



MEMORANDUM

To: Project Management Team

From: Matt Kittelson, PE, Miranda Barrus, PE, Eza Andrews, PE, Robert Olney; Joel McCarroll, PE, Lacy Brown, PhD, PE, RSP₂₁, Anders Hart, RSP₁

Date: June 9, 2026

Re: Bend Metropolitan Planning Organization TSAP Update
Final Tech Memo #3: Existing Conditions

Introduction

The Bend Metropolitan Planning Organization (MPO), in partnership with the City of Bend (City), is updating its Transportation Safety Action Plan (TSAP), developed in 2019. The purpose of the TSAP Update is to help the MPO and its partners eliminate fatal and serious injury crashes from the transportation system through site-specific and systemic countermeasures and multidisciplinary actions. This memorandum summarizes the crash history within the MPO boundary, including crash patterns and locations where crashes may be concentrating.

The crash history analysis is a foundation for identifying crash emphasis areas (e.g., speeding) that may be addressed through systemwide strategies, as well as specific locations that could be prioritized for individual safety projects, which will be explored in *Tech Memo #4 (Strategies)*. This memorandum also documents the safety projects and strategies that the City has implemented from the 2019 TSAP.

Together with input from the MPO, City, agency partners, and community, the findings in this memorandum will support the development of systemic, site-specific, and non-infrastructure safety strategies within the study area, defined by the Bend MPO boundary and illustrated in Figure 1.



