and Kimberly Drive.	Low
Install shared-use path on OR 140 between Washburn Way and Homedale Road.	Low
Widen pavement to accommodate shoulders or bike lanes on Lakeshore Drive between Lynnewood Boulevard and west UGB.	Low
Widen road to add paved shoulders or bike lanes on Old Fort Road between Loma Linda Drive and UGB.	Low
Crossing Projects	
OC&E Trail crossing of OR 39.	High
OC&E Trail crossing of Homedale Road.	High

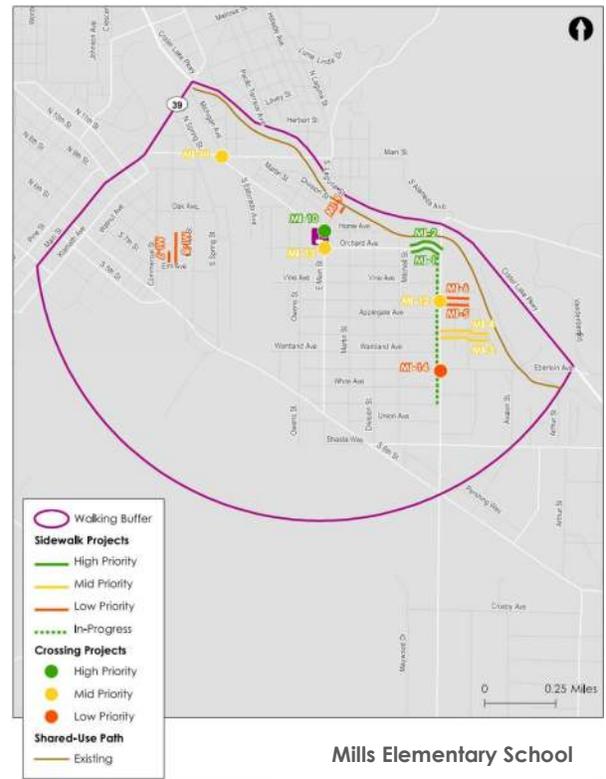
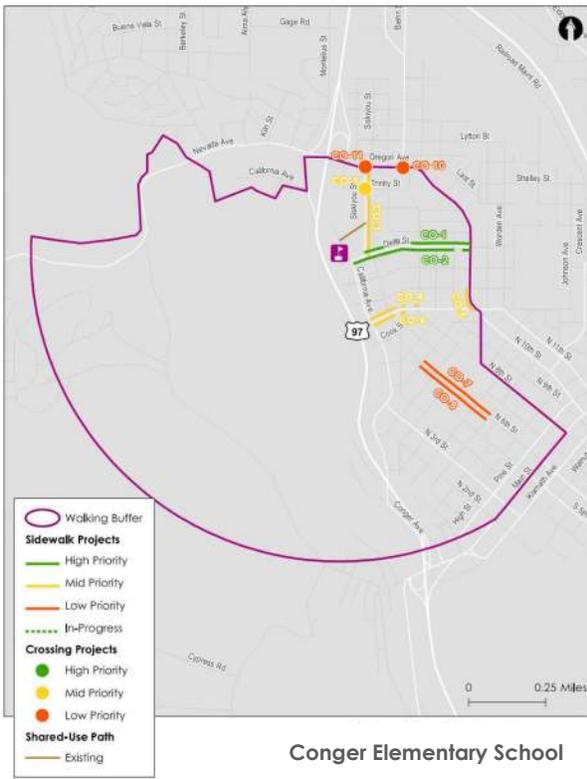
Project Description	Priority
OC&E Trail crossing of Summers Lane.	High
OC&E Trail crossing of Altamont Drive.	High
Conduct study to determine final crossing treatment for "A" Canal Trail at Washburn Way. Enhanced crossing treatments recommended.	High
Conduct study to determine final crossing treatment for "A" Canal Trail at Main Street. Enhanced crossing treatments recommended.	High
Conduct study to determine final crossing treatment for "A" Canal Trail at Esplanade Avenue. Enhanced crossing treatments recommended.	High
Install striped crosswalk and appropriate signage at OC&E Trail crossing of Hope Street.	Medium
Install marked crosswalk, appropriate signage, and raised median island at "A" Canal Trail crossing of Homedale Road. Install gate across maintenance road on east side of Homedale Road end trail.	Medium
Install marked crosswalk and appropriate signage at "A" Canal Trail crossing of Hope Street.	Medium
Conduct study to determine final crossing treatment for "A" Canal Trail at Shasta Way. Enhanced crossing treatments recommended.	Medium
Conduct study to determine final crossing treatment for "A" Canal Trail at Eberlein Avenue. Enhanced crossing treatments recommended.	Medium
Sidewalk Projects	
Install sidewalks on both sides of OR 39 between the OC&E Trail and Keller Road.	Low
Install sidewalks on both sides of Hope Street between Bristol Avenue and SW 6 th Street.	Low
Policies and Programs	
Develop a program to install and maintain wayfinding signage at all trailheads and trail crossings of public streets.	High
Develop a policy that requires bicycle parking to be provided at key locations and pursue grant funding to provide it at key locations where it is missing.	High
Develop guidelines for how to evaluate trail crossings and determine the appropriate treatment for the City and County to use in applying consistent treatments at crossings for local streets.	Medium
Evaluate the feasibility of installing illumination along the trail system, including type of illumination, priority locations, and cost/maintenance.	Low
Develop a plan for strategic placement of bicycle repair stations and racks throughout the urban trail system.	Low

