

City of Umatilla, Oregon

Roadway Safety Action Plan



June 2025

Prepared by:



THE
LANGDON
GROUP



GATEWAY
MAPPING
INC.

OTHER J-U-B COMPANIES

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Introduction

The City of Umatilla is situated in northeastern Oregon in Umatilla County along the Columbia River. In 2024 Umatilla had a population of 7,755 an increase of over 5% since the 2020 census, and comprises approximately five square miles in area.

The City of Umatilla seeks to provide a safe network of transportation facilities that enhances the quality of life for its residents and visitors. It has approximately 48.5 miles of arterial, collector and local streets. There are also approximately 4.92 miles of state highways that serve a significant role in the transportation network in Umatilla. There are several development proposals, primarily on the South Hill off Powerline Road and at the east end of the city. As the city grows it is important to ensure that the system is safe for all users. The city supports the State of Oregon Transportation Safety Action Plan that has a vision of zero fatalities or serious injury crashes by year 2035. To address transportation safety, Umatilla has created this Comprehensive Roadway Safety Action Plan (SAP) that uses a data-driven proactive approach to identify and prioritize risk factors and apply systemic improvements across the transportation network, as well as specific treatments at important locations.

This Safety Action Plan has been developed in response to two separate but related safety programs that introduce varying requirements.

The **Safe Streets and Roads for All (SS4A)** program, administered by the United States Department of Transportation (USDOT) directly, supports the National Roadway Safety Strategy and the USDOT's goal of zero deaths and serious injuries on our nation's roadways. SS4A funding is available to local, regional, and tribal entities, and participation requires a Safety Action Plan that includes the following elements:

- Leadership commitment and goal setting to eliminate roadway fatalities and serious injuries
- Planning Structure through a committee or task force
- Safety Analysis of existing conditions
- Engagement and collaboration with public and relevant stakeholders
- Policy and process assessments and potential improvements
- Strategy and project selections
- Progress measurement and transparency

An eligible Safety Action Plan is required for the City to pursue Implementation Grants under the SS4A program. The preparation of this Roadway Safety Action Plan has been funded by a grant from the United States Department of Transportation and thus will document the necessary components of a Safety Action Plan.

The Oregon Department of Transportation (ODOT) All Roads Transportation Safety (ARTS) Program also distributes federal Highway Safety Improvement Program (HSIP) funding to local agencies. The ARTS program recognizes that about half of all fatal and serious injury crashes occur on non-state highway facilities. The program guidelines are as follows:

- All projects shall address specific safety problems that contribute to fatal and serious injury crashes.
- All projects shall use only countermeasures from the ODOT approved countermeasure list.
- Only the most recent available five years of ODOT-reported crashes shall be used for crash analysis.

-
- Projects shall be prioritized based on ODOT-approved prioritization method such as Benefit-Cost Ratio.
 - ODOT Regions will be responsible for developing and delivering projects.

The program includes two subprograms, defined by ODOT as follows:

- **Hotspot Location:** a location that has at least one fatal or serious injury crash within the last five years.
Systemic: The systemic approach identifies a few proven low-cost countermeasures that can be widely implemented and then applies the countermeasures where there is evidence that they would be most useful. The ARTS program further divides the systemic component into three emphasis areas -roadway departure, intersection, and pedestrian/bicycle. These three emphasis areas account for approximately 85% of the fatal and serious injury crashes in the state.

To address both SS4A and ODOT Highway Safety Improvement Program needs, and to be eligible for both HSIP and SS4A funding, the SAP includes a prioritized list of safety projects.

Not all projects identified in this SAP will qualify for funding from either of these funding programs, but this plan will help to identify other safety needs for other grants and opportunities to reach the Vision Zero goal. It also serves as a guiding document to staff in the design and development of future projects and programs. Every year city public works staff develop a variety of transportation related projects, many of which are capital improvements or maintenance to existing facilities where there are opportunities for both operational and safety enhancements. This plan, by identifying a set of key mitigation strategies and programs, will help city staff to develop safety projects that take advantage of appropriate city and grant funded transportation improvements to improve the overall safety of Umatilla's transportation network. By doing so, we are also making a concerted effort to help meet Oregon State's vision of reducing traffic fatalities and serious injury crashes.

Leadership Commitment and Goal Setting

The preparation of this Safety Action Plan has identified that there were a total of 265 crashes from 2018 – 2022, resulting in zero fatalities and nine serious injury crashes, as will be discussed later. (Although data is incomplete for year 2023, there were two fatalities that year.)

As part of the preparation of this Comprehensive Roadway Safety Action Plan City Council has adopted a resolution and commitment to the Vision Zero initiative with the goal of eliminating all traffic fatalities and serious injury crashes by year 2035. The resolution is included in Appendix A.

Safety Analysis

The consultant team obtained the five most recent years of available crash data from the Oregon Department of Transportation (ODOT), representing years 2018 – 2022.

Crash History

The total number of crashes during the 5-year period was 265, ranging from 44 in 2020 (with travel patterns reduced because of Covid-19) to 66. This data includes 188 crashes on state highways, which constitutes more than two-thirds of the total (only 77 occurring on city streets). These crashes are included and evaluated throughout this SAP. It is recognized that significant coordination efforts with ODOT would be required for development, design and implementation of projects on US 730, US 395 or I-82.

Below are three tables that demonstrate some of the crash history regarding total crashes, types of injuries and crash types for crashes in Umatilla during the study period. Following the tables are figures that graphically show the geographical distribution of the data in Tables 1-3.

Table 1. Total Crashes by Year 2018 - 2022

Year	2018	2019	2020	2021	2022	Total
Number of Crashes	55	48	44	52	66	265

As shown in Table 2, no fatal crashes and nine serious injury crashes occurred in the City of Umatilla. There were two fatalities that occurred in 2023 however, one on I-82 and the other on Powerline Road, but data for that year is not fully available. Serious injuries are defined in the Highway Safety Manual as a crash that involves broken bones, dislocation, severe lacerations, or unconsciousness, but not death. On a per-capita basis this is 0.004 of 1% for fatalities and 0.023 of 1% for serious injuries annually (using the six years of data for fatalities), approximately 66% of the state per capita rates (with 1796 combined fatalities and serious injury crashes and a population of 4,230,000 the rate is 0.042%) The majority of crashes are property damage only, with 64% of crashes being No Apparent Injury.

Table 2. Most Severe Injury Type

Most Severe Injury Type	Number of Crashes	
	Total	Percent
Fatality*	0	0.0%
Suspected Serious	9	3.4%
Suspected Minor Injury	30	11.3%
Possible Injury	56	21.1%
No Apparent Injury	170	64.2%
TOTAL	265	100.0%

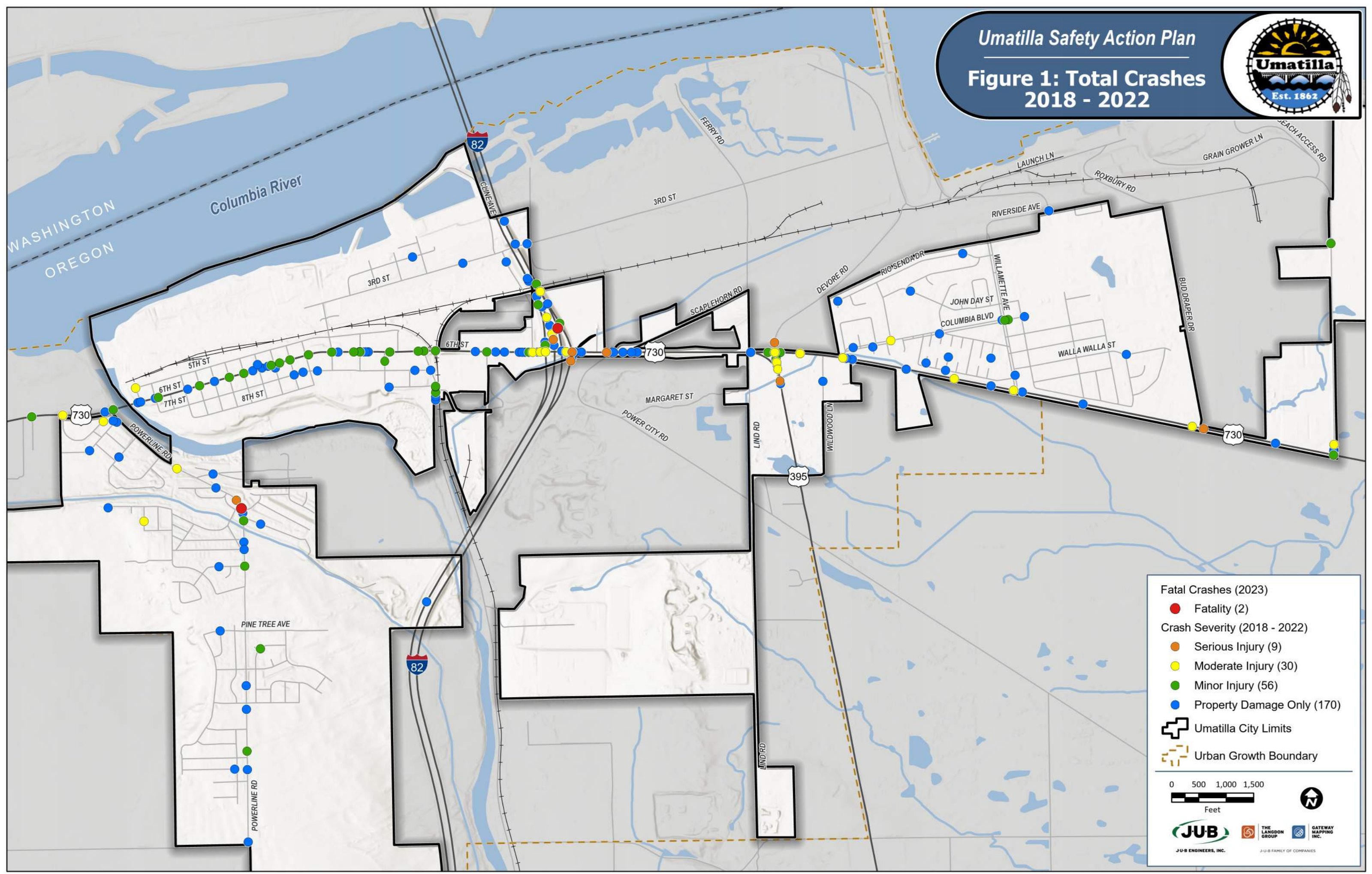
* 2 Fatalities occurred in 2023, only 2023 fatality data is available for 2023.

Table 3 shows the crash type. It indicates that 76% of all crashes involve only four crash types, those being rear-end, entering at an angle, fixed object or parked car crashes. The parked car and fixed object crashes combined make up over 26%. Only one crash involved a bicycle or pedestrian.

Table 3. Crash Type

Crash Type	Number of Crashes	
	Total	Percent
Rear end	87	32.8%
Entering at angle	46	17.4%
Fixed object	38	14.3%
Parked motor vehicle	31	11.7%
Same direction – sideswipe	20	7.6%
Opposite direction one left turn one straight	16	6.0%
All others	10	3.8%
Animal	9	3.4%
Opposite direction - all others	7	2.6%
Bicycle/Pedestrian	1	0.4%
TOTAL	265	100%

Umatilla Safety Action Plan
Figure 1: Total Crashes
2018 - 2022



- Fatal Crashes (2023)
- Fatality (2)
- Crash Severity (2018 - 2022)
- Serious Injury (9)
 - Moderate Injury (30)
 - Minor Injury (56)
 - Property Damage Only (170)
- ⬢ Umatilla City Limits
- ⬢ Urban Growth Boundary

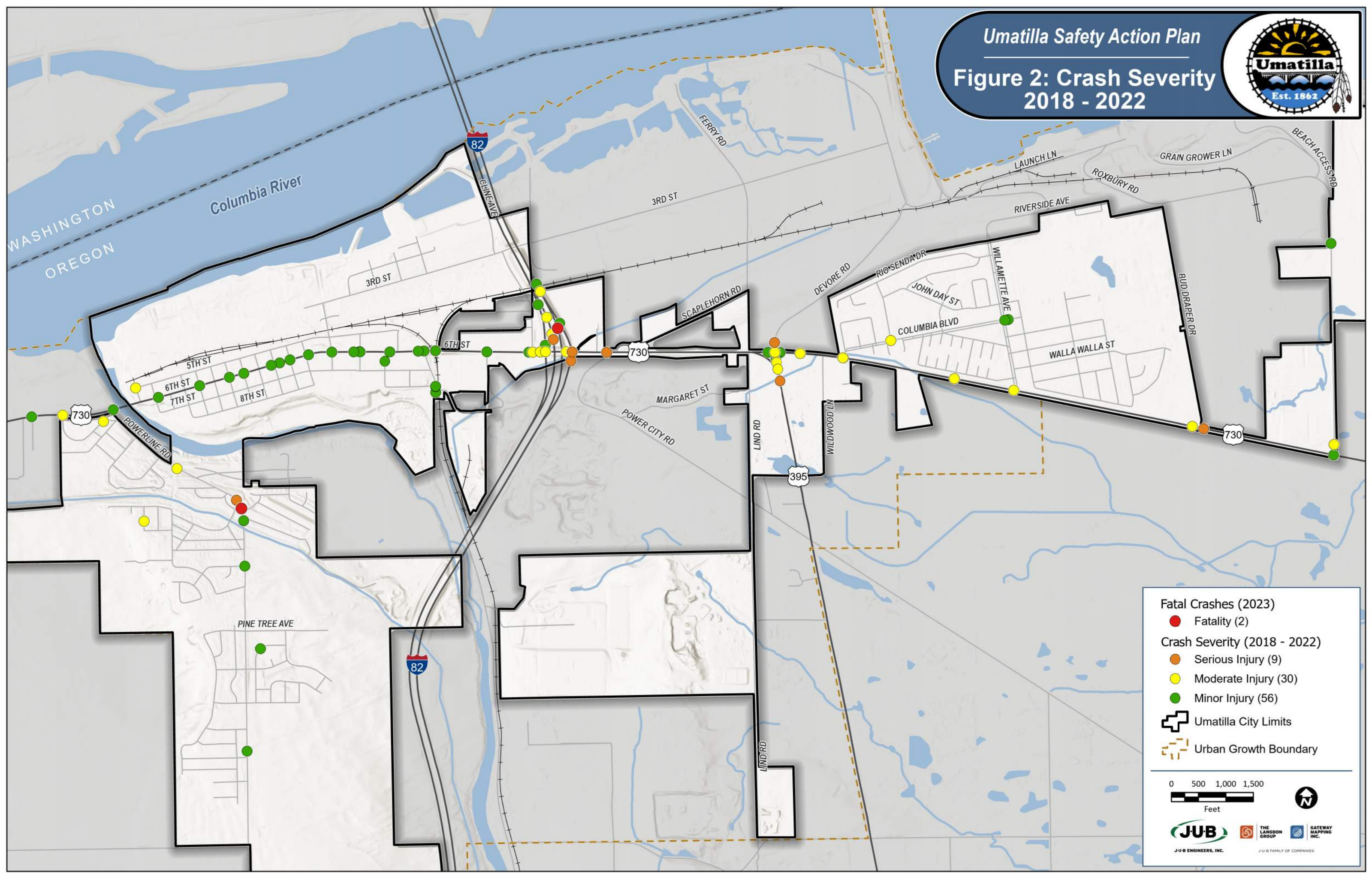
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JUB
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Umatilla Safety Action Plan
Figure 2: Crash Severity
2018 - 2022



Fatal Crashes (2023)
● Fatality (2)

Crash Severity (2018 - 2022)
● Serious Injury (9)
● Moderate Injury (30)
● Minor Injury (56)

⬢ Umatilla City Limits
⬢ Urban Growth Boundary

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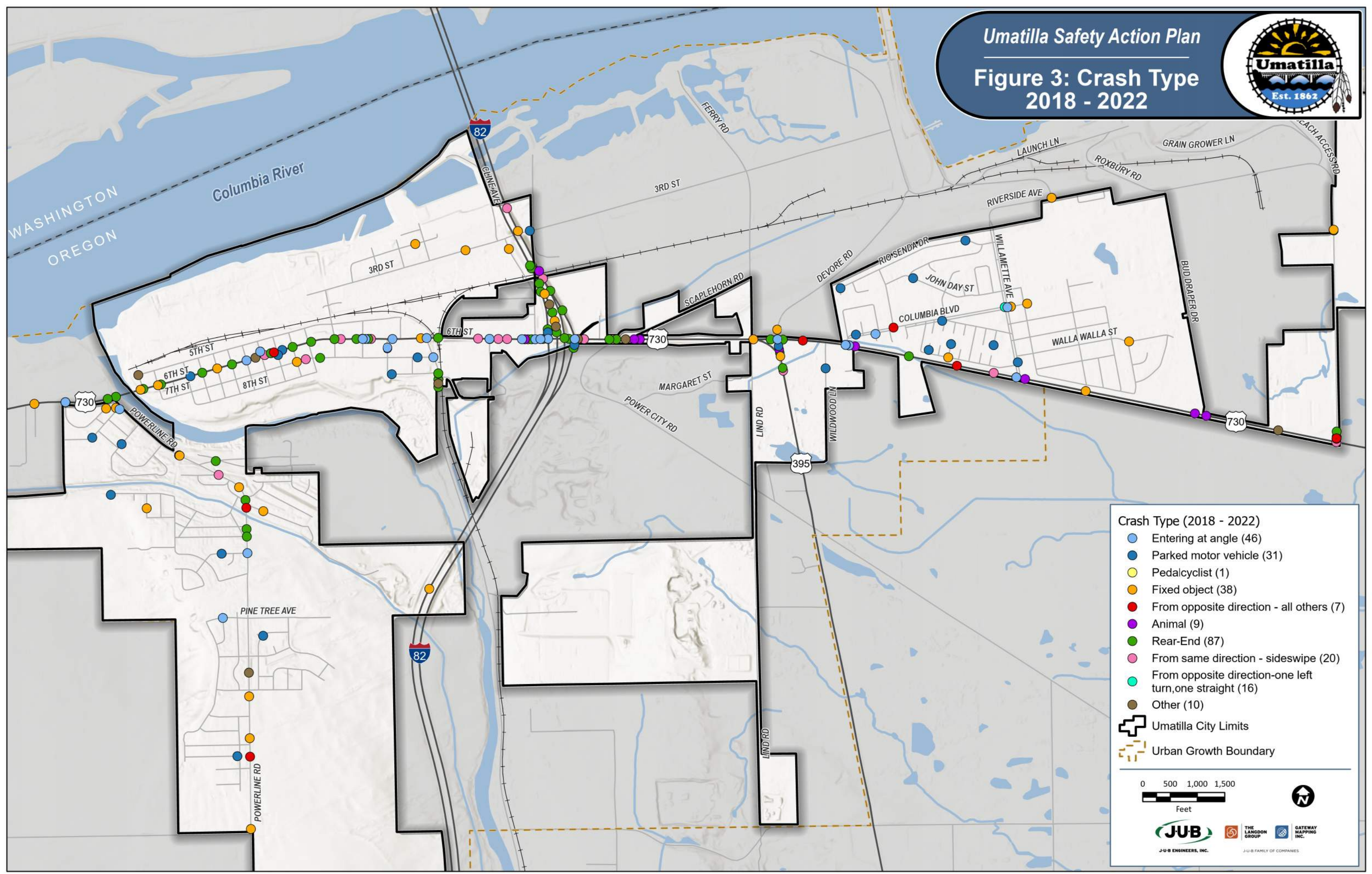
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Umatilla Safety Action Plan

Figure 3: Crash Type 2018 - 2022



Crash Type (2018 - 2022)

- Entering at angle (46)
- Parked motor vehicle (31)
- Pedalcyclist (1)
- Fixed object (38)
- From opposite direction - all others (7)
- Animal (9)
- Rear-End (87)
- From same direction - sideswipe (20)
- From opposite direction-one left turn, one straight (16)
- Other (10)

Umatilla City Limits

Urban Growth Boundary

0 500 1,000 1,500
Feet

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High Crash Location Evaluation

As the crash data was reviewed it was important to better understand geographic distribution, trends, and specific information about the crashes happening at the highest crash locations. With a focus on the functionally classified roadway network, each crash was assigned to one of three categories:

- 122 (46.0%) of crashes at the intersection of two functionally classified streets
- 115 (43.4%) of crashes were on functionally classified roadway segments
- 28 (10.6%) of crashes were on local streets.

Tables 4 and 5 below show the crashes at intersections and on functionally classified roadway segments, these making up nearly 90% of all crashes and representing the high priority network.

Examining Table 4 indicates that there were 9 intersections with 5 or more crashes during the most recent 5 years of available data, (2018-2022), the most having 23 crashes. Even though these are the highest intersections, having this many crashes in most cases does not provide a significant amount of information to identify trends and causes for crashes. A few of the trends are noted below.

- The highest number of crashes at an intersection occurred at US 730/northbound I-82 ramps which currently has the northbound ramps as stop controlled and has had 23 crashes. Eight of those crashes were vehicles entering at an angle with seven of these crashes being rear end (two moving and five stopped. Two major factors influence the traffic operations at this intersection that play a role in the number of crashes: 1) the intersection is nearing capacity and 2) there are a significant number of trucks. The eastbound trucks wanting to turn left onto northbound I-82 take up much of the space in the two-way left-turn lane to the west of this intersection That then causes issues with westbound vehicles as well.
- The second most number of crashes at an intersection is at the US 730/Brownell Blvd intersection, with a total of 20 and 60% of those crashes are of the rear-end variety (some stopped and some moving), with four others being entering at an angle. This is the location of the pedacyclist crash.
- Next is the US 730/southbound I-82 ramps intersection with 12 crashes and half of those crashes being opposite direction with one left and one straight.
- US 730/Willamette Street had 10 crashes during the five-year period, three were entering at an angle and two were rear end crashes.

Examining Table 5 indicates that there were also nine roadway segments that had five or more crashes during the five year period. The most on any segment was 23. A few of the trends for the segments with the most crashes are summarized below.

- The most road segment crashes occurred on US 730 from Powerline Road to Switzer Road with 23 crashes. Over half of the crashes were rear end (six stopped, six moving), with three fixed object and two entering at an angle.
- The second most crashes on a roadway segment was 18 on I-82 mainline, with 11 being rear end and four being fixed object.
- There were 18 crashes on US 395 south of US 730, with 14 of them being rear end crashes.
- There were 10 crashes on US 730 between Switzer Road and River Road five were entering at an angle and four were rear end crashes.
- Also with 10 crashes was Powerline Road from US 730 to Madison Street. Half of the crashes were fixed object and four were rear end. The curve on Powerline Road was the site of one of the fatalities in 2023.

Table 4. Top Intersections - Crash Type

Intersection Name	Animal	Entering at angle	Fixed object	From opposite direction both going straight	From opposite direction one left turn, one straight	Rear End	From same direction all others, including parking	Other non-collision	Parked motor vehicle	Pedal-cyclist	Total
US 730/I-84 NB ramps	0	8	3	2	0	7	3	0	0	0	23
US 730/Brownell Blvd	1	4	0	1	1	12	0	0	0	1	20
US 730/I-84 SB ramps	0	1	1	0	6	2	1	1	0	0	12
US 730/Willamette St	1	3	1	1	1	3	0	0	0	0	10
US 730/US 395	0	1	1	0	2	5	1	0	0	0	10
US 730/Powerline Rd	0	6	0	0	1	0	0	0	0	0	7
US 730/Beach Access	0	0	1	1	0	4	0	1	0	0	7
US 730/River Road	0	2	1	0	1	0	0	0	0	0	5
US 730/Columbia Blvd	1	3	0	0	0	0	0	0	1	0	5

Table 5. Top Roadway Segments - Crash Type

Segment Name	Animal	Entering at angle all others	Fixed object	From opposite direction both going straight	From opposite direction one left turn, one straight	Rear End	From same direction one turn, one straight	Other non-collision	Over-turned	Parked motor vehicle	Total
US 730: Powerline - Switzler	0	2	3	2	1	12	1	0	1	1	23
I-82 mainline	1	0	4	0	0	11	0	1	1	0	18
US 395: US 730 - to City Limits	1	0	1	0	0	14	0	0	0	1	17
US 730: Switzler - River Rd	0	5	0	0	1	4	0	0	0	0	10
Powerline Rd: US 730 - Madison	0	1	5	1	0	3	0	0	0	0	10
US 730: I-82 - US 395	2	0	1	0	0	4	1	1	0	0	9
I-84 SB off ramp	0	0	0	0	1	5	2	0	0	0	8
US 730: River Rd - Brownelle Blvd	0	3	1	0	0	3	0	0	0	0	7
River Road: US 730 south	0	1	0	0	0	5	0	1	0	0	7

Engagement and Collaboration

The City of Umatilla, OR, contracted with J-U-B Engineers, Inc. (J-U-B) to develop a holistic, well-defined strategy to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries in the city through development of a Safety Action Plan and implementation focused on all users, including pedestrians, bicyclists, public transportation users, motorists, micro-mobility users, and commercial operators. The Langdon Group (TLG), the public involvement subsidiary of J-U-B, provided public involvement for the project.

In coordination with the project team and City Staff, TLG implemented a public involvement strategy which lasted from September 2024-June 2025, and included the following:

Phase 1: Stakeholder Assessment
 Public Involvement Plan

Phase 2: Public Open Houses/Events (2)
 Technical Advisory Committee Meetings (TAC) and Workshops
 Public Survey
 Summary of Public Involvement

Goals for Public Involvement:

- Inform community members about the importance of the Safety Action Plan.
- Engage in meaningful public interaction with all impacted and interested members of the public.
- Apply the appropriate level of engagement for each task, to emphasize transparency, build community trust and collect relevant stakeholder and public insight.
- Gather feedback to inform the development of the safety action plan and features that will serve the needs of all Umatilla residents.
- Keep stakeholders and the public informed about the project timeline and development.

The following summarizes each of the public involvement tasks performed. A more detailed summary for each can be found in the Appendix section of this document.

Stakeholder Assessment

In Winter of 2024, TLG conducted a series of stakeholder interviews in order to collect direct feedback from regional community experts. The interviews were conducted in person and remotely via Zoom and by phone call based on stakeholder preference. Stakeholders were selected to provide a holistic representation of perspectives including city and regional agencies, community groups, educational institutions, public safety, and public transit. Feedback was focused on the themes of public safety, road safety and design, pedestrian/non-car users, public transportation, and public communication/messaging. A stakeholder guide, list of interviews, and overview of feedback themes can be found in Appendix C.1.

Technical Advisory Commission

The City of Umatilla Technical Advisory Committee (TAC) was charged with the plan's development, implementation, and monitoring. The TAC was comprised of city staff that relied also on key stakeholder assistance to provide with local perspective and review of the draft Safety Action Plan.

The project team met with the TAC three times over the course of the plan development to review safety data, identify opportunities for public engagement, and receive feedback on the draft chapters. Full presentation materials can be found in Appendix C.2.

Public Open Houses

City Trick or Treat Event

On October 24, 2024, the project team in coordination with City Staff hosted a booth at the City's well-attended annual Trick-or-Treat event to present information on the Safety Action Plan. The event was advertised on the City's website and social media accounts, the project website, and in the City newsletter. Direct invitations were sent to key individuals and community organizations including those who participated in key stakeholder interviews. The event was hosted as a drop-in style, casual community event, in which various local organizations and agencies provided information on local efforts with family-friendly activities. Four display boards were arranged around the Safety Action Plan booth, providing information about the project and area maps. Attendees were engaged in dialogue to provide verbal feedback on the Plan as well as directed to the project survey to record their feedback. The survey was hosted online, and a QR code to the survey website was included on a project flier which was handed to all attendees as well as printed on a poster board displayed at the event. Attendees were encouraged to share the flier and survey with their friends and family. Multiple project team members were available to explain the planning process and answer any technical questions. All handouts were provided in both English and Spanish, and the event was staffed with a Spanish translator. A summary report of the event can be found in Appendix C.3.

Umatilla Tree Lighting Event

provided in both English and Spanish. A summary report of the event can be found in Appendix C.3. On December 5, 2024, project team members from The Langdon Group hosted an informational booth at the annual Tree Lighting event hosted by the City of Umatilla. The event is regarded as well-attended within the community, offering family friendly activities and opportunities for local businesses and agencies to engage members of the public. The team presented information on the Safety Action Plan including funding, timeline, and opportunities for the public to get involved. The open house was advertised on the City's website and social media accounts, and the project website. Direct invitations were sent to key individuals and community organizations, including those who participated in key stakeholder interviews. Tree Lighting attendees were encouraged to complete the project survey to record their feedback. The survey was hosted online, and a QR code to the survey website was included on a project flier which was available to all attendees as well as printed on a poster board displayed at the event. All handouts were provided in both English and Spanish. A summary report of the event can be found in Appendix C.3.

Public Information Materials (Website, Informational Flier, Poster Boards)

In order to provide information about the Safety Action Plan and collect community feedback, a project website was developed to serve as a central location for up to date information on the project. The website was linked onto the City website. TLG worked in coordination with the City to develop the web-based content including project overview information on the background, goals, funding, timeline, and public involvement opportunities. Contact information was provided on the site for direct public inquiries. The public survey was hosted via the website. A snapshot of the project website can be found in Appendix C.4.

Following the stakeholder interviews, a project overview flier and poster boards were produced to highlight key project information. The flier and boards included the webpage URL and a QR code leading straight to the project website and hosted public survey. The project flier can be found in Appendix C.5 and the poster boards in Appendix C.6.

Public Survey and Comment Map

In the Winter of 2024, the City of Umatilla contracted the services of The Langdon Group (TLG) to administer a public survey to collect community feedback on the development of the Roadway Comprehensive Safety Action Plan. The goal of the survey was to obtain valuable community feedback early in the process, allowing for input to inform the prioritization of projects within the Plan. The online survey included an online comment map where survey respondents were able to drop location specific pins and make a comment related to their safety concern(s) at that location and a traditional survey hosted on SurveyMonkey. Comment types for the comment map were offered by topic for respondent convenience, including: ADA mobility, bicycle infrastructure, reducing collisions, road maintenance, pedestrian safety, public safety (e.g. lighting), speed reduction, and general/other. The comment map was hosted on the project website from October 21 to December 10, 2024 and the SurveyMonkey survey was open from May 23 to June 1, 2025. The survey was advertised on the project website and an informational flier was posted on the City's social media accounts as well as key locations around town. Survey responses can be found in Appendix C.7.

Policy and Process Changes

As part of the preparation of this Safety Action Plan a review of current city policies, plans, guidelines and standards to identify opportunities to improve transportation safety was undertaken. The following summarizes this effort.

Transportation System Plan

The City of Umatilla has a Transportation System Plan adopted in 2023 that four goals with accompanying objectives, as well as policies that support safety . Applicable Goals as well as policies are summarized below.

TSP Goal 1 – Promote a balanced, safe, and efficient transportation system.

TSP Goal 2 – Ensure the adequacy of the roadway network in terms of function, capacity, level of service, and safety.

TSP Goal 3 – Promote alternative modes of transportation.

TSP Goal 4 – Identify and prioritize transportation improvement needs in the City of Umatilla and identify a set of reliable funding sources that can be applied to these improvements.

The TSP also has the following policies.

1. The City shall promote a balanced, safe and efficient transportation system. In evaluating parts of the system, the City will support proposals that:
 - Protect the qualities of neighborhoods and the community.
 - Provide for adequate street capacity, optimum efficiency and effectiveness.
2. The City will coordinate with ODOT in implementing its improvement program (Ord 544).
3. Development proposals, plan amendments, or zone changes shall conform to the adopted Transportation System Plan.

In order to better address safety issues and protect the most vulnerable aspects of the transportation in the city by providing direction for safe places for pedestrians and bicyclists, which are the most vulnerable transportation system users and most likely to suffer serious injuries or fatalities that would result from a crash, more specific policies could be considered for incorporation into the City Comprehensive Plan and Transportation System Plan, including:

- Establish and maintain a system of bicycle and pedestrian trails and routes that link neighborhoods and public facilities and that enhance the walking and bicycling experience.
- Priority consideration to those streets that provide access to schools and parks, or where there is concern for pedestrian safety.
- Enforce standards for new streets and upgrade existing streets.
- Enhance connectivity and accessibility for all users.
- Establish and maintain an inventory of sidewalks with a priority list of repair and maintenance activities, missing links and new service roads, to include crosswalks, lighting, parking regulations, etc., and other safety features to protect the public and pedestrian and vehicular traffic.
- Implement complete streets practices.
- Continue to evaluate where bicycle and pedestrian routes should be designated and encourage their construction and use.

Municipal Code

The City of Umatilla Municipal Code contains guidance on when certain features are required to be constructed within the public right-of-way and requires them to be designed and constructed consistent with the city engineering design standards. City Design Standards are updated on a regular basis to ensure continued alignment with national best practices and changing city needs. The Code requires property owners to maintain and construct sidewalks under certain conditions. This Safety Action Plan makes the following recommendations:

- Prepare a Complete Street Policy for inclusion in the Municipal Code. Include important concepts such as:
 - Purpose of complete streets, and a description of principles of creating a complete streets network, exceptions.
 - Complete Streets infrastructure, best practices, performance standards.
 - Express in the complete streets policy that to make the provision of sidewalks citywide as a network fiscally achievable that consideration of having sidewalks on one side of each street may need to be necessary initially.
 - Include a statement that indicates that when reasonably feasible, when seeking grant funding, or with city funded projects, that sidewalk extensions to connect to the nearest sidewalks or to transit stops should be incorporated with larger street projects to eliminate gaps in the pedestrian sidewalk network.
- Prepare an Americans with Disabilities Transition Plan. These plans are required for public entities with 50 or more employees and provide a guide for the removal of barriers to accessibility. Removing such barriers provide significant mobility and safety benefits to other modes as well. An effective ADA Transition Plan includes:
 1. Comprehensive assessment of current barriers to accessibility – including a self-evaluation of one’s sidewalks, curb ramps, and other assets in the public right-of-way.
 2. Detailed methods for removing identified barriers
 3. Schedule for completing necessary modifications
 4. Designation of officials responsible for implementation
 5. Opportunities for public input and involvement
 6. Regular progress monitoring and plan updates

Strategy and Project Selections

As part of the preparation of this Safety Action Plan there were many contributing sources that were considered to determine appropriate strategies and projects to address safety issues in College Place. Countermeasures are actions designed to counteract a threat to safety and that are proven to reduce the incidence of high-risk traffic crashes.

The ODOT Highway Safety Improvement Program provides approved Countermeasures and Crash Modification Factors that must be used for their funding through the All Roads Transportation Safety (ARTS) Program. These are included in Appendix D. This document also includes links to national publications such as Countermeasures That Work as well as Crash Modification Factors Clearinghouse that provide many safety related improvements to address known traffic and pedestrian related issues that contribute to crashes.