Figure 1. TSAP Update Study Area, Bend MPO Boundary

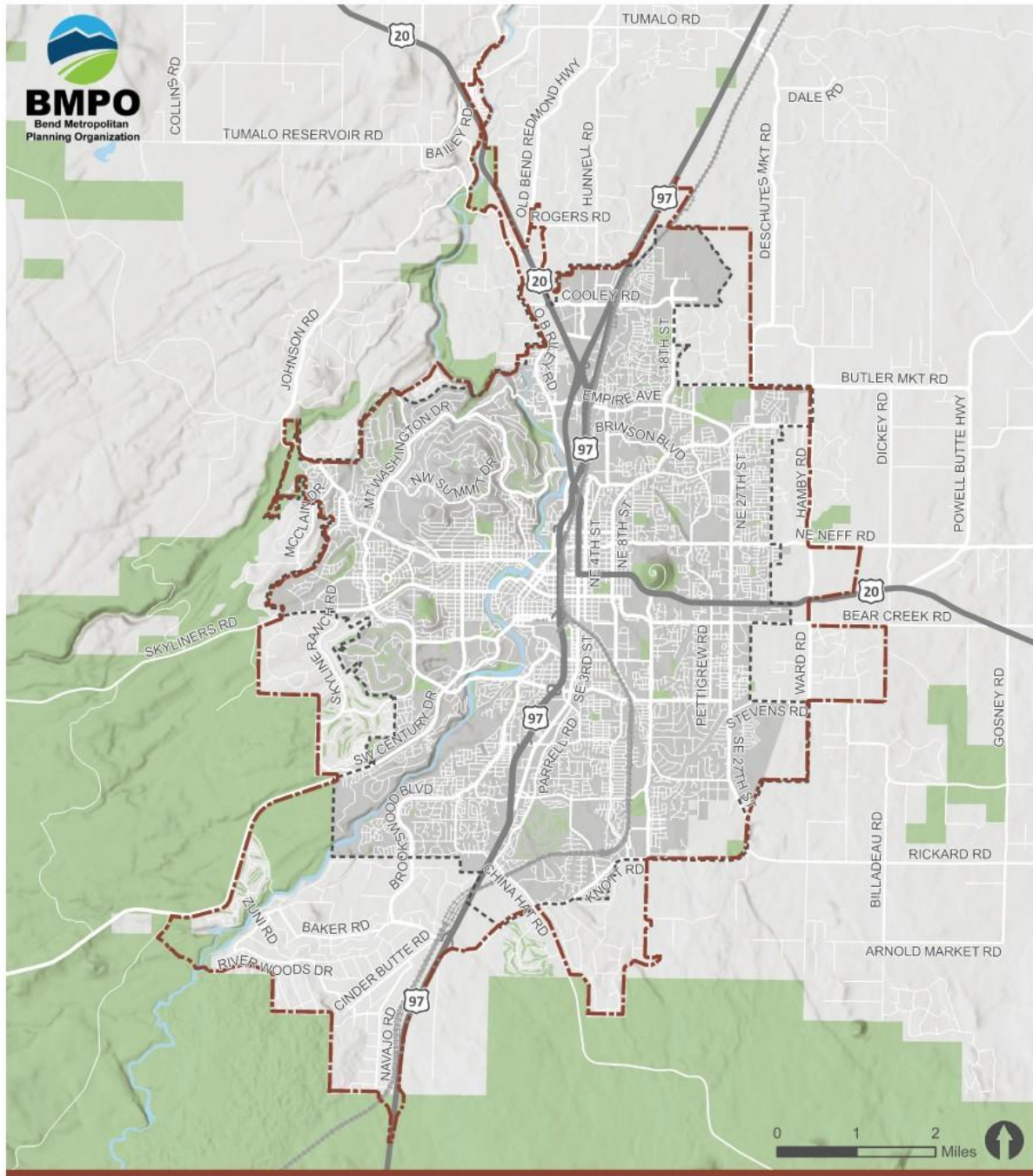


Figure 1 - Study Area
Bend MPO TSAP



Crash Data Analysis

The crash data analysis summarized in the following sections is based on the most recent five years of crash data (January 1, 2019 through December 31, 2023) that were available at the time the evaluation was conducted, obtained from the Oregon Department of Transportation (ODOT). The crash data analysis evaluates historical crash patterns and locations where crashes have concentrated within the study area, with an emphasis on more serious injury crashes. This data may encompass crash information at locations where the City has since made safety improvements or where improvements are programmed or planned. These instances will be identified in this memorandum accordingly.

The severity of a crash is determined based on the most serious injury of a person involved in the crash. Crash severities have five categories that are abbreviated as KABCO:

- **Fatal (K):** Any injury that results in death within 30 days of the crash.
- **Suspected Serious Injury (A):** Typically, life-altering injuries such as broken limbs, dislocation, severe lacerations, paralysis, or organ damage, but also includes unconsciousness, head injuries, and significant loss of blood.
- **Suspected Minor Injury (B):** Other visible injuries that are evident at the scene of the crash, including minor lacerations, bruising, and rashes.
- **Possible Injury (C):** Any injury that is not fatal, serious, or minor. Includes complaint of non-visible pain/injury, such as confusion, limping, and soreness.
- **Property Damage Only (PDO, O):** A collision without injury or complaint of pain but resulting in property damage to a vehicle or another object, commonly referred to as a "fender bender."

Serious injuries and fatalities not only have life-changing impacts on people involved in and adjacent to these crashes, but they also impart a high cost onto them and the overall region.

The crash analysis summarized herein investigates serious crashes through two primary methods:

1. **Crash Pattern Assessment** – identifies the history and patterns of crashes on all public and private roads in the study area, including characteristics like crash severity and location, temporal trends, collision types (e.g., rear-end, bicycle) and contributing factors, road features (e.g., lack of pedestrian infrastructure), driver behaviors (e.g., speeding), and external conditions (e.g., low lighting, weather). The results of this analysis help to identify the MPO's crash Emphasis Areas, presented later in this section.
2. **Network Screening Evaluation** – screens the transportation network within the study area for higher concentrations of crashes, particularly serious crashes, to later identify the MPO's High Injury Network. The Equivalent Property Damage Only (EPDO) performance measure, described in *Tech Memo #2 (Safety Analysis Framework)*, assigns weights to the five crash severities ('100' for Injury K and A crashes, '10' for Injury B and C crashes, and '1' for Injury O crashes) to help locate intersections and street corridors within the entire system that exhibit the most frequent and serious crashes.