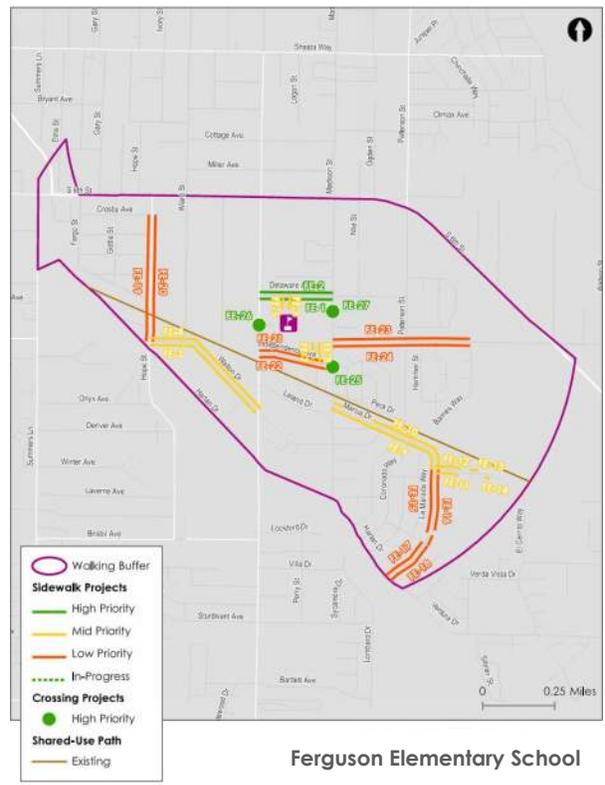
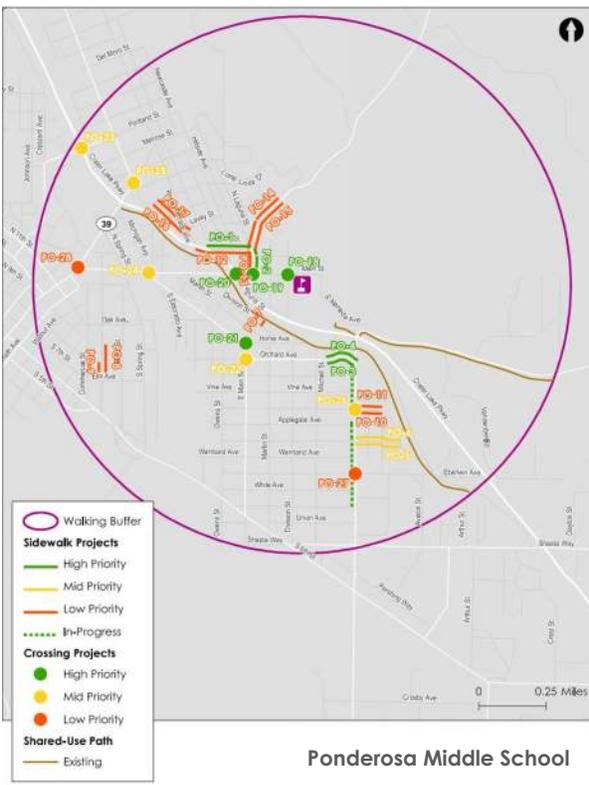
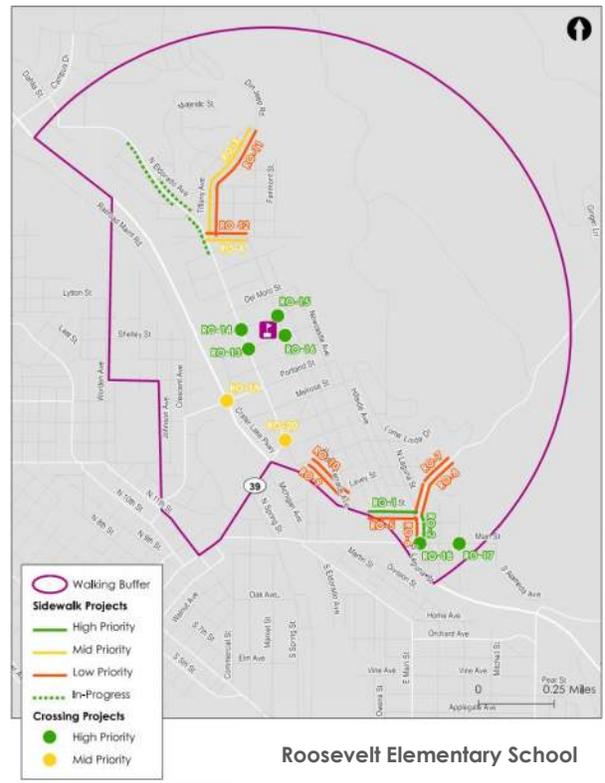
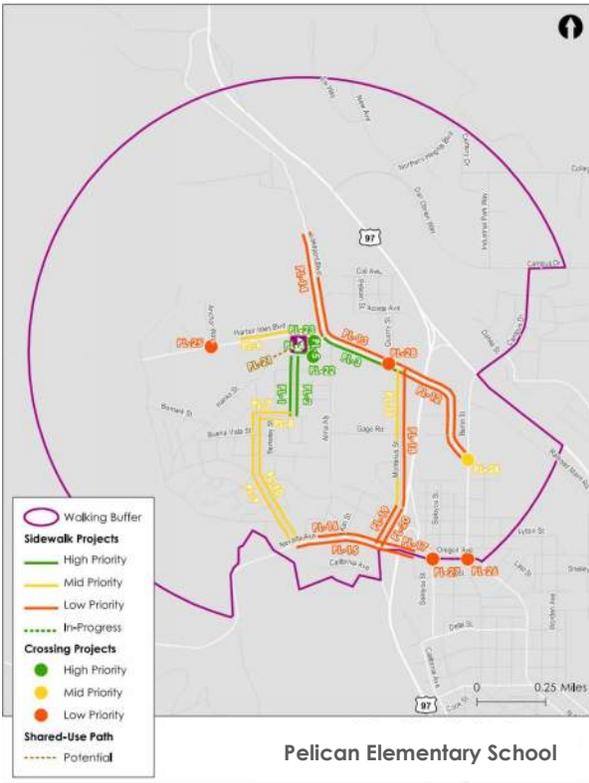
Klamath Falls Safe Routes to School Master Plan

The 2018 Klamath Falls Safe Routes to School (SRTS) Master Plan identifies projects and programs to promote safe walking and bicycling conditions to elementary and junior high/middle schools within the Klamath Falls UGB, including the following six E's:

- **Education:** educating students on pedestrian and bicycle safety is achieved through various school programs, which in turn educates parents.
- **Encouragement:** encouraging activities, such as walking school buses and bike trains, typically accompany education to promote walking and biking.

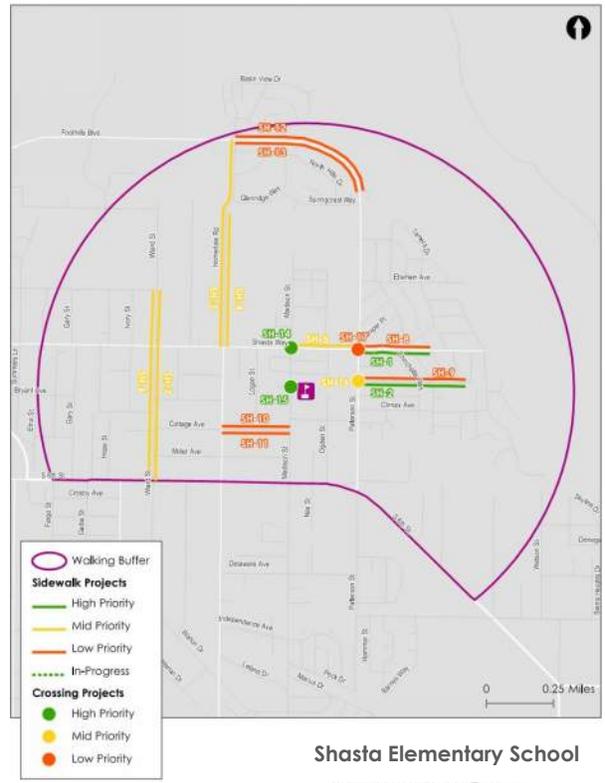
- **Engineering:** new or improved sidewalks and street crossings along identified walking routes within one-mile boundary of each school that are prioritized based on cost, feasibility, proximity to school, neighboring existing infrastructure, and adjacent roadway classification and speed (see maps that follow).
- **Enforcement:** law enforcement officers are experts on traffic behavior and can be a valuable resource in determining how to deter unsafe behaviors.
- **Evaluation:** evaluate program objectives that are "SMART:" Specific, Measurable, Achievable, Relevant, and Time-bound.
- **Equity:** prioritizing equity requires partnering with organizations who work closely with populations living below the poverty line.