Public involvement efforts, as discussed earlier, were instrumental in identifying areas of concern as well. Below is a discussion of strategies and projects that have been selected to reduce the likelihood of fatal and serious crashes in the City of Umatilla.

Strategies

The following strategies are recommended by this SAP.

Prepare and implement an Americans with Disabilities Act (ADA) Transition Plan

As discussed earlier in the Policies and Processes Changes chapter, an ADA transition Plan will help to identify barriers to disabled travel that will also improve safe mobility for pedestrians in general. The primary purpose is to identify and guide the removal of accessibility barriers. These barriers include missing sidewalks, missing or substandard curb ramps and traffic signal push buttons.

Focusing on the functionally classified network of public roadways that have the highest speeds and the most traffic will be a significant effort, as it will give not only those with disabilities a safe place to travel but will also serve pedestrians as well.

Umatilla has a safe transportation network with very few crashes that have resulted in a fatality or serious injury. The most vulnerable users and likely crashes that could result in fatal or serious injury are those involving a bicyclist or pedestrian.

Improve Sight Distance

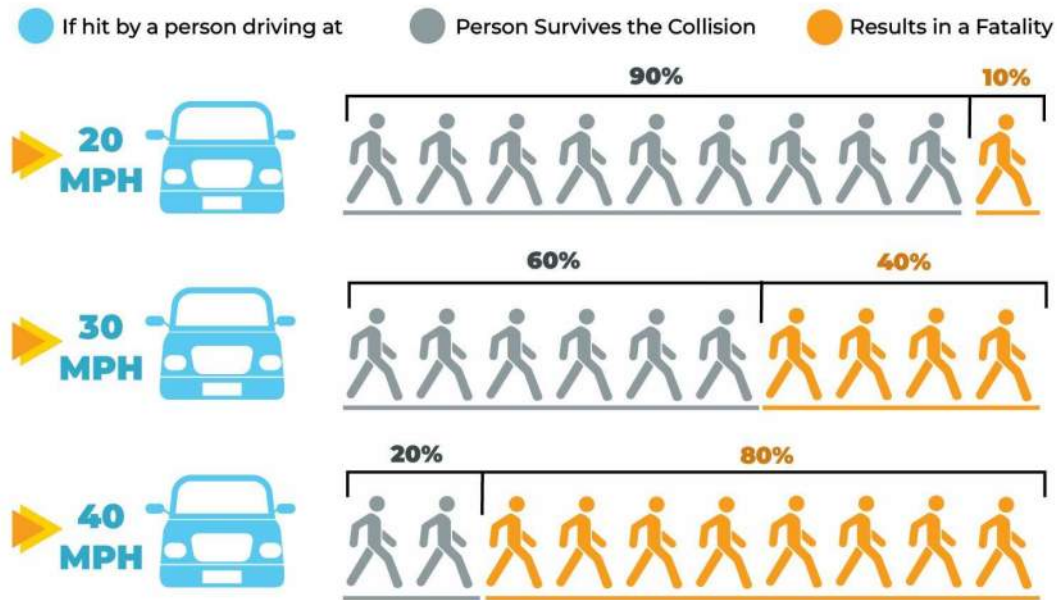
Helping motorists and other travelers to see potential conflicts can increase the time necessary to avoid a crash. There are three major components that can assist in this effort:

- Regular maintenance of vegetation - inspect sight triangles for vegetation growth that may impede visibility of oncoming traffic at intersections to help travelers recognize adequate gaps in traffic in which to cross or merge.
- Review sight triangles for parking obstructions. Some locations specific for this application are Willamette Street .

Evaluate Speed Limits

Speed is the single most important factor in crash severity. Reducing conflicts between motor vehicles pedestrians, bicyclists, and the disabled is important. Managing speeds is also critical to reducing crash

severity. The graphic below shows the vulnerability of non-motorists and the importance of lower speeds.



Consideration should be given to creating a speed limit policy as well as reducing speeds through design criteria that reduces lane widths to manage speed from a comfort perspective.

Street Pavement Markings and Signage Maintenance

Pavement markings and signage are important to help drivers know of potential conflicts. Pavement markings and signage help drivers to know where to be for turns, lane usage, when pedestrians may be present, where to stop, and many other traffic safety conditions. These things should be well maintained to bring to the attention of drivers that something is changing or in need of their attention and could reduce distractions and inattention as contributing factors to crashes.

Enforcement of Traffic Laws

Given the high percentage of crashes that resulted from both inattention and exceeding reasonable speeds, it could be beneficial for the City of Umatilla to increase enforcement of traffic laws and have more of a presence in the community. Some of this could be done through speed detection devices that inform travelers of their speed. Other public information systems and newsletters could be helpful, including publication of this Safety Action Plan and making the public aware of the high percentage of crashes that were the result of distraction and inattention.

Access Management

Implement the access management standards identified in the Comprehensive Plan

Projects

Using the evaluation of historic crashes presented earlier in this Safety Action Plan and countermeasures that reduce crashes, a list of projects for both intersections and roadway segments was prepared and is shown below. ODOT approved countermeasures are identified in the list as well (e.g. H-22)

Intersections

It should be noted that many of the intersection improvements identified below are situated along state highways. Before any intersection improvements are undertaken an Intersection Control Evaluation will need to be performed that considers traffic operations, safety and cost to determine the most appropriate improvement. The following intersection projects were identified to address specific safety issues at high crash locations.

US 730/ I-82 Northbound ramps

- Install urban traffic signal (H 22, H 23). Include westbound right turn lane. This project is identified in the TSP and the Interchange Area Management Plan.

US 730/Brownelle Blvd

- Signal at I-82/Northbound ramps is anticipated to help here as well.
- ODOT also has a project in the development stage to enable Weigh-in-Motion for trucks that would allow them to proceed from northbound ramp to southbound ramp without adding all the extra movements through this intersection.

US 730/ I-82 Southbound ramps

- Signal at I-82/Northbound ramps is anticipated to help here as well. Eastbound vehicles turning to northbound I-82 ramps currently experience significant delay and must wait for gaps in westbound traffic. They use much of the storage space between the two ramps causing significant conflicts in both directions because queues back up into the through lanes. A traffic signal will improve operations through these three intersections.
- ODOT also has a project in the development stage to enable Weigh-in-Motion for trucks that would allow them to proceed from northbound ramp to southbound ramp without adding all the extra movements through this intersection.

US 730/Willamette St

- Add right turn lane on single major road approach, unsignalized intersection (H-2).
- Install lighting at intersection (H-29, I 1).

US 730/US 395

- Dual/Double left turn lanes (H-63), for both northbound and westbound approaches. This project is included in the TSP.

US 730/Powerline Road

- Add right turn lane on single major road approach, unsignalized intersection (H-2).
- Add left turn lane on single major road approach, unsignalized intersection (H-7).
- Install Roundabout from minor street stop control (H-18).

US 730/Beach Access Road

- Consider reducing speed limit and installing advance warning signs for speed reduction

US 730/ River Road

- Install urban traffic signal (H 22, H 23). Include northbound left turn lane. This project is included in the TSP.

US 730/Columbia Road

- Add right turn lane on single major road approach, unsignalized intersection (H-2).
- Add left turn lane on single major road approach, unsignalized intersection (H-7).
- Install lighting at intersection (H-29, I 1).

Street Segments

The following roadway segment projects were identified to address specific safety issues at high crash locations.

US 730: Powerline Road – Switzler Avenue

- Monitor crashes on this segment to see if recent corridor improvements to add two-way left turn lane and bike lanes will reduce crashes.

I-82 Mainline

- Multiple fixed object crashes, evaluate to determine potential removal.
- Several rear end crashes near southbound off-ramp. Lengthen storage by 100' (H 57). Consider if these occurred during times of construction.

US 395: US 730 to south City limits

- Dual/Double left turn lanes (H-63), for both northbound US 395 at US 730 should shorten queues to reduce the number of rear end crashes on this segment. This project is included in the TSP.

US 730: Switzler Avenue – River Road

- Monitor crashes on this segment to see if recent corridor improvements to add two-way left turn lane and bike lanes will reduce crashes.

Powerline Road: US 730 – Madison Street

- Install Two-Way Left-Turn lane on 2-lane road (H33). This project is included in the TSP.
- Install new guardrail (H 32).
- Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign (RD 9)

US 730: I-82 – US 395

- Install wildlife warning signs (RD 27).
- Install lighting on a roadway segment (H 30).
- Install Actuated/Coordinated Flashing Beacon as Advance Warning for Signalized Intersection (I-16).

I-82 Southbound off-ramp

- Extend Deceleration lane 100' (H 57)

River Road: US 730 to south

- Install Two-Way Left-Turn lane (H 33)

Other Projects

There are many other projects that have been identified as a result of public involvement and previous city efforts that will contribute to making a safer transportation network.

Table 6 includes a list of projects identified as a result of public involvement efforts that are primarily low-cost improvements. See Appendix C for associated comments.

Table 6 Low-Cost Safety Improvements Based on Public Comments Received

- Add an "official crosswalk" for pedestrians crossing at 6th/Yerxa.
- Repaint the yellow and white lines of Powerline Road.
- Evaluate the parking on Willamette near the golf course and make adjustments to improve sight distance.
- Consider eliminating the southern turn in at the gas station on Willamette to reduce conflict of vehicles slowing.
- Improve lighting and crosswalks in the vicinity around McNary Heights Elementary School
- Consider reducing speed on US 730 entering town from the west from 40 MPH, and through town down to 30 MPH.

The City has many other projects that, although they may not have been initiated for safety purposes, have a significant opportunity to improve safety or extend bicycle and pedestrian systems that will provide safe places for active transportation modes. Other City projects are shown in Table 7.

Table 7 Other City Projects That Will Contribute to Safety

Project Name	Description	Safety Benefit
Trails Master Plan		
SOUTH HILL		
South Hill Connector	Powerline Rd trail on west side from Tyler Ave to Bus Stop Park, crosses to east side from Bus Stop Park to existing trail at Monroe Street	Improves ped safety along Powerline Road
Paved Walking/Bike Path to Foot Bridge	Previously completed	
Umatilla River Crossing	New ped bridge north of Umatilla bridge to connect Downtown to area west	separated pedestrian
Route to West County Trail System/Rail to Trails	Ped trail along Umatilla River Rd that connects to ex west county regional Umatilla River Trail	Improves ped safety along Umatilla River Road
DOWNTOWN UMATILLA		
Third and Main Connector to Sixth	Bike and ped features when Brownell Blvd is resurfaced from 3rd to 6th St	Improves ped safety along Brownell Blvd

Umatilla River to Landing Park Connector	Ped path from existing trail from Nugent Park to Umatilla Landing Park under Umatilla Bridge	separated pathway
Third Street to Marina	Ped trail along Quincy Ave from existing 3rd St trail to Marina Park	Improves ped safety along Quincy Ave
Marina to Landing Park/Old Town Rail	Ped path between Umatilla/Columbia River confluence and Marina Park	separated pathway
MCNARY		
McNary Connector	Walking path around the golf course	
McNary to Downtown Connector	Ped path using either new trails or connecting existing trails between McNary and Marina Park	separated pathway
McNary to McNary Beach	Ped path along or on Beach Access Rd and Roxbury Rd	Improves ped safety along Beach Access and Roxbury Roads

Bike and Ped Plan		
SOUTH HILL		
Traffic Calming and Crossings	Crosswalks, refuge islands, roundabout	Improves ped safety along Powerline Road
Umatilla River Bridge	If new bridge built, historic bridge turned into path	separated pathway
DOWNTOWN UMATILLA		
3rd Street Path to River Path	sidewalks, bike lanes, crosswalks, refuge islands to connect two existing trails through Downtown	Improves ped and biker safety along Switzler Road, F St
Walkway Infill	sidewalks throughout downtown	Improves ped safety on streets in Downtown
Old Umatilla Connectors	potential parksite with trails and paths	separated pathway
CENTRAL AREA		
3rd Street Corridor	unpaved mixed use path from Brownell Blvd to Spillway St	Improves ped safety on 3rd St
Crossroads Intersection	Sidewalks under and east of I-82 on Hwy 730	Improves ped safety on Hwy 730
MCNARY		
Devore Road Connection	trail to connect McNary neighborhood to Devore Drive through undeveloped lot	separated pathway

Water System Plan		
DS-6 waterline	L St (6th St to 7th St)	Sidewalk
DS-7 waterline	7th St (L St to Randall Ave)	Sidewalk
DS-8 waterline	Yerxa Ave (6th St to 7th St)	Sidewalk
DS-9 waterline	6th St (Yerxa Ave to Sloan Ave)	Sidewalk
DS-10 waterline	Switzler Ave (3rd St to 6th St)	Sidewalk
DS-11 waterline	3rd St (WWTP to Cline Ave)	Sidewalk
DS-12 waterline	Cline Ave (3rd St to 2nd St)	Sidewalk
DS-14 waterline	Oliver Ave (2nd St to 3rd St)	Sidewalk
DS-15 waterline	Patterson St (2nd St to 3rd St)	Sidewalk
DS-16 waterline	Quincy Ave (1st St to 3rd St)	Sidewalk
DS-17 waterline	2nd St (Oliver Ave to Quincy Ave)	Sidewalk
DS-19 waterline	Stephens Ave	Sidewalk
DS-20 waterline	Tucker Ave	Sidewalk
DS-21 waterline	J Street (Stephens Ave to Tucker Ave)	Sidewalk

Sewer System Plan		
SE.3 sewer system expansion	Powerline Road from Quail Rd to south City limits	Sidewalk
SE.4 System Expansion US 730	US 730 from city limits to Umatilla River	Sidewalk

Prioritization

An evaluation of factors that contribute to risk for non-motorized users of the transportation network was undertaken. Factors were identified that increase conflict and therefore the likelihood of a potential crash between an automobile and modes that are vulnerable, especially pedestrians, and would suffer greater injury or fatality. These factors include the following:

- A history of crashes
- High traffic volumes
- History of fatal or serious injury crashes
- Crash rates
- Proximity of disadvantaged users including higher poverty, low car ownership, age, disabilities
- Public comments with respect to safety issues
- Lack of sidewalks
- Safe routes to school or school zone
- Transit route

The results of this prioritization are presented in Tables 8 and 9. These tables include all intersections of functionally classified roads and all roadway segments of classified roads regardless of whether they have any crash history at all. The functionally classified network is the priority network for the City of Umatilla, and as such, if future projects are identified these tables can help to prioritize improvements to address high risk locations. It should be noted that this priority listing can be applied to the projects listed earlier in this Safety Action Plan.

Table 8. Intersection Prioritization Based on Risk Factors

Intersection Name	Total Crashes	Crashes Points (1)	Average Daily Traffic	ADT Points (2)	Number of Fatal or Serious Injury Crashes	Serious/Fatal Points (3)	Crash Rate	Crash Rate Points (4)	Disadvantage Users (Low/Medium/High)	Disadvantage Users Points (5)	Number of public comments	Public Comments Points (6)	Speed Limit	Speed Points (7)	Percent sidewalk coverage (0/25/50/75/ 100)	Lack of Sidewalk Points (8)	Safe Route to School/ School Zone	Transit Route	Vulnerable Users Points (9)	Total Points
US 730/I-84 NB ramps	23	100	19900	100	3	300	0.57	11.4	Low	0	2	20	35	25	0	100			0	656
US 730/US 395	10	100	17500	100	1	100	0.23	4.6	Medium	50		0	45	50	0	100			0	505
US 730/Powerline Rd	7	70	13100	100		0	0.29	5.8	Medium-High	70	4	40	40	50	0	100			0	436
US 730/Willamette St	10	100	12400	100		0	0.28	5.6	Medium	50	1	10	55	50	0	100			0	416
US 730/Columbia Blvd	5	50	13600	100		0	0.17	3.4	Medium-High	70	4	40	45	50	0	100			0	413
US 730/Brownell Blvd	20	100	16400	100		0	0.66	13.2	Low-Medium	35	1	10	35	25	25	75		1	50	408
US 730/Bud Draper Rd	2	20	6800	68	1	100	0.16	3.2	Medium	50		0	55	50	0	100			0	391
US 730/Switzler Ave	3	30	13100	100		0	0.13	2.6	High	85		0	25	0	50	50	1	1	100	368
US 730/River Road	5	50	15200	100		0	0.11	2.2	High	85	1	10	25	0	50	50		1	50	347
US 730/I-84 SB ramps	12	100	24000	100		0	0.31	6.2	Low-Medium	35	1	10	35	25	75	25			0	301
Powerline/Madison	1	10	4300	43		0	0.13	2.6	Medium	50	1	10	35	25	0	100	1		50	291
US 730/Beach Access	7	70	6000	60		0	0	0	Medium	50		0	25	0	0	100			0	280
Columbia Blvd/Chenowith St	1	10	2700	27		0	0.34	6.8	Medium	50	3	30	25	0	0	100	1		50	274
Powerline/Riley		0	4000	40		0	0	0	Medium-High	70		0	35	25	25	75			0	210
Switzler/3rd		0	1000	10		0	0	0	Medium-High	70		0	25	0	0	100			0	180
Riverside Ave/Deschutes Ave	1	10	700	7		0	1.22	24.4	Low-Medium	35		0	25	0	0	100			0	176
Powerline/Pine Tree		0	4200	42		0	0	0	Medium-High	70		0	35	25	75	25			0	162
3rd/Deschutes		0	900	9		0	0	0	Medium	50		0	25	0	0	100			0	159
Deschutes/Devore		0	700	7		0	0	0	Low	0		0	25	0	0	100	1		50	157
Willamette St/Columbia Bvd	3	30	2200	22		0	0.49	9.8	Low	0		0	25	0	75	25	1		50	137
WillametteSt/Walla Walla		0	3200	32		0	0	0	Medium	50		0	25	0	50	50			0	132
Rio Senda/Chenowith		0	800	8		0	0	0	Medium	50		0	25	0	75	25			0	83
Williamette/Rio Senda		0	1400	14		0	0	0	Low-Medium	35		0	25	0	75	25			0	74

Notes:

(1) 10 points for each collision from 2018 - 2022.

(2) Average Daily Traffic/100. If ADT is > 10000, then max 100 points.

(3) 100 points for each collision that resulted in a fatality or serious injury.

(4) Collision rate times 20, max of 100 points if > 5. Collision rate is number of collisions per million vehicle miles of travel on the road segment.

(5) Six categories of census data were examined and whether census block group data was above or below the region average for that category (over represented) -- poverty 20 points, low vehicle ownership 20 points, race 15 points, age 15 points, disabled 15 points, limited english 15 points). The highest census block group that touched an intersection was used.

(6) 10 points for each public comment submitted for a segment.

(7) 25 MPH = 0 points, 30 MPH = 15 points, 35 MPH = 25 points, > 35 MPH = 50 points.

(8) Percentage of sidewalks that extend 100' back from the intersection: 0% sidewalks = 100 points, 25% sidewalks = 75 points, 50% sidewalks = 50 points, 75% sidewalks - 25 points, 100% sidewalks = 0 points.

(9) 50 points each for the intersection being a Safe Routes to School or on a Transit route.

Table 9. Roadway Segment Prioritization Based on Risk Factors

Segment Name	Total Collisions	Collision Points (1)	Average Daily Traffic	ADT Points (2)	Number of Fatal or Serious Injury Collisions	Serious/ Fatal Points (3)	Collision Rate	Collision Rate Points (4)	Disadvantage Users (Low/ Medium/ High)	Disadvantage Users Points (5)	Number of public comments	Public Comments Points (6)	Speed Limit	Speed Points (7)	Percent of sidewalk coverage (0/25/50/ 75/ 100)	Lack of Sidewalk Points (8)	Safe Route to School/ School Zone	Transit Route	Vulnerable Users Points (9)	Total Points
Powerline Rd: US 730 - Madison	10	100	4300	43	2	200	1.34	26.8	Medium-High	70	11	100	35	25	0	100	1		50	715
I-84 mainline	18	100	18000	100	2	200	1.1	22	Low	0		0	70	50	0	100			0	572
US 395: US 730 to south city limit	17	100	16000	100	1	100	1.2	24	Medium	50	0	0	55	50	0	100			0	524
US 730: Switzer - River Rd	10	100	12900	100		0	1.33	26.6	High	85	9	90	25	0	50	50		1	50	502
US 730: I-82 - US 395	9	90	18400	100	1	100	0.3	6	Low	0	1	10	45	50	0	100			0	456
US 730: Powerline - Switzer	23	100	11800	100		0	1.12	22.4	Medium-High	70	4	40	25	0	75	25		1	50	407
US 730: River Rd - Brownell	7	70	13800	100		0	0.74	14.8	Medium	50	1	10	35	25	50	50		1	50	370
I-84 SB off ramp	8	80	7600	76		0	2.54	50.8	Low	0		0	40	50	0	100			0	357
US 730: West of Powerline	1	10	10000	100		0	0.03	0.6	Medium-High	70	2	20	40	50	0	100			0	351
US 730: Columbia Blvd - Willamette		0	11600	100		0	0.31	6.2	Medium	50	6	60	55	50	25	75			0	341
US 730: US 395 - Columbia Blvd	1	10	12900	100		0	0.18	3.6	Medium-High	70		0	45	50	0	100			0	334
Columbia: US 730 - Chenowith	1	10	1400	14		0	4.15	83	Medium	50	2	20	25	0	0	100	1		50	327
US 730: Willamette - Bud Draper		0	7100	71		0	0.12	2.4	Medium	50	5	50	55	50	25	75			0	298
River Road: US 730 south	7	70	5200	52		0	0.81	16.2	Medium-High	70		0	30	15	25	75			0	298
Powerline Rd: Madison - Pine Tree		0	4300	43		0	0	0	Medium-High	70		0	35	25	25	75	1		50	263
US 730: Brownell - I-82 SB ramps		0	18800	100		0	0	0	Low-Medium	35		0	35	25	0	100			0	260
Columbia: Chenowith- Willamette	2	20	1100	11		0	1.06	21.2	Medium	50	3	30	25	0	25	75	1		50	257
US 730: Bud Draper - Beach Access		0	5300	53		0	0.44	8.8	Low-Medium	35		0	55	50	0	100			0	247
Powerline Rd: Pine Tree - Riley	4	40	4000	40		0	1.06	21.2	Medium-High	70		0	45	50	75	25			0	246
US 730: I-82 SB ramps - I-82 NB ramps		0	16000	100		0	0.74	14.8	Low	0		0	35	25	0	100			0	240
Powerline Rd: Riley - south	1	10	4000	40		0	0.62	12.4	Medium-High	70		0	25	0	0	100			0	232
Willamette: US 730 - Walla Walla	1	10	5200	52		0	0	0	Medium	50	2	20	25	0	50	50		1	50	232
Madison: McFarland - Powerline		0	400	4		0	0	0	Medium-High	70		0	25	0	0	100	1		50	224
Bud Draper: US 730 - Walla Walla	1	10	1600	16		0	0	0	Medium	50		0	35	25	0	100			0	201
Third: Switzler - Deschutes	2	20	1200	12		0	0.46	9.2	Medium-High	70		0	25	0	25	75			0	186
Pine Tree Rd: High Desert - Powerline	1	10	300	3		0	12.58	100	Medium-High	70		0	25	0	100	0			0	183
Bud Draper: Walla Walla - Roxbury		0	800	8		0	0	0	Medium	50		0	35	25	0	100			0	183
Switzler: US 730 - Third		0	900	9		0	0	0	Medium-High	70		0	25	0	0	100			0	179
Rio Senda : Chenowith - Willamette	1	10	300	3		0	4.32	86.4	Medium	50	2	20	25	0	100	0			0	169
Rio Senda west of Chenowith	1	10	300	3		0	10.75	100	Medium	50		0	25	0	100	0			0	163
Riverside/Roxbury: Deschutes-Beach Access		0	700	7		0	0	0	Medium	50		0	25	0	0	100			0	157
Deschutes: Third - Devore		0	1200	12		0	0	0	Low-Medium	35		0	25	0	0	100			0	147
Deschutes: Devore - Riverside		0	600	6		0	0	0	Low-Medium	35		0	25	0	0	100			0	141
Walla Walla: Willamette -east	1	10	1200	12		0	0.83	16.6	Medium	50		0	25	0	50	50			0	139
Riverside: Rio Senda - Deschutes		0	700	7		0	0	0	Low	0		0	25	0	0	100			0	107
Devore: US 730 - Deschute		0	600	6		0	0	0	Low	0		0	25	0	0	100			0	106
Pheasant Ridge Road: Pine Tree - Riley		0	300	3		0	0	0	Medium-High	70		0	25	0	75	25			0	98
Riley: High Desert Loop - Powerline		0	300	3		0	0	0	Medium-High	70		0	25	0	75	25			0	98
Willamette: Columbia - Rio Senda		0	1200	12		0	0	0	Medium	50	2	20	25	0	100	0			0	82
Willamette: Walla Walla - Columbia		0	2000	20		0	0	0	Medium	50		0	25	0	100	0			0	70

Notes:

(1) 10 points for each collision from 2018 - 2022.

- (2) Average Daily Traffic/100. If ADT is > 10000, then max 100 points.
- (3) 100 points for each collision that resulted in a fatality or serious injury.
- (4) Collision rate times 20, max of 100 points if > 5. Collision rate is number of collisions per million vehicle miles of travel on the road segment.
- (5) Six categories of census data were examined and whether census block group data was above or below the region average for that category (over represented) -- poverty 20 points, low vehicle ownership 20 points, race 15 points, age 15 points, disabled 15 points, limited english 15 points). The highest census block group that touched a segment or intersection was used.
- (6) 10 points for each public comment submitted for a segment.
- (7) 25 MPH = 0 points, 30 MPH = 15 points, 35 MPH = 25 points, > 35 MPH = 50 points.
- (8) 0 sidewalks = 100 points, 25% sidewalks = 75 points, 50% sidewalks = 50 points, 75% sidewalks - 25 points, 100% sidewalks = 0 points.
- (9) 50 points each for the segment being a Safe Routes to School or on a Transit route.

Progress and Transparency

It is important to ensure ongoing transparency with stakeholders and the public regarding the progress of projects and strategies in this Safety Action Plan and their effects. The City of Umatilla is committed to transparency by making this Safety Action Plan publicly available on the City website. It is also committed to measuring progress in two meaningful ways as described below.

Project Progress

The City will monitor and report the progress in implementation of projects and strategies as a result of this Safety Action Plan. Each is evidence that activities were performed toward the goal of reducing the number and severity of crashes in the City of Umatilla. Examples can include progress toward the completion of:

- Safety projects listed in this Plan
- Policy revisions such as the preparation of a Complete Streets Policy and ADA Transition Plan

Project Effectiveness

Beyond tracking each action and activity, it is important to know how effective those projects, strategies, and policy changes are to the ultimate outcome – improving safety on the transportation network in Umatilla. The most common measures in traffic safety are the number, type, and severity of roadway crashes.

- The number of people killed and seriously injured.
- The rate of fatal and serious injury crashes, often normalized by population or vehicle miles traveled.

The City will develop and maintain a publicly accessible Safety Outcomes summary that displays available crash data including, at a minimum, the number, type and severity of crashes occurring in Umatilla. The City will update this report at least bi-annually, as OSDOT updates to crash data become available. A five-year rolling average is a common reporting methodology that could be implemented. This can be reported for specific locations as well as for projects as they are implemented to monitor effectiveness in a before-and-after implementation approach.

Appendix A

VISION ZERO ADOPTING RESOLUTION

RESOLUTION NO. 47-2025

A RESOLUTION ADOPTING THE CITY OF UMATILLA ROADWAY SAFETY ACTION PLAN AND ADOPTING A VISION ZERO INITIATIVE WITH THE GOAL OF ELIMINATING ALL TRAFFIC FATALITIES AND SERIOUS INJURY COLLISIONS IN THE CITY OF UMATILLA BY 2035

WHEREAS, the “Vision Zero” initiative was first established in Sweden in the 1990’s as a set of traffic management policies with the goal of eliminating traffic-related deaths and severe injuries; and

WHEREAS, the guiding principles of “Vision Zero” include that deaths and injuries caused by traffic crashes should be treated as a public health problem, which can be eliminated through planning for the safety of all rather than as an inevitable by-product of the vehicle-based transportation system; and

WHEREAS, the City of Umatilla is dedicated to the safety, health and well-being of all community members; and

WHEREAS, the City of Umatilla was awarded a grant from the US Department of Transportation Federal Highway Administration for completion of the City of Umatilla Roadway Safety Action Plan; and

WHEREAS, in 2025 the City of Umatilla developed the attached Roadway Safety Action Plan through a public process with public input as to transportation network safety issues, and that identifies countermeasures to be implemented at locations throughout the city that have a history of traffic crashes and prioritizes those locations with a history of crashes that resulted in death or serious injury and/or those that involved bicyclists or pedestrians; and

WHEREAS, measures to make Umatilla’s streets safer for all road users, particularly those who are most physically vulnerable, will further empower people to walk, bike and take transit, enhancing our community’s culture of well-being and safety; and

WHEREAS, between 2018 and 2023 there have been crashes resulting in 0 deaths (with two known deaths occurred from crashes in 2023, full data is not yet available), nine serious injuries and 30 minor injuries within the City of Umatilla; and

WHEREAS, the City of Umatilla finds that the only acceptable number of fatalities and serious injuries resulting from traffic crashes is zero; and

WHEREAS, children, the elderly, people of color, and people in low-income communities face a disproportionate risk of traffic injuries and fatalities; and

WHEREAS, a commitment to Vision Zero will also create opportunities to invite meaningful community collaboration between relevant governmental agencies; and

WHEREAS, more needs to be done to eliminate traffic crashes within the City and it is clear that Umatilla would benefit from formally adopting its own Vision Zero Initiative based on the following five fundamental principles shared by the Vision Zero Network:

1. Deaths and severe injuries caused by traffic crashes are preventable;
2. Human life and health should be prioritized in all transportation systems and in all aspects of transportation planning;
3. Human error is inevitable and transportation systems should be forgiving;
4. Transportation planning should focus on systems-level changes above influencing individual behavior; and
5. Speed is the single most important factor in crash severity.

NOW THEREFORE, the City Council of the City of Umatilla, Oregon hereby resolves as follows:

Section 1: The City of Umatilla adopts the attached Roadway Safety Action Plan labeled Exhibit A.

Section 2: The City of Umatilla is committed to and formally adopts the goal of eliminating traffic deaths and serious injuries on Umatilla roadways by 2035 and endorses Vision Zero as a comprehensive and holistic approach to achieving this goal.

Section 3: The City of Umatilla is committed to meaningful collaboration with the Oregon Department of Transportation and Umatilla County which seeks to design and implement county-wide programs that promote safe driving through community efforts and partnerships.

Section 4: The City of Umatilla is committed to the implementation of traffic safety countermeasures, strategies and projects as featured in the Roadway Safety Action Plan and will aggressively pursue any and all funding available to the City to implement these improvements with a priority on locations with a history of crash resulting in fatality or serious injury.

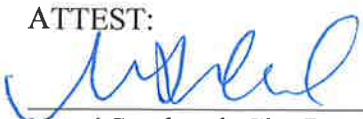
Section 5: Through policies such as Complete Streets and city planning documents such as the 3 Comprehensive Plan and Transportation System Master Plan (2023), the City of Umatilla will continue to align local planning and engineering standards with national best practices for ensuring safe streets for all community members.

Section 6: The City of Umatilla is committed to pursuing opportunities for meaningful community engagement with all community members, and to enhancing community engagement with communities that historically have been underserved.

PASSED by the Council and **SIGNED** by the Mayor this 17th day of June 2025.