Crash Pattern Assessment

This section summarizes the historic crash patterns observed within the study area based on the categories below:

- Crash Severity
- Intersection and Segment Crashes
- Crashes by Roadway Owner
- Temporal Trends
- Crash Types and Contributing Factors
- Roadway Characteristics
- Behavioral Characteristics
- Vulnerable Road Users

This analysis includes reported crashes on all public and private roads in the study area, including highway facilities owned by ODOT.

This section also lists the data provided in the 2019 City Bend TSAP where it overlaps with the data provided in this document. The 2019 City of Bend TSAP only covered the area in the City of Bend’s urban growth boundary (UGB) and covered the years of 2012 to 2016, so it is not directly comparable to the data shown here, which is for the entire area in the MPO and for 2019 to 2023.

Crash Severity

5,013 crashes¹ were reported within the study area over the five-year study period (2019-2023). Of these, 27 were fatal and 175 were serious injury crashes for a combined 5% of total crashes. Possible injury and PDO crashes were the most common, totaling 3,919 crashes in these combined severity categories (78% of total crashes). Table 1 presents the severity breakdown of reported crashes for the study period.

The 2019 City of Bend TSAP reported that only 2% of crashes resulted in a fatal or serious injury, compared to 5% shown here.

Table 1. 2019-2023 Crashes by Severity in the Bend MPO Boundary

Severity	Number of Crashes	Percentage of Crashes
Fatal (K)	27	1%
Suspected Serious Injury (A)	175	4%
Suspected Minor Injury (B)	892	18%
Possible Injury (C)	1,273	25%
PDO (O)	2,646	53%
Total	5,013	100%*
* The individual percentages do not add to 100% due to rounding.		

¹ Some crashes (especially ones that do not result in injuries or result in damage less than \$2,500) are not reported, so this figure is an underestimate of the true number.



Intersection and Segment Crashes

As shown in Chart 1, roughly twice as many crashes occur at intersections (64%) than street segments (36%) within the study area. This split holds true across severity levels, with approximately 60% of fatal and serious injury crashes occurring at intersections compared to 40% along segments. This kind of result is common in urban areas due to intersections typically being closely spaced together. Table 2 further demonstrates this for crashes across all modes.

The 2019 City of Bend TSAP showed a higher proportion of intersection crashes (88%) than in the MPO (64%).