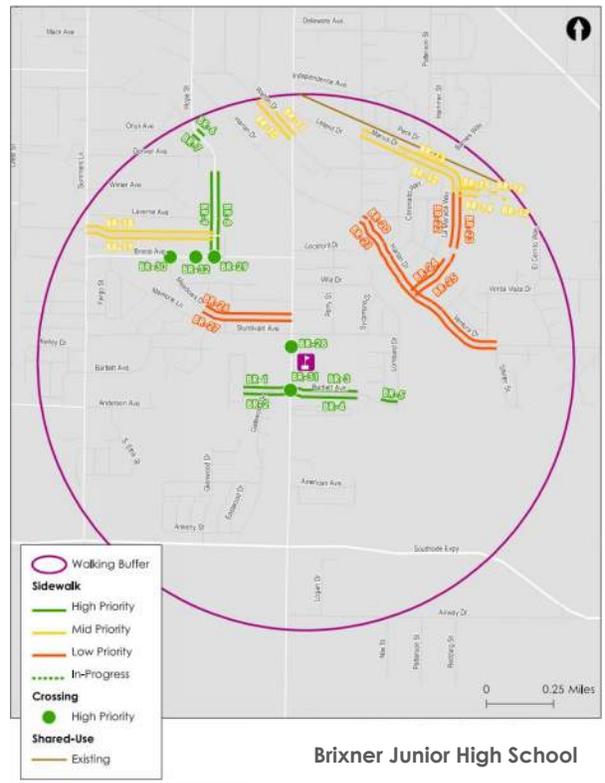
Peterson Elementary School



Shasta Elementary School



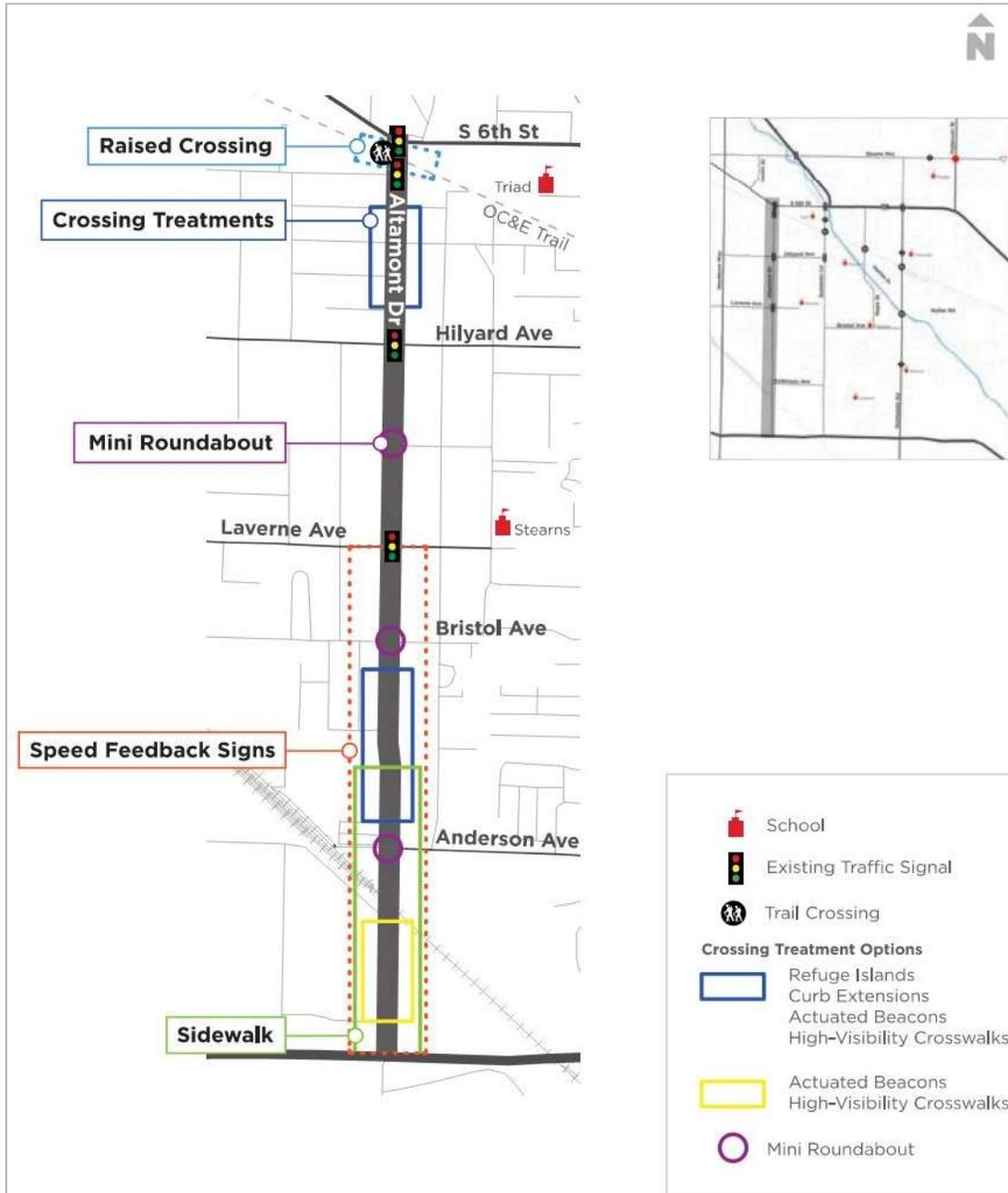
Stearns Elementary School

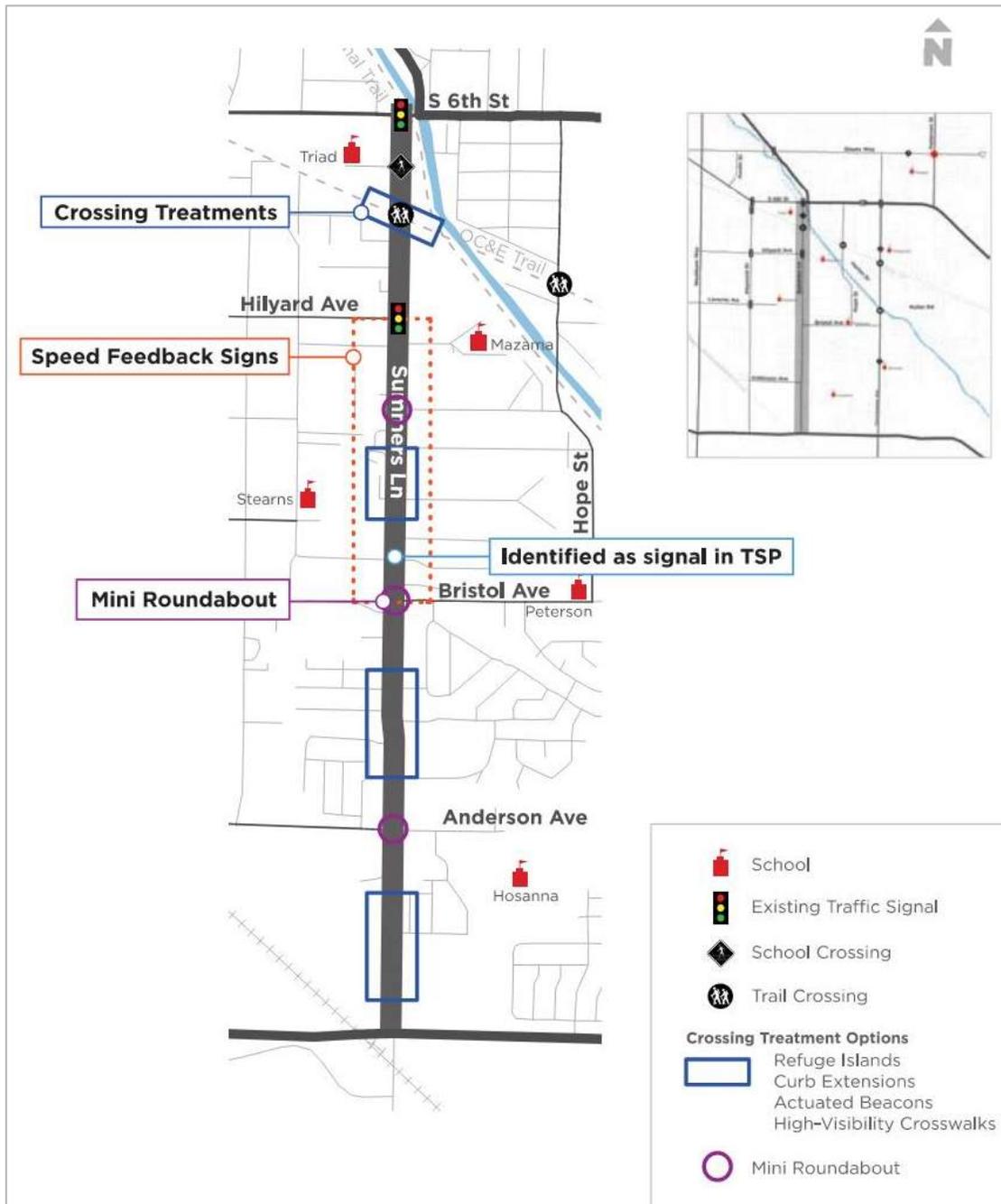


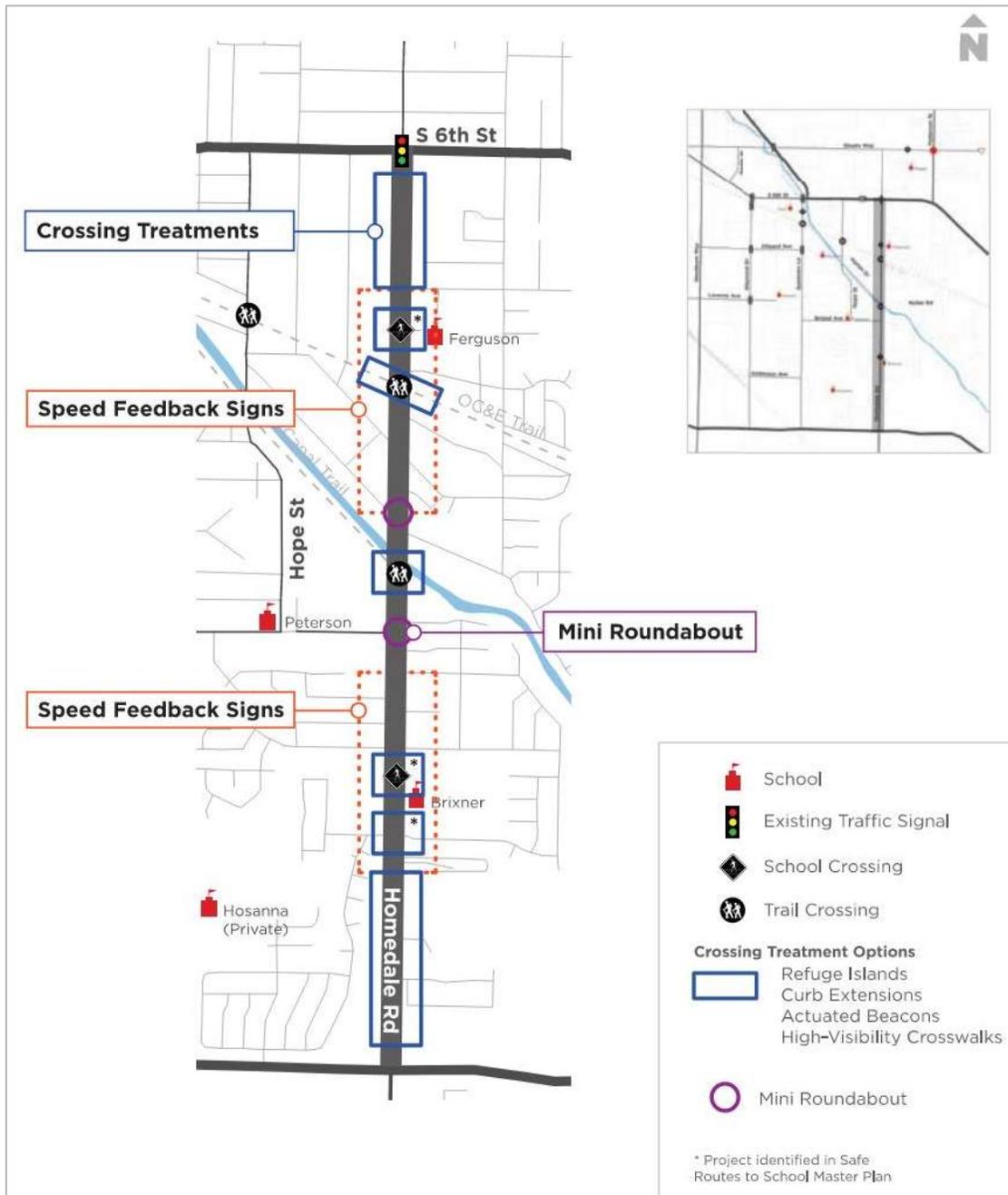
Brixner Junior High School

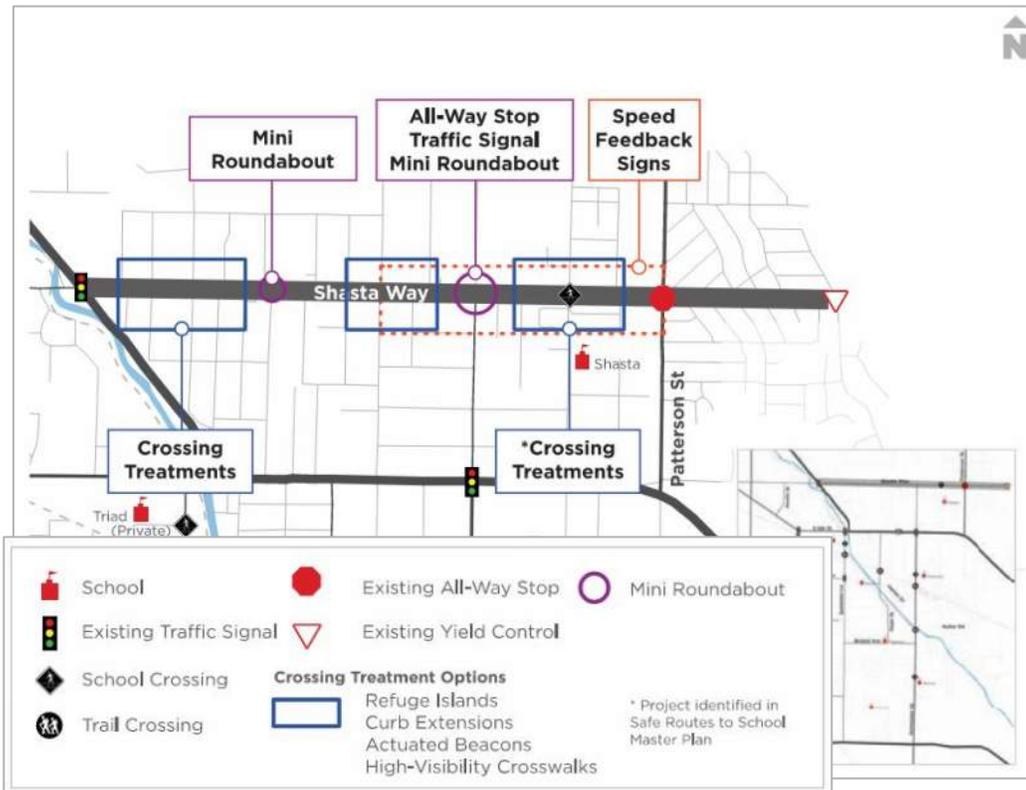
Klamath Falls Traffic Calming Evaluation

The Klamath Falls Traffic Calming Evaluation is a study from 2019 that assessed vehicular speeds, crash history, geometric characteristics, and traffic calming measures along Altamont Drive, Summers Lane, Homedale Road, Harlan Drive-Keller Road, and Shasta Way. The evaluation resulted in a variety of corridor-wide and location-specific traffic calming recommendations and provided a traffic calming "toolbox" for the County to have on hand when considering traffic calming measures for other roadways under its jurisdiction. The extents of each corridor and their recommendations are illustrated in the following maps.