Caden Sipe, Mayor

ATTEST:


Nanci Sandoval, City Recorder

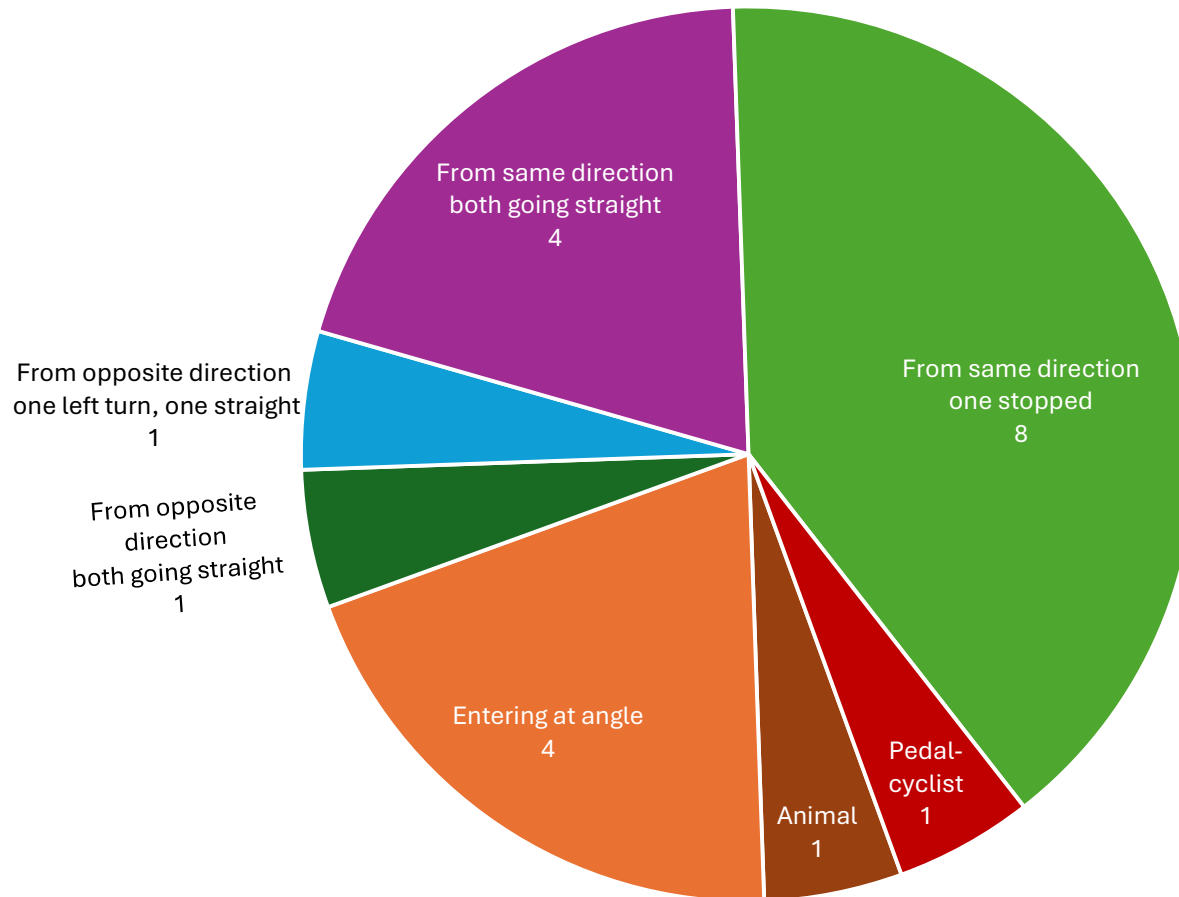


Appendix B

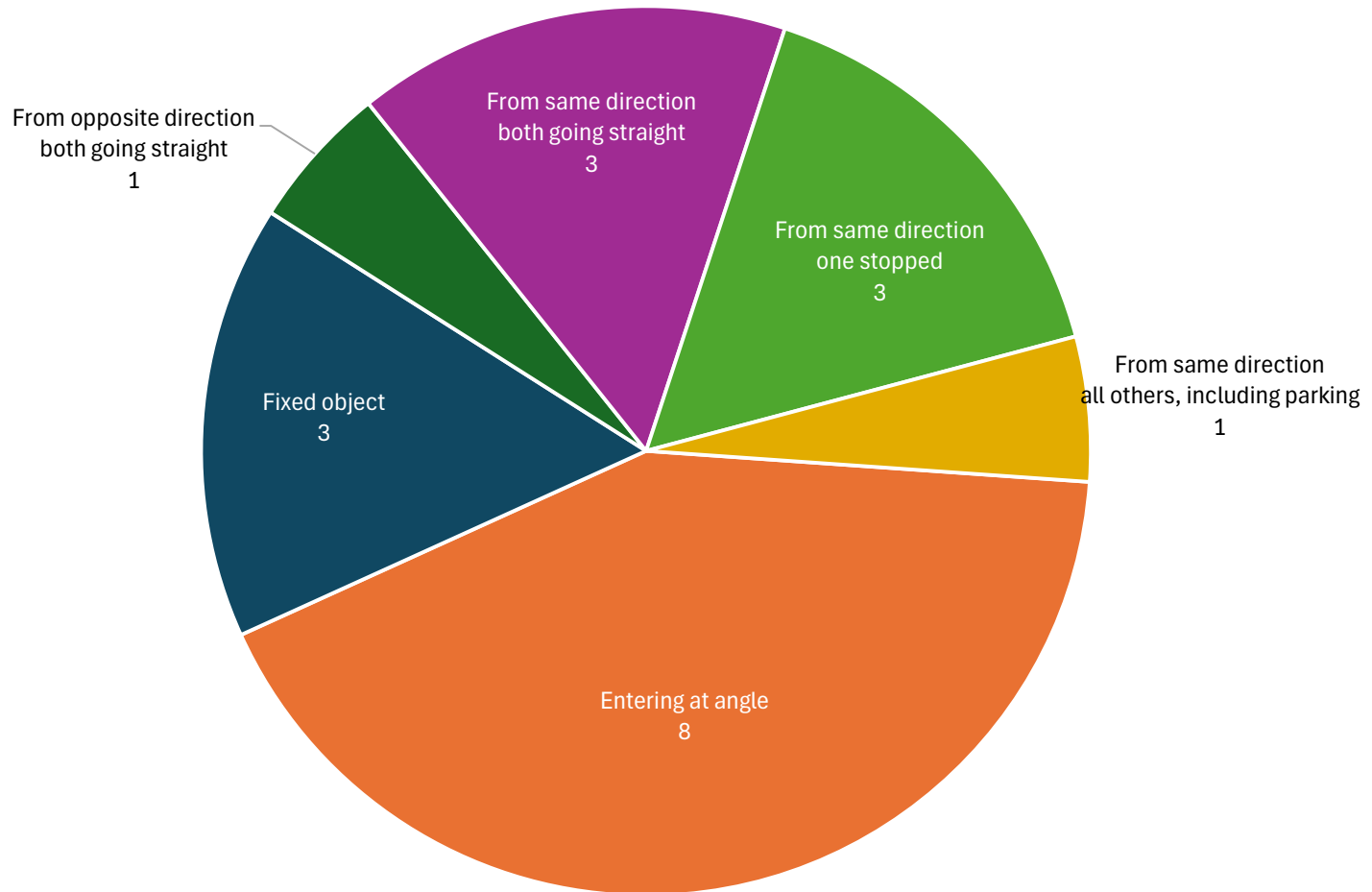
Intersection and Roadway Segment Crash Type Pie Charts

Intersections

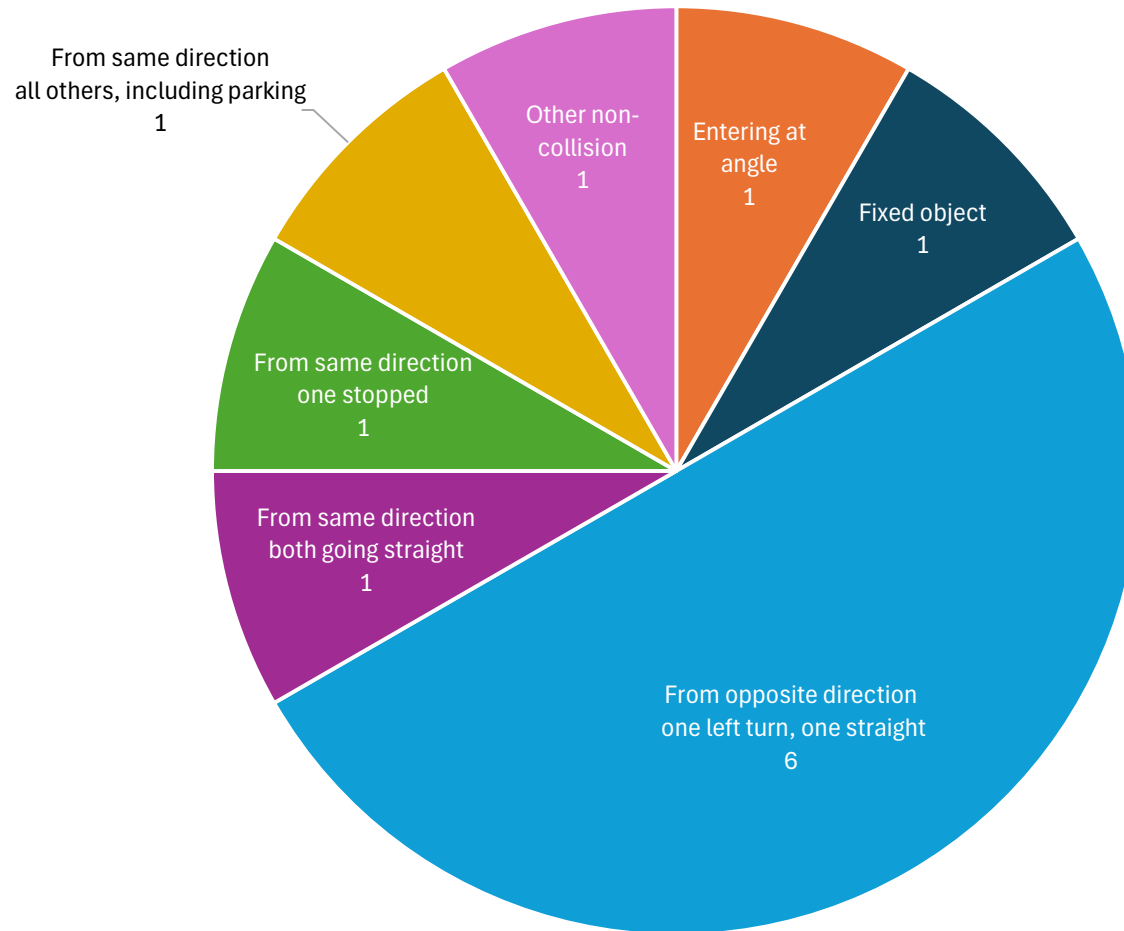
US 730/Brownell Blvd



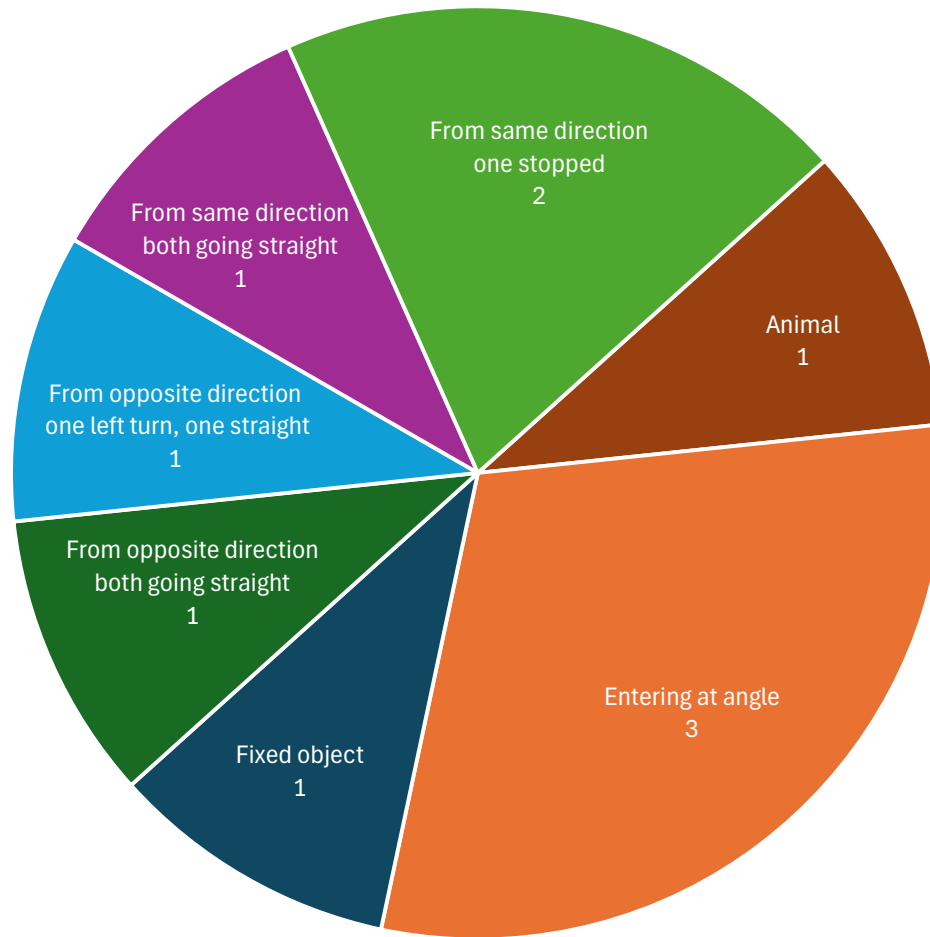
US 730/I-84 NB ramps



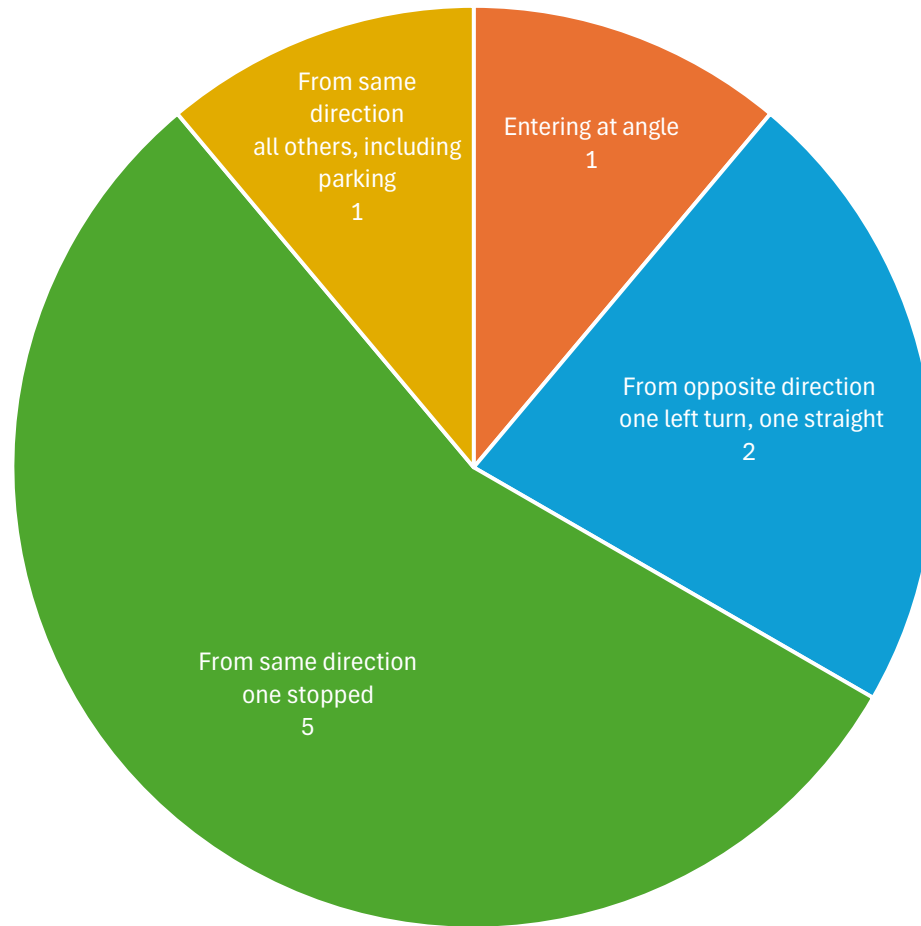
US 730/I-84 SB ramps



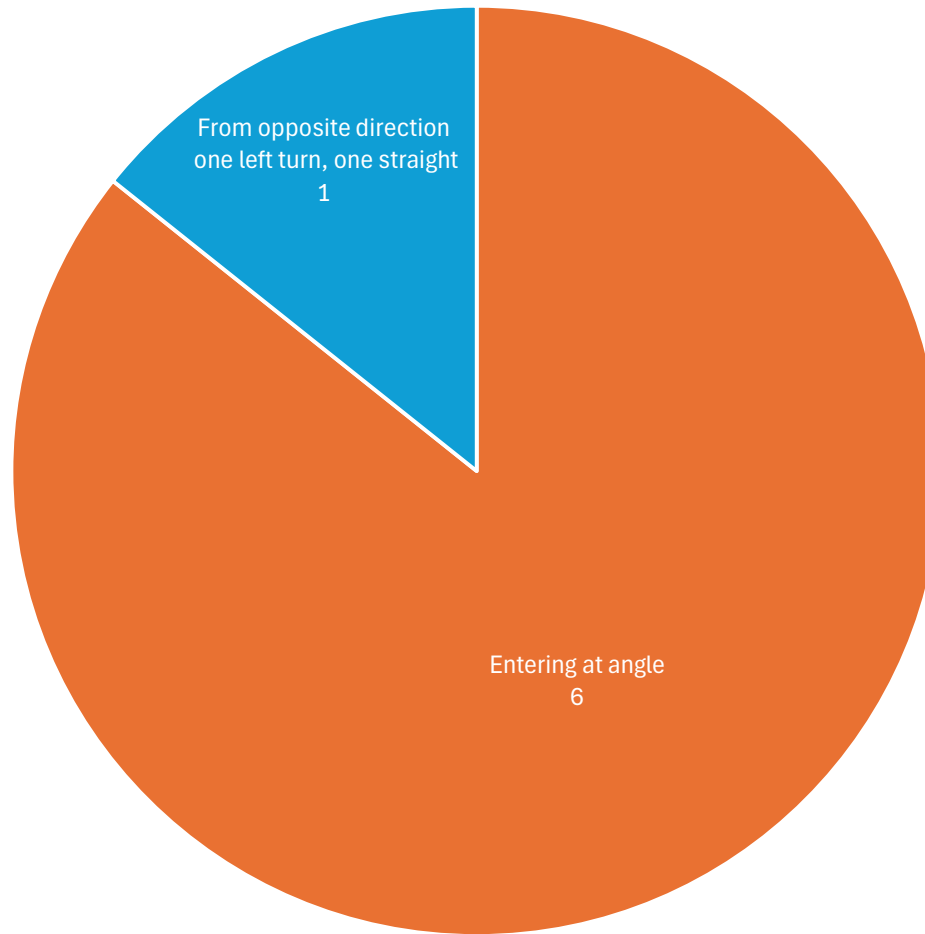
US 730/Willamette St



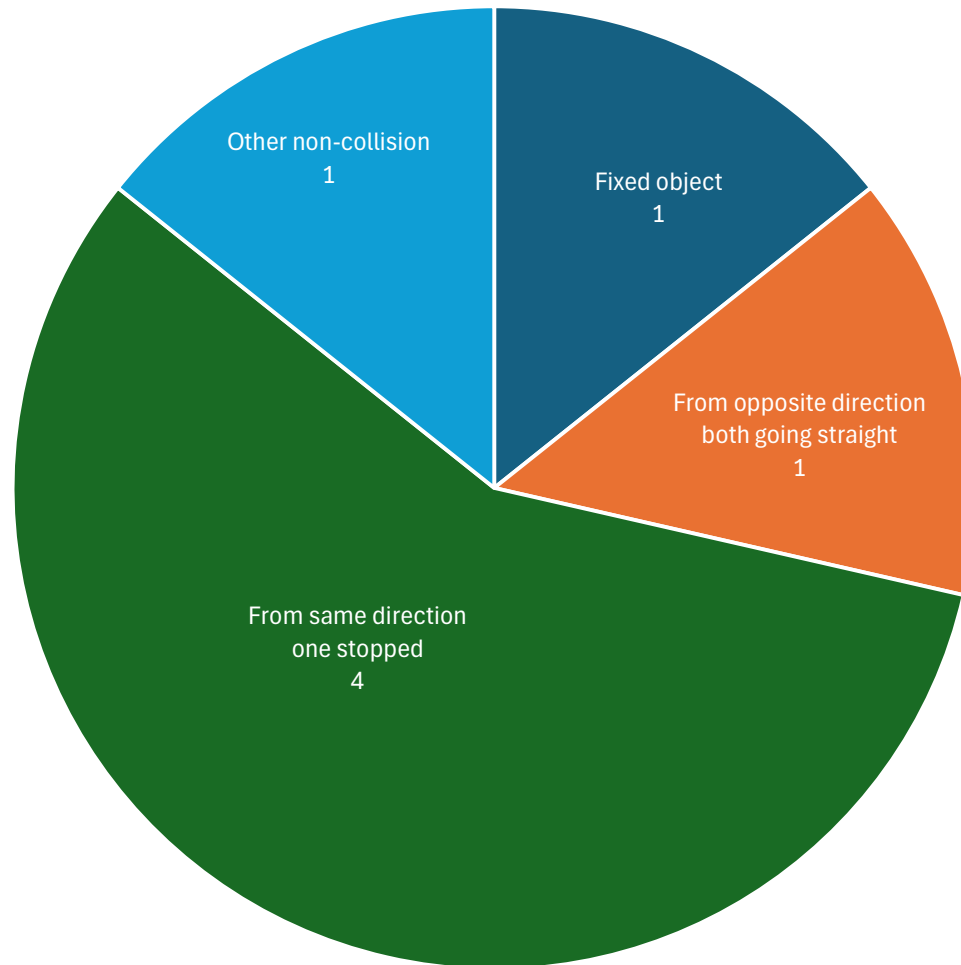
US 730/US 395



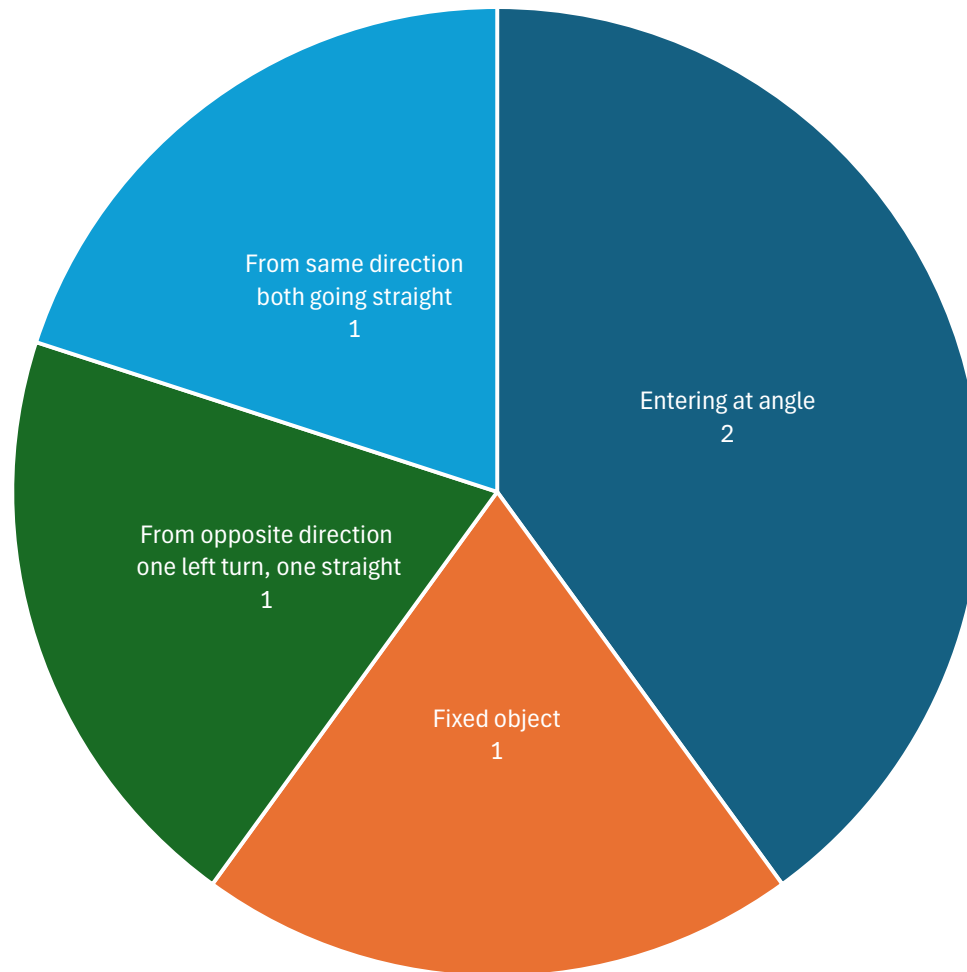
US 730/Powerline Rd



US 730/Beach Access

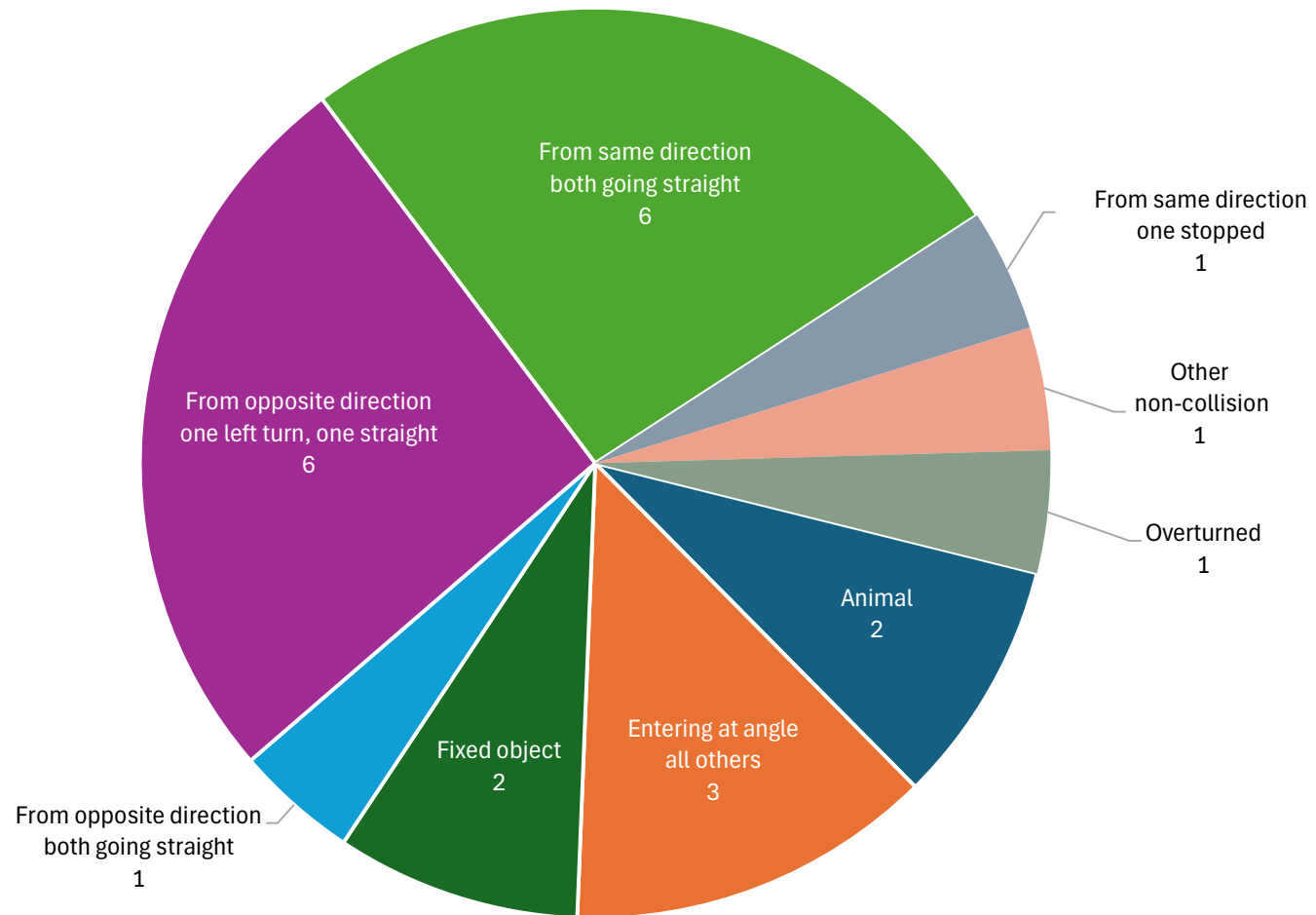


US 730/River Road

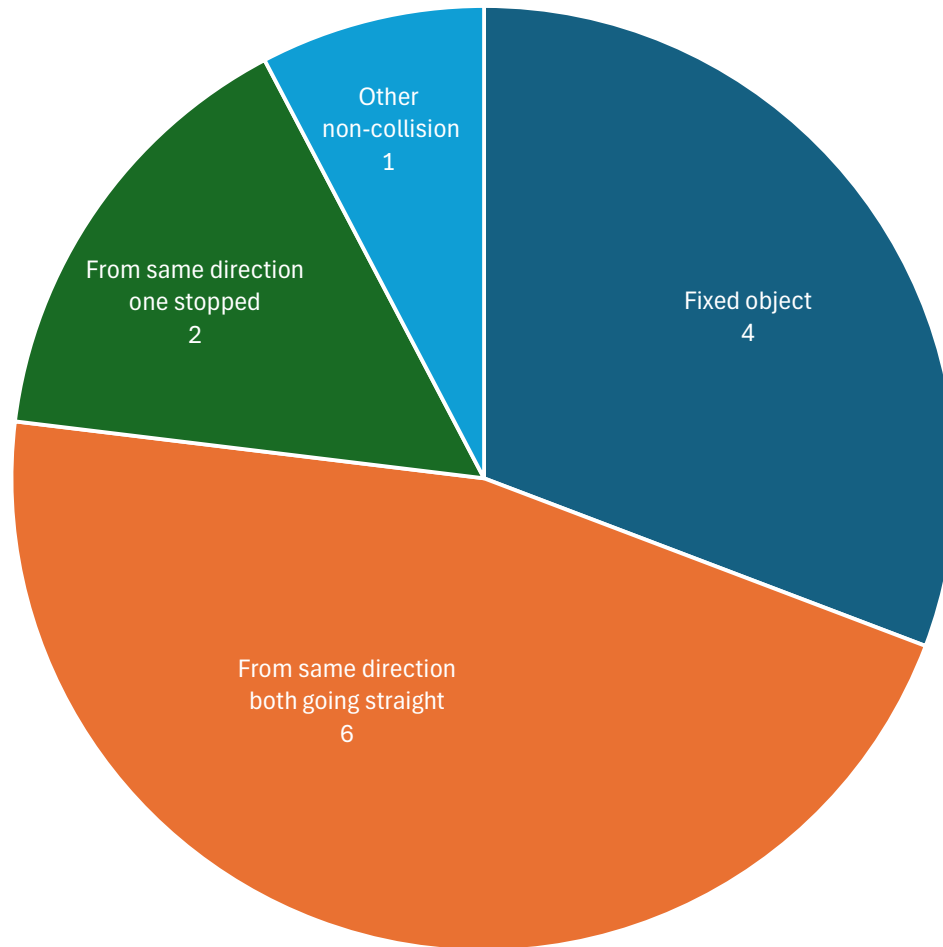


Roadway Segments

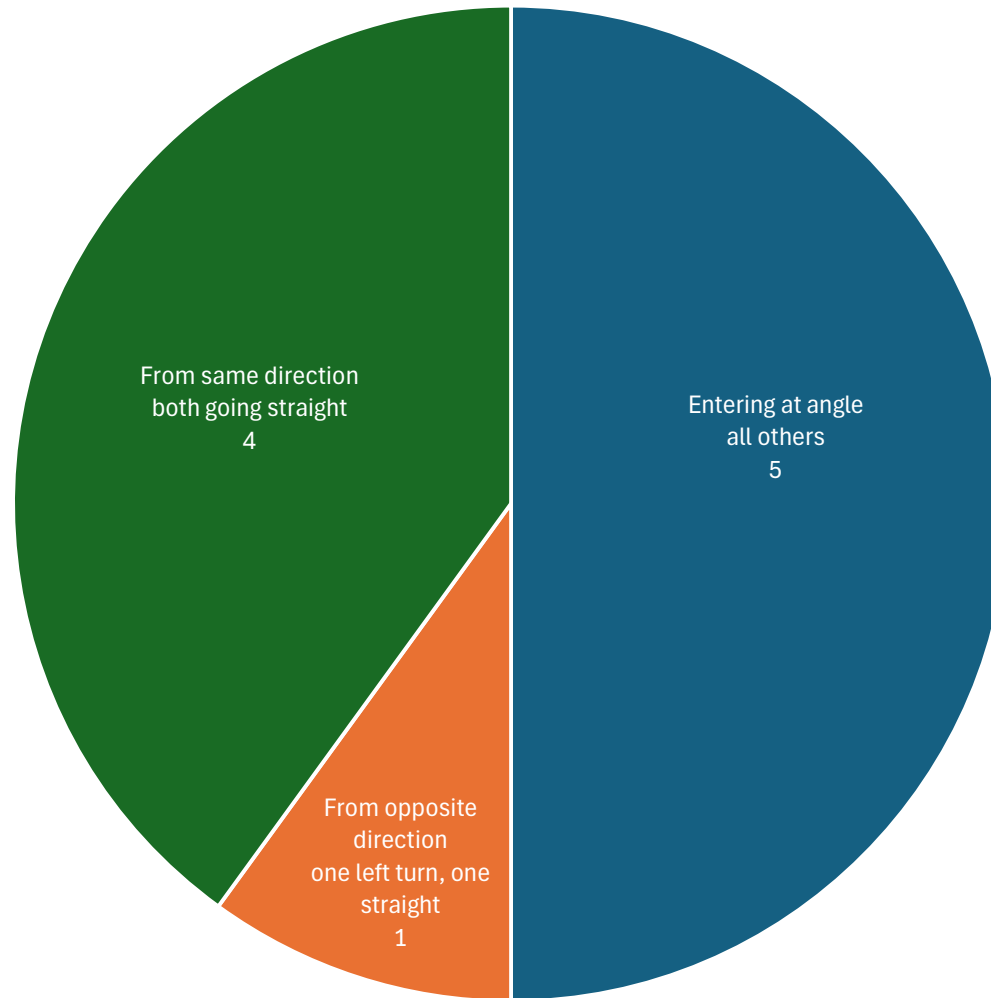
US 730: Powerline - Switzer



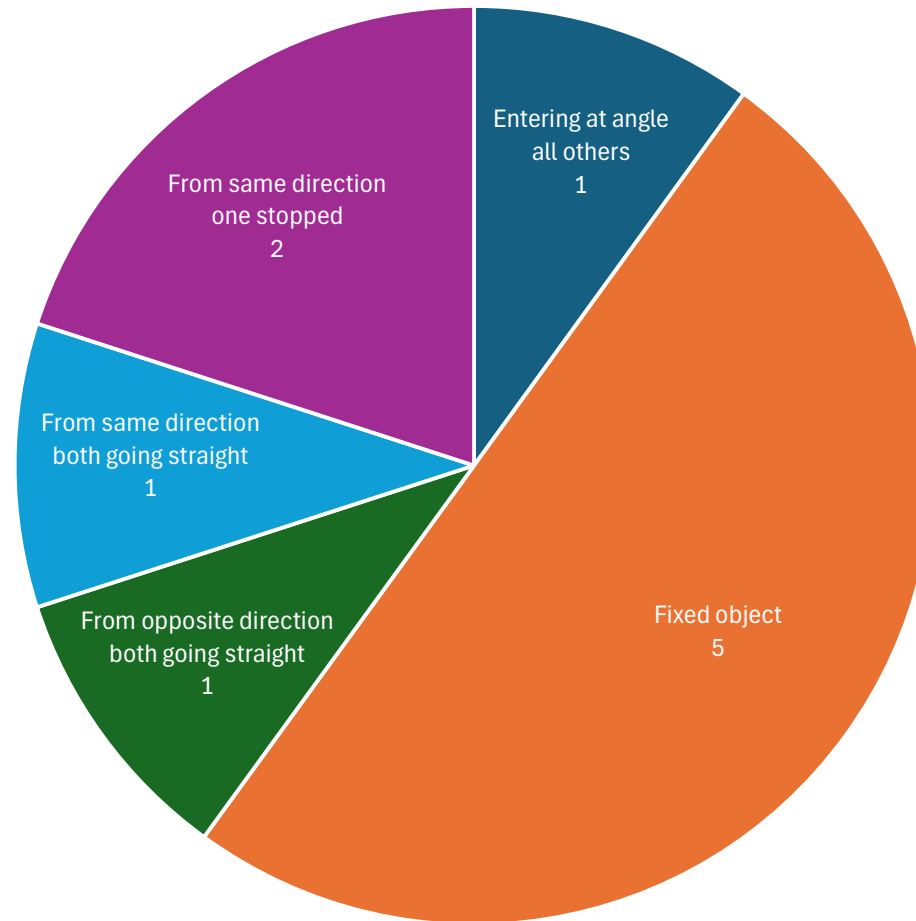
I-84 mainline



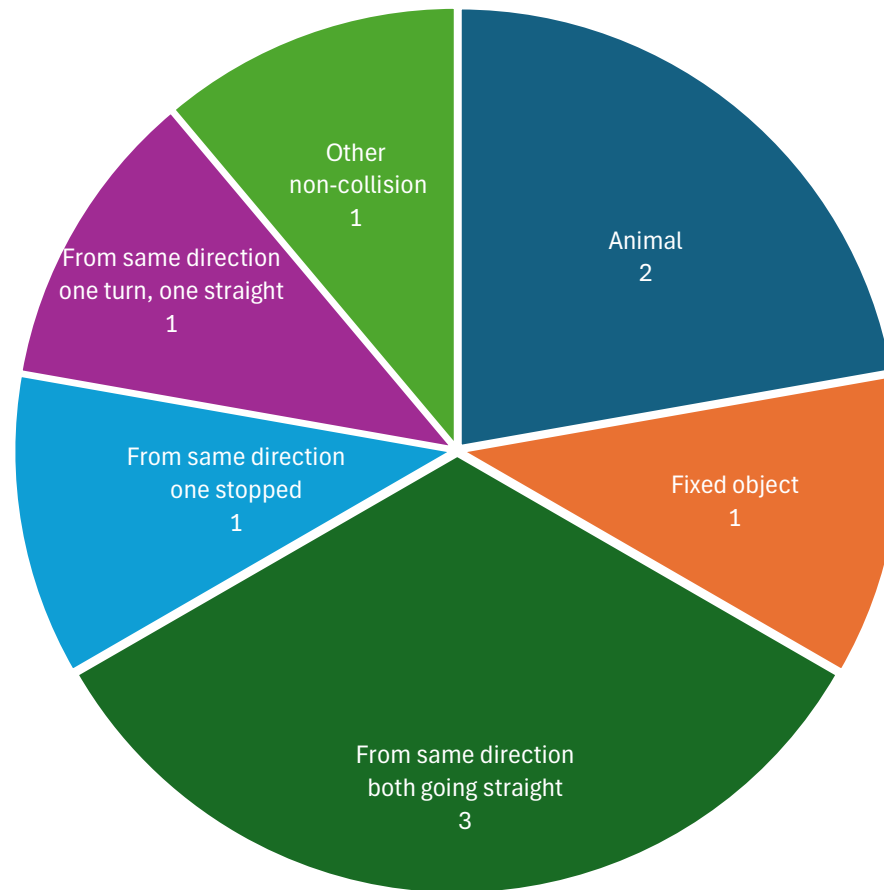
US 730: Switzer - River Rd
Segment 3



Powerline Rd: US 730 - Madison



US 730: I-82 - US 395



Appendix C

Public Involvement

APPENDICES

APPENDIX C1. STAKEHOLDER ASSESSMENT

Stakeholder Assessment Summary City of Umatilla Safety Action Plan

In Winter of 2025, Angela Singleton of The Langdon Group, a subsidiary of J-U-B Engineers, Inc. specializing in public involvement and facilitation, conducted a series of stakeholder interviews for the City of Umatilla Safety Action Plan. Interviews were conducted in person and via video and phone call based on stakeholder preference. Stakeholders were selected to provide a holistic representation of perspectives, including State and local governments, emergency service providers, community services, local businesses, and public transportation.