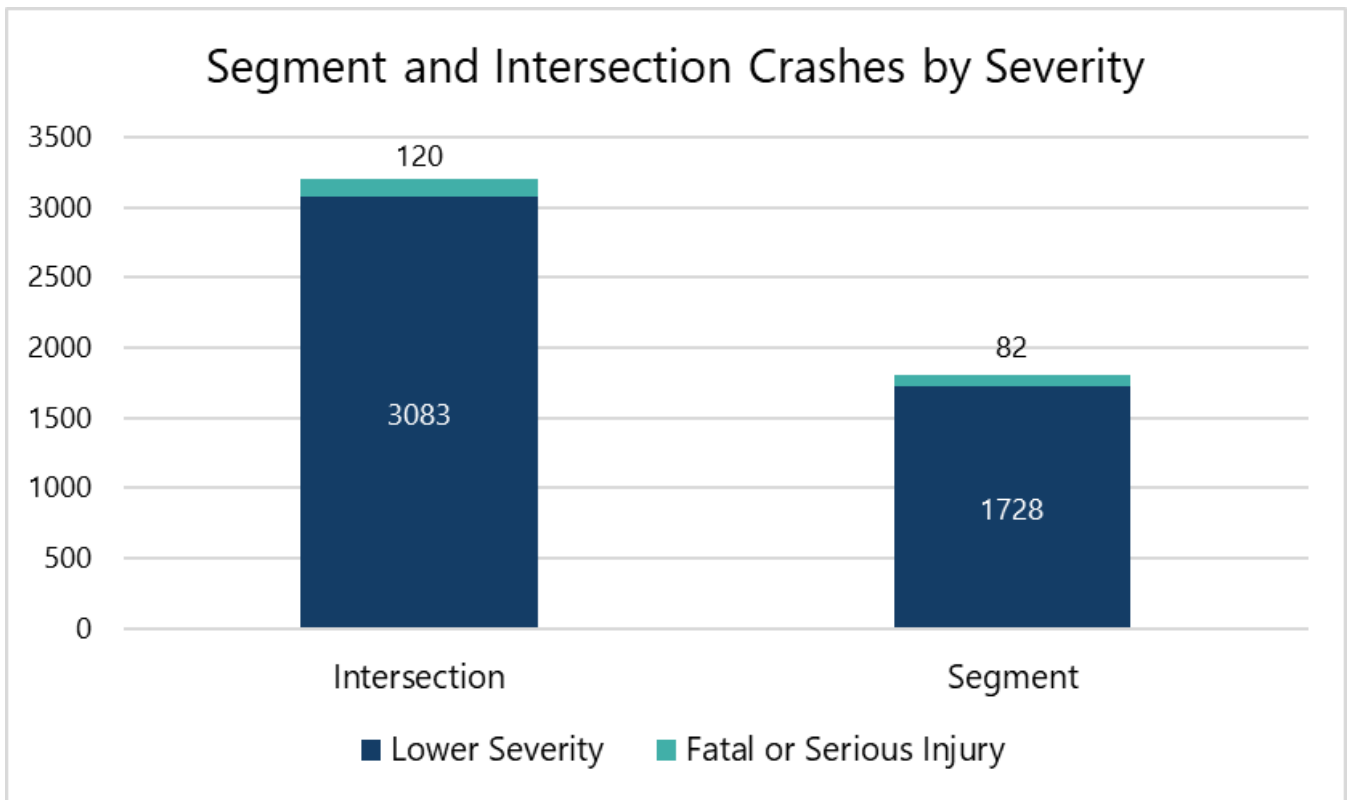


Chart 1. Intersection and Street Segment Crashes by Severity (2019-2023)

Table 2. 2019-2023 Crashes by Mode in the Bend MPO

Mode	Intersections	Segments	Total
Pedestrian Crashes	41	25	66
Bicyclist Crashes	80	28	108
Motorcycle Crashes	48	35	83
Motor Vehicle-Only Crashes	3,034	1,722	4,756
Total Crashes	3,203	1,810	5,013



Crashes by Roadway Owner

Chart 2 summarizes the number of crashes that occurred on state highways versus County, local, or Federal roads. Non-state roads account for 92% of road miles within the study area and 72% of crashes. State highways account for only 8% of road miles but 28% of crashes, indicating that these facilities are overrepresented among crashes. Note that this comparison reflects the centerline miles of roadway and does not capture the differences in traffic volume (or vehicle miles travelled) on each roadway type. Regardless of the reason, the large proportion of crashes occurring on state highways highlights the importance of coordination and partnership with ODOT as the MPO and City aim to improve safety for residents and visitors.