Klamath Falls YMCA Traffic Calming Study

The Klamath Falls YMCA Traffic Calming study is an evaluation from 2023 to address community requests to study issues of speeding near the YMCA Youth Development Center on Donald Street. The study found multiple instances of speeding and recommended physical treatments to calm traffic. Recommendations were grouped into low-cost treatments that could be implemented in the near term, and higher-cost treatments that could be considered if speeding issues persisted after initial implementation. Initial recommendations included high visibility crosswalks near Fairview Park (Fulton Street) or close to the primary YMCA access point (Donald Street), and speed feedback signs as low-cost options. The medium/high-cost option is to construct bulb-out/curb extensions to increase visibility between motorists and pedestrians through narrowing the roadway.

Downtown Intersection Projects

Several studies and concepts have been developed for the downtown core of Klamath Falls in recent years and there currently are two sets of recommendations to carry into the TSAP for signalized and unsignalized intersections, as summarized below.

- ARTS Project Signal Upgrades for All Downtown Traffic Signals
 - Upgrade signal lenses from eight-inch to twelve-inch
 - Upgrade signal heads from incandescent to LED lenses
 - Install reflectorized back plates
 - Provide supplemental signal heads (minimum of one per approach lane recommended)
 - Adjust yellow change and all red intervals in accordance with Institute of Transportation Engineers (ITE) timing standards
 - Install pedestrian countdown timers
 - Upgrade signs
- Pedestrian Safety Enhancements at Key Unsignalized Intersections
 - Klamath Avenue / 3rd Street
 - o Install high visibility continental crosswalk pavement markings.
 - o Remove two existing parallel parking stalls at southwest corner (eastbound approach).
 - o Install Advance Yield Here to (Stop Here For) Pedestrians Sign and yield (stop) line.
 - o Install pedestrian-actuated Rectangular Rapid Flashing Beacon (RRFB).
 - o Monitor and maintain landscaping in southwest intersection corner.
 - o Evaluate adequate nighttime lighting levels and crossing warning signs.
 - Main Street / 2nd Street, Main Street / 3rd Street, Klamath Avenue / 2nd Street, and Klamath Avenue / 4th Street
 - o Prioritize intersections with higher pedestrian activity and evaluate other funding source options.
 - o Convert Main Street / 3rd Street to all-way stop-control.
 - o Maintain two-way stop-control at remaining intersections.
 - o Install speed feedback sign on Klamath Avenue south of 2nd Street.
 - o Install curb extensions at all intersections. If phased implementation is required, consider prioritizing locations with highest pedestrian activity.

Klamath County TSAP

Klamath County completed its first TSAP in June 2020 and adopted its updated TSP in June 2021. The TSAP focuses on transportation safety needs and projects throughout Klamath County, inside the Klamath Falls UGB. The County's TSP incorporates the TSAP projects located within the UGB, but outside of Klamath Falls city limits (study bounds). The safety projects from these plans that are located within or intersect with the Klamath Fall's UGB are summarized in the table below.

Relevant Klamath County TSP & TSAP Safety Projects

Name	Description	Priority
Summers Lane / Shasta Way	Possible roundabout or mini roundabout; access management in the southeast corner; raised medians along Shasta Way; and marked crosswalk and intersection visibility treatments on the west leg of Shasta Way.	High
Harlan Drive / Homedale Road	Possible offset-T intersection to eliminate intersection skew	High
Laverne Avenue / Washburn Way	Possible raised medians along Washburn Way and protected-only left turn operation for northbound and southbound left turn movements on Washburn Way during peak hour	High
Vale Road / OR 140 Intersection Safety Improvement	Increase sight distance for northbound vehicles to the west by removing tree. Increase intersection awareness with larger stop signs and pavement markings.	High
Delap Pit Road Realignment	Phase 3 of the Green Springs IAMP. Realign Delap Pit Road to connect with the realigned OR 140 approximately 1/4 mile from OR66	High
Lakeshore Drive Corridor Safety Improvement	Install chevrons and delineators on curves from OR140 to Klamath Falls UGB; Target winter maintenance at curves on hills where crashes occurred in snow/ice	Medium
US97 / Wocus Road Intersection Safety Improvement and Roadway Realignment	Convert both existing intersections to right-in, right-out only; Construct new roadway connection at Cove Point Road	Medium
Old Fort Road Safety Improvement	Install centerline rumble strips from Loma Linda Drive to the pavement end to reduce risk of crossing crashes.	Low

ATTACHMENT B: POTENTIAL FUNDING SOURCES

Funding Source	Description	Potential Application
Potential Local Funding Mechanisms		
Street Utility Fees / Road Maintenance Fees	A fee based on the number of automobile trips a particular land use generates; usually collected through a regular utility bill. Fees can also be tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance of the street system.	System-wide transportation facilities including streets, sidewalks, bike lanes, and shared use paths.
Local Gas Tax	A local tax can be assessed on the purchase of gas within the urban area. This tax is added to the cost of gasoline at the pump, along with the state and federal gas taxes.	System-wide transportation facilities including streets, sidewalks, and bike lanes.
Public / Private Partnerships	Public/private partnerships have been used around the country to provide public transportation amenities within the public right-of-way in exchange for operational revenue from the facilities. These partnerships could be used to provide services such as vehicle charging stations, public parking lots, bicycle lockers, or car share facilities. A local example of this funding source is Sky Lakes Medical Center partially funding the protected bike lane project on Oregon Avenue.	System-wide transportation facilities including streets, sidewalks, bike lanes, shared use paths, and transit.
Revenue and General Obligation Bonds	Bonding allows municipal and county government to finance construction projects by borrowing money and paying it back over time, with interest. Financing requires smaller regular payments over time compared to paying the full cost at once, but financing increases the total cost of the project by adding interest. General obligation bonds are often used to pay for construction of large capital improvements and must be approved by a public vote. These bonds add the cost of the improvement to property taxes over time. The City of Bend passed a General Obligation Bond in 2020 that is currently funding and will continue to fund \$190 million in transportation capital projects.	Construction of major capital improvement projects within the city, street maintenance and incidental improvements.
Potential State and Federal Grants		
Safe Streets and Roads for All (SS4A) Program	SS4A is a five-year program of the Infrastructure Investment and Jobs Act (IIJA) that was allocated \$5 billion to safety action plan and implementation programs to prevent roadway deaths and serious injuries for cities, counties, and MPOs. The IIJA was signed into law on November 15, 2021. Equitable outreach and an Action Plan backed by the community and elected officials are critical elements of this program.	Planning and implementation projects to eliminate fatal and serious injury crashes from roadways.
All Roads Transportation Safety Program (ARTS)	The federal Highway Safety Improvement Program is administered as ARTS in Oregon. ARTS provides funding to infrastructure and non-infrastructure projects that improve safety on all public roads. ARTS requires a data-driven approach and prioritizes projects in demonstrated problem areas.	Areas of safety concerns within the city, as identified in its TSAP, and consistent with Oregon's Transportation Safety Action Plan.
Safe Routes to School (SRTS)	SRTS, administered by ODOT, focus on infrastructure and non-infrastructure programs to improve access and safety for children to walk, roll, and/or bike to school.	Pedestrian and bicycle-related projects within the vicinity of local schools, including projects identified in the Klamath Falls SRTS Master Plan.