Interviews focused on identifying opportunities and preferences for road improvements, vehicle and pedestrian safety, public outreach methods, and overall community needs. In total, six interviews occurred. Feedback included focusing on pedestrian safety and lighting, speed reduction, and traffic flow.

Organizations Represented in Stakeholder Interviews
City of Umatilla Parks and Recreation Department
City of Umatilla Police Department
Umatilla Chamber of Commerce
Kayak Transit (Regional Transportation Agency)
Oregon Department of Transportation
Oregon Department of Human Services

Themes and Takeaways

The following is a comprehensive summation of feedback collected during the stakeholder interview process, organized by these central themes: 1) Pedestrian safety and lighting, 2) Challenges, and 3) Community Involvement.

1. Pedestrian safety and lighting
 - a. A large majority of the community members in Umatilla walk to get to school or work and are asking the City to install and/or connect sidewalks and add lighted crosswalks.
 - b. There is a lack of sidewalk connectivity between key buildings and services including the new developments and the school.
 - c. Areas in need of sidewalks and lighting improvements or additions include:
 - i. South Hill
 - ii. McNary
 - iii. River Road
 - iv. Powerline Road
 - v. Yursa Avenue + 6th Street

- vi. Middle and High School foot/bike traffic for several blocks in any direction
 - vii. Highway 730 + 6th Street
- d. Community members would support a speed reduction on Highway 730 past the bridge. There is a turn to make and factors such as fog or lack of lighting can make it difficult to slow down for the turn.

2. Challenges

- a. Many stakeholders were concerned with the lack of funding the City has for these projects and if they would receive grant funding to complete the projects outlined in the Safety Action Plan.
- b. Some community members struggle with growth in Umatilla and don't support improvements that will increase resident taxes.
- c. Most of the areas that need sidewalks don't have a real shoulder or room for a sidewalk or other improvements.
- d. Knowledge of pedestrian right of way and policies would be helpful for everyone to re-learn. Some stakeholders were frustrated with the lack of proper use of newly installed cross walk indicators and of drivers not knowing when they should completely stop versus yield.

3. Community involvement

- a. There is a large Spanish speaking population in Umatilla, so it is important to make all public materials available in both English and Spanish.
- b. Community events in Umatilla are highly attended so it is best to join an event that is already happening to reach a diversity of community members.
- c. The City has an active Facebook page and newsletter that residents check for updates over the City's website.

City of Umatilla
Safety Action Plan
Stakeholder Interview Guide

Conducting one-on-one interviews with key stakeholders is an effective method of public involvement (PI). Stakeholder interviews help to gain an understanding of the community's priorities, interests, challenges, and potential opportunities for improvements. Stakeholder input will help inform the public involvement strategy moving forward. Interviews will be held over the phone or virtually, whichever is most convenient for the interviewee. Interviews are scheduled to last one hour but may vary based on the availability and/or interest of the stakeholder.

The following questions will serve as a guide for conducting stakeholder interviews. For each stakeholder, questions will be selected based on stakeholder interest and relevance to their role in the community. Some or all may be used. Interviews are intended to be conversational, allowing the interviewee to focus on the issues that are most important to them.

Guiding Questions

1. How do you travel around Umatilla and the region?
2. What is your role in the community, or connection to Umatilla?
3. Are you familiar with safety action plans? Were you aware the City is taking on this effort?
 - a. If yes, what is your current knowledge of the effort, and/or goal of SAPs?
 - b. *Interviewer – help explain Zero Fatalities commitment, and goals of SAP.*
4. How can you see this Plan being implemented in your area?
 - a. Are the specific areas this would benefit most from safety improvements?
5. What possible challenges are there for reaching the goals of the SAP?
6. Do you have any concerns about this process?
7. What should the City of Umatilla prioritize in the Safety Action Plan?
 - a. EXAMPLE: Reducing collision, ped safety, bike infrastructure, ADA, Speed reduction, Lighting or Crime safety, maintenance, etc.
8. How can we best adapt the Plan to fit the needs of this community?
 - a. What do you think will be the community's main priorities or interests?
 - b. Are there specific community groups you know of that would be helpful to contact, or collect feedback from?
 - c. How can we best reach these groups regarding the Safety Action Plan, to collect their feedback?
9. Are there any other items or details you think should be considered in the planning process?
10. How can we best reach the public with project information?
 - a. How would you prefer to receive updates on the project?
 - b. Is there any information or specific topics you would recommend we focus on providing to the community?
11. Is there anyone else that we should talk to regarding this project? Why?

APPENDIX C2. TECHNICAL ADVISORY COMMITTEE (TAC)

A Technical Advisory Committee (TAC) was convened to provide expert and community insight at key points in the project, to inform the Plan's development, implementation, and monitoring. The TAC is a four-member commission comprised of diverse local perspectives responsible for making recommendations to the City Council.

The project team met with the TAC three times over the course of the Plan development to review safety data, identify opportunities for public engagement, and receive feedback on draft chapters. Agenda packet materials are included in this appendix for each meeting. Additionally, a draft version of the Plan was shared with TAC members for comment prior to adoption.

Members of the City of Umatilla TAC overseeing the Safety Action Plan development included:

- Brandon Seitz – City of Umatilla Community Development Director
- Ronald Bridge – City of Umatilla Police Chief
- Nancy Miranda – City of Umatilla Associate Planner
- Scott Coleman – City of Umatilla Public Works Director

TAC Meeting Schedule and Goals:

1. **August 13th, 2024** – Project kick off
2. **February 19th, 2025** – Review preliminary findings and public involvement summary
3. **June 3rd, 2025** – Present draft to City Council for feedback
4. **June 17th, 2025** – Plan adoption



HELPING EACH OTHER
CREATE BETTER COMMUNITIES

J-U-B

THE LANGDON GROUP | GATEWAY MAPPING INC.

J-U-B FAMILY OF COMPANIES

Umatilla Safety Action Plan

August-13-2024

1

Meeting Goals

Introductions

Present our recommended approach

Receive feedback and guidance

2



Spencer Montgomery, J-U-B Engineers,
Project Manager

- Project Controls; Scope, Schedule and Budget
- Oversee Deliverables and Quality Control



Hannah Anderson, The Langdon Group,
Public Involvement Lead

- Stakeholder and Community Liaison
- Project Information and Public Outreach



Jennifer Switzer, Gateway Mapping,
Geographic Information Systems Lead

- Mapping and graphics support

Project
Team

3

Roadway Comprehensive Safety Action Plan Project Background

- National (USDOT) planning grant through Safe Streets and Roads for All, city matching funds.
- To include all modes of transportation.
- Significant Public Involvement
- Goal of zero roadway fatalities and serious injuries.
- Potential Implementation funds for those with approved Safety Action Plans.

4

Roadway Comprehensive Safety Action Plan Project Scope

- Leadership commitment to eventual goal of zero roadway fatalities and serious injuries.
- Public Involvement
- Collision History and Safety Analysis
 - Focus on high rates of fatalities and serious injuries
 - Evaluate barriers to bicycle/pedestrian movements, access to transit and safe routes to school
 - Evaluate where and why collision occur
- Equity Considerations, research and assess underserved communities
- Assess Existing Policies, Programs and Practices identifying opportunities to improve/prioritize safety
- Strategy and Project Selections
- Prepare Safety Action Plan

5

Public Involvement Plan



Coordinate UTAC Meetings



Situation Assessment



Stakeholder Coordination



Public Surveying



Open Houses



Messaging and Informational Materials



Summary of Public Involvement

6

Technical Advisory Group Role



TECHNICAL
ADVISORY



LOCAL,
COMMUNITY
PERSPECTIVE



FEEDBACK TO
CITY AND
CONSULTANTS

7



TRAFFIC AND
ROADWAYS



COMMUNITY GROWTH
AND DEVELOPMENT



PUBLIC
TRANSPORTATION



PUBLIC SAFETY



LONG-TERM
PLANNING

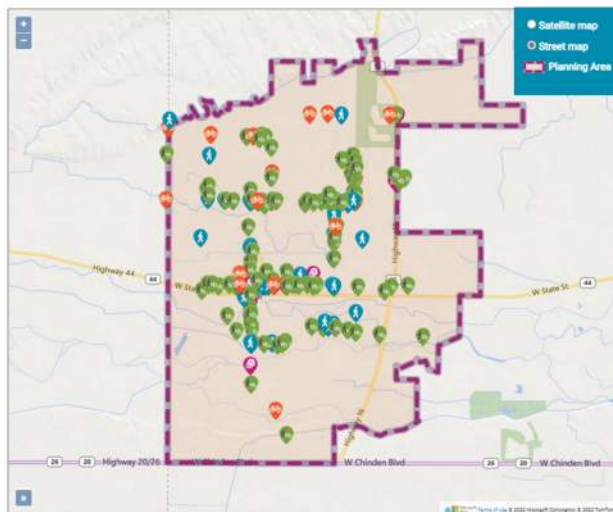


PUBLIC OUTREACH

Situation Assessment - Stakeholder Interviews

8

Planning Area Map



Public Surveying

3P Visual Comment Map

Location specific
Areas of incident
Congestion
Transit

Traditional Survey

Content Specific
Big picture
Goals, values, vision

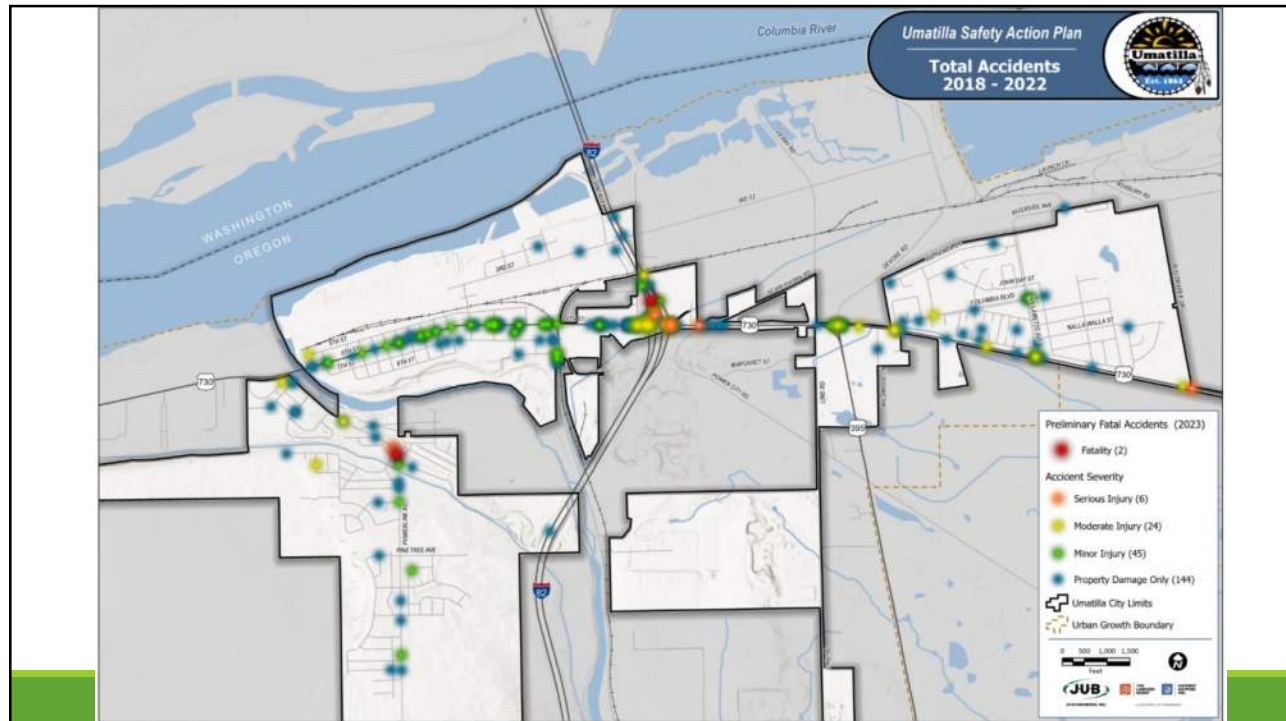
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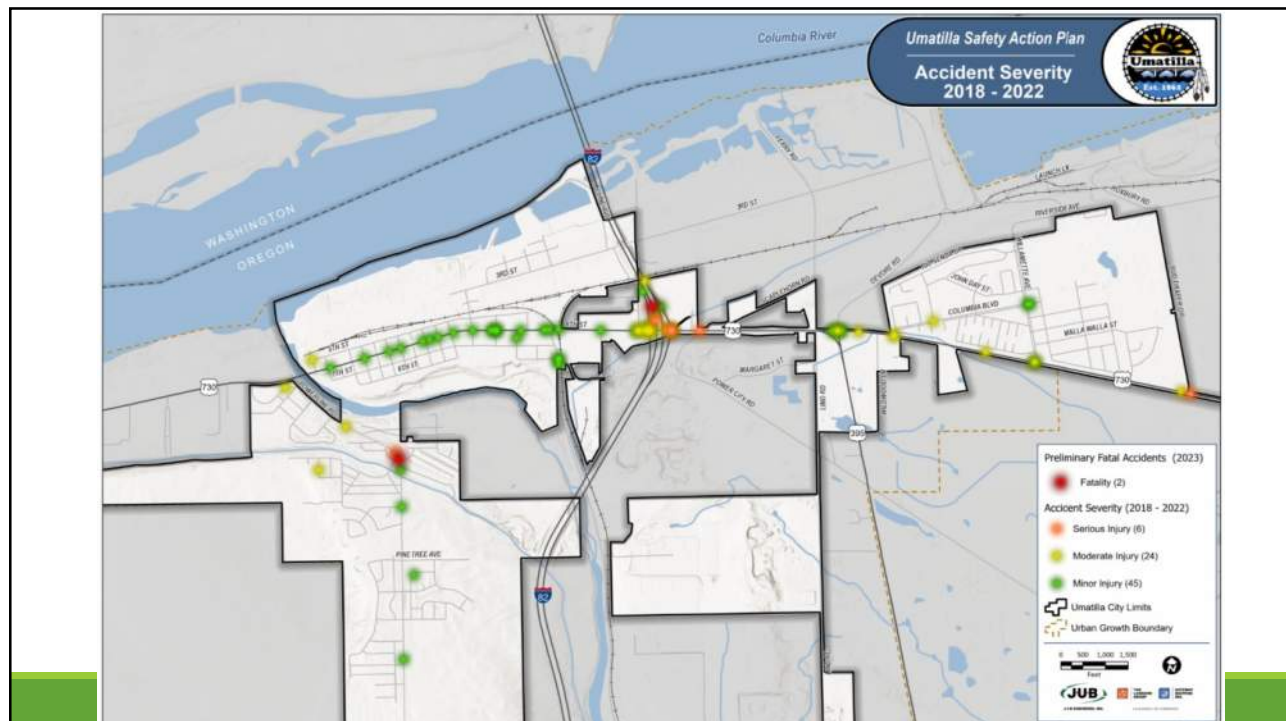
Public Open Houses

- Open House #1 | Fall 2024
 - Inform public of the project
 - Collect early feedback (plan goals)
 - Understand public priorities
- Open House #2 | Jan 2024
 - Present draft findings
 - Verify project findings
 - Refine feedback

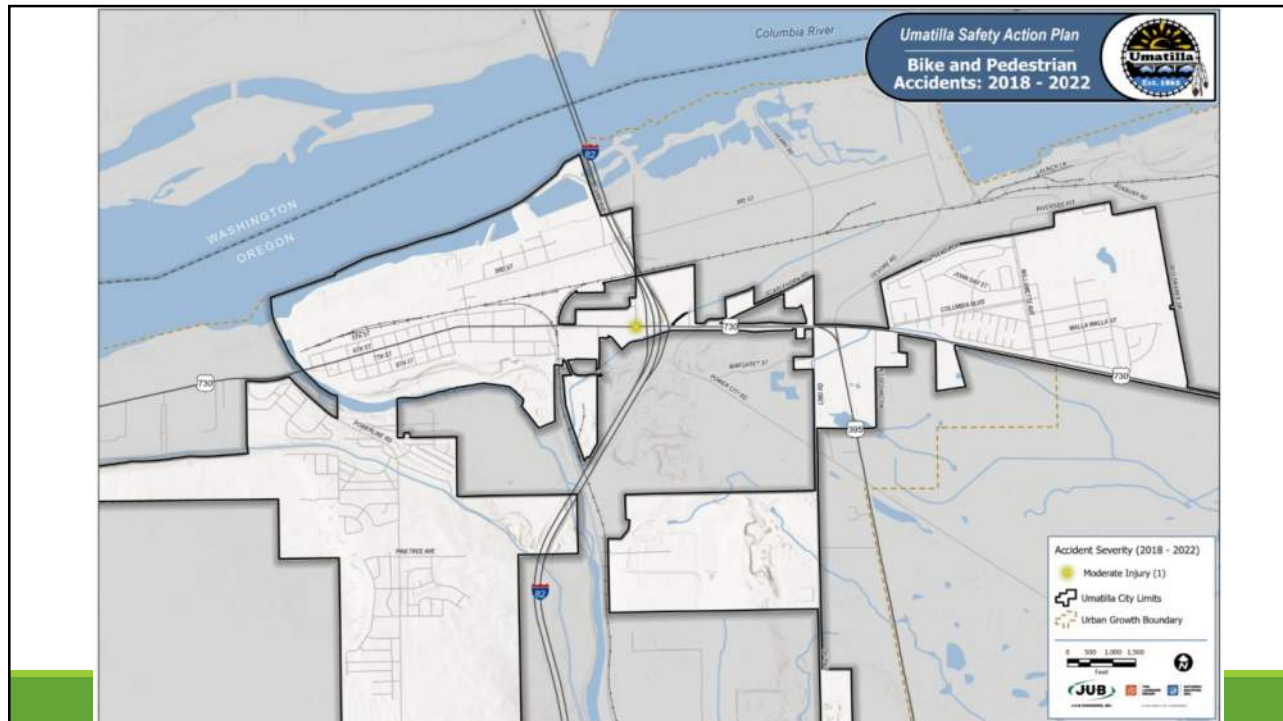
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11



12



13

City of Umatilla
Crash Summary 2018 - 2022

Total Crashes by Year

Year	2018	2019	2020	2021	2022	Total
Number	49	41	37	46	54	227

Most Severe Injury Type

Injury Type	Number of Crashes
Fatality*	0
Disabling	0
Suspected Serious	4
Suspected Minor Injury	22
Possible Injury	54
No Apparent Injury	346
Unknown	25
TOTAL	451

* 2 Fatalities occurred in 2023, only 2023 fatality data is available.

Accident History Summary Tables

14

Most Common First Collision Type

Collision Type	Number of Crashes	
	Total	Percent
Same direction - rear end	65	28.6%
Entering at angle	40	17.6%
Fixed object	35	15.4%
Parked Car	21	9.3%
Same direction - sideswipe	19	8.4%
Opposite direction one left turn	15	6.6%
Opposite direction - all others	10	4.4%
All others	8	3.5%
Same direction - all others	6	2.6%
Animal	7	3.1%
Bicycle/Pedestrian	1	0.4%
TOTAL	227	100%

Contributing Circumstance

Motor Vehicle 1 Contributing Circumstance	Number of Crashes	
	Total	Percent
Distractions/Inattention	63	27.8%
Did not grant ROW, Disregard Traffic Control	42	18.5%
Improper backing/turn/merge/U-turn	35	15.4%
Failed to avoid vehicle ahead	27	11.9%
Other	18	7.9%
Exceeding reasonable or posted speed	16	7.0%
Follow too closely	13	5.7%
Reckless Driving	5	2.2%
Defective equipment	4	1.8%
View Obscured	4	1.8%
TOTAL	227	100%

Accident History Summary Tables

15

PUBLIC OUTREACH
CONCEPT DESIGNS
BOND

Next Steps
and
Schedule

16



**HELPING EACH OTHER
CREATE BETTER COMMUNITIES**

**Umatilla
Safety Action Plan Update**

Technical Advisory Committee Meeting
February 19, 2025

J-U-B FAMILY OF COMPANIES

1

Public Involvement



Spencer Montgomery, J-U-B Engineers
Project Manager

- Project Controls; Scope, Schedule and Budget
- Oversee Deliverables and Quality Control



Angela Singleton, The Langdon Group
Public Involvement Specialist

- Stakeholder and Community Liaison
- Project Information and Public Outreach



Jennifer Switzer, Gateway Mapping
Geographic Information Systems Lead

- Mapping and graphics support

**HELPING EACH OTHER
CREATE BETTER COMMUNITIES** 

2

Public Involvement



Goals

Provide information to the public on the Safety Action Plan process, timeline, and PI opportunities

Engage in **meaningful public interaction**

Gather feedback to inform the development of the Safety Action Plan

Develop **community goals and support** for the Safety Action Plan

Tasks

- Public Involvement Plan (PIP)
- Stakeholder Interviews
- Technical Advisory Committee
- Informational Flier
- Public Open House + Public Events
- Interactive Website
- Survey promotion
- Social Media Posts

Social Media Posts



- Posted in both English and Spanish
- Keep the project interesting and relevant



Informational Project Flier

- Overview information
- Relevant for the duration of the project
- Share goals
- Provide project timeline
- Contact Information
- Link to Project Website



5



Trick or Treat Tabling Event

- October 25th, 2024
- Drop-in style
- 4:30-6:30pm at Village Square Park
- Targeted feedback on transportation priorities

HELPING EACH OTHER
CREATE BETTER COMMUNITIES



6

Website and Public Survey



Public Input

You can help! Public involvement is an important part of this process, to make sure the Safety Plan accurately reflects the community's experience and priorities.

- 1) **TRICK OR TREAT 6th STREET event!** | Our team hosted a table on *Friday, October 25, 2024 from 4:30-6:30pm*, at the Village Square Park next to Umatilla City Hall. We enjoyed handing out candy while sharing information about this important project and getting community feedback.
- 2) **COMMUNITY TREE LIGHTING EVENT!** | On *Friday, December 6, 2024, from 6:30-7:30pm*, members of the project team hosted a booth at the annual Tree Lighting event, where we handed out seasonal treats alongside project fliers and shared display maps of the City of Umatilla to raise awareness and hear feedback on improving transportation safety.
- 3) **PUBLIC SURVEY** | A map survey was open for members of the public to leave location specific comments for the project team. *The survey was open October 21- December 10, 2024. View the results of the survey below:*

- Advertised: Newsletter, Social media, Direct invitation to stakeholders, flyers, events
- Website to host Safety Action Plan project details

HELPING EACH OTHER
CREATE BETTER COMMUNITIES



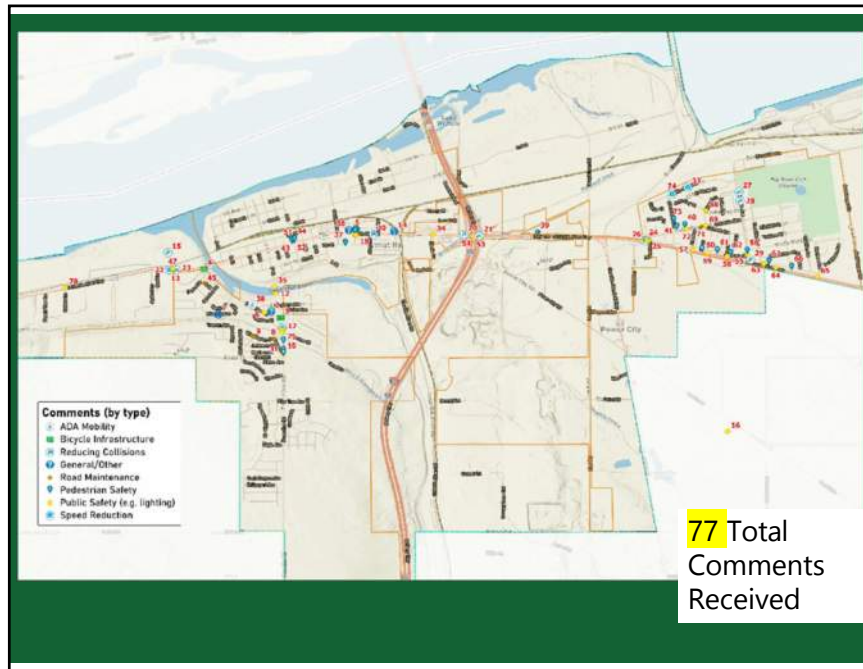
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Tree Lighting Tabling Event

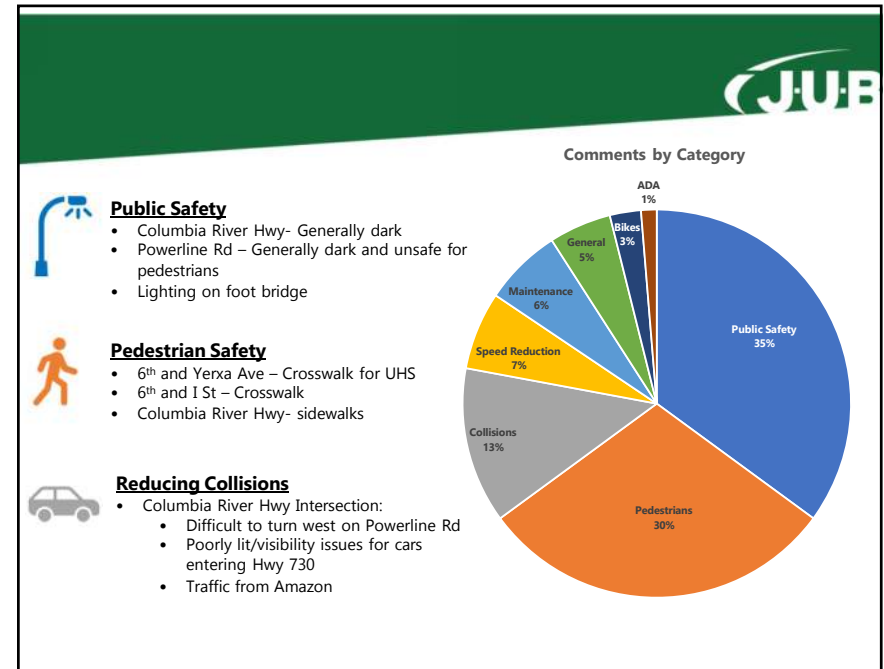
- December 6th, 2024
- Drop-in style
- 6:00-7:30pm at Umatilla City Hall
- Targeted feedback on transportation priorities

HELPING EACH OTHER
CREATE BETTER COMMUNITIES

8



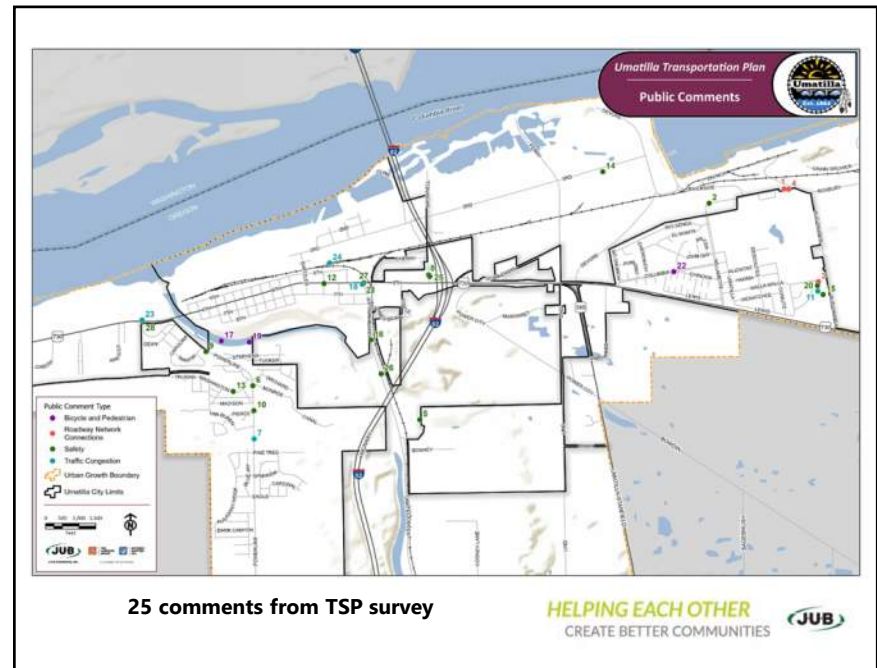
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10

Safety Comments from TSP (2022)

- Powerline Rd. poses a threat to safety due to absence of sidewalks, mixed residential and industrial uses, narrow road, and lack of shoulder.
- River Rd. experiences casualties and safety issues due to limited visibility, sharp turns, and speeding.
- Lighting around the 2-Rivers Prison needs to be improved.
- Traffic control near Beach Access and Wanapuh Rd needs to be implemented to slow truck traffic and enforce adherence to reduced speed limit.
- Free range cattle is occasionally a safety issue <1 per year.



3rd Public Involvement Event/Outreach



Goal: Share project options with the public/verify we heard them right



Ask: Suggestions for a March event in Umatilla?

HELPING EACH OTHER
CREATE BETTER COMMUNITIES



13

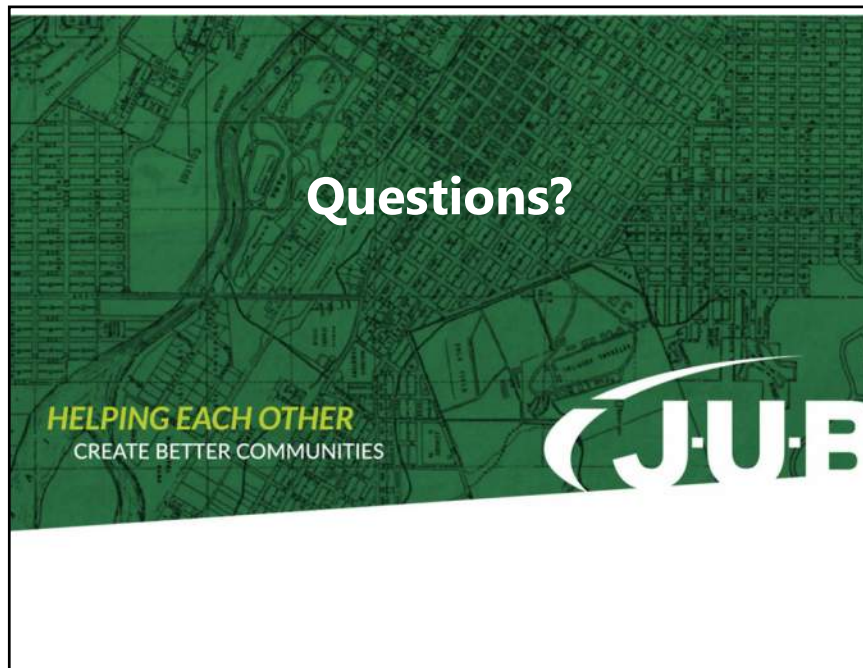
Next Steps & Timeline



HELPING EACH OTHER
CREATE BETTER COMMUNITIES



14



15



Purpose of the Safety Action Plan

Target Zero – Eliminate Fatal and Serious Injury Crashes

- In Umatilla from 2018 – 2023 there were -
- 2 Fatalities –
 - Powerline Road curve
 - I-82 mainline
- 6 Serious Injury Collisions
 - US 730 at: I-82 NB ramp(2), Bud Draper
 - Powerline curve, US 730 between I-84 and US 395, I-82 Mainline

We're doing pretty good here, let's remember that😊

16

Safety Action Plan Project Identification



Multiple Ways of Identifying Projects

- The collision data and identifying trends
- Comments received – experience of users of the system
- Previously identified projects

So here is the data...

17

Summary of Collisions



Total Crashes by Year

Year	2018	2019	2020	2021	2022	2023	Total
Number	51	44	38	48	56	2	239

Most Severe Injury Type

Injury Type	Number of Crashes
Fatality*	2
Suspected Serious	6
Suspected Minor Injury	27
Possible Injury	50
No Apparent Injury	154
TOTAL	239

* 2 Fatalities occurred in 2023, only 2023 fatality data is available.