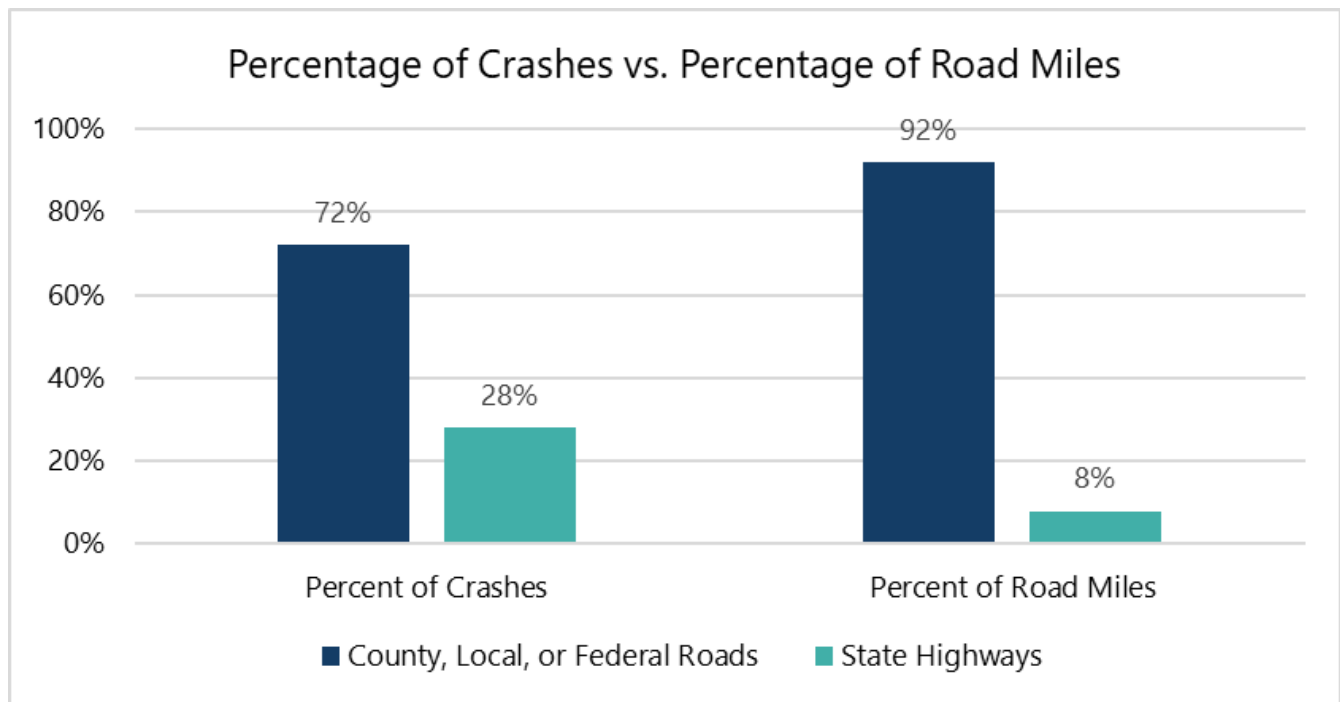


Chart 2. Crashes and Road Miles by Road Ownership

Note: County, local, and federal roads include approximately 21 miles of US Forest Service and Bureau of Land Management roads where no crashes were reported between 2019 and 2023. They include approximately 80 miles of roadway, where ownership is unknown, that accounted for 78 crashes between 2019 and 2023. Roads with unknown ownership may include private streets.



Assessment of Crashes on the Highway System Versus the Local System

Project stakeholders asked the evaluation team to assess whether crashes on the state highway system show distinct patterns that could influence the overall assessment of crashes within the MPO boundary study area. Specifically, they questioned if including highway crash data in the broader study area assessment might mask important trends that are more relevant to the local system.

However, based on the crash analyses presented in this memorandum, the project team found the following:

- While there are several designated state highways within the study area, most of them function similarly to the local transportation system. For example, 3rd Street is part of the US 20 alignment in northern Bend and then transitions to City operated south of Greenwood Avenue. The roadway context and crash patterns are consistent across both sections, with no noticeable differences.
- The Parkway (US 97) and US 20 entering Bend from the northwest are the most prominent highway sections in the community. However, crash trends on these roads do not appear to skew the overall results toward highway-focused crash patterns. Instead, the project team identified notable urban crash emphasis areas, which are discussed in this document.