Funding Source	Description	Potential Application
Statewide Transportation Improvement Program (STIP)	STIP is the State of Oregon's four-year transportation capital improvement program. ODOT's system for distributing these funds has varied over recent years. Generally, local agencies apply in advance for projects to be funded in each four-year cycle.	Projects on any facility that meet the benefit categories of the STIP.
Transportation and Growth Management (TGM) Grants	TGM Grants are planning grants administered by ODOT and awarded on an annual basis. The TGM grants are generally awarded to projects that will lead to more livable, economically vital, transportation efficient, sustainable, and pedestrian-friendly communities. The grants are awarded in two categories: transportation system planning and integrated land use/transportation planning.	Transportation system plans and planning efforts that integrate land use and transportation.
Oregon Parks and Recreation Local Government Grants	Oregon Parks and Recreation Department administers this program using Oregon Lottery revenues. These grants can fund acquisition, development, and major rehabilitation of public outdoor parks and recreation facilities. A match of at least 20 percent is required.	Trails and other recreational facility development or rehabilitation.
Multimodal Active Transportation Fund	This fund invests in multimodal transportation infrastructure improvements across Oregon.	Pedestrian and bicycle-related projects.
Community Paths Program	This is a State of Oregon program focused on helping communities create and maintain connections through shared-use paths.	Shared-use paths.
Rural Surface Transportation Grant Program	Rural Surface Transportation Grant Program will support projects to improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life.	Rural Surface Transportation Grant Program
State Transit Improvement Fund (STIF) and Public Transportation Funds	STIF is a newer dedicated source of funding under Section 122 of the House Bill (HB) 2017 Transportation Funding Package for improving or expanding public transportation service in Oregon.	Pedestrian and bicycle improvements that provide connections to transit.

APPENDIX D

PROJECT PRIORITIZATION AND COST ESTIMATE WORKSHEETS



	Crash Severity		Equity		Planning-Level Cost		Public Support	Env/ROW Impacts	Previous Projects	Total Score	Timeframe
	Fatal/Serious	Score	Disparity Category	Score	Cost	Score	Score	Score	Score		
Intersections											
Main/3rd	1	1	High	2	\$381,000	2	1	2	2	10	Near-Term
Main/5th	1	2	High	2	\$410,000	2	1	2	2	11	Near-Term
Pine/11th	1	1	High	2	\$416,000	2	1	2	2	10	Near-Term
6th/E Main	1	2	High	2	\$255,000	2	1	2	0	9	Mid-Term
Washburn/Eberlein	1	1	High/Medium-High	1	\$4 million	1	2	1	1	7	Long-Term
Washburn/Radcliffe	1	1	Medium-High	1	\$4 million	1	2	1	0	6	Long-Term
Shasta/Avalon	1	1	Medium-High	1	\$657,000	2	2	2	0	8	Mid-Term
Streets											
S 5th	2	1	High	2	\$2 million	2	2	2	2	11	Near-Term
S 6th	2	1	High	2	\$2 million	2	2	1	2	10	Mid-Term
Washburn	5	2	Medium-High/High	1	\$5 million	1	2	1	2	9	Long-Term

- 2 The concept addresses the criterion and/or makes substantial improvements in the criterion category. (●)
- 1 The concept partially addresses the criterion and/or makes some improvements in the criterion category. (◐)
- 1 The concept does not support the intent of and/or negatively impacts the criterion category. (○)
- 0 The criterion does not apply to the concept or the concept has no influence on the criterion. (⊗)

Klamath Falls TSAP
Main Street / 3rd Street



Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$17,000.00	\$17,000.00	
Traffic Control	LS	ALL	\$9,000.00	\$9,000.00	
Construction Staging	LS	ALL	\$9,000.00	\$9,000.00	
Erosion Control	AC	0.1	\$10,000.00	\$1,000.00	
Removal of Structures and Obstructions	LS	ALL	\$4,000.00	\$4,000.00	
Clearing and Grubbing	LS	ALL	\$4,000.00	\$4,000.00	
General Earthworks	CY	100	\$40.00	\$4,000.00	
Raised Concrete Island	SF	2,000	\$12.90	\$25,800.00	
Detectable Warnings	EA	8	\$500.00	\$4,000.00	
Pedestrian Ramps	EA	8	\$7,500.00	\$60,000.00	
Extra for Pedestrian Ramps	EA	8	\$1,500.00	\$12,000.00	
Storm Water Conveyance System, Complete	LS	ALL	\$32,000.00	\$32,000.00	
Roadside Water Quality and Hydromodification System, Complete	SF	100	\$90.00	\$9,000.00	
Pavement Markings, Complete	LS	ALL	\$2,746.00	\$2,746.00	
Signage, Complete	LS	ALL	\$9,000.00	\$9,000.00	
TOTAL CONSTRUCTION COST				\$	202,546
RIGHT-OF-WAY SUBTOTAL				\$	-
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$51,000.00	\$51,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	51,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	256,280
				40% Contingency	\$ 102,520
TOTAL ESTIMATED PROJECT COST				\$	358,800

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear. (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Klamath Falls TSAP
Main Street / 5th Street



Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$20,000.00	\$20,000.00	
Traffic Control	LS	ALL	\$10,000.00	\$10,000.00	
Construction Staging	LS	ALL	\$10,000.00	\$10,000.00	
Erosion Control	AC	0.1	\$10,000.00	\$1,000.00	
Removal of Structures and Obstructions	LS	ALL	\$5,000.00	\$5,000.00	
Clearing and Grubbing	LS	ALL	\$4,000.00	\$4,000.00	
General Earthworks	CY	100	\$40.00	\$4,000.00	
Concrete Curbs - Standard Curb	LF	300	\$30.90	\$9,270.00	
Raised Concrete Island	SF	2,000	\$12.90	\$25,800.00	
Detectable Warnings	EA	8	\$500.00	\$4,000.00	
Pedestrian Ramps	EA	8	\$7,500.00	\$60,000.00	
Extra for Pedestrian Ramps	EA	8	\$1,500.00	\$12,000.00	
Storm Water Conveyance System, Complete	LS	ALL	\$35,000.00	\$35,000.00	
Roadside Water Quality and Hydromodification System, Complete	SF	100	\$90.00	\$9,000.00	
Signage, Complete	LS	ALL	\$3,750.00	\$3,750.00	
Traffic Signal Modifications, Complete	LS	ALL	\$19,050.00	\$19,050.00	
TOTAL CONSTRUCTION COST				\$	231,870
RIGHT-OF-WAY SUBTOTAL				\$	-
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$58,000.00	\$58,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	58,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	292,604
				40% Contingency	\$ 117,050
TOTAL ESTIMATED PROJECT COST				\$	409,654

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Klamath Falls TSAP
Pine Street / 11th Street



Engineer's Conceptual Estimate

Prepared By: CCT Date: 2/7/2024

Reviewed By: MKB

This Estimate has a Rating of: **3C** (See rating scale guide below.)

ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
Mobilization	LS	ALL	\$20,000.00	\$20,000.00
Traffic Control	LS	ALL	\$10,000.00	\$10,000.00
Construction Staging	LS	ALL	\$10,000.00	\$10,000.00
Erosion Control	AC	0.1	\$10,000.00	\$1,000.00
Removal of Structures and Obstructions	LS	ALL	\$5,000.00	\$5,000.00
Clearing and Grubbing	LS	ALL	\$4,000.00	\$4,000.00
General Earthworks	CY	100	\$40.00	\$4,000.00
Concrete Curbs - Standard Curb	LF	300	\$30.90	\$9,270.00
Raised Concrete Island	SF	2,000	\$12.90	\$25,800.00
Detectable Warnings	EA	8	\$500.00	\$4,000.00
Pedestrian Ramps	EA	8	\$7,500.00	\$60,000.00
Extra for Pedestrian Ramps	EA	8	\$1,500.00	\$12,000.00
Storm Water Conveyance System, Complete	LS	ALL	\$35,000.00	\$35,000.00
Roadside Water Quality and Hydromodification System, Complete	SF	100	\$90.00	\$9,000.00
Signage, Complete	LS	ALL	\$3,000.00	\$3,000.00
Traffic Signal Modifications, Complete	LS	ALL	\$21,000.00	\$21,000.00
Hardened Center Line	LF	25	\$100.00	\$2,500.00
TOTAL CONSTRUCTION COST \$				235,570
RIGHT-OF-WAY SUBTOTAL				\$ -
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	ALL	\$59,000.00	\$59,000.00
ENGINEERING SUPPORT SUBTOTAL				\$ 59,000
ENGINEERING PERMITS				
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00
ENGINEERING PERMITS SUBTOTAL				\$ 2,734
TOTAL PROJECT SUBTOTAL \$				297,304
40% Contingency \$				118,930
TOTAL ESTIMATED PROJECT COST \$				416,234

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$12,000.00	\$12,000.00	
Traffic Control	LS	ALL	\$6,000.00	\$6,000.00	
Construction Staging	LS	ALL	\$6,000.00	\$6,000.00	
Removal of Structures and Obstructions	LS	ALL	\$3,000.00	\$3,000.00	
Clearing and Grubbing	LS	ALL	\$3,000.00	\$3,000.00	
Signage, Complete	LS	ALL	\$9,000.00	\$9,000.00	
Traffic Signal Modifications, Complete	LS	ALL	\$94,500.00	\$94,500.00	
Hardened Center Line	LF	100	\$100.00	\$10,000.00	
TOTAL CONSTRUCTION COST				\$	143,500
RIGHT-OF-WAY COSTS					
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$36,000.00	\$36,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	36,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	182,234
				40% Contingency	\$ 72,900
TOTAL ESTIMATED PROJECT COST				\$	255,134

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Klamath Falls TSAP
Shasta Way / Avalon Street



Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$31,000.00	\$31,000.00	
Traffic Control	LS	ALL	\$16,000.00	\$16,000.00	
Construction Staging	LS	ALL	\$16,000.00	\$16,000.00	
Erosion Control	AC	0.2	\$10,000.00	\$2,000.00	
Removal of Structures and Obstructions	LS	ALL	\$7,000.00	\$7,000.00	
Clearing and Grubbing	LS	ALL	\$6,000.00	\$6,000.00	
General Earthworks	CY	600	\$40.00	\$24,000.00	
Asphalt Roadway - Full Depth	SF	7,000	\$9.20	\$64,400.00	
Subgrade Geotextile	SY	778	\$1.50	\$1,167.00	
Concrete Curbs - Standard Curb & Gutter	LF	200	\$36.70	\$7,340.00	
Detectable Warnings	EA	2	\$500.00	\$1,000.00	
Pedestrian Ramps	EA	2	\$7,500.00	\$15,000.00	
Extra for Pedestrian Ramps	EA	2	\$1,500.00	\$3,000.00	
Storm Water Conveyance System, Complete	LS	ALL	\$35,000.00	\$35,000.00	
Roadside Water Quality and Hydromodification System, Complete	SF	900	\$90.00	\$81,000.00	
Pavement Markings, Complete	LS	ALL	\$4,080.00	\$4,080.00	
Signage, Complete	LS	ALL	\$2,000.00	\$2,000.00	
Traffic Signal Modifications, Complete	LS	ALL	\$58,440.00	\$58,440.00	
TOTAL CONSTRUCTION COST				\$	374,427
RIGHT-OF-WAY SUBTOTAL				\$	-
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$94,000.00	\$94,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	94,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	471,161
40% Contingency				\$	188,470
TOTAL ESTIMATED PROJECT COST				\$	659,631

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Klamath Falls TSAP
S 5th Street: Klamath Avenue to S 6th Street



Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$97,000.00	\$97,000.00	
Traffic Control	LS	ALL	\$49,000.00	\$49,000.00	
Construction Staging	LS	ALL	\$49,000.00	\$49,000.00	
Erosion Control	AC	0.4	\$10,000.00	\$4,000.00	
Removal of Structures and Obstructions	LS	ALL	\$21,000.00	\$21,000.00	
Clearing and Grubbing	LS	ALL	\$19,000.00	\$19,000.00	
General Earthworks	CY	500	\$40.00	\$20,000.00	
Concrete Curbs - Standard Curb	LF	1,500	\$30.90	\$46,350.00	
Raised Concrete Island	SF	10,900	\$12.90	\$140,610.00	
Concrete Walks	SF	11,640	\$8.40	\$97,776.00	
Detectable Warnings	EA	38	\$500.00	\$19,000.00	
Pedestrian Ramps	EA	38	\$7,500.00	\$285,000.00	
Extra for Pedestrian Ramps	EA	38	\$1,500.00	\$57,000.00	
Storm Water Conveyance System, Complete	LS	ALL	\$200,000.00	\$200,000.00	
Regional Water Quality and Hydromodification System, Complete	SF	1,400	\$28.00	\$39,200.00	
Pavement Markings, Complete	LS	ALL	\$16,635.00	\$16,635.00	
Signage, Complete	LS	ALL	\$6,500.00	\$6,500.00	
TOTAL CONSTRUCTION COST				\$	1,167,071
RIGHT-OF-WAY SUBTOTAL				\$	-
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$292,000.00	\$292,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	292,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	1,461,805
				40% Contingency	\$ 584,730
TOTAL ESTIMATED PROJECT COST				\$	2,046,535

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Klamath Falls TSAP
S 6th Street: Owen Street to Washburn Way



Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$96,000.00	\$96,000.00	
Traffic Control	LS	ALL	\$48,000.00	\$48,000.00	
Construction Staging	LS	ALL	\$48,000.00	\$48,000.00	
Removal of Structures and Obstructions	LS	ALL	\$21,000.00	\$21,000.00	
Clearing and Grubbing	LS	ALL	\$19,000.00	\$19,000.00	
General Earthworks	CY	300	\$40.00	\$12,000.00	
Raised Concrete Island	SF	30,000	\$12.90	\$387,000.00	
Detectable Warnings	EA	10	\$500.00	\$5,000.00	
Pedestrian Ramps	EA	10	\$7,500.00	\$75,000.00	
Extra for Pedestrian Ramps	EA	10	\$1,500.00	\$15,000.00	
Storm Water Conveyance System, Complete	LS	ALL	\$149,000.00	\$149,000.00	
Permanent Landscaping	SF	15,000	\$4.20	\$63,000.00	
Irrigation, Complete	SF	15,000	\$2.50	\$37,500.00	
Pavement Markings, Complete	LS	ALL	\$3,465.00	\$3,465.00	
Traffic Signal Modifications, Complete	LS	ALL	\$4,800.00	\$4,800.00	
Traffic Signal System, Complete	LS	ALL	\$160,000.00	\$160,000.00	
Raised Crossing	SF	200	\$9.20	\$1,840.00	
TOTAL CONSTRUCTION COST				\$	1,145,605
RIGHT-OF-WAY SUBTOTAL				\$	-
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$287,000.00	\$287,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	287,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	1,435,339
				40% Contingency	\$ 574,140
TOTAL ESTIMATED PROJECT COST				\$	2,009,479