18

Summary of Collisions

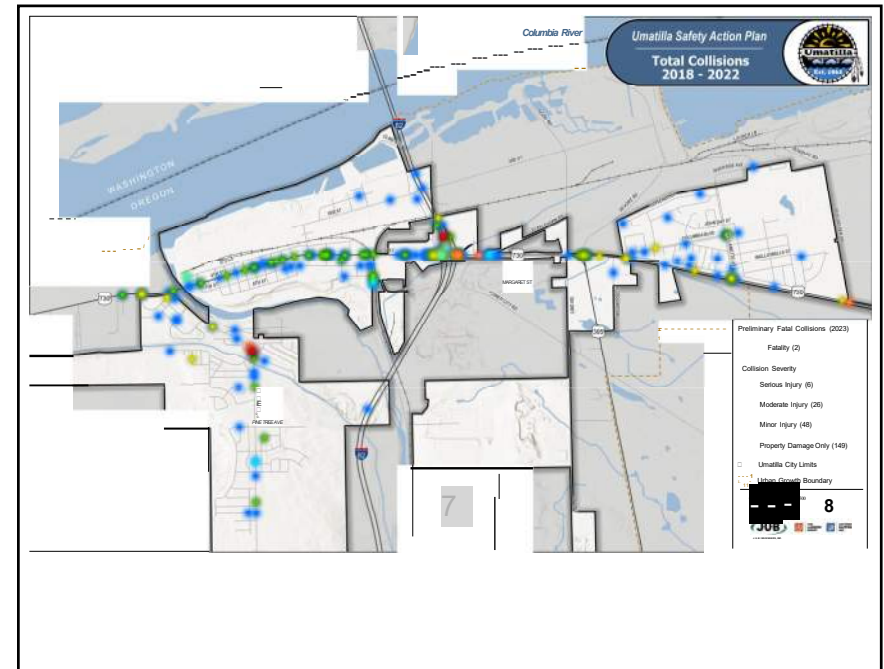


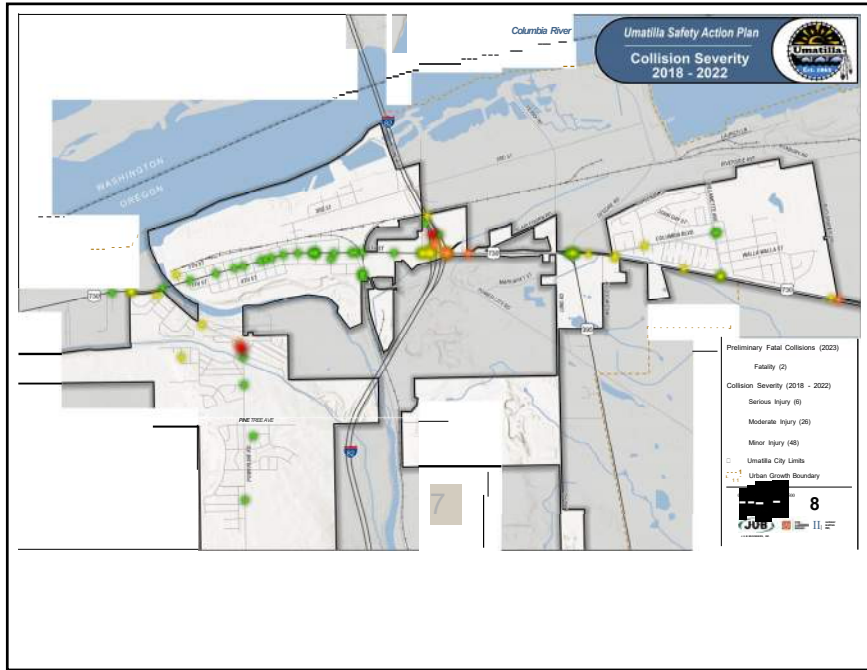
Crash Type

Collision Type	Number of Crashes	
	Total	Percent
Same direction - rear end	67	28.0%
Entering at angle	46	19.2%
Fixed object	38	15.9%
Parked Car	21	8.8%
Same direction - sideswipe	19	7.9%
Opposite direction one left turn	16	6.7%
Opposite direction - all others	10	4.2%
All others	8	3.3%
Animal	7	2.9%
Same direction - all others	6	2.5%
Bicycle/Pedestrian	1	0.4%
TOTAL	239	100%

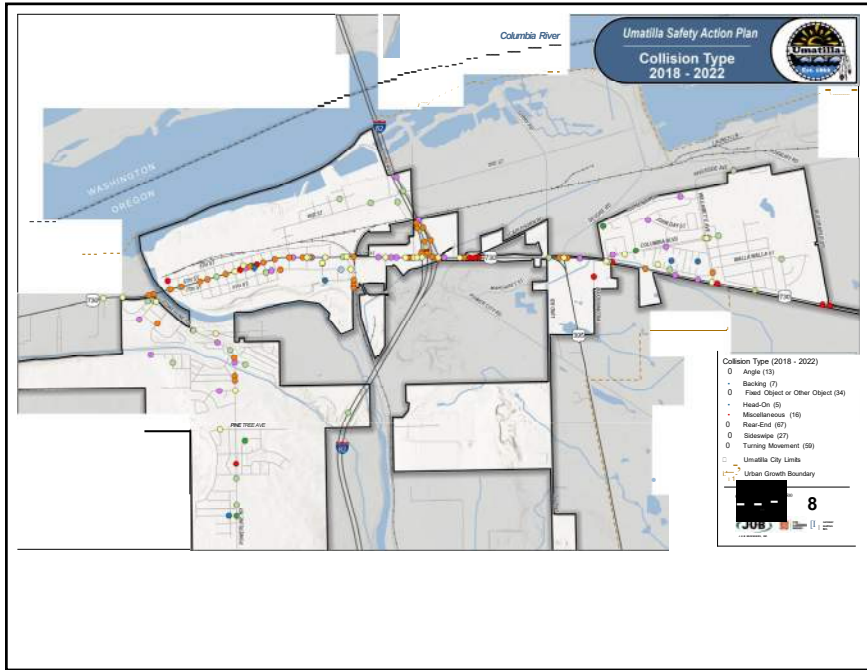
Crash Cause

Crash Cause	Number of Crashes	
	Total	Percent
Did not grant ROW, Disregard Traffic Control	62	25.9%
Distractions/Inattention	60	25.1%
Failure to avoid vehicle ahead	27	11.3%
Exceeding reasonable or posted speed	19	7.9%
Follow too closely	14	5.9%
Other Circumstance not listed	13	5.4%
Physically Impaired	11	4.6%
Other Improper Driving	11	4.6%
Improper backing/turn/merge/U-turn	9	3.8%
Reckless Driving	5	2.1%
Defective equipment	4	1.7%
View Obscured	4	1.7%
TOTAL	239	100%





21



22

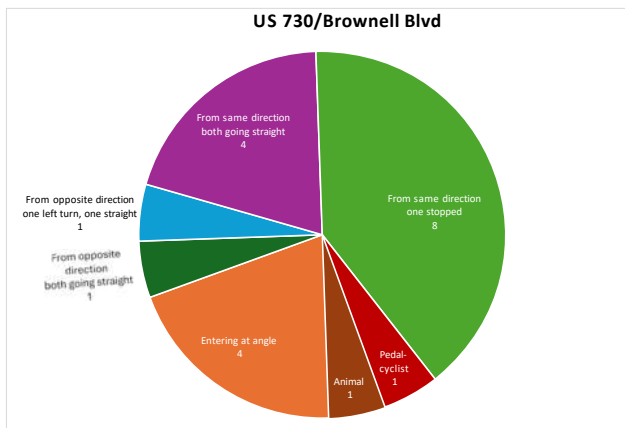
City of Umatilla 2018 - 2022 Crash Data
Intersections

Intersection Name	Animal	Entering at angle	Fixed object	From opposite direction both going straight	From opposite direction one left turn, one straight	From same direction both going straight	From same direction one stopped	From same direction all others, including parking	Other non-collision	Parked motor vehicle	Pedalcyclist	Grand Total
US 730/Brownell Blvd	1	4	0	1	1	4	8	0	0	0	1	20
US 730/I-84 NB ramps	0	8	3	1	0	3	3	1	0	0	0	19
US 730/I-84 SB ramps	0	1	1	0	6	1	1	1	1	0	0	12
US 730/Willamette St	1	3	1	1	1	1	2	0	0	0	0	10
US 730/US 395	0	1	0	0	2	0	5	1	0	0	0	9
US 730/Powerline Rd	0	6	0	0	1	0	0	0	0	0	0	7
US 730/Beach Access	0	0	1	1	0	0	4	0	1	0	0	7
US 730/River Road	0	2	1	0	1	1	0	0	0	0	0	5
US 730/Columbia Blvd	1	3	0	0	0	0	0	0	0	1	0	5
US 730/Switzer Ave	0	0	0	0	0	0	3	0	0	0	0	3
Willamette St/Columbia Blvd	0	1	1	0	1	0	0	0	0	0	0	3
US 730/Bud Draper Rd	2	0	0	0	0	0	0	0	0	0	0	2
Powerline/Madison	0	0	0	0	0	1	0	0	0	0	0	1
Riverside Ave/Deschutes Ave	0	0	1	0	0	0	0	0	0	0	0	1
Columbia Blvd/Chenoweth St	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL	5	29	9	5	13	11	26	3	2	1	1	105

City of Umatilla 2018 - 2022 Crash Data
Segments

Segment Name	Animal	Entering at angle	Fixed object	From opposite direction both going straight	From opposite direction one left turn, one straight	From same direction both going straight	From same direction one stopped	From same direction one turn, one straight	Other non-collision	Overtur ned	Parked motor vehicle	Grand Total
US 730: Powerline - Switzer	0	2	3	2	1	6	6	1	0	1	1	23
I-84 mainline	0	0	4	0	0	6	2	0	1	0	0	13
US 730: Switzer - River Rd	0	5	0	0	1	4	0	0	0	0	0	10
Powerline Rd: US 730 - Madison	0	1	5	1	0	1	2	0	0	0	0	10
US 730: I-82 - US 395	2	0	1	0	0	3	1	1	1	0	0	9
I-84 SB off ramp	0	0	0	0	1	2	3	2	0	0	0	8
US 730: River Rd - Brownell	0	3	1	0	0	2	1	0	0	0	0	7
River Road: US 730 south	0	1	0	0	0	2	3	0	1	0	0	7
Powerline Rd: Pine Tree - Riley	0	0	2	1	0	0	0	0	0	1	0	4
Columbia: Chenoweth - Willamette	0	1	0	0	0	0	0	0	0	0	1	2
US 730: West of Powerline	0	0	1	0	0	0	0	0	0	0	0	1
US 730: US 395 - Columbia Blvd	0	0	0	1	0	0	0	0	0	0	0	1
Powerline Rd: Riley - south	0	0	1	0	0	0	0	0	0	0	0	1
Pine Tree Rd: High Desert - Powerlin	0	1	0	0	0	0	0	0	0	0	0	1
Third: Switzer - Deschutes	0	0	1	0	0	0	0	0	0	0	0	1
Rio Senda west of Chenoweth	0	0	0	0	0	0	0	0	0	0	1	1
Rio Senda: Chenoweth - Willamette	0	0	0	0	0	0	0	0	0	0	1	1
Columbia: US 730 - Chenoweth	0	0	0	0	0	0	0	0	0	0	1	1
Willamette: US 730 - Columbia	0	0	0	0	0	0	0	0	0	0	1	1
Walla Walla: Willamette -east	0	0	1	0	0	0	0	0	0	0	0	1
Bud Draper: US 730 north	0	0	0	0	0	0	0	1	0	0	0	1
TOTAL	2	14	20	5	3	26	18	5	3	2	6	104

Intersections

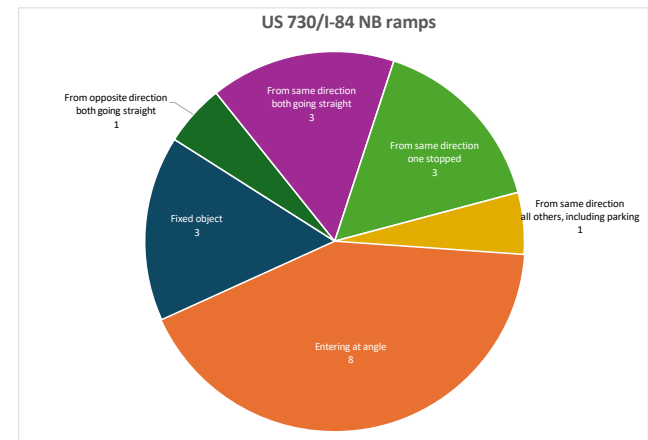


Potential Projects:

- Evaluate traffic signal timing to eliminate permissive left turn

25

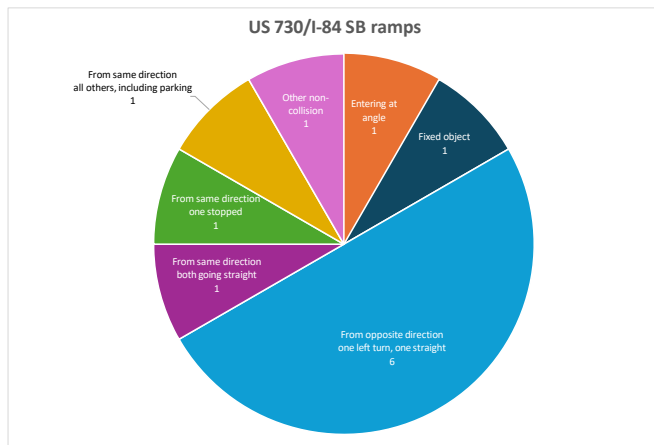
US 730/I-84 NB ramps



Potential Projects:

- Install traffic signal to facilitate turns across oncoming traffic

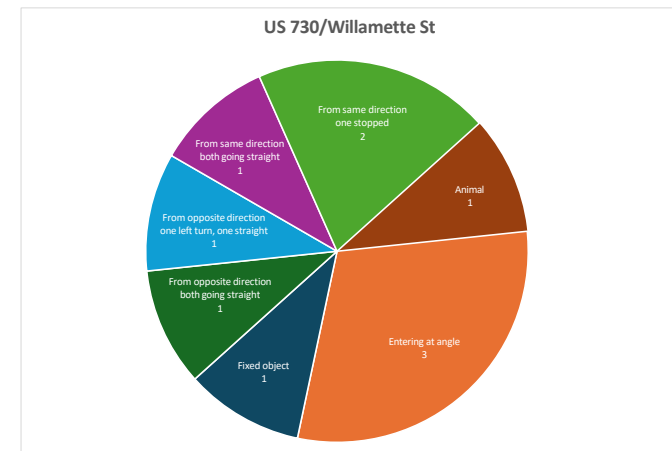
26



Potential Projects:

- Evaluate traffic signal timing to eliminate permissive left turn

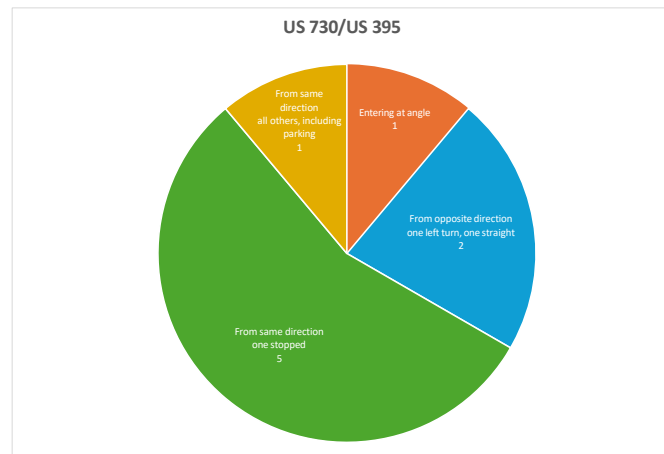
27



Potential Projects:

- Improve intersection geometry and sight distance.
- Close driveway on north side

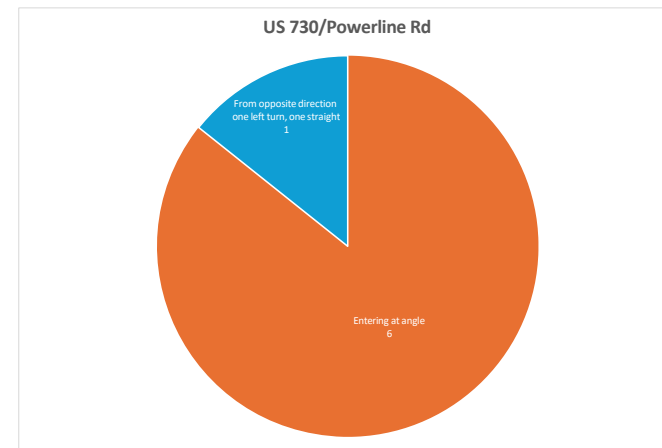
28



Potential Projects:

- Evaluate traffic signal timing to eliminate permissive left turn
- Add turn lanes to improve capacity

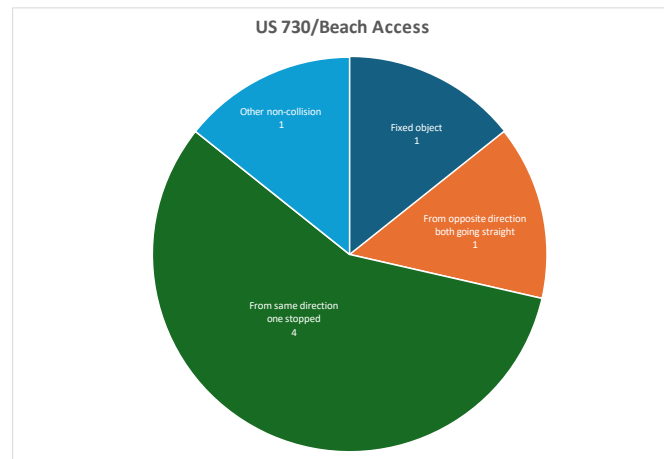
29



Potential Projects:

- Install westbound receiving lane for northbound left turns
- Install roundabout or traffic signal

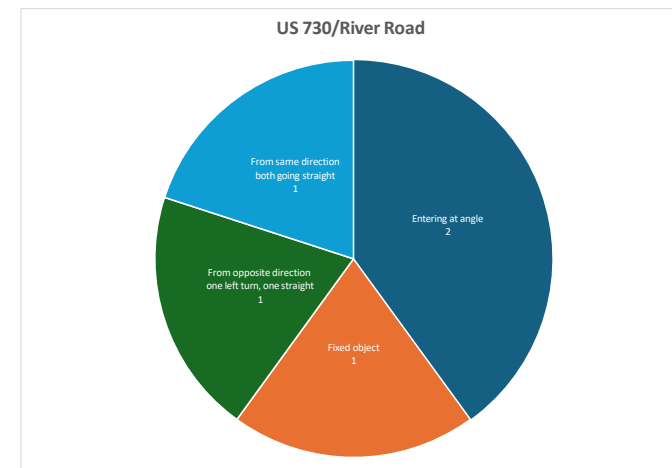
30



Potential Projects:

- Evaluate speed limit

31

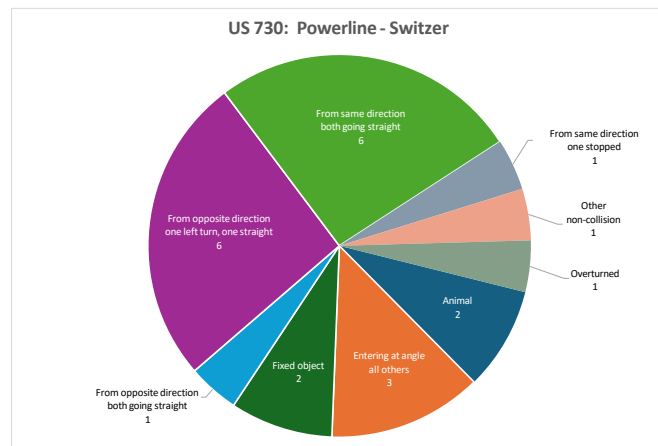


Potential Projects:

- Install traffic signal

32

Roadway Segments

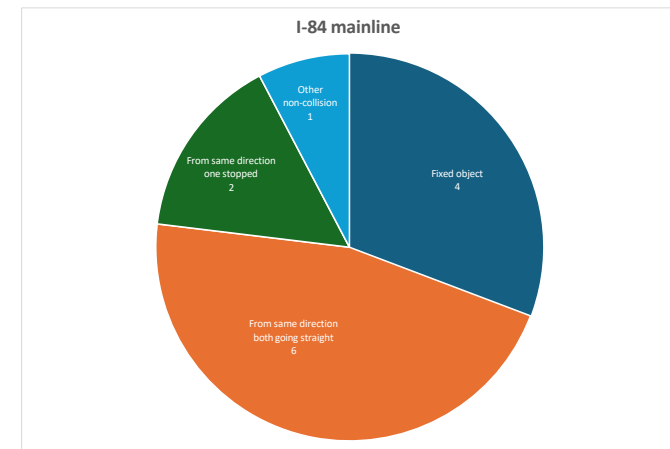


Potential Projects:

- Add signal to corridor to create gaps for traffic to enter from side streets

33

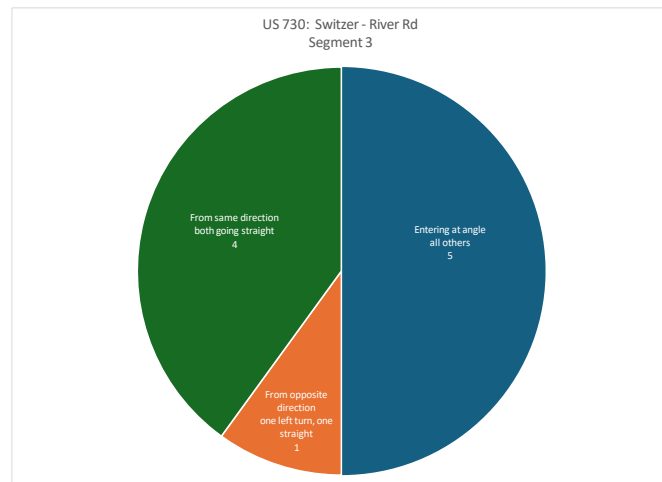
I-84 mainline



Potential Projects:

- Discuss with ODOT

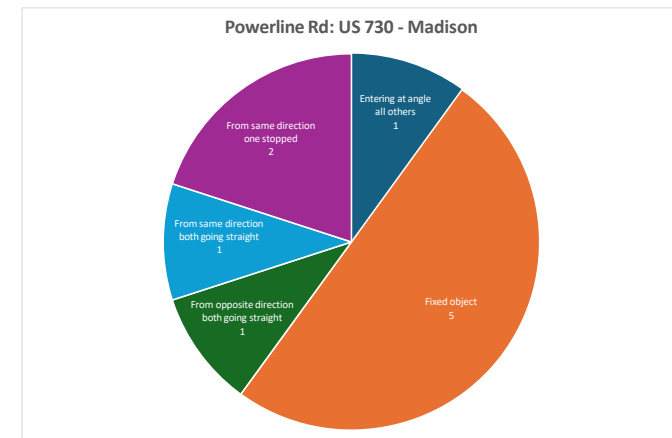
34



Potential Projects:

- Add signal to corridor to create gaps for traffic to enter from side streets

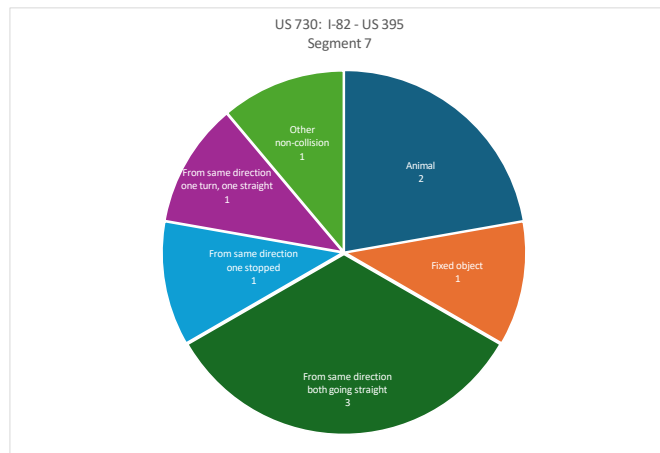
35



Potential Projects:

- Improve road to city standards with shoulders, center turn lane

36



Potential Projects:

- Install animal crossing signs
- Install traffic signal at I-82 northbound ramps (and advance traffic signal warning flashing signs)

37

Safety Action Plan



Other Discussion Topics

- ODOT meeting
- Public Involvement
- Adoption Process

38



City of Umatilla

Safety Action Plan

City Council Presentation -- June 3, 2025

1

Roadway Comprehensive Safety Action Plan - 7 Components

1. **Leadership commitment** and Goal Setting - zero roadway fatalities and serious injuries Draft Resolution in Appendix A
2. **Planning Structure** – Planning, public works and Police staff, stakeholder interviews
3. **Safety Analysis**
4. **Engagement and Collaboration** – multiple opportunities (Trick or Treat, Tree Lighting events) to promote on-line survey
5. **Policy and Process Changes** – recommendations to develop more specific policies for non-motorized travel (most vulnerable users) prepare a Complete Streets Policy and ADA Transition Plan
6. **Strategy and Project Selections**
7. **Progress and Transparency** –
 - measure project progress (completion of projects and policy changes) and
 - project effectiveness (monitor number of fatal and serious injury collisions and collision rates at project locations)

2

Roadway Comprehensive Safety Action Plan 7 Components

3. Safety Analysis

Does the Action Plan include **ALL** of the following?

- Analysis of existing conditions and **historical trends** to provide a baseline level of crashes involving **fatalities and serious injuries** across a jurisdiction, locality, Tribe, or region;
- Analysis of the location(s) of crashes, the severity, contributing factors, and crash types;
- Analysis of systemic and specific safety needs, as needed (e.g., high-risk road features or specific safety needs of relevant road users); and,
- A geospatial identification (**geographic or locational data using maps**) of higher risk locations.

☐ YES

☐ NO

Note: Availability and level of detail of safety data may vary greatly by location. The [Fatality and Injury Reporting System Tool \(FIRST\)](#) provides county- and city-level data. When available, local data should be used to supplement nationally available data sets.

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

Document Title	Page Number(s)

3

Roadway Comprehensive Safety Action Plan 7 Components

6. Strategy and Project Selections

Does the plan identify a comprehensive set of projects and strategies to address the safety problems in the Action Plan, with information about time ranges when projects and strategies will be deployed, and an explanation of project prioritization criteria?

☐ YES

☐ NO

*Note: This should include one or more lists of community-wide multi-modal and multi-disciplinary projects that respond to safety problems and reflect community input and a description of how your community will **prioritize projects** in the future.*

If "YES," please list the relevant document(s) and page number(s) that corroborate your response.

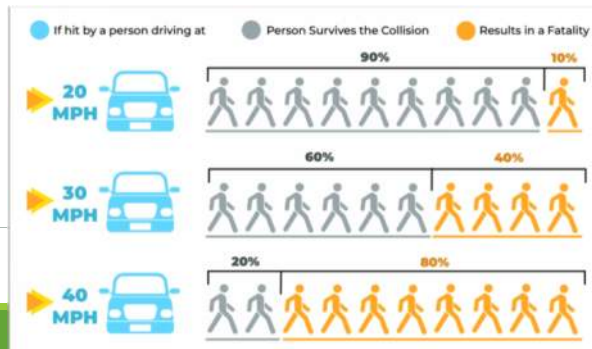
Document Title	Page Number(s)

4

Roadway Comprehensive Safety Action Plan Component 6 - Strategies, Projects and Prioritization

• Strategies

- Prepare and implement an ADA Transition Plan
- Improve sight distance triangles for vegetation and parking obstructions
- Perform pavement marking and signage maintenance
- Evaluate speeds – single most important factor in crash severity
- Enforcement of traffic laws



5

Roadway Comprehensive Safety Action Plan Component 6 - Strategies, Projects and Prioritization

• Potential Intersection Projects

US 730/Brownelle Blvd & I-82 Southbound ramps

- Signal at NB ramps will help here too
- ODOT weigh-in-Motion

US 730/I-82 Northbound ramps

- Install traffic signal, with WB right-turn lane

US 730/Willamette

- Add westbound right turn lane
- Add lighting

US 730/US 395

- Double left turn lanes for both NB and WB

US 730/Powerline Road

- Add eastbound right turn lane
- Add northbound left turn lane
- Add roundabout

US 730/Beach Access Road

- Consider speed reduction

US 730/River Road

- Install traffic signal with northbound left turn lane

US 730/Columbia Road

- Add WB right turn lane
- Add left turn lane
- Install lighting

6

Roadway Comprehensive Safety Action Plan Component 6 - Strategies, Projects and Prioritization

Potential Road Segment Projects

US 730: Powerline – Switzer Ave

US 730: Switzer – River Road

- Monitor collisions after recent corridor improvements

I-82 Mainline

- Evaluate for multiple fixed-object collisions
- Lengthen southbound off ramp

Powerline Road: US 730 – Madison St

- Install Two-Way Left-Turn Lane
- Install Guardrail
- Provide advisory curve warning sign

US 730: I-82 – US 395

- Install wildlife warning signs
- Install lighting on roadway segment
- Install actuated/coordinated flashing beacon as advance warning for traffic signal

I-82 southbound ramp

- Extend deceleration lane 100'

River Road: US 730 to south

- Install Two-Way Left Turn lane

7

Roadway Comprehensive Safety Action Plan Component 6 - Strategies, Projects and Prioritization

Other Projects

List of Other City project that could have safety benefits (non –maintenance)

List of Bike/Ped projects

Projects identified through public comments

- Add an "official crosswalk" for pedestrians crossing at 6th/Yerxa
- Repaint the yellow and white lines of Powerline Road.
- Evaluate the parking on Willamette near the golf course and make adjustments to improve sight distance.
- Consider eliminating the southern turn in at the gas station on Willamette to reduce conflict of vehicles slowing.
- Improve lighting and crosswalks in the vicinity around McNary Heights Elementary School
- Consider reducing speed on US 730 entering town from the west from 40 MPH, and through town down to 30 MPH

8

Roadway Comprehensive Safety Action Plan Component 6 - Strategies, Projects and Prioritization

Prioritization

- A history of collisions
- High traffic volumes
- History of fatal or serious injury collisions
- Collision rates
- Proximity of disadvantaged users including higher poverty, low car ownership, age, disabilities
- Public comments with respect to safety issues
- Lack of sidewalks
- Safe routes to school or school zone
- Transit route

9



Thank you!

QUESTIONS?

10

APPENDIX C3. PUBLIC OPEN HOUSE/EVENT SUMMARIES

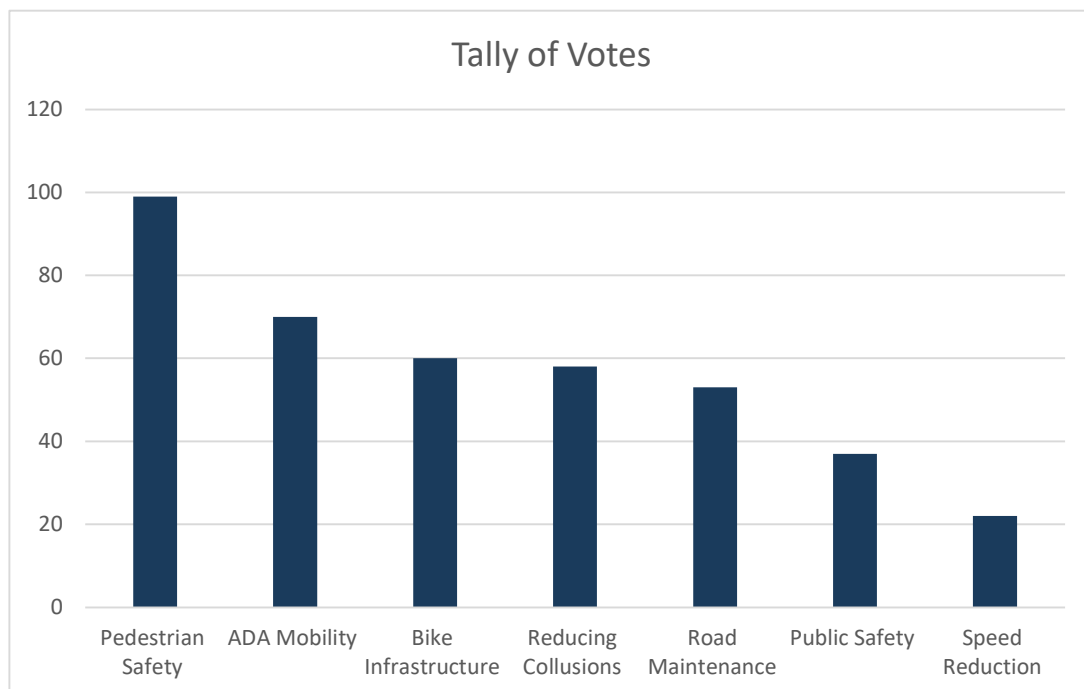
City of Umatilla Trick-or-Treat on 6th St. Village Square Park next to City Hall Umatilla, OR

Summary of Public Involvement
October 24, 2024

On Friday, October 25, 2024, the City of Umatilla, in coordination with J-U-B ENGINEERS, Inc., held a pop-up booth at the established Trick-or-Treat on Sixth Street City event to present information on the effort to commit to zero fatalities through development of the Safety Action Plan. The Langdon Group, a J-U-B ENGINEERS, Inc. subsidiary company specializing in public involvement and facilitation, was contracted to assist in the planning, preparation, and facilitation of the pop-up event. The pop-up event was advertised on the City social media accounts, the project website, and in the City newsletter.

The pop-up was a drop-in style event, held from 4:00-7:00 pm at the City of Umatilla Village Square Park. Attendees were greeted at a booth by a project team member who shared information on the Safety Action Plan, offering a project overview flier and project timeline, as well as the opportunity for them to provide their opinions through a penny voting activity to indicate what they think the City should prioritize in the Safety Action Plan. A Spanish-speaking translator with the Langdon Group was available at the event and all materials were provided in both English and Spanish.

In total, about 200 members of the public visited the booth and participated in the activity. Below are the results of the penny-voting activity. Each attendee was given three marbles to place into different jars with a label representing one of the following priorities: Pedestrian Safety, ADA Mobility, Bike Infrastructure, Reducing Collusions, Public Safety, Road Maintenance, Speed Reduction.





Project team members providing information to the public and encouraging them to take the public survey.
Spanish translation was available at this event.



Social media advertisements for the event in both English and Spanish.

City of Umatilla Tree Lighting Event
City Hall Umatilla, OR
Summary of Public Involvement
December 6, 2024

On Friday, December 6th, 2024, the City of Umatilla, in coordination with J-U-B ENGINEERS, Inc., held a pop-up booth at the City's Annual Tree Lighting event to present information on the effort to commit to zero fatalities through their Safety Action Plan. The Langdon Group, a J-U-B ENGINEERS, Inc. subsidiary company specializing in public involvement and facilitation, was contracted to assist in the planning, preparation, and facilitation of the pop-up event. The pop-up event was advertised on the City social media accounts, the project website, and in the City newsletter.