Based on these findings, the project team has not separated crash trends specifically for highway related crashes. The MPO and its agency partners may continue to use the information presented in this memorandum and subsequent analysis documents as appropriate to prioritize investments and set priorities for either the highway or local roadway system.



Temporal Trends

The following section summarizes temporal crash trends, describing reported crashes by year, month, day of the week, and time of day within the five-year period.

Crashes by Year

5,013 crashes over the five-year period equates to an average of 1,003 crashes per year. The total number of annual crashes has remained relatively constant since 2019, except for a dip in 2020 that was likely caused by changing travel patterns during the COVID-19 pandemic (Chart 3). However, the number and proportion of fatal and serious injury crashes have more than doubled since 2019. Fatal and serious injury crashes made up 2.2% of all crashes in 2019 compared to 6.3% of crashes in 2023. This trend is not unique to the Bend area. Jurisdictions in Oregon and across the US experienced a significant increase in high-severity crashes following the COVID-19 pandemic.

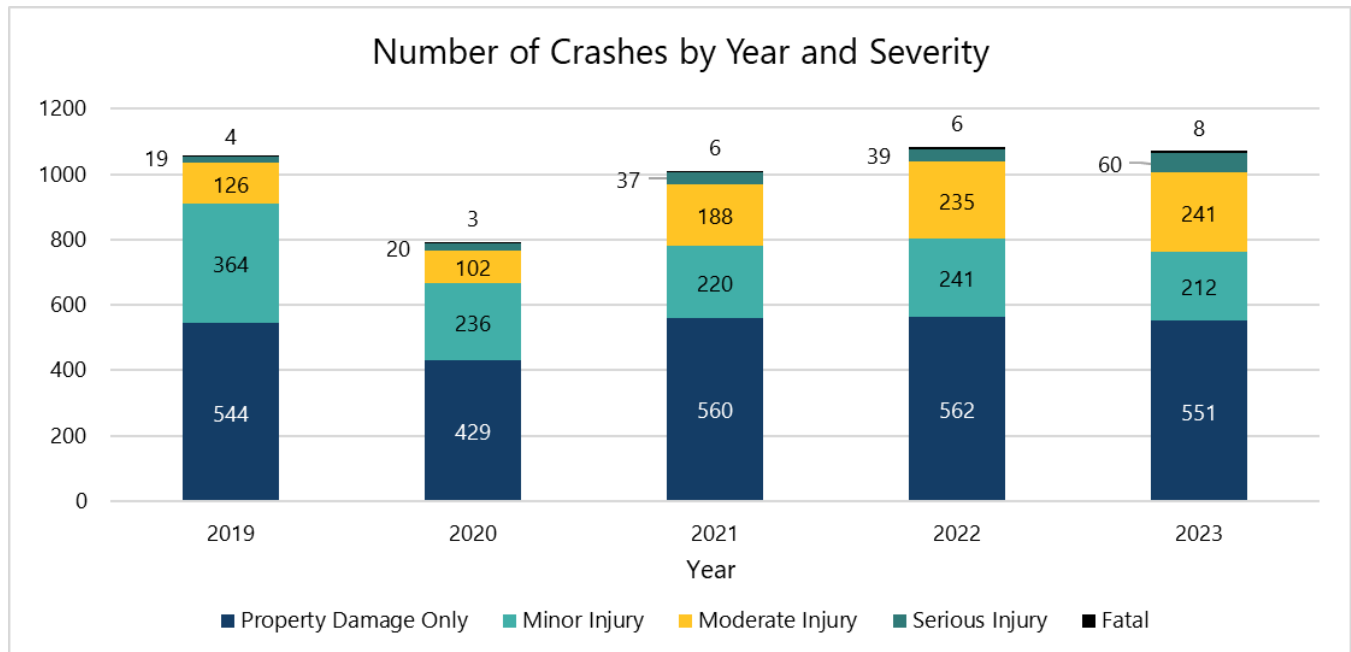


Chart 3. Crashes by Year and Severity (2019-2023)



Crashes by Month

As shown in Chart 4, the highest number of crashes reported during the five-year period occurred during the months of September, October, November, and December while March, April, and May had the fewest crashes. Fatal and serious injury crashes occurred most frequently in June, September, and November.