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

Klamath Falls TSAP
Washburn Way: South of OC&E Trail to Laverne Avenue



Engineer's Conceptual Estimate

Prepared By: CCT			Date: 2/7/2024		
Reviewed By: MKB					
This Estimate has a Rating of:			3C (See rating scale guide below.)		
ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST	
Mobilization	LS	ALL	\$261,000.00	\$261,000.00	
Traffic Control	LS	ALL	\$131,000.00	\$131,000.00	
Construction Staging	LS	ALL	\$131,000.00	\$131,000.00	
Removal of Structures and Obstructions	LS	ALL	\$57,000.00	\$57,000.00	
Clearing and Grubbing	LS	ALL	\$50,000.00	\$50,000.00	
General Earthworks	CY	900	\$40.00	\$36,000.00	
Raised Concrete Island	SF	89,760	\$12.90	\$1,157,904.00	
Detectable Warnings	EA	20	\$500.00	\$10,000.00	
Pedestrian Ramps	EA	10	\$7,500.00	\$75,000.00	
Storm Water Conveyance System, Complete	LS	ALL	\$384,000.00	\$384,000.00	
Permanent Landscaping	SF	44,880	\$4.20	\$188,496.00	
Irrigation, Complete	SF	44,880	\$2.50	\$112,200.00	
Pavement Markings, Complete	LS	ALL	\$123,426.00	\$123,426.00	
Signage, Complete	LS	ALL	\$8,000.00	\$8,000.00	
Traffic Signal System, Complete	LS	ALL	\$400,000.00	\$400,000.00	
TOTAL CONSTRUCTION COST				\$	3,125,026
RIGHT-OF-WAY SUBTOTAL				\$	-
ENGINEERING SUPPORT					
Engineering & Construction Management	LS	ALL	\$782,000.00	\$782,000.00	
ENGINEERING SUPPORT SUBTOTAL				\$	782,000
ENGINEERING PERMITS					
Grading & Erosion Control Permit	LS	ALL	\$2,734.00	\$2,734.00	
ENGINEERING PERMITS SUBTOTAL				\$	2,734
TOTAL PROJECT SUBTOTAL				\$	3,909,760
40% Contingency				\$	1,563,910
TOTAL ESTIMATED PROJECT COST				\$	5,473,670

Unit Costs Note:

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

APPENDIX E

POTENTIAL FUNDING SOURCES



Funding Source	Description	Potential Application
Potential Local Funding Mechanisms		
Street Utility Fees / Road Maintenance Fees	A fee based on the number of automobile trips a particular land use generates; usually collected through a regular utility bill. Fees can also be tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance of the street system.	System-wide transportation facilities including streets, sidewalks, bike lanes, and shared use paths.
Local Gas Tax	A local tax can be assessed on the purchase of gas within the urban area. This tax is added to the cost of gasoline at the pump, along with the state and federal gas taxes.	System-wide transportation facilities including streets, sidewalks, and bike lanes.
Public / Private Partnerships	Public/private partnerships have been used around the country to provide public transportation amenities within the public right-of-way in exchange for operational revenue from the facilities. These partnerships could be used to provide services such as vehicle charging stations, public parking lots, bicycle lockers, or car share facilities. A local example of this funding source is Sky Lakes Medical Center partially funding the protected bike lane project on Oregon Avenue.	System-wide transportation facilities including streets, sidewalks, bike lanes, shared use paths, and transit.
Revenue and General Obligation Bonds	Bonding allows municipal and county government to finance construction projects by borrowing money and paying it back over time, with interest. Financing requires smaller regular payments over time compared to paying the full cost at once, but financing increases the total cost of the project by adding interest. General obligation bonds are often used to pay for construction of large capital improvements and must be approved by a public vote. These bonds add the cost of the improvement to property taxes over time. The City of Bend passed a General Obligation Bond in 2020 that is currently funding and will continue to fund \$190 million in transportation capital projects.	Construction of major capital improvement projects within the city, street maintenance and incidental improvements.
Potential State and Federal Grants		
Safe Streets and Roads for	SS4A is a five-year program of the Infrastructure Investment and Jobs Act (IIJA) that was allocated \$5 billion to safety action plan and implementation	Planning and implementation projects to eliminate fatal and serious

Funding Source	Description	Potential Application
All (SS4A) Program	programs to prevent roadway deaths and serious injuries for cities, counties, and MPOs. The IJA was signed into law on November 15, 2021. Equitable outreach and an Action Plan backed by the community and elected officials are critical elements of this program.	injury crashes from roadways.
All Roads Transportation Safety Program (ARTS)	The federal Highway Safety Improvement Program is administered as ARTS in Oregon. ARTS provides funding to infrastructure and non-infrastructure projects that improve safety on all public roads. ARTS requires a data-driven approach and prioritizes projects in demonstrated problem areas.	Areas of safety concerns within the city, as identified in its TSAP, and consistent with Oregon’s Transportation Safety Action Plan.
Safe Routes to School (SRTS)	SRTS, administered by ODOT, focus on infrastructure and non-infrastructure programs to improve access and safety for children to walk, roll, and/or bike to school.	Pedestrian and bicycle-related projects within the vicinity of local schools, including projects identified in the Klamath Falls SRTS Master Plan.
Statewide Transportation Improvement Program (STIP)	STIP is the State of Oregon’s four-year transportation capital improvement program. ODOT’s system for distributing these funds has varied over recent years. Generally, local agencies apply in advance for projects to be funded in each four-year cycle.	Projects on any facility that meet the benefit categories of the STIP.
Transportation and Growth Management (TGM) Grants	TGM Grants are planning grants administered by ODOT and awarded on an annual basis. The TGM grants are generally awarded to projects that will lead to more livable, economically vital, transportation efficient, sustainable, and pedestrian-friendly communities. The grants are awarded in two categories: transportation system planning and integrated land use/transportation planning.	Transportation system plans and planning efforts that integrate land use and transportation.
Oregon Parks and Recreation Local Government Grants	Oregon Parks and Recreation Department administers this program using Oregon Lottery revenues. These grants can fund acquisition, development, and major rehabilitation of public outdoor parks and recreation facilities. A match of at least 20 percent is required.	Trails and other recreational facility development or rehabilitation.
Multimodal Active	This fund invests in multimodal transportation infrastructure improvements across Oregon.	Pedestrian and bicycle-related projects.

Funding Source	Description	Potential Application
Transportation Fund		
Community Paths Program	This is a State of Oregon program focused on helping communities create and maintain connections through shared-use paths.	Shared-use paths.
Rural Surface Transportation Grant Program	Rural Surface Transportation Grant Program will support projects to improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life.	Rural Surface Transportation Grant Program
State Transit Improvement Fund (STIF) and Public Transportation Funds	STIF is a newer dedicated source of funding under Section 122 of the House Bill (HB) 2017 Transportation Funding Package for improving or expanding public transportation service in Oregon.	Pedestrian and bicycle improvements that provide connections to transit.