The pop-up booth was a drop-in style event, held from 6:00-7:30 pm at the Umatilla City Hall. Attendees were greeted at a booth and a project team member shared information on the Safety Action Plan, offering a project overview flier and project timeline, as well as the opportunity for them to provide their opinions through oral or written comments on what they think the City should prioritize in the Safety Action Plan. In total, 50 members of the public visited the booth and 10 provided written or oral feedback.



Booth set up at the event with informational fliers available in English and Spanish.

5/22/25, 4:31 PM

Umatilla Safety Action Plan



Umatilla Safety Action Plan



Umatilla Safety Action Plan

Welcome! Learn more about how the City of Umatilla is developing a strategy to improve roadway safety for all users.

Si necesita ayuda con la traducción al español,
comuníquese con Tracy Ortiz al 208-797-1649.

TAKE OUR FINAL SURVEY!

*Tell the City how you want improvements to be prioritized. Scroll
below to learn more about the project.*

[Click HERE to take survey](#)[Oprima AQUÍ para español](#)

Overview

The City of Umatilla, OR is developing a Safety Action Plan to guide decision-makers in selecting the best methods for creating a safer transportation network.

The goal of the Plan is to produce a well-defined strategy for **improving roadway safety and reducing or eliminating roadway fatalities and serious injuries.**

The Plan will consider everyone who uses the transportation system, including vehicles, pedestrians, bicyclists, public transportation users, motorists, and commercial drivers.

What is a Safety Action Plan?

Comprehensive Safety Action Plans (referred to as “**Action Plans**”) are the basic building block to significantly improve roadway safety. Action Plans use data analysis to characterize roadway safety problems and strengthen a community’s approach through projects and strategies that address the most significant safety risks.

Umatilla is completing this project through the Safe Streets and Roads for All (SS4A) grant program. To learn more, visit the U.S. Department of Transportation website: [Comprehensive Safety Action Plans | US Department of Transportation](#)

Collision Data + Transportation Projects

Public Involvement Summary and Potentia...

Click to view a summary of public involvement including survey responses as well as potential safety projects...

https://drive.google.com/file/d/1jB0eGGWY_ZnJzLnRQUI7sQRTtoxZtJKN/view?usp=sharing



Summary Chart of Low-Cost Projects

Click to view a summary chart of low-cost project options based on public feedback.

https://drive.google.com/file/d/1An_PU9bYI7G3sjupP69ifDekBS9CqzMz/view?usp=sharing



Collision Maps and Summary Tables

Click to view a summary of collision type and severity from 2018-2023.

<https://drive.google.com/file/d/1z0fVy0z5DDySBL4vu61eTzjzvt5kgcB/view?usp=sharing>



Prioritization Table Based on Risk Factors

Click to view a table of intersections and road segments prioritized by risk factor.

<https://drive.google.com/file/d/1pGJWak5wCYvvakP7TCsTdN-clv9uKzN/view?usp=sharing>



Transportation System Plan Projects

Click to view a summary of Capital Improvement Projects identified in the Umatilla Transportation System...

https://drive.google.com/file/d/18ky_MU9YV04mC36mbL2JpKe8ZV53cySs/view?usp=sharing

Project	Location	Estimated Cost
1.001	1st Street to 2nd Street	\$100,000
1.002	2nd Street to 3rd Street	\$100,000
1.003	3rd Street to 4th Street	\$100,000
1.004	4th Street to 5th Street	\$100,000
1.005	5th Street to 6th Street	\$100,000
1.006	6th Street to 7th Street	\$100,000
1.007	7th Street to 8th Street	\$100,000
1.008	8th Street to 9th Street	\$100,000
1.009	9th Street to 10th Street	\$100,000
1.010	10th Street to 11th Street	\$100,000
1.011	11th Street to 12th Street	\$100,000
1.012	12th Street to 13th Street	\$100,000
1.013	13th Street to 14th Street	\$100,000
1.014	14th Street to 15th Street	\$100,000
1.015	15th Street to 16th Street	\$100,000
1.016	16th Street to 17th Street	\$100,000
1.017	17th Street to 18th Street	\$100,000
1.018	18th Street to 19th Street	\$100,000
1.019	19th Street to 20th Street	\$100,000
1.020	20th Street to 21st Street	\$100,000



Public Input

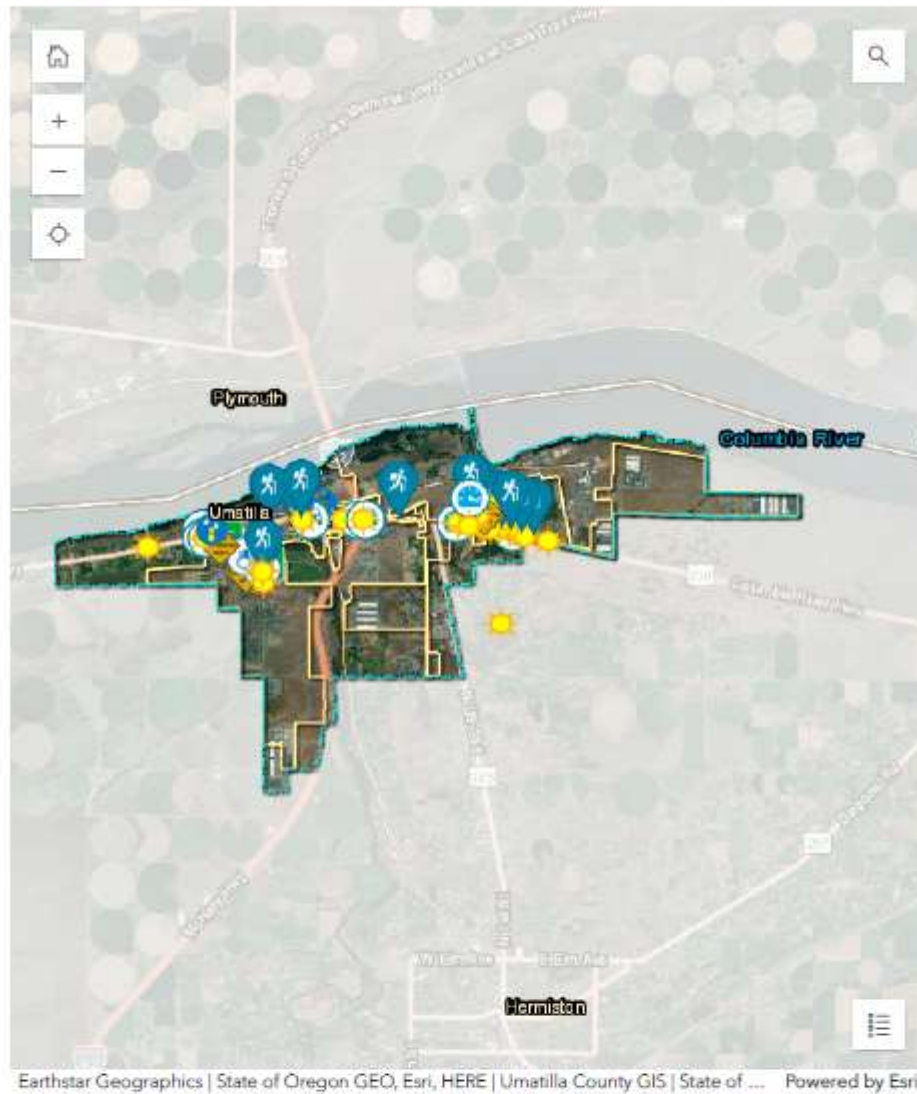
You can help! Public involvement is an important part of this process, to make sure the Safety Plan accurately reflects the community's experience and priorities.

1) TRICK OR TREAT 6th STREET event! | Our team hosted a table on **Friday, October 25, 2024 from 4:30-6:30pm**, at the **Village Square Park next to Umatilla City Hall**. We enjoyed handing out candy while sharing information about this important project and getting community feedback.

2) COMMUNITY TREE LIGHTING EVENT | On **Friday, December 6, 2024, from 6:30-7:30pm**, members of the project team hosted a booth at the annual Tree Lighting event, where we handed out seasonal treats alongside project fliers and shared display maps of the City of Umatilla to raise awareness and hear feedback on improving transportation safety.

3) PUBLIC SURVEY | A map survey was open for members of the public to leave location specific comments for the project team.

The survey was open October 21- December 10, 2024. View the results of the survey below:



Earthstar Geographics | State of Oregon GEO, Esri, HERE | Umatilla County GIS | State of ... Powered by Esri

Reports



Umatilla Safety Action Plan Comment Map

What's Next?

This project began in the Summer of 2024, and is anticipated to be complete Spring 2025.



Questions? Contact:

Hannah Anderson
Public Involvement Specialist
handerson@langdongroupin
c.com

CITY OF UMATILLA SAFETY ACTION PLAN



The City of Umatilla is developing a Comprehensive Roadway Safety Action Plan. The Plan will lay out a well-defined strategy for improving roadway safety for all users, by reducing or eliminating roadway fatalities and serious injuries related to transportation within the City.

HOW WILL THE CITY ACCOMPLISH THIS?

Hear Feedback from the Community

- » Public
- » Law enforcement
- » Public health
- » Emergency Services
- » Elected Officials

Analyze Safety Data

- » Review Crash Data
- » Evaluate Barriers to bicycle, pedestrian, and transit movements
- » Perform Safety Audits
- » Review Traffic Violations
- » Review City Policies, Programs, and Practices to identify opportunities to improve safety

Identify Potential Safety Countermeasures

Choose Proven Solutions to Develop Projects

Implement Solutions

- » Information Sharing
- » Capital Improvement Projects

WHY THIS MATTERS

Once implemented, actions and projects prioritized in this Plan will help eliminate fatal and serious injury collisions and address significant safety issues like reckless, distracted and/or high-speed driving.

PROJECT GOALS:



Identify high-priority transportation projects, strategies, and policies to address and reduce traffic collisions



Incorporate safety components into planned transportation projects



Adopt a Safety Action Plan to prioritize transportation safety projects identified by the Umatilla community

CITY OF UMATILLA SAFETY ACTION PLAN



WE WANT TO HEAR FROM YOU!

Share your thoughts on how to make Umatilla safer for pedestrians, bicyclists, transit users and drivers:

Hannah Anderson

Public Involvement Specialist

» handerson@langdongroupinc.com

» (208) 770-0500

Spencer Montgomery

Project Manager

» smontgomery@jub.com

» (509) 783-2144



<https://arcg.is/1n1eD8>

CIUDAD DE UMATILLA

PLAN DE ACCIÓN DE SEGURIDAD TRANSPORTE



La Ciudad de Umatilla está desarrollando un Plan de Acción de Seguridad Vial integral. El Plan establecerá una estrategia bien definida para mejorar la seguridad vial para todos los usuarios, reduciendo o eliminando las muertes en las carreteras y lesiones graves relacionadas con el transporte dentro de la Ciudad.

¿CÓMO LO LOGRARÁ LA CIUDAD?

Escuche los comentarios de la comunidad

- » Público
- » Aplicación de la ley
- » Salud pública
- » Servicios de emergencia
- » Funcionarios electos

Analice los datos de seguridad

- » Revise los datos de accidentes,
- » Evalúe las barreras a la gente en bicicleta y los movimientos de tránsito
- » Realice una auditoría de seguridad
- » Revise las infracciones de tráfico
- » Revise las políticas de la ciudad
- Programas y prácticas para identificar oportunidades para mejorar la seguridad

Identificar posibles contramedidas de seguridad

Elija soluciones probadas para desarrollar el proyecto

Implementar soluciones

- » Intercambio de información
- » Proyectos de mejora

POR QUÉ IMPORTA

Una vez implementadas, las acciones y proyectos priorizados en este plan ayudarán a eliminar las colisiones graves y fatales y abordarán problemas de seguridad significativos como la conducción imprudente, distraída y / o a alta velocidad.

OBJETIVOS DEL PROYECTO:



Identificar proyectos, estrategias y políticas de transporte de alta prioridad para abordar y reducir las colisiones de tráfico



Incorporar componentes de seguridad en los proyectos de transporte planificados



Adoptar un Plan de Acción de Seguridad para priorizar los proyectos de seguridad en el transporte identificados por la comunidad de Umatilla

CIUDAD DE UTAMILLA

PLAN DE ACCIÓN DE SEGURIDAD



¡COMPÁRTANOS SU OPINIÓN!

Comparta sus opiniones sobre cómo hacer que Umatilla sea más seguro para peatones, ciclistas, usuarios del transporte público y conductores

Tracy Ortiz

Apoyo a la Participación Pública

» tortiz@langdongroupinc.com

» (208) 797-1649

Spencer Montgomery

Director de Proyecto

» smontgomery@jub.com

» (509) 783-2144



<https://arcg.is/1n1eD8>

CITY OF UMATILLA SAFETY ACTION PLAN



WE WANT YOUR FEEDBACK!

Tell us about how the transportation network could be safer for your community!



Scan the QR code, or visit our website to learn more and complete a quick survey:
<https://arcg.is/1n1eD8>

CITY OF UMATILLA SAFETY ACTION PLAN

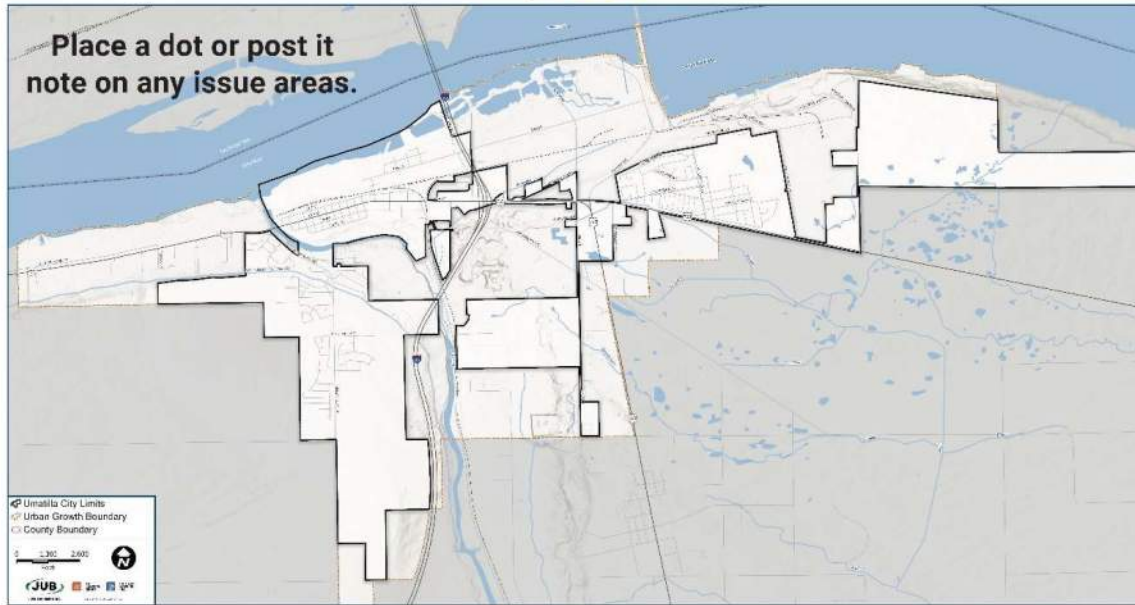
Collision Data | 2019–2023



CITY OF UMATILLA SAFETY ACTION PLAN



Place a dot or post it
note on any issue areas.



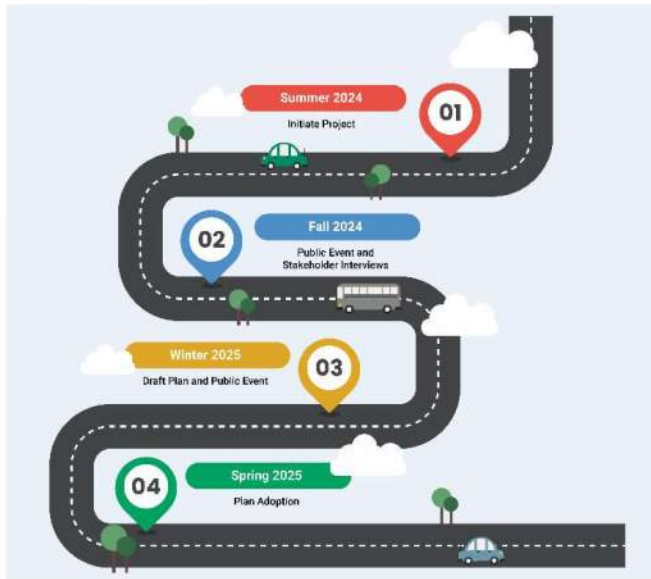
CITY OF UMATILLA SAFETY ACTION PLAN



What should the City of Umatilla prioritize in the Safety Action Plan?
Place a dot to show us your highest priorities.

REDUCE COLLISIONS	PEDESTRIAN SAFETY	BICYCLE INFRASTRUCTURE	ADA MOBILITY	SPEED REDUCTION ZONES	LIGHTING/CRIME SAFETY	ROAD MAINTENANCE
						

CITY OF UMATILLA SAFETY ACTION PLAN



The City of Umatilla is developing a Comprehensive Roadway Safety Action Plan. The Plan will lay out a well-defined strategy for improving roadway safety for all users, by reducing or eliminating roadway fatalities and serious injuries related to transportation within the City. The Plan will focus on all users including pedestrians, bicyclists, public transportation users, motorists, and commercial operators.

APPENDIX C7. PUBLIC SURVEY

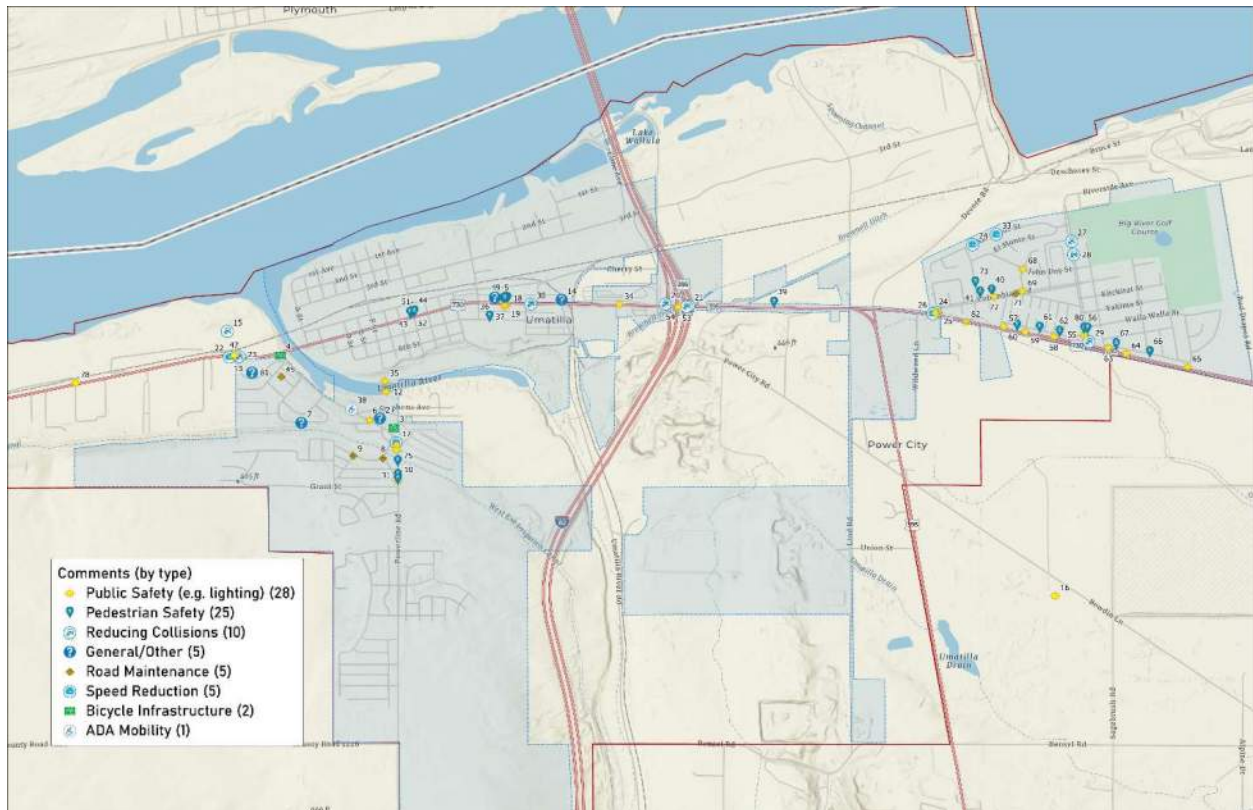
Public Survey Executive Summary

In Winter of 2024, the City of Umatilla contracted the services of The Langdon Group (TLG) to administer a public survey to collect community feedback on the development of a Roadway Comprehensive Safety Action Plan. The goal of the survey was to obtain valuable community feedback early in the process, allowing for input to inform the prioritization of projects within the Plan. The public survey included an online, interactive mapping software (3P mapping, a J-U-B proprietary software) where survey respondents were able to drop a pin at a specific location and make a comment related to their safety concern(s) at that location. Feedback collected from the community was used to provide insight on project priorities and areas of concern. The 3P comment map was hosted on the project website from October 21 to December 10, 2024 and the survey was open from May 23 to June 1, 2025. The survey was advertised on the project website and an informational flier was posted on the City's social media accounts.

At the in-person project open house held on December 6, 2024, informational handouts were available and poster boards with a QR link to the project survey were displayed at the Winter Fest event. The survey was provided in both English and Spanish, and survey questions were identical. In total, there were 86 responses submitted through the comment map and 24 responses to the public survey. The comments and their location as well as unedited responses to the second survey are attached below.

3P COMMENT MAP RESULTS

Public comments were collected by the Gateway Mapping team via the project website. A full list of comments received is included below.



Comment Map Comments

Number	Type	Comment
2	General	Pedestrian and Biker Concern: This stretch of road is unsafe for walking or biking, and there are no sidewalks or bike lanes. The pedestrian bridge will help alleviate this issue, but having a sidewalk on this portion of Powerline Road would be great.
3	Bikes	
4	Bikes	
5	Pedestrians	
6	Safety	The morning sun is blinding coming up this stretch of Powerline road.
7	General	Please repaint middle lines on powerline road. Can't see in dark or fog. Impossible to see at night when raining. Also paint fog lines!!
8	Maintenance	Sage & Washington; Update this 270 degree turn, outdated from a poor street planning plan. Straighten and/or improve this corner.
9	Maintenance	Update and repave the South Hill's old presidents development.
10	Pedestrians	Powerline Road, old president's division area; Add sidewalks or widen the road for pedestrians and bicyclers
11	Maintenance	Upkeep on the yellow and white lines. Add guardrails on the curve. Extend roadway shoulder. Improve/repair bridge over the canal.
12	Safety	Solar lights on the new footbridge.

13	Safety	Reduce incoming speed down from 40mph coming from the west.
14	General	This intersection sees a lot of traffic and isn't well lit for pedestrians, a pedestrian has been hit here before. It would help for safety to have a light here and would help with traffic build up when people turn left.
15	Collisions	Pretty much a left-hand turn anywhere across Highway 730 is becoming more difficult because of all of the traffic since the Amazon warehouse services has come into our area. It is especially difficult to turn west onto Highway 730 from Powerline.
16	Safety	Needs more lighting
17	Speed	People drive really fast around this corner making it dangerous for people pulling out onto Powerline from Monroe St.
18	Pedestrians	You must make this a crossing for students going to Harvest Foods. This intersection is very unsafe for pedestrians.
19	Safety	Low light, improper crossing and speeding vehicles make this intersection unsafe for everyone.
20	Collisions	Off ramp is terrible. Exiting cars from the freeway seldomly yield.
21	Collisions	Large trucks turning east bound on I82 from 730 congest the intersection. Oncoming West bound entry vehicles from 730 usually cross into oncoming cars traveling west bound on 730. DO NOT say this is an ODOT issue, this freeway/730 issue must be fixed.
22	Speed	East bound 730 cars approach cars waiting to enter from Southhill way to fast. It is difficult for a car entering 730 to gauge their speed when enter 730.
23	Collisions	Cars do not stop here when they enter 730. Super dangerous
24	Collisions	Poorly lit and terrible visibility for cars entering 730. Can we please fix this intersection?
25	Safety	Unsafe for cars to enter 730.
26	Speed	Can we get trucks to slow down? They speed past this area at way faster than 45.
27	Collisions	I have had several near miss collisions due to tight parking near this turn out creating limited visibility. Usually the person leaving the golf course parking lot runs out without looking for the person going north bound on Willamette.
28	Collisions	If there is a day with a lot of street parking there is limited line of sight and cars traveling north bound on Willamette will get hit by cars coming out of the parking lot. Fix parking for golfers.
29	Collisions	Consider eliminating this turn in. Cars slow down too quickly coming off of the highway causing congestion in an awkward spot, not far enough off of the highway. Take out the speed bump or block this entrance into the gas station.
30	Collisions	6th Street/Hwy 730 should be 30 mph zone. This is consistent with other cities like Irrigon and Boardman.
31	Safety	I don't care who owns the damn lights on Powerline, get them fixed.
32	Pedestrians	Get sidewalks and curbs installed on Powerline!
33	Speed	Kids are constantly at risk for speeding cars down Rio Senda. Keep our kids safe and patrol and or reduce the speed down this street.
34	Safety	The intersections in this area are unsafe due to the amount of back up during peak transportation times. Trying to turn west onto Hwy 730 from Eislle is almost impossible. The entire areas around I-82 need to be re-assessed to try to alleviate backups
35	Safety	Lighting will need installed going to and from the new foot bridge
36	General	Some emphasis needs to be put on finishing the downtown corridor project with new lights and sidewalks
37	Pedestrians	Sidewalks need to be installed on all heavily travelled routes going to and from the school

38	ADA	The new path along Powerline from Stephens north is not safe for people with mobility issues it is too steep
39	Pedestrians	Any person wanting to walk from downtown to McNary is forced to walk on the highway there is no path or sidewalk in this area at all
40	Pedestrians	Unsafe for school kids to walk to and from school. Children nearly get hit by cars backing out who park on the side of the street and now sidewalks for kids.
41	Pedestrians	Unsafe for school kids to walk to and from school. Children nearly get hit by cars backing out who park on the side of the street and now sidewalks for kids.
42	Pedestrians	Need more crosswalks
43	Pedestrians	Need crosswalks
44	Pedestrians	need crosswalk
45	Maintenance	Potholes need fixed
46	Safety	need flashing light for pedestrian crossing
47	Safety	need stop light
48	Pedestrians	Cross walks with lighted warning signs are needed for the kids from UHS
49	Pedestrians	needed
50	Safety	umatilla missed this half of the town when they put there nice lights in or dont care about this and up sad they missed half the town
51	Pedestrians	lots of walkers
52	Pedestrians	
53	Collisions	turn lane too small
54	Safety	
55	Safety	no crosswalk
56	Pedestrians	
57	Safety	dark
58	Safety	dark
59	Safety	dark
60	Pedestrians	
61	Pedestrians	
62	Pedestrians	
63	Safety	dark
64	Safety	
65	Safety	
66	Pedestrians	
67	Pedestrians	
68	Safety	Very dark. Poor lighting. Get kids from school with flashlights 🔦
69	Safety	Dark intersection with heavy traffic at school times with traffic coming multiple ways.
70	Safety	
71	Maintenance	Flooded crosswalks during rainy or wet weather
72	Safety	Need better lighting and crosswalks visibility
73	Pedestrians	need sidewalks along Chenoweth Ave
74	Speed	cars are moving too fast in this area, children live and play in this area, cars will slow down when kids can be seen, this road needs Children at play signs
75	Pedestrians	Not having a sidewalk all the way up Powerline, and not having any other cohesive path up the hill is dangerous. the work connected to the new bridge is great but what about the rest of the street that the school children have to walk to get there?

76	Safety	road is dark, especially below the irrigation canal, and there are pedestrians who walk along it in the dark
77	Safety	Umatilla High School is growing and so is the community- we need to consider adding an "official crosswalk" here. I have let ODOT know my concern, as well.
78	Safety	We need a Right Turn Lane for South Shore Drive. Traffic is getting worse. Traffic to Irrigon is just getting speed while residents are trying to slow down to turn. Increasing number of people trying to "pass" in the TURN LANE!
79	Pedestrians	Crossing issue for pedestrians
80	Pedestrians	
81	General	This curve did not last long for alleviating congestion
82	Safety	continue lighting on 6th st

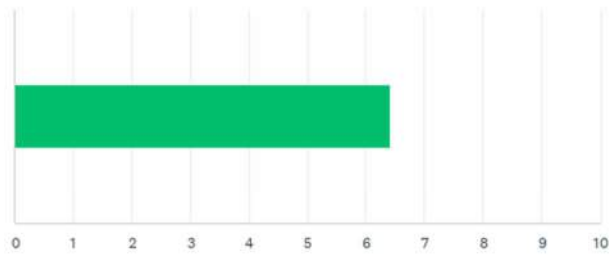
PUBLIC SURVEY RESULTS

A community input survey was made available from May 23, 2025 to June 2, 2025 to gather feedback from residents on their preferences for how the City of Umatilla prioritizes safety improvements. This survey provided an English and Spanish option for respondents. This input will help ensure the Roadway Comprehensive Safety Action Plan reflects the community's needs, preferences, and vision. A total of 24 responses were received and summarized data is provided below.

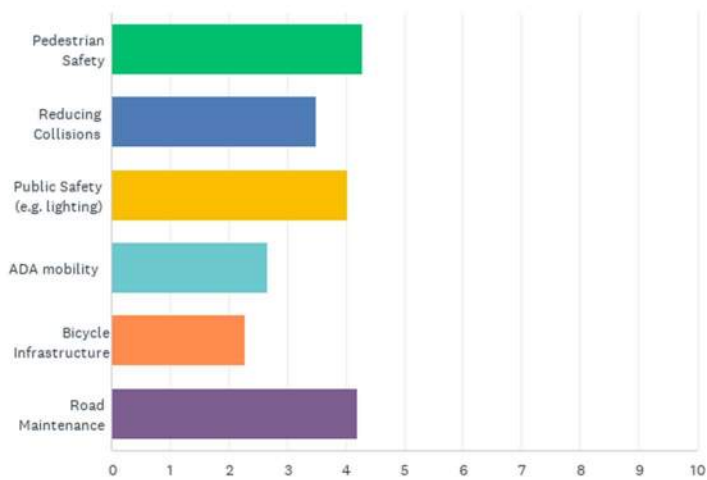
Complete list of the survey questions:

1. Generally, how safe do you feel traveling in Umatilla?
 2. Please rank the following safety categories from most to least important to you.
- 3-11. Slide the scale to indicate how much priority should be given to safety improvements related to this criterion:
- Pedestrian Safety
 - Reducing Collisions
 - Public Safety (e.g. lighting)
 - Bicycle Infrastructure
 - ADA Mobility
 - Road Maintenance
- 4-Do you have comments on the draft Safety Action Plan or wish to share anything else with the project team? You can find the draft Safety Action Plan on the project website: <https://arcg.is/1n1eD8>

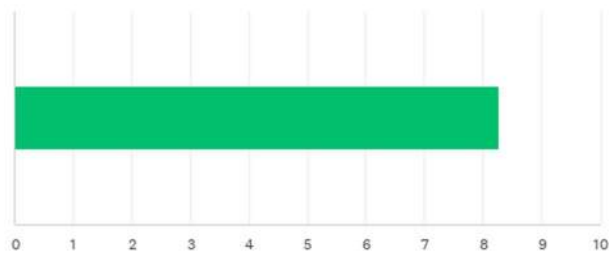
Q1 Generally, how safe do you feel traveling in the City of Umatilla?



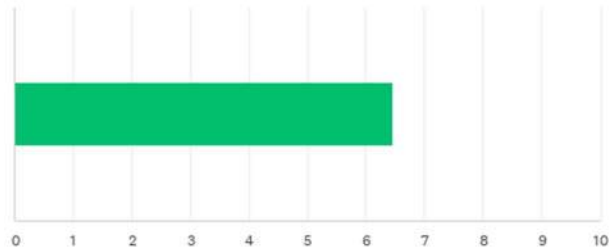
Q2 Please rank the following transportation safety categories from most to least important to you.