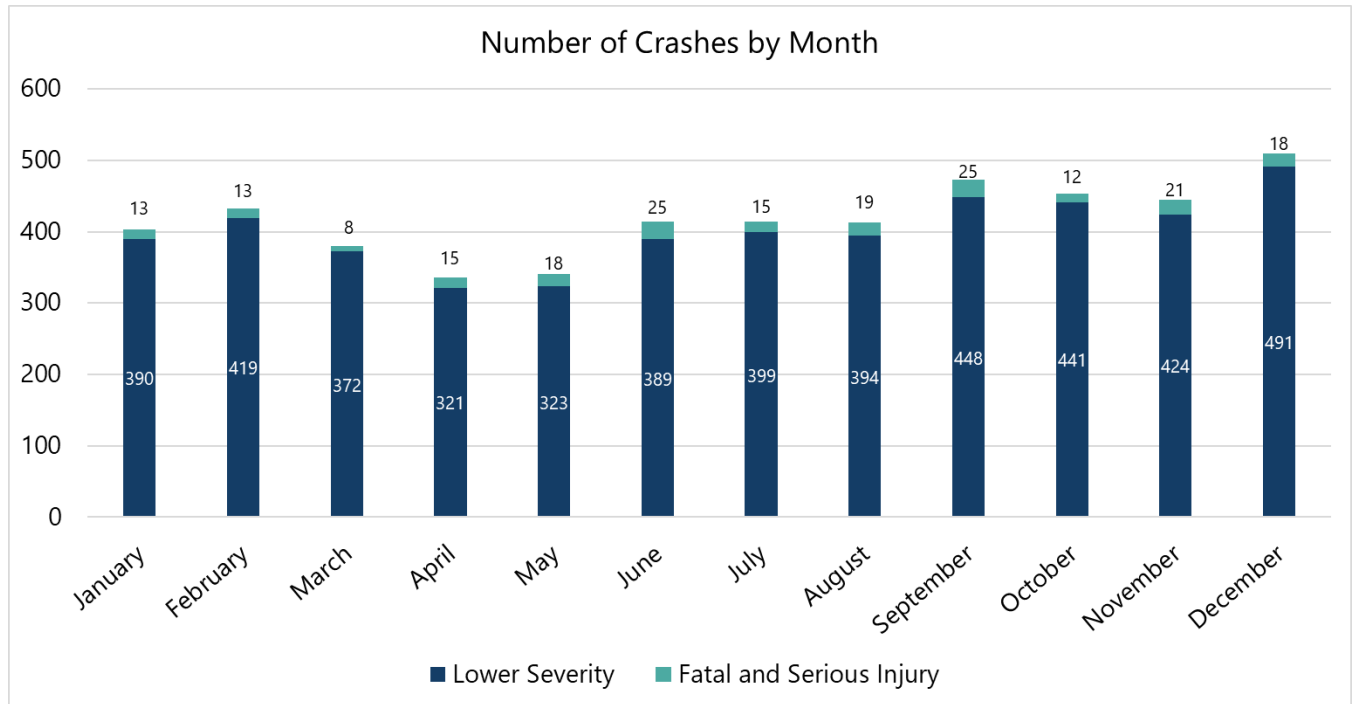


Chart 4. Crashes by Month (2019-2023)



Crashes by Day of Week

As shown in Chart 5, lower severity crashes occur most often on weekdays when traffic volumes are likely highest, with a significant decrease on weekends. In contrast, the occurrence of fatal and serious injury crashes is notably higher on Thursdays, Fridays, and Saturdays.