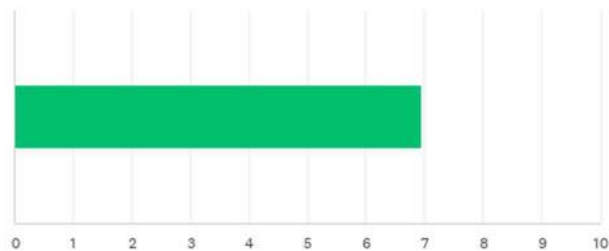
Q3 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Traffic volume



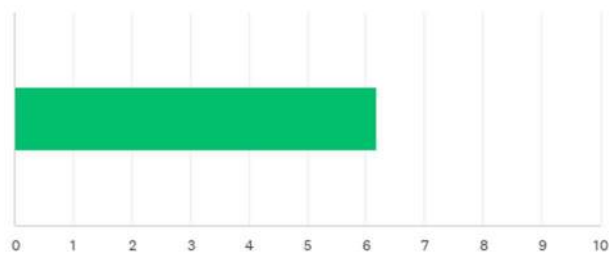
Q4 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Collision History



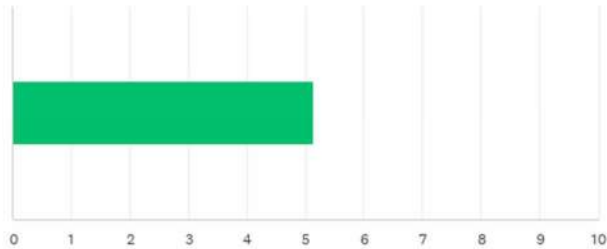
Q5 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Fatal and serious injury history



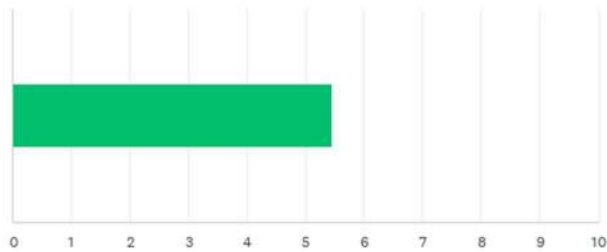
Q6 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Collision rate



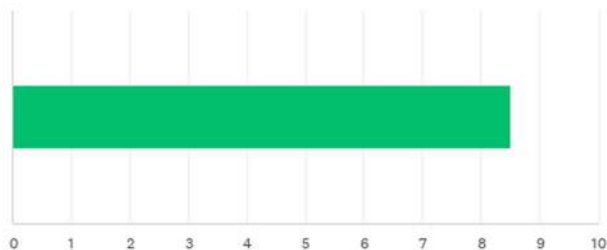
Q7 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Disadvantaged/vulnerable users (poverty, car ownership, disabilities, age, language)



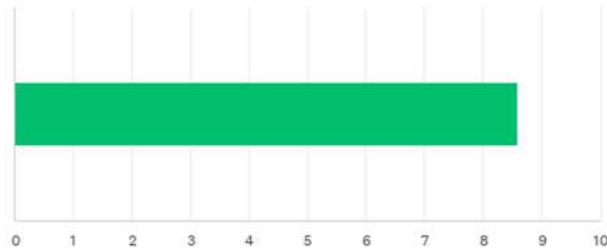
Q8 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Speed limit



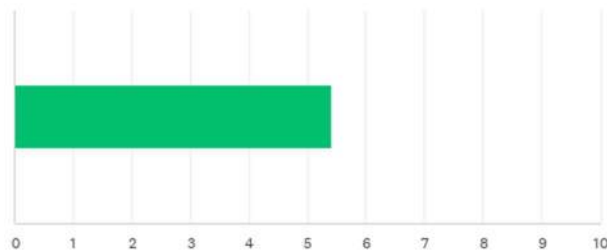
Q9 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Presence of sidewalks



Q10 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Safe routes to schools



Q11 Slide the scale to indicate how much priority you think should be given to safety improvements related to this criterion: Transit routes



Q12 Do you have comments on the draft Safety Action Plan or wish to share anything else with the project team? You can find the draft Safety Action Plan on the project website: <https://arcg.is/1n1eD8>

- This survey is yet another example of how this city has no idea how to plan. The only way someone can get this survey is Facebook? How many people frequent the city website, not many. I am so tired of poor planning and lack of input from the public. Like every other survey, Stockdale will take the item that can show off the most to the council, like the big concrete sign, no matter the public need and build and develop it because it is easy. Is there a public safety group or committee? Is there a process for all kinds of issues and planning? The real answer is nope, hide the facts and do the bare minimum.
- Good job putting one light up behind the new store. Glad to see there is acknowledgement of the trap house there on J and 7th too. Now please put them up all along the side streets now, all the way down 5th, 7th, and 8th. If you put one up on the corner of J and the alley between 8th and 7th though, you'll never hear my input again. Oh and side walks, don't forget that—as soon as side walks go up then it will actually look like a flourishing community and not a mock up of Radiator Springs. And please, in the name of public safety and community health, put a four way stop on J and 7th too, I can't even begin to explain how many people fly through that intersection and blow that stop sign. Do all this and I promise that police station gets votes in

with flying colors, because at that point, there's now a community with infrastructure that people would take pride and feel needs to be protected. I'll be back to provide more feedback before June 1st

- Downtown traffic is one lane, and speed is slow, think we are good there. Some of our side streets need replaced. Better patches
- I feel like there is a missing cross walk sign at the intersection of powerline rd and Kennedy St. There is a cross walk warning and sign at the cross walk coming down the hill, but only a warning coming up powerline and no sign at the cross walk. Cars speed fast around that corner
- Powerline Road needs safer pedestrian sidewalks all along Powerline Road.
- Connect and complete sidewalks along Powerline Rd, especially in the "presidents" area of south hill.
- For the love of God stop building other things and build side walks and install street lights on the side streets of Umatilla; the letter streets down town. Clean that alley up too that runs from one side of down town to the other, it looks terrible. And that house on J street (I know you know the house) is full of transients, stick some street lights in so I at least don't feel like I'm going to be mugged when I walk to the new store down the street. And CONSTANTLY do we have transients walking through the NONLIT CORRIDOR that is that alley, ONLY to go to the transient house at 11:50pm. It's crazy. Light up that alley; light up your damn streets; build the side walks; make the community safe. I would even give you back the 10 feet of property in front of my house IF YOU PLEASE MAKE THE INFRASTRUCTURE BETTER. Thanks.
- One thing I think we need to remember is while there are areas we all think of as downtown Umatilla they are also Hwy. 730 one of the busiest roadways in the area.
- We must have sidewalks all along Powerline Rd, especially in the "presidents" section of the road.
- Please fix Lewis and McNary Road it is bad/ugly

Social media advertising shared on the City of Umatilla's Facebook page and with stakeholders that The Langdon Group interviewed or interacted with earlier in the project.



LAST CALL:

Take the Safety Action
Plan Public Survey!

Closes May 31st, 2025



→ **Project website:** <https://arcg.is/1n1eD8>



ÚLTIMA LLAMADA:

¡Encuesta pública sobre el
Plan de Acción para la
Seguridad!

Cierra el 31 de mayo de 2025



→ **Página web del proyecto:** <https://arcg.is/1n1eD8>

Appendix D

Countermeasures

Oregon Department of Transportation (ODOT) HSIP Countermeasures and Crash Reduction Factors

The [Highway Safety Improvement Program](#) (HSIP) is a federal program designed to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. The HSIP requires a data-driven, strategic approach to improving highway safety. In Oregon, the HSIP program funds the All Roads Transportation Safety (ARTS) Program, an application-based program providing funding to address safety concerns on public roadways within the State. The intent of the Crash Reduction Factor (CRF) countermeasure table and appendix is to provide safety practitioners, intending to use HSIP funding, with a list of effective countermeasures that are appropriate improvements to many common safety issues. The countermeasures in this appendix are strategies intended to reduce crash frequency or severity on the road. For road safety engineers, this is typically a physical change to the infrastructure of a road section or intersection, such as the addition of signs, signals, or markings, or a change in roadway design.

Use of these countermeasures is required for the ARTS program and allows applications to be evaluated consistently and fairly. The countermeasures have been sorted into 2 primary categories: countermeasures eligible for Hotspot Funding and countermeasures eligible for Systemic Funding. Systemic Funding is further divided into Roadway Departure, Intersection and Bicycle & Pedestrian for informational use only. It is important to note that a maximum of four countermeasures can be applied in one application. While systemic and Hotspot countermeasures may be applicable at the same location, ODOT asks applicants to submit separate applications for hotspot and for systemic measures during this round. Once approved for funding, the measures can be combined under one project if desired. Separate applications allow similar comparisons of benefits for both methods.

The Excel Table (available on the ARTS website) summarizes the CRF's in tabular form and the Appendix below describes in more detail where the countermeasure should be used, why they are effective and potential impediments to the implementation. The appendix also includes information on the type of crashes where the countermeasure is best used, the CRF value to use in the benefit-cost analysis and the acknowledged range of their overall effectiveness based on the research available. The fixed set of CRFs included in these tables are intended to allow for all projects to be evaluated consistently and fairly throughout the project selection process.

ODOT recognizes that there may be countermeasures that are not included on the list where CRF's have not been established yet. This list will be periodically reevaluated by ODOT to include more recent and/or reliable CRF countermeasures and values as new safety research data becomes available. ODOT is interested in any feedback and suggestions from safety practitioners on the overall countermeasure list as well as specific details of individual countermeasures. Please use the form provided at this website to submit your suggestion: <https://www.oregon.gov/odot/Forms/2ODOT/7345160.pdf>.



Please send all other feedback and suggestions to Christina McDaniel-Wilson (christina.a.mcdaniel-wilson@odot.state.or.us). They will be considered for inclusion in the next HSIP process for the next STIP cycle. Where not otherwise specified, ODOT uses some of the following references to establish the summarized CRF List and Appendix. Safety Practitioners are encouraged to utilize these references to better understand the listed countermeasures and the details surrounding their application.

- The Crash Modification Factors Clearinghouse (<http://www.cmfclearinghouse.org/>)
- FHWA's proven Safety Countermeasures: (<https://safety.fhwa.dot.gov/provencountermeasures>)
- Highway Safety Manual (HSM), First Edition, 2010 (<http://www.highwaysafetymanual.org>)
- FHWA Desktop Reference for Crash Reduction Factors
(<http://safety.fhwa.dot.gov/tools/crf/resources/fhwasa08011/>)
- Manual for Selecting Safety Improvements on High Risk Rural Roads
(http://safety.fhwa.dot.gov/hsip/hrrr/manual/hrrr_2014.pdf)

For more information on the All Roads Transportation Safety (ARTS) program, please see the following web link: <https://www.oregon.gov/odot/Engineering/Pages/ARTS.aspx>

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Oregon Department of Transportation

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CRF Table:

			Green = Crash Specific				Blue = Area Type Specific					
Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Hotspot	H1	Median U-Turn Intersection Treatment	All	All Injury (Excludes PDO's)	20	Signalized or Unsignalized	Urban or Rural	30	30%	Synthesis of the Median U-Turn Intersection Treatment (FHWA-HRT-07-033) FHWA-HRT-07-033, FHWA Proven Safety Countermeasures (https://safety.fhwa.dot.gov/provenco/untermeasures/reduced_left/)	Y- Reduced Left-Turn Conflict Intersections	
Hotspot	H2	Right Turn Lane on Single Major Road Approach: Unsignalized Intersection (3- or 4-leg)	All	All	20	Unsignalized	Urban or Rural	14	14 - 26%	HSM, CMF Clearinghouse (CMF ID: 285)	Y- Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections	Likely
Hotspot	H3	Right Turn Lane on Both Major Road Approaches: Unsignalized Intersection (3- or 4-leg)	All	All	20	Unsignalized	Urban or Rural	26	14 - 26%	HSM, CMF Clearinghouse (CMF ID:289)	Y- Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections	Likely
Hotspot	H4	Right Turn Lane on Single Major Road Approaches: Signalized Intersection (3- or 4-leg)	All	All	20	Signalized	Urban or Rural	4	4 - 9%	HSM, CMF Clearinghouse (CMF ID: 286)		Likely
Hotspot	H5	Right Turn Lane on Both Major Road Approaches: Signalized Intersection (3- or 4-leg)	All	All	20	Signalized	Urban or Rural	8	4 - 9%	HSM, CMF Clearinghouse (CMF ID: 290)		Likely
Hotspot	H6	Channelized Right Turn Lane with Raised Median	All	All Injury (Excludes PDO's)	20	Signalized or Unsignalized	Urban or Rural	35	25 - 50%	FHWA Desktop reference Crash Reductions Factors, FHWA-SA-13-027 (2013)		Likely
Hotspot	H7	Left Turn Lane on Single Major Road Approach: Urban, Unsignalized Intersection (3-leg)	All	All	20	Unsignalized	Urban	33	33 - 55%	HSM, CMF Clearinghouse (CMF ID: 254)	Y- Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections	Likely
Hotspot	H8	Left Turn Lane on Both Major Road Approaches: Urban, Unsignalized Intersection (4-leg)	All	All	20	Unsignalized	Urban	47	47 - 58%	HSM, CMF Clearinghouse (CMF ID: 269)	Y- Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections	Likely
Hotspot	H9	Left Turn Lane on Single Major Road Approach: Rural, Unsignalized Intersection (3-leg)	All	All	20	Unsignalized	Rural	44	33 - 55%	HSM, CMF Clearinghouse (CMF ID: 253)	Y- Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections	
Hotspot	H10	Left Turn Lane on Both Major Road Approaches: Rural, Unsignalized Intersection (4-leg)	All	All	20	Unsignalized	Rural	48	47 - 58%	HSM, CMF Clearinghouse (CMF ID: 268)	Y- Left and Right Turn Lanes at Two-Way Stop-Controlled Intersections	
Hotspot	H11	Left Turn Lane on Single Major Road Approach: Urban, Signalized Intersection (3-leg)	All	All	20	Signalized	Urban	7	7 - 15%	HSM, CMF Clearinghouse (CMF ID: 4644)		Likely
Hotspot	H12	Left Turn Lane on Single Major Road Approach, Urban, Signalized Intersection (4-leg)	All	All	20	Signalized	Urban	10	10%	HSM, CMF Clearinghouse (CMF ID: 262)		
Hotspot	H13	Left Turn Lane on Both Major Road Approaches: Urban, Signalized Intersection (4-leg)	All	All	20	Signalized	Urban	19	17 - 48%	HSM, CMF Clearinghouse (CMF ID: 270)		Likely

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Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Hotspot	H14	Left Turn Lane on Single Major Road Approach: Rural, Signalized Intersection (3-leg)	All	All	20	Signalized	Rural	15	7 - 15%	HSM, CMF Clearinghouse (CMF ID: 4643)		Likely
Hotspot	H15	Left Turn Lane on Single Major Road Approach, Rural, Signalized Intersection (4-leg)	All	All	20	Signalized	Rural	18	18%	HSM		
Hotspot	H16	Left Turn Lane on Both Major Road Approaches: Rural, Signalized Intersection (4-leg)	All	All	20	Signalized	Rural	33	17 - 48%	HSM		Likely
Hotspot	H17	Channelized Left Turn Lane with Raised Median on All Approaches (3- or 4-leg)	All	All Injury (Excludes PDO's)	20	Signalized or Unsignalized	Urban or Rural	27	4 - 27%	HSM, CMF Clearinghouse (CMF ID: 249)		Likely
Hotspot	H18	Install Roundabout from Minor Road Stop Control	All	All Injury (Excludes PDO's)	20	Unsignalized	Urban or Rural	82	19 - 82%	HSM, CMF Clearinghouse (CMF ID: 228)	Y- Roundabouts	Likely
Hotspot	H19	Install Roundabout from Signalized Intersection	All	All Injury (Excludes PDO's)	20	Signalized	Urban or Rural	78	48 - 78%	HSM, CMF Clearinghouse (CMF ID: 226)	Y- Roundabouts	Likely
Hotspot	H20	Convert to All-Way Stop Control (From Urban 2-Way or Yield Control)	Angle	All	10	Unsignalized	Urban	75	18 - 75%	HSM, CMF Clearinghouse (CMF ID: 310)		
Hotspot	H21	Convert to All-Way Stop Control (From Rural 2-Way or Yield Control)	All	All	10	Unsignalized	Rural	48	18 - 75%	HSM, CMF Clearinghouse (CMF ID: 315)		
Hotspot	H22	Install Urban Traffic Signal	Angle	All	20	Unsignalized	Urban	67	-143 - 77%	HSM, CMF Clearinghouse (CMF ID: 323)		Likely
Hotspot	H23	Install Urban Traffic Signal	Rear End	All	20	Unsignalized	Urban	-143	-143 - 77%	HSM, CMF Clearinghouse (CMF ID: 324)		Likely
Hotspot	H24	Install Rural Traffic Signal	Angle	All	20	Unsignalized	Rural	77	-58 - 77%	HSM, CMF Clearinghouse (CMF ID: 326)		Likely
Hotspot	H25	Install Rural Traffic Signal	Rear End	All	20	Unsignalized	Rural	-58	-58 - 77%	HSM, CMF Clearinghouse (CMF ID: 328)		Likely
Hotspot	H26	Convert 4-Leg Intersection to Two 3-Leg Intersections (Minor St ADT is 15-30% of Total Entering Traffic)	All	All Injury (Excludes PDO's)	20	Unsignalized	Urban or Rural	25	10 - 33%	HSM, CMF Clearinghouse (CMF ID: 201)		Likely
Hotspot	H27	Convert 4-Leg Intersection to Two 3-Leg Intersections (Minor St ADT is 30% + of Total Entering Traffic)	All	All Injury (Excludes PDO's)	20	Unsignalized	Urban or Rural	33	10 - 33%	HSM, CMF Clearinghouse (CMF ID: 202)		Likely

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Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Hotspot	H28	Install Rural Median Acceleration Lane	All	All Injury (Excludes PDO's)	20	Unsignalized	Rural	45	20 - 79%	CMF Clearinghouse (CMF ID: 2755), NCHRP 650		
Hotspot	H29	Install Lighting at Intersection	Night	All Injury (Excludes PDO's)	20	Signalized or Unsignalized	Urban or Rural	38	31 - 38%	HSM, CMF Clearinghouse (CMF ID: 433)		Likely
Hotspot	H30	Install Lighting on a Roadway Segment	Night	All Injury (Excludes PDO's)	20	None - Roadway	Urban or Rural	28	17 - 29%	HSM, CMF Clearinghouse (CMF ID: 192)		
Hotspot	H31	Install Any Type of Median Barrier	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban or Rural	30	-24 - 43%	HSM, CMF Clearinghouse (CMF ID: 43)	Y- Median Barriers	Likely
Hotspot	H32	Install New Guardrail (Not Median Barrier Application)	Run off the Road	All Injury (Excludes PDO's)	20	None - Roadway	Urban or Rural	47	44 - 47%	CMF Clearinghouse (CMF ID: 38)	Y- Roadside Design Improvements at Curves	
Hotspot	H33	Install Two Way Left Turn Lane on 2-Lane Road	Rear End	All	20	None - Roadway	Urban or Rural	39	-5 - 53.1%	CMF Clearinghouse (CMF ID: 2351)		
Hotspot	H34	Reduce Urban Driveways from 48 to 26 - 48 per mile	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban	29	25 - 31%	HSM, CMF Clearinghouse (CMF ID: 177)	Y- Corridor Access Management	Likely
Hotspot	H35	Reduce Urban Driveways from 26 - 48 to 10 - 24 per mile	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban	31	25 - 31%	HSM, CMF Clearinghouse (CMF ID: 178)	Y- Corridor Access Management	Likely
Hotspot	H36	Reduce Urban Driveways from 10 - 24 to less than 10 per mile	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban	25	25 - 31%	HSM, CMF Clearinghouse (CMF ID: 179)	Y- Corridor Access Management	Likely
Hotspot	H37	Provide a Raised Median, Urban 2-Lane Road	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban	39	39%	HSM, CMF Clearinghouse (CMF ID: 21)		Likely
Hotspot	H38	Provide a Raised Median, Urban Multi-Lane Road	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban	22	0 - 22%	HSM, CMF Clearinghouse (CMF ID: 22)		Likely
Hotspot	H39	Provide a Raised Median, Rural Multi-Lane Road	All	All Injury (Excludes PDO's)	20	None - Roadway	Rural	12	0 - 22%	HSM, CMF Clearinghouse (CMF ID: 24)		Likely
Hotspot	H40	Install Traversable Median (4 ft. or more)	All	All	20	None - Roadway	Urban or Rural	12	12 - 30%	Engineering Judgement		Likely
Hotspot	H41	Install Passing Lane or Climbing Lane on Rural, 2-Lane Roadway	All	All Injury (Excludes PDO's)	20	None - Roadway	Rural	25	25 - 35%	HSM		

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Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Hotspot	H42	Widen Rural Paved Lane Width by 1 foot	All	All	20	None - Roadway	Rural	5	5%	CMF Clearinghouse (CMF ID: 3)	Y- Roadside Design Improvements at Curves	
Hotspot	H43	Flatten Horizontal Curve (Increase Radius)	All	All	20	None - Roadway	Urban or Rural	See table	15 - 78%	CMF Clearinghouse		
Hotspot	H44	Flatten Crest Vertical Curve	All	All	20	None - Roadway	Urban or Rural	20	20 - 51%	CMF Clearinghouse (CMF ID: 720, 721), FHWA Desktop Reference for Crash Reductions Factors FHWA-SA-08-011		
Hotspot	H45	Improve Superelevation Variance (SV) on Rural Curves (Between 0.01 and 0.02)	All	All	20	None - Roadway	Rural	CRF = -600*(SV - 0.01)	N/A	HSM, CMF Clearinghouse (CMF ID: 5183)		
Hotspot	H46	Improve Superelevation Variance (SV) on Rural Curves (More than 0.02)	All	All	20	None - Roadway	Rural	CRF = -300*SV	N/A	HSM, CMF Clearinghouse (CMF ID: 5184)		
Hotspot	H47	Convert from Urban Two-Way to One-Way Traffic	All	All	20	None - Roadway	Urban	47	47%	CMF Clearinghouse		
Hotspot	H48	Increase Pavement Friction by Installing High Friction Surface Treatment - Curves Application	Wet Road	All	10	None - Roadway	Urban or Rural	52	20 - 68%	CMF Clearinghouse (CMF ID: 7901)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Hotspot	H49	Increase Pavement Friction by Installing High Friction Surface Treatment - Ramps Application	Wet Road	All	10	None - Roadway	Urban or Rural	86	86%	CMF Clearinghouse (CMF ID: 7899)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Hotspot	H50	Install Urban Variable Speed Limit Signs	All	All	10	None - Roadway	Urban	8	8%	CMF Clearinghouse (CMF ID: 8730)		
Hotspot	H51	Install Urban Variable Speed Limit Signs with Queue/Weather Warning System	All	All	10	None - Roadway	Urban	14	14%	Engineering Judgement		
Hotspot	H52	Install Rural Variable Speed Limit Signs	All	All	10	None - Roadway	Rural	20	20 - 30%	Engineering Judgement		
Hotspot	H53	Convert 4-Lane Roadway to 3-Lane Roadway with Center Turn Lane (Road Diet)	All	All	20	None - Roadway	Urban	29	29%	HSM, CMF clearinghouse (CMF ID: 199)	Y- Road Diets (Roadway Reconfiguration)	Likely
Hotspot	H54	Install Truck Escape Ramp	Truck	All	20	None - Roadway	Urban or Rural	20	33 - 75%	FHWA Desktop Reference for Crash Reductions Factors		
Hotspot	H55	Install Guide Signs	All	All	20	None - Roadway	Urban or Rural	15	15%	FHWA Desktop Reference for Crash Reductions Factors, North Carolina CMF List in CMF Clearinghouse		

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Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Hotspot	H56	Provide an Auxiliary Lane Between an Entrance Ramp and Exit Ramp (Freeway Interchange)	All	All	20	None - Roadway	Urban or Rural	20	20%	CMF Clearinghouse (CMF ID: 3898)		
Hotspot	H57	Extend Deceleration Lane by Approximately 100 ft (Freeway Interchange)	All	All	20	None - Roadway	Urban or Rural	7	7%	HSM, CMF Clearinghouse (CMF ID: 475)		
Hotspot	H58	Extend Acceleration Lane by Approximately 100 ft (Freeway Interchange)	All	All	20	None - Roadway	Urban or Rural	11	11%	CMF Clearinghouse (CMF ID: 474)		
Hotspot	H59	Add Acceleration Lane (Interchange)	All	All	20	None - Roadway	Urban or Rural	CRF = 100*(1-e(-2.59*L)) Where, L = Length of Acceleration Lane (in mile)	N/A	HSM		
Hotspot	H60	Reduce Intersection Skew Angle (Minor Street Stop-Controlled Intersections Only) on 3-Leg intersection	All	All	20	Unsignalized	Rural	3-Leg Stop-Control: CRF = 100*(e^0.0040*Skew Angle) existing (e^0.0040*Skew Angle) proposed	N/A	HSM		
Hotspot	H61	Reduce Intersection Skew Angle (Minor Street Stop-Controlled Intersections Only) on 4-Leg intersection	All	All	20	Unsignalized	Rural	4-Leg Stop-Control: CRF = 100*(1-e0.0054*ΔSkew Angle) Where, ΔSkew Angle = Proposed Skew Angle - Existing Skew Angle	N/A	HSM		
Hotspot	H62	Truck Priority System (Detection)	Angle and Rear-End	All	10	Signalized	Urban or Rural	9	9%	Field Evaluation of Detection-Control System, FHWA-HRT-14-058 (2015)		
Hotspot	H63	Dual/Double Left Turn Lanes	All	All Injury (Excludes PDO's)	20	Signalized	Urban or Rural	29	29%	FHWA-SA-13-027 (pg.11-17)		
Hotspot	H64	Convert Two-Way Left-Turn Lane to Raised Median	All	All	20	None - Roadway	Urban or Rural	47	47%	CMF Clearinghouse (CMF ID: 7771)		
Hotspot	H65	Install offset (buffered) right turn lane	Angle and Turning	All	20	None - Roadway	Rural	69	69%	CMF Clearinghouse (CMF ID: 2777), NCHRP report 650 (table 45, pg.122)		
Hotspot	H66	Install Speed Humps/Table (not on state highways)	All	All	20	None - Roadway	Urban	50	50%	CMF Clearinghouse (CMF ID: 134)		
Intersection Systemic	I1	Install Lighting at Intersection	Night	All Injury (Excludes PDO's)	20	Signalized or Unsignalized	Urban or Rural	38	31 - 38%	HSM, CMF Clearinghouse (CMF ID:433)		Likely
Intersection Systemic	I2	Improve Signal Hardware: Lenses, Reflectorized Back plates, Size, and Number	All	All	20	Signalized	Urban or Rural	20% for 2 Countermeasures from List 25% for 3-4 Countermeasures from List 30% for 5-6 Countermeasures from List	0 - 46%	Caltrans/Intersection Implementation Plan/Engineering Judgment	Y- Backplates with Retroreflective Borders	

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Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Intersection Systemic	I3	Add 3-inch yellow retroreflective sheeting to signal backplates	All	All	10	Signalized	Urban	15	15%	CMF Clearinghouse (CMF ID: 1410), FHWA-SA-17-051, FHWA Proven Safety Countermeasure (https://safety.fhwa.dot.gov/provenco/untermeasures/blackplate/)	Y- Backplates with Retroreflective Borders	
Intersection Systemic	I4	Replace 8-inch red signal heads with 12-inch	Angle	All	10	Signalized	Urban or Rural	42	42%	CMF Clearinghouse (CMF ID: 2333)		
Intersection Systemic	I5	Increase Signal Head Quantity - Additional Primary Head	All	All	10	Signalized	Urban	28	28%	CMF Clearinghouse (CMF ID: 1414), 2005 FHWA-SA-13-027 (2013)		
Intersection Systemic	I6	Replace Incandescent Traffic Signal Bulbs with Light Emitting Diodes (LEDs)	Rear end	All	10	Signalized	Urban	17	17%	CMF Clearinghouse (CMF ID:4901), FHWA-HRT-13-070 (2013)		
Intersection Systemic	I7	Replace night time flash with stead operation	All	All	10	Signalized	Urban or Rural	48	48%	CMF Clearinghouse (CMF ID: 4887)		
Intersection Systemic	I8	Replace Doghouse with Flashing Yellow Arrow Signal Heads	Left Turning	All	20	Signalized	Urban or Rural	25	25%	CMF Clearinghouse, Safety Effectiveness of Flashing Yellow Arrow: Evaluation of 222 Signalized Intersections in North Carolina		
Intersection Systemic	I9	Replace Urban Permissive or Protected/Permissive Left Turns to Protected Only	Left Turning	All	20	Signalized	Urban	99	6 - 99%	HSM, CMF Clearinghouse (CMF ID: 333)		
Intersection Systemic	I10	Protected Left Turn - Split Side Street Signal Phasing	Left Turning	All	10	Signalized	Urban or Rural	70	70%	North Carolina CMF list in CMF Clearinghouse		
Intersection Systemic	I11	Replace Urban Permissive Left Turns to Protected/Permissive	Left Turning	All Injury (Excludes PDO's)	20	Signalized	Urban	16	6 -99%	HSM, CMF Clearinghouse (CMF ID: 4578)		
Intersection Systemic	I12	Change from permissive only to FYA - permissive only	Left Turning	All	10	Signalized	Urban or Rural	50	50%	CMF Clearinghouse (CMF ID: 7700)		
Intersection Systemic	I13	Install Adaptive Signal Timing of Urban Traffic Signals	All	All	10	Signalized	Urban	17	17%	CMF Clearinghouse		
Intersection Systemic	I14	Install Actuated Advance Warning Dilemma Zone Protection System at High Speed Signals (Microwave Detection)	All	All	10	Signalized	Urban or Rural	8	0 - 43.6%	CMF Clearinghouse (CMF ID: 4857)		
Intersection Systemic	I15	Install Flashing Beacons as Advance Warning at Intersections (Not Coordinated with Signal Timing)	All	All	10	Signalized or Unsignalized	Urban or Rural	13	10.2 - 13.3%	FHWA Desktop Reference for Crash Reductions Factors FHWA-SA-08-011		
Intersection Systemic	I16	Install Actuated/Coordinated Flashing Beacons as Advance Warning for Signalized Intersections	Rear End	All	10	Signalized	Urban or Rural	36	36 - 62%	CMF Clearinghouse (CMF ID: 1672), FHWA Desktop Reference for Crash Reductions Factors FHWA-SA-08-011		

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Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Intersection Systemic	I17	Increase Triangle Sight Distance	All	All Injury (Excludes PDO's)	10	Signalized or Unsignalized	Urban or Rural	48	11 - 56%	CMF Clearinghouse (CMF ID: 307)		
Intersection Systemic	I18	Increase Pavement Friction by Installing High Friction Surface Treatment - Intersection or Segment Application	Wet Road	All	10	Signalized or Unsignalized	Urban or Rural	57	17 - 57%	CMF Clearinghouse (CMF ID: 195)		
Intersection Systemic	I19	Left Turning Traffic Calming Treatments (Left Turn Wedge), Posted Speeds < 35 MPH	Left Turning	All	20	Signalized	Urban	10	10%	Engineering Judgement		
Intersection Systemic	I20	Left Turning Traffic Calming Treatments (Hardened Centerline), posted speeds <35 MPH	Left Turning	All	20	Signalized	Urban	10	10%	Engineering Judgement		
Intersection Systemic	I21	Improve Intersection Warning: Stop Ahead Pavement Markings, Stop Ahead Signs, Larger Signs, Additional Stop Signs and/or Other Intersection Warning or Regulatory Signs	All	All	10	Unsignalized	Urban or Rural	20% for 1-2 Countermeasures from List 25% for 3-4 Countermeasures from List 30% for 5-7 Countermeasures from List	11 - 55%	Caltrans/Intersection Implementation Plan/Engineering Judgment	Y- Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	
Intersection Systemic	I22	Install Advance Warning Signs (Signal Ahead)	Angle	All	10	Signalized	Urban	35	35%	CMF Clearinghouse (CMF ID: 1684), FHWA Desktop Reference for Crash Reductions Factors FHWA-SA-08-011		
Intersection Systemic	I23	Increase retroreflectivity of Stop Signs (reflective strips on sign post optional)	Angle	All	10	Unsignalized	Urban or Rural	7	7%	CMF Clearinghouse (CMF ID: 6048)	Y- Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	
Intersection Systemic	I24	Provide Flashing Beacons at All-Way Stop Controlled Intersections	Angle	All	10	Unsignalized	Urban or Rural	28	5 - 58%	HSM, CMF Clearinghouse (CMF ID: 454)		
Intersection Systemic	I25	Provide Flashing Beacons at Minor Road Stop Controlled Intersections	Angle	All	10	Unsignalized	Urban or Rural	13	5 - 58%	HSM, CMF Clearinghouse (CMF ID: 449)		
Intersection Systemic	I26	Provide Actuated Flashing Beacons Triggered by Approaching Vehicles at Unsignalized Intersections	All	All	10	Unsignalized	Urban or Rural	27	27	CMF Clearinghouse (CMF ID: 8441)		
Intersection Systemic	I27	Install Transverse Rumble Strips on Stop Controlled Approach(es)	All	Fatal/Serious Injury (A)	10	Unsignalized	Urban or Rural	25	-36 - 33%	CMF Clearinghouse (CMF ID: 2705)		
Intersection Systemic	I28	Install 6 ft. or greater Raised Divider on Stop Approach (Splitter Island)	All	All	20	Unsignalized	Urban or Rural	15	15%	FHWA Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections		
Intersection Systemic	I29	Prohibit Right-Turn-On-Red	All	All	10	Signalized	Urban or Rural	9	9%	HSM		
Intersection Systemic	I30	Provide "Stop Ahead" pavement markings	All	All	10	Unsignalized	Rural	31	31%	HSM	Y- Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	

			Green = Crash Specific				Blue = Area Type Specific					
Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Intersection Systemic	I31	Provide overhead lane-use signs	Rear end	All	10	Signalized	Urban or Rural	10	10%	Signalized Intersections: Information Guide. FHWA_HRT-04-091		
Intersection Systemic	I32	Install Wrong Way Driving Countermeasures: Signing, Pavement markings, Geometric Modifications, and ITS Technologies (seeTable 3.1 in Wrong-Way Driving Analysis and Recommendations Final Report)	All	All	20	Unsignalized	Urban or Rural	20%: for 2 Countermeasures from List 30%: for 3 Countermeasures from List 40%: for 4 (or more) Countermeasures from List	20% - 40%	oregon.gov/ODOT/Engineering/Docs _TrafficEng/Wrong-Way-Driver-Report.pdf		
Intersection Systemic	I33	Curb Extensions	All	All	20	Signalized or Unsignalized	Urban	30	30%	Michigan intersection crash reduction factors - https://www.michigan.gov/document s/mdot/mdot_Crash_Reduction_Factors 303744 7.pdf		Likely
Bike/Ped Systemic	BP1	Install Pedestrian Countdown Timer(s)	Pedestrian	All	20	Signalized	Urban or Rural	70	0 - 70%	CMF Clearinghouse (CMF ID: 5272)		
Bike/Ped Systemic	BP2	Provide Intersection Lighting (Bike & Ped)	P & B Night	All Injury (Excludes PDO's)	20	Signalized or Unsignalized	Urban or Rural	42	42%	HSM, CMF Clearinghouse (CMF ID: 436)		Likely
Bike/Ped Systemic	BP3	Install Urban Leading Pedestrian or Bicycle Interval at Signalized Intersection	P & B	All	10	Signalized	Urban	37	37 - 45%	CMF Clearinghouse, Safety Effectiveness of Leading Pedestrian Intervals Using Empirical Bayes Method (https://trid.trb.org/view/881112)	Y- Leading Pedestrian Intervals	
Bike/Ped Systemic	BP4	Install No Pedestrian Phase Feature with Flashing Yellow Arrow	Pedestrian	All	20	Signalized	Urban or Rural	43	43%	Accident Analysis & Prevention, FHWA-HRT-18-044 (https://www.fhwa.dot.gov/publications/research/safety/18044/18044.pdf)		
Bike/Ped Systemic	BP5	Reduce Right Turn Permissive Conflicts (right turn arrow)	P & B	All	20	Signalized	Urban or Rural	20	20%	Engineering Judgement		
Bike/Ped Systemic	BP6	Install Urban Green Bike Lanes at Conflict Points	Bicycle	All	10	Signalized or Unsignalized	Urban	39	39%	CMF Clearinghouse (CMF ID: 3258)		
Bike/Ped Systemic	BP7	Install Bike Box at Conflict Points	Bicycle	All	10	Signalized	Urban or Rural	35	35%	Signalized Intersections: An informational guide FHWA-SA-13-027 (2013)		
Bike/Ped Systemic	BP8	Install Pedestrian Refuge Island	Pedestrian	All	20	None - Roadway	Urban or Rural	31	26 - 31%	CMF Clearinghouse (CMF ID: 8799), NCHRP 841	Y- Medians and Pedestrian Crossing Islands in Urban and Suburban Areas	Likely
Bike/Ped Systemic	BP9	Install Rectangular Rapid Flashing Beacon (2-Lane Road)	Pedestrian	All	20	None - Roadway	Urban or Rural	10	10 - 56%	ODOT Engineering Judgement / NCHRP 841		
Bike/Ped Systemic	BP10	Install Pedestrian Activated Beacon at Intersection	P & B	All	20	None - Roadway	Urban	10	10%	ODOT Engineering Judgement / NCHRP 841		
Bike/Ped Systemic	BP11	Install Rectangular Rapid Flashing Beacon without Median (3-Lane or More Roadway)	Pedestrian	All	20	None - Roadway	Urban or Rural	10	10 - 56%	ODOT Engineering Judgement / NCHRP 841		

			Green = Crash Specific				Blue = Area Type Specific					
Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Bike/Ped Systemic	BP12	Install Rectangular Rapid Flashing Beacon with Median (3-Lane or More Roadway)	Pedestrian	All	20	None - Roadway	Urban or Rural	56	10 - 56%	ODOT Engineering Judgement / NCHRP 841	Y- Medians and Pedestrian Crossing Islands in Urban and Suburban Areas	
Bike/Ped Systemic	BP13	Install Pedestrian Activated Beacon Midblock	P & B	All	20	None - Roadway	Urban	10	10%	ODOT Engineering Judgement / NCHRP 841		
Bike/Ped Systemic	BP14	Install Pedestrian Activated Beacon (flashing Beacon in conjunction with median and stop bar)	P & B	All	20	None - Roadway	Urban	56	56%	ODOT Engineering Judgement / NCHRP 841	Y- Medians and Pedestrian Crossing Islands in Urban and Suburban Areas	
Bike/Ped Systemic	BP15	Install Continental Crosswalk Markings and Advance Pedestrian Warning Signs at Uncontrolled Locations	Pedestrian	All	10	None - Roadway	Urban or Rural	15	15%	FHWA Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections		
Bike/Ped Systemic	BP16	Install Curb Ramps and Extensions with a Marked Crosswalk and Pedestrian Warning Signs	Pedestrian	All	20	None - Roadway	Urban or Rural	37	37%	FHWA Desktop Reference for Crash Reductions Factors		
Bike/Ped Systemic	BP17	Install Advance Pedestrian or Bicycle Warning Signs	P & B	All	10	None - Roadway	Urban or Rural	5	5 - 15%	FHWA Desktop Reference for Crash Reductions Factors		
Bike/Ped Systemic	BP18	Install Pedestrian Signal	P & B	All	20	None - Roadway	Urban or Rural	55	15 - 69%	FHWA Desktop Reference for Crash Reductions Factors		Likely
Bike/Ped Systemic	BP19	Install Pedestrian Hybrid Beacon	P & B	All	20	None - Roadway	Urban	55	55 - 69%	CMF Clearinghouse (CMF ID: 2922, 9020), NCHRP 926 (2020), FHWA Proven Safety Countermeasure (https://safety.fhwa.dot.gov/provenco/untermeasures/ped hybrid beacon/)	Y- Pedestrian Hybrid Beacons	Likely
Bike/Ped Systemic	BP20	Convert 4-Lane Roadway to 3-Lane Roadway with Center Turn Lane (Road Diet)	All	All	20	None - Roadway	Urban	29	29%	HSM, NCHRP 926	Y- Road Diets (Roadway Reconfiguration)	Likely
Bike/Ped Systemic	BP21	Install Bike Signal	Bicycle	All	20	Signalized	Urban or Rural	45	45%	FHWA MUTCD Interim Approval for Optional Use of a Bicycle Signal Face (IA-16)		
Bike/Ped Systemic	BP22	Install Bike Lanes	Bicycle	All	20	None - Roadway	Urban or Rural	36	0 - 53%	FHWA Desktop Reference for Crash Reductions Factors		
Bike/Ped Systemic	BP23	Install Cycle Tracks	Bicycle	All Injury (Excludes PDO's)	20	None - Roadway	Urban	59	59 - 74%	CMF Clearinghouse (CMF ID: 4102, 4097)		Likely
Bike/Ped Systemic	BP24	Install Buffered Bike Lanes	Bicycle	All Injury (Excludes PDO's)	20	None - Roadway	Urban	47	N/A	ODOT Engineering Judgement		
Bike/Ped Systemic	BP25	Prohibit Right-Turn-On-Red	P & B	All	10	Signalized	Urban or Rural	41	26 - 44%	HSM		

			Green = Crash Specific				Blue = Area Type Specific					
Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Bike/Ped Systemic	BP26	Advanced Yield and Stop Markings & Signs	P & B	All	10	None - Roadway	Urban or Rural	25	25%	CMF Clearinghouse (CMF ID: 9017)		
Bike/Ped Systemic	BP27	Install Bicycle Boulevard	P & B	All	10	None - Roadway	Urban or Rural	63	63%	CMF Clearinghouse (CMF ID: 3092)		
Bike/Ped Systemic	BP28	Install Raised Crosswalk	P & B	All	20	Signalized or Unsignalized	Urban	30	30%	Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes FHWA-SA-014 (https://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_tctpepc/)		Likely
Bike/Ped Systemic	BP29	Sidewalk	destrian - walking alo	All	20	None - Roadway	Urban or Rural	20	20%	Engineering Judgement	Y- Walkways	Likely
Bike/Ped Systemic	BP30	Install Speed Humps/Table (not on state highways)	P & B	All	20	None - Roadway	Urban	15	15%	CMF Clearinghouse (CMF ID: 145)		
Bike/Ped Systemic	BP31	Street Tree's (supports blueprint for Urban Design)	All	All	20	None - Roadway	Urban	10	10%	ODOT Engineering Judgement		Likely
Roadway Departure Systemic	RD1	Increase Distance to Rural Roadside Obstacle from 3 ft. (1 m) to 16 ft. (5 m)	All	All	20	None - Roadway	Rural	22	22 - 44%	HSM, CMF Clearinghouse (CMF ID: 35)	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD2	Increase Distance to Rural Roadside Obstacle from 16 ft. (5 m) to 30 ft. (9 m)	All	All	20	None - Roadway	Rural	44	22 - 44%	HSM, CMF Clearinghouse (CMF ID: 36)	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD3	Flatten Rural Side Slopes	All	All	20	None - Roadway	Rural	See table	3 - 15%	HSM	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD4	Increase Pavement Friction by Installing High Friction Surface Treatment - Intersection or Segment Application	Wet Road	All	10	None - Roadway	Urban or Rural	57	20 - 68%	CMF Clearinghouse (CMF ID: 195)	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD5	Provide Safety Edge for Rural Pavement Edge Drop-Off	All	All	10	None - Roadway	Rural	6	5-15%	CMF Clearinghouse	Y- SafetyEdgeSM	
Roadway Departure Systemic	RD6	Install RECOMMENDED Chevron Signs on Rural Horizontal Curves	Run Off The Road	All Injury (Excludes PDO's)	10	None - Roadway	Rural	16	4 - 25%	CMF Clearinghouse (CMF ID: 2438)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD7	Install REQUIRED Chevron Signs on Rural Horizontal Curves (Ballbanking and Revised Speed Riders Included)	Run Off The Road	All Injury (Excludes PDO's)	10	None - Roadway	Rural	16	16%	ODOT Engineering Judgement	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD8	Install Oversized, Doubled Up and/or Fluorescent Yellow Sheeting for Advance Curve Warning Signs	Run Off The Road	All	10	None - Roadway	Urban or Rural	20	20%	ODOT Engineering Judgement	Y- Enhanced Delineation and Friction for Horizontal Curves	

			Green = Crash Specific				Blue = Area Type Specific					
Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Roadway Departure Systemic	RD9	Provide Static Combination Horizontal Alignment/Advisory Curve Warning Sign	All	All Injury (Excludes PDO's)	10	None - Roadway	Urban or Rural	13	13 - 29%	HSM, CMF Clearinghouse (CMF ID: 73)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD10	Install Advance Curve Warning Flashers (Curve Warning Signs Exist)	Curve Crashes	All	10	None - Roadway	Urban or Rural	10	10%	Engineering Judgement	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD11	Install Dynamic Speed Feedback Sign for Curves	All	All	10	None - Roadway	Rural	5	5%	CMF Clearinghouse (CMF ID: 6885)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD12	Install Speed Feedback Sign	All	All	5	None - Roadway	Urban or Rural	10	10%	Engineering Judgement		
Roadway Departure Systemic	RD13	Install Raised or Recessed Pavement Markers	Night	All	10	None - Roadway	Urban or Rural	15	15%	https://www.oregon.gov/ODOT/Engineering/Docs_TrafficEng/Departure-Implementation-Plan.pdf		
Roadway Departure Systemic	RD14	Install Post-Mounted Delineators (Curve Application)	Curve crashes at Night	All	10	None - Roadway	Urban or Rural	30	0 - 30%	FHWA Desktop Reference for Crash Reductions Factors	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD15	Install Edgeline Striping (Tangent and/or Curve Application)	Run off the Road	All	10	None - Roadway	Rural	11	11 - 13%	CMF Clearinghouse (CMF ID: 1943, 1946)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD16	Install Centerline Rumble Strips	All	All Injury (Excludes PDO's)	10	None - Roadway	Rural	12	9 - 45%	CMF Clearinghouse (CMF ID: 3362, 3350)	Y- Longitudinal Rumble Strips and Stripes	
Roadway Departure Systemic	RD17	Install Centerline Rumble Strips	Head On & Sideswipe Meeting	All Injury (Excludes PDO's)	10	None - Roadway	Rural	45	45%	CMF Clearinghouse (CMF ID: 3360)	Y- Longitudinal Rumble Strips and Stripes	
Roadway Departure Systemic	RD18	Install Shoulder Rumble Strips	Run off the Road	All	10	None - Roadway	Urban or Rural	22	16 - 42%	CMF Clearinghouse (CMF ID: 2423)	Y- Longitudinal Rumble Strips and Stripes	
Roadway Departure Systemic	RD19	Install Profiled Line Pavement Markings	Night & Wet Road	All	5	None - Roadway	Urban or Rural	9	0 - 9%	CMF Clearinghouse (CMF ID: 9803 (2018 4-star study)), FHWA-HRT-17- 075		
Roadway Departure Systemic	RD20	Install Widen Paved Shoulder by 1 ft.	All	All	20	None - Roadway	Urban or Rural	6	3 - 6%	CMF Clearinghouse (CMF ID: 5277)	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD21	Install Widen Paved Shoulder by 2 ft.	All	All	20	None - Roadway	Urban or Rural	13	5 - 13%	CMF Clearinghouse (CMF ID: 5279)	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD22	Install Widen Paved Shoulder by 3 ft.	All	All	20	None - Roadway	Urban or Rural	18	6 - 18%	CMF Clearinghouse (CMF ID: 5281)	Y- Roadside Design Improvements at Curves	

			Green = Crash Specific				Blue = Area Type Specific					
Hotspot or Systemic Application Type	Countermeasure Number	Countermeasure	Crash Type	Injury, PDO or All	Service Life (Years)	Existing Intersection Traffic Control	Urban or Rural	CRF %	Range of CRF	Reference	Proven Safety Countermeasure	ADA Trigger
Roadway Departure Systemic	RD23	Upgrade existing markings to wet-reflective pavement markings	Wet Road	All	10	None - Roadway	Urban or Rural	14	14%	CMF Clearinghouse (CMF ID: 8137)		
Roadway Departure Systemic	RD24	Install wider edgelines (4 in. to 6 in.)	All	All	10	None - Roadway	Rural	14	17%	CMF Clearinghouse (CMF ID: 4736, 3-star 2019 study CMF ID: 10128)	Y- Enhanced Delineation and Friction for Horizontal Curves	
Roadway Departure Systemic	RD25	Install Any Type of Median Barrier	All	All Injury (Excludes PDO's)	20	None - Roadway	Urban or Rural	30	30%	HSM, CMF Clearinghouse (CMF ID: 43)	Y- Median Barriers	
Roadway Departure Systemic	RD26	Install New Guardrail (Not Median Barrier Application)	Run off the Road	All Injury (Excludes PDO's)	20	None - Roadway	Urban or Rural	47	47%	CMF Clearinghouse (CMF ID: 38)	Y- Roadside Design Improvements at Curves	
Roadway Departure Systemic	RD27	Install Seasonal Wildlife Warning Signs	All	All	20	None - Roadway	Rural	26	26%	http://cem.uaf.edu/media/131602/20150506-huijser-warning-signs-final-2.pdf		
Roadway Departure Systemic	RD28	Install Wildlife Detection System	Wildlife only	All	20	None - Roadway	Rural	87	87%	FHWA publication: https://www.fhwa.dot.gov/publications/publicroads/09septoct/03.cfm		

H2: Right Turn Lane on Single Major Road

Approach: Unsignalized Intersection (3- or 4-leg)

Description: A right turn lane is an auxiliary lane for storage and to accommodate the decreasing speed of right turn vehicles as they approach an intersection.



Image from ODOT

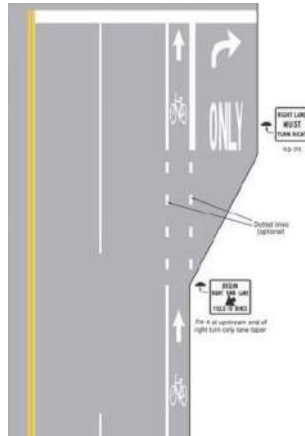


Image from FHWA

Applications: At intersections with a high frequency of rear end crashes resulting from conflicts between a) vehicles turning right and following vehicles and b) vehicles turning right and through vehicles coming from the left on the cross street.

Considerations: This countermeasure may require a significant amount of right of way. Turns lane(s) shall be of adequate storage length so vehicles will not be stopped in the travel lanes. For rural applications, using a buffered right turn lane may improve safety by allowing drivers to see approaching vehicles behind the right turning vehicles.

Special Conditions: This countermeasure CRF value can only be used for installation of a right turn lane on ONE major road approach at a 3-leg or 4-leg UNSIGNALIZED intersection.

ODOT CRF Value:

14%

Reduction in **All Crashes**
at **All Severities**
(Including PDO's)

Range of Effectiveness:

14% - 26%

Safety Effects:

Providing a right turn lane at an intersection can reduce rear-end crashes by allowing vehicles to proceed through the intersection without having to stop or slow down for vehicles making a right turn.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 285\)](#)

[Safety Effectiveness of Intersection Left- and Right-Turn Lanes \(FHWA-RD-02-089\)](#)

FHWA Proven Safety Countermeasure

H3: Right Turn Lane on Both Major Road Approaches: Unsignalized Intersection (3- or 4-leg)

Description: A right turn lane is an auxiliary lane for storage and to accommodate the decreasing speed of right turn vehicles as they approach an intersection.



Image from Google

Applications: At intersections with a high frequency of rear end crashes resulting from conflicts between a) vehicles turning right and following vehicles and b) vehicles turning right and through vehicles coming from the left on the cross street.

Considerations: This countermeasure may require a significant amount of right of way. Turns lane(s) shall be of adequate storage length so vehicles will not be stopped in the travel lanes. For rural applications, using a buffered right turn lane may improve safety by allowing drivers to see approaching vehicles behind the right turning vehicles.

Special Conditions: This countermeasure CRF value can only be used for installation of right turn lanes on BOTH major road approaches at a 4-leg UNSIGNALIZED intersection.

ODOT CRF Value:

26%

Reduction in **All Crashes**
at **All Severities**
(Including PDO's)

Range of Effectiveness:

14% - 26%

Safety Effects:

Providing a right turn lane at an intersection can reduce rear-end crashes by allowing vehicles to proceed through the intersection without having to stop or slow down for vehicles making a right turn.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 289\)](#)

[Safety Effectiveness of Intersection Left- and Right-Turn Lanes \(FHWA-RD-02-089\)](#)

FHWA Proven Safety Countermeasure

H7: Left Turn Lane on Single Major Road

Approach: Urban, Unsignalized Intersection (3-leg)

Description: A left turn lane is an auxiliary lane for storage and to accommodate the decreasing speed of left turn vehicles as they approach an intersection. This countermeasure is also known as a channelized left turn lane.



Image from FHWA

Applications: Use this countermeasure where you have a higher frequency of rear end crashes resulting from the conflicts between vehicles turning left and following vehicles. Crash frequencies between vehicles turning left and opposing through vehicles are also candidates for the installation of left turn lanes - drivers feel less pressure to take insufficient gaps when they have their own lane to wait in.

Considerations: Turns lane(s) shall be of adequate storage length so vehicles will not be stopped in the travel lanes.

Special Conditions: This countermeasure CRF value can only be used for installation of a left turn lane on ONE major road approach at an URBAN 3-leg UNSIGNALIZED intersection.

ODOT CRF Value:

33%

Reduction in **All Crashes**
at **All Severities**
(Including PDO's)

Range of Effectiveness:

33% - 55%

Safety Effects:

Left turn lanes allow vehicles to proceed through the intersection without having to stop or slow down for vehicles waiting to make a left turn.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 254\)](#)

[Safety Effectiveness of Intersection Left- and Right-Turn Lanes \(FHWA-RD-02-089\)](#)

FHWA Proven Safety Countermeasure

H18: Install Roundabout from Minor Road Stop Control

Description: A modern roundabout is a type of circular intersection defined by the basic operational principle that entering traffic yields to vehicles on the circular roadway.



Image from FHWA

Applications: Roundabouts should be considered for all existing unsignalized intersections that have been identified as needing major safety or operational improvements. Typical crash patterns that could be resolved with a roundabout are higher than expected speed related, angle and/or turning crashes.

Considerations: Roundabouts require a significant amount of public outreach and education in addition to requiring a larger geometric footprint than a typical intersection.

Special Conditions: Map-21 Legislation declares a National focus to reduce Fatalities and Severe (Injury A) crashes on our roadways. Roundabouts are one of the primary tools we can use to reduce severity of crashes and meet this National goal.

ODOT CRF Value:

82%

Reduction in **All Crashes**
at **All Injury Severities**
(Excludes PDO's)

Range of Effectiveness:

19% - 82%

Safety Effects:

Roundabout intersections eliminate a number of vehicle conflict points (up to 75%) typically associated with traditional intersections. They also enhance safety by reducing vehicle speeds (more typical in rural settings) both in and through the intersection and by changing the crash type from angle to sideswipe, which typically results in less severe crashes.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 228\)](#)

**FHWA Proven Safety
Countermeasure**

H22, H23: Install Urban Traffic Signal

Description: Traffic Signals are a traffic control device positioned on roadways to efficiently control and manage competing flows of traffic (vehicles, pedestrians and/or bicycles).



Image from Google

Applications: Where an intersection is experiencing a higher than expected frequency of right angle crashes with adequate sight distance to that intersection from all approaches.

Considerations: It is important that the existing intersection crash patterns are related to failing to yield to right of way as opposed to failing to yield to slowing traffic as a signal installation will likely increase the latter.

Special Conditions: While signals decrease the potential for angle crashes, simultaneously they increase the potential for rear end crashes. It is also important to note that rear end crashes in high speed corridors typically result in more severe crashes than in lower speed corridors. Benefit/Cost Analysis using this countermeasure shall include BOTH CRF values listed below, one for decreasing angle crashes and the other for increasing rear end crashes, to best represent the expected changes in safety with installation.

The MUTCD lists nine warrants for the placement of traffic signals, which should be reviewed as installation of this treatment is considered. State Traffic Engineer Approval and warrant analysis is REQUIRED for all potential signal installations on the State Highway.

ODOT CRF Value:

67% (Angle)

-143% (Rear End)

Reduction in **Angle & Rear End Crashes** at All Severities (Including PDO's)

Range of Effectiveness:

-143% - 77%

Safety Effects:

Traffic signals help to assign right of way to traffic movements which helps to reduce right angle crashes at intersections.

References:

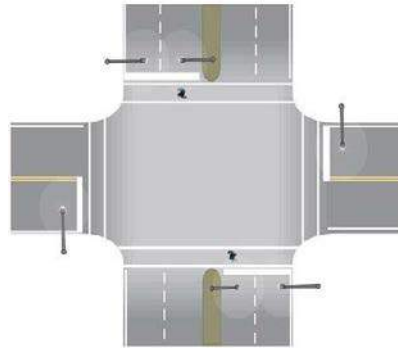
Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 323\)](#)

[Crash Modification Factors Clearinghouse \(CMF ID: 324\)](#)

H29: Install Lighting at Intersection

Description: A permanent source of artificial light installed at an intersection that provides greater visibility of the intersection.



Images from FHWA

Applications: Intersections that are experiencing a high instance of dark or nighttime crashes. Particularly for unsignalized intersections, rear-end, right-angle, or turning crashes on the major road approaches may indicate that approaching drivers are unaware of the presence of the intersection.

Considerations: In rural areas it may be difficult to locate a power source. In addition, it is important to determine, upfront, the jurisdiction responsible for paying the ongoing utility costs.

Special Conditions: This countermeasure is for new lighting only, not to replace existing, substandard lighting. This CRF value can be applied to signalized and unsignalized intersections. For ODOT Highways, please refer to the ODOT Lighting Policy and Guidelines for further guidance on lighting warrants.

ODOT CRF Value:

38%

Reduction in **Night Crashes**
at **All Injury Severities**
(Excludes PDO's)

Range of Effectiveness:

31% - 38%

Safety Effects:

Intersection lighting allows for greater visibility of the intersection, making signs and markings more visible and helping drivers determine a safe path through the intersection. This can be especially helpful at rural intersections where the only source of lighting for the roadway is often provided by vehicle headlights.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 433\)](#)

H30: Install Lighting on a Roadway Segment

Description: A permanent source of artificial light installed on a segment of roadway that provides greater visibility of the roadway.



Image from American Electric Lighting



Image from Google

Applications: Segments of roadway that are experiencing a high instance of dark or nighttime crashes, particularly crashes related to missed visual roadway queues.

Considerations: In rural areas it may be difficult to locate a power source. In addition, it is important to determine, upfront, the jurisdiction responsible for paying the ongoing utility costs.

Special Conditions: This countermeasure is for new lighting, not to replace existing, substandard lighting. This CRF value applies to roadway segments only. For ODOT Highways, please refer to the ODOT Lighting Policy and Guidelines for further guidance on lighting warrants.

ODOT CRF Value:

28%

Reduction in **Night Crashes**
at **All Injury Severities**
(Excludes PDO's)

Range of Effectiveness:

17% - 29%

Safety Effects:

Segment lighting allows for greater visibility of the roadway and the visual cues that help drivers determine a safe path along the roadway. This can be especially helpful in rural areas where the only source of lighting for the roadway is often provided by vehicle headlights.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 192\)](#)

H32: Install New Guardrail (Not Median Barrier Application)

Description: A semi-rigid barrier typically consisting of connected segments of metal railing supported by posts and blocks.



Images from FHWA

Applications: Guardrails should be installed where there is evidence (i.e. crash history) of the need to shield motorists from a roadside hazard that has a higher risk for fatal or serious injury crashes than the guardrail itself. Potential roadside hazards could be point hazards (such as a bridge pier or utility pole), medium-sized hazards (such as roadside culverts), and long hazards (such as steep roadside slopes).

Considerations: Guardrails themselves are a roadside obstacle that a motorist can potentially strike (subsequently creating a lot of potential maintenance costs as well) so it is important to minimize guardrail installation to locations where you are protecting a motorist from roadside hazards that have a higher risk for fatal or serious injury crashes.

Special Conditions: For more guidance on installation of guardrails please see NCHRP Report 638.

ODOT CRF Value:

47%

Reduction in
Run off the Road Crashes
at **All Injury Severities**
(Excludes PDO's)

Range of Effectiveness:

44% - 47%

Safety Effects:

Because guardrail systems are designed to absorb energy during a crash, and the entire assembly is designed to move or deflect during an impact, guardrail systems usually minimize potential injuries in run off the road or roadway departure crashes.

References:

[Crash Modification Factors Clearinghouse \(CMF ID: 38\)](#)

FHWA Proven Safety Countermeasure

H33: Install Two Way Left Turn Lane on 2-Lane Road

Description: A type of traversable median reserved for the exclusive use of vehicles turning left from both directions.



Image from FHWA

Applications: On two-lane roadways where you have frequent accesses and a high frequency of rear end crashes related to vehicles turning left.

Considerations: If the pavement width doesn't already exist, this countermeasure could have significant costs associated with adding more impervious surface. Typical examples are right of way acquisition, drainage impacts and environmental mitigation.

Special Conditions: On arterials with higher volumes (above 20,000 ADT) and frequent access, it may be advantageous to consider a non-traversable (curbed) median, rather than a TWLTL. On higher volume or higher speed roadways, the TWLTL loses much of its safety advantage, which the non-traversable medians retain.

ODOT CRF Value:

39%

Reduction in **Rear End Crashes at All Severities**
(Including PDO's)

Range of Effectiveness:

-5% - 53.1%

Safety Effects:

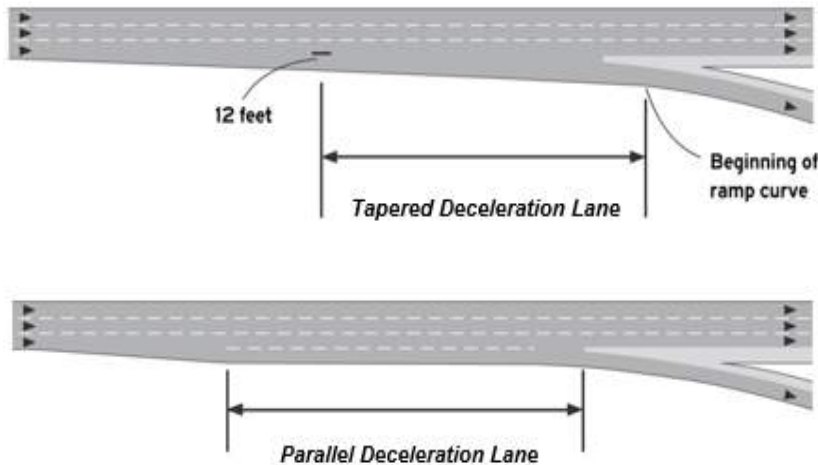
Reduces the need for vehicles to slow down for vehicles waiting to turn left by separating the left turning vehicles from the through lanes. In areas with frequent accesses, this countermeasure could significantly reduce these potential conflicts along an entire corridor in addition to increasing capacity of the facility. This countermeasure can also provide vehicles with the ability to make two-stage turning maneuvers from accesses.

References:

[Crash Modification Factors Clearinghouse \(CMF ID: 2351\)](#)

H57: Extend Deceleration Lane by Approximately 100 ft. (Freeway Interchange)

Description: A deceleration lane, also known as an auxiliary or speed-change lane, allows vehicles to slow down in a designated space not used by high-speed through traffic.



Images from FHWA

Applications: At freeway off-ramps that are short, requiring exiting traffic to slow quickly before exiting the main traffic lane.

Considerations: Lane space should be considered when extending deceleration lanes. Converting current roadway shoulders to useable lanes may require widening and strengthening of the existing roadway pavement, leading to higher costs due to construction.

Special Conditions: This countermeasure CRF is specific to extending deceleration lanes on freeway interchanges.

ODOT CRF Value:

7%

Reduction in **All Crashes**
at **All Severities**
(Including PDO's)

Range of Effectiveness:

7%

Safety Effects:

Deceleration lanes allow traffic exiting a freeway to slow down to a safer speed without affecting the main flow of traffic. Increases safety by reducing the number of conflicts between vehicles traveling at different speeds.

References:

Highway Safety Manual

[Crash Modification Factors
Clearinghouse \(CMF ID:
475\)](#)

H63: Dual/Double Left Turn Lanes

Description: Two lanes that can be used to make a turn left at a signalized intersection.



Image from Google

Applications: Used at intersections with high left-turn volumes where a single left-turn lane is not sufficient.

Considerations: Consider dual left-turn lanes when volumes exceed 300 vehicles per hour (assuming moderate levels of opposing through traffic and adjacent street traffic). For double left-turn lanes, the following should be considered:

- Widths of receiving lanes and intersection
- Clearance between opposing left-turn movements during concurrent maneuvers.
- Pavement marking and signing visibility.
- Placement of stop lines for left-turning and through vehicles.
- Weaving movements downstream of turn.
- Potential for pedestrian conflict.

Special Conditions: Benefits of dual/double left turn lanes may include a reduced delay to left turning vehicles, improved intersection capacity, and extra green time that can be allocated to other movements or removed to decrease cycle length. Providing positive guidance (pavement markings) along with the implementation of dual/double left turn lanes could help guide drivers through their designated turn lane and reduce sideswipe crashes.

ODOT CRF Value:

29%

Reduction in **All Crashes**
at **All Injury Severities**
(Excluding PDO's)

Range of Effectiveness:

29%

Safety Effects:

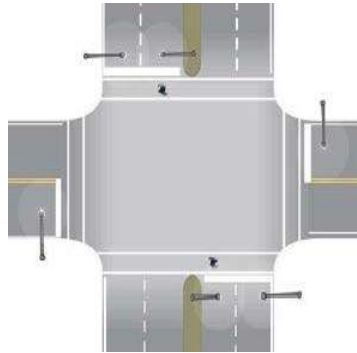
Dual/Double left turn lanes provide additional capacity at an intersection and improves intersection operation by reducing the time allocated to the signal phase for the left-turn movement.

References:

[Signalized Intersections
Informational Guide
\(FHWA-SA-13-027\)](#)

I1: Install Lighting at an Intersection

Description: A permanent source of artificial lighting installed at an intersection that provides greater visibility of the intersection.



Images from FHWA

Applications: At intersections with a high frequency of dark or nighttime crashes. Particularly for unsignalized intersections, rear-end, right-angle, or turning crashes on the major road approaches may indicate that approaching drivers are unaware of the presence of the intersection.

Considerations: In rural areas it may be difficult to locate a power source. In addition, it is important to determine, upfront, the jurisdiction responsible for paying the ongoing utility costs. For signalized intersections, retrofitting illumination onto existing signal poles could result in an entire signal rebuild.

Special Conditions: This countermeasure CRF value is for new lighting only on all corners (i.e. no lighting currently exists) and can be applied to signalized and unsignalized intersections (both rural and urban). If the existing intersection is partially lit or partial lighting will be installed at an intersection, refer to the special situation below to calculate CRF value.

For state highways, refer to the [ODOT Lighting Policy and Guidelines](#) for further guidance on lighting warrants.

ODOT CRF Value:

38%

Reduction in **Night Crashes**
at **All Injury Severities**
(Excluding PDO's)

Range of Effectiveness:

31% - 38%

Safety Effects:

Intersection lighting allows for greater visibility of the intersection, making signs and markings more visible, and helping drivers determine a safe path through the intersection. This can be especially helpful at rural intersections where the only source of lighting for the roadway is often provided by vehicle headlights.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 433\)](#)

BP29: Add Sidewalk

Description: A sidewalk is a paved path, located along roadways, designated for use by pedestrians. Sidewalks are usually raised and can be separated from roads by curbs and/or planting strips or swales.



Applications: Where there is a higher than expected frequency of pedestrian crashes or vehicle crashes caused by pedestrians walking along a roadway.

Considerations: Consider sidewalks as a treatment for accommodating pedestrians along heavily traveled corridors where frequent pedestrian use is expected. Sidewalk furnishings can also be implemented to provide additional buffering between pedestrians and vehicles. Sidewalk designs should meet and follow ADA guidelines.

Special Conditions: This countermeasure is only applicable to crashes involving pedestrians walking along a roadway, not crossing. For further guidance and standards, refer to the Oregon Bicycle and Pedestrian Design Guide.

ODOT CRF Value:

20%

Reduction in
Pedestrian – walking along
Crashes at All Severities
(Including PDO's)

Range of Effectiveness:

20%

Safety Effects:

Sidewalks provide refuge for pedestrians and create a safer walking environment away from traffic. Sidewalks help improve roadway operations, safety, and mobility.

References:

ODOT Engineering
Judgement

**FHWA Proven Safety
Countermeasure**

RD9: Provide Static Combination Horizontal Alignment/Advisory Curve Warning Signs

Description: A combined Turn (W1-1) sign or the Curve (W1-2) sign with the Advisory Speed (W13-1) plaque to form a combination warning sign that is placed at the beginning of a turn or curve.



Images from MUTCD

Applications: Use it as a supplement to (not a replacement for) the advance Horizontal Alignment sign and Advisory Speed plaque where crash history depicts a need for enhanced curve warning.

Considerations: It is important, for curves with crash histories, to consider all curve warning enhancement options to determine which countermeasure is the most appropriate for the identified crash pattern(s).

Special Conditions: This sign is often used on sequential curves that have different advisory speeds and are spaced too closely to be signed separately with advance Horizontal Alignment signs. The slower curve often needs additional warning. See the 2009 MUTCD for additional guidance.

ODOT CRF Value:

13%

Reduction in **All Crashes**
at **All Injury Severities**
(Excluding PDO's)

Range of Effectiveness:

13% - 29%

Safety Effects:

The sign is intended to remind motorists of the need to slow down as they begin to negotiate the alignment change.

References:

Highway Safety Manual

[Crash Modification Factors Clearinghouse \(CMF ID: 73\)](#)

**FHWA Proven Safety
Countermeasure**

RD26: Install New Guardrail (Not Median Barrier Application)

Description: A semi-rigid barrier typically consisting of connected segments of metal railing supported by posts and blocks.



Images from FHWA

Applications: Guardrails should be installed where there is evidence (i.e. crash history) of the need to shield motorists from a roadside hazard that has a higher risk for fatal or serious injury crashes than the guardrail itself. Potential roadside hazards could be point hazards (such as a bridge pier or utility pole), medium-sized hazards (such as roadside culverts), and long hazards (such as steep roadside slopes).

Considerations: Guardrails themselves are a roadside obstacle that a motorist can potentially strike (subsequently creating a lot of potential maintenance costs as well) so it is important to minimize guardrail installation to locations where you are protecting a motorist from roadside hazards that have a higher risk for fatal or serious injury crashes.

Special Conditions: For more guidance on installation of guardrails please see NCHRP Report 638.

ODOT CRF Value:

47%

Reduction in
Run off the Road Crashes
at **All Injury Severities**
(Excludes PDO's)

Range of Effectiveness:

47%

Safety Effects:

Because guardrail systems are designed to absorb energy during a crash, and the entire assembly is designed to move or deflect during an impact, guardrail systems usually minimize potential injuries in run off the road or roadway departure crashes.

References:

[Crash Modification Factors Clearinghouse \(CMF ID: 38\)](#)

FHWA Proven Safety Countermeasure

RD27: Install Seasonal Wildlife Warning Signs

Description: Seasonal wildlife warning signs that are only present during certain times of the year when wildlife cross roadway systems most frequently.



Image from FHWA

Applications: Where you have a high frequency of roadway crashes related to crossing wildlife.

Considerations: It may be important to provide educational outreach to the public on the use of seasonal wildlife warning signs as well as give drivers advice on the best actions to take to avoid collisions with wildlife.

Special Conditions: Seasonal wildlife signs are used most frequently in rural areas where wildlife are attracted to roadside vegetation.

ODOT CRF Value:

26%

Reduction in **All Crashes** at
All Severities
(Including PDO's)

Range of Effectiveness:

26%

Safety Effects:

Seasonal wildlife warning signs improves the safety of roadways by alerting drivers to areas where wildlife could be present to help reduce crashes with vehicles.

References:

[Wildlife Warning Signs and Animal Detection Systems](#)