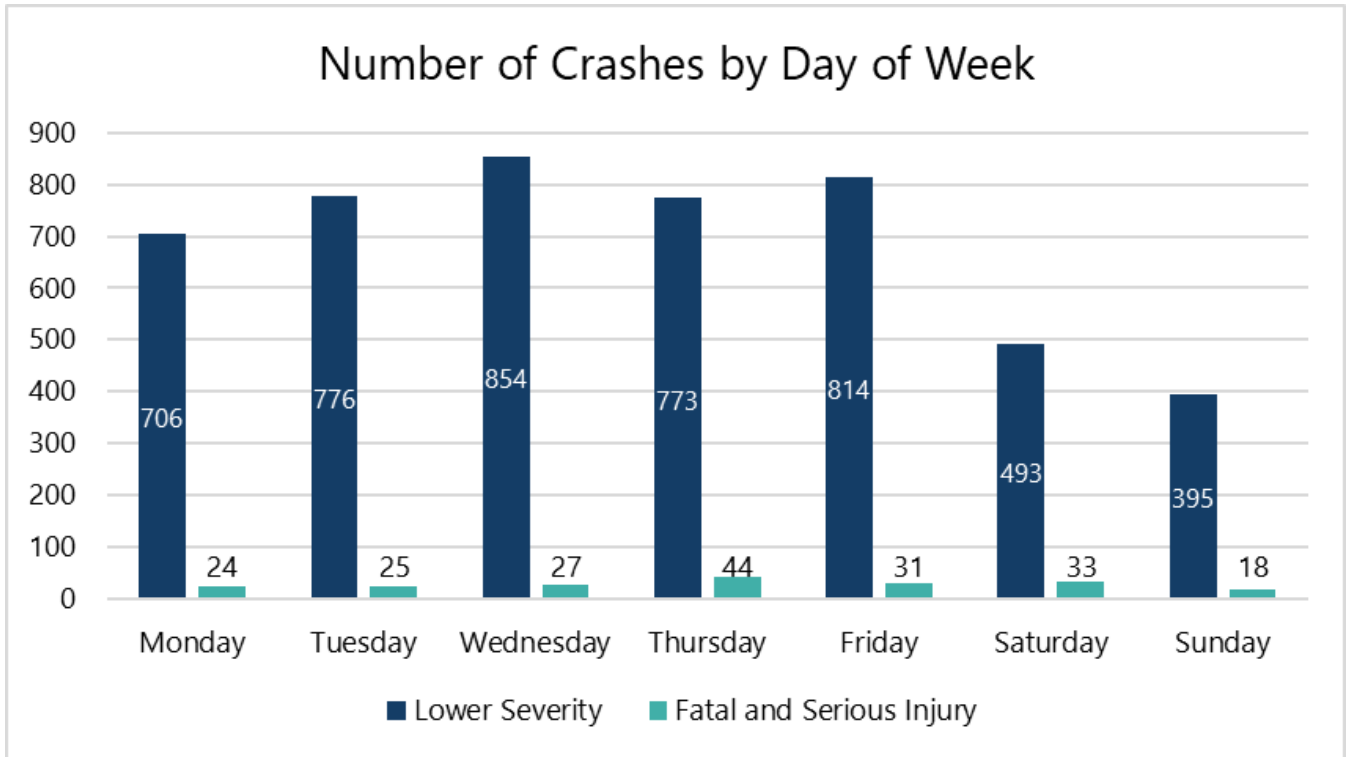


Chart 5. Crashes by Day of Week (2019-2023)



Crashes by Time of Day

Chart 6 illustrates the number of crashes across a 24-hour day within the five-year study period. Crashes most often occurred from 3PM to 5PM (29%), consistent with typical afternoon commuter travel periods. While some time periods experienced slightly higher occurrences of fatal and serious injury crashes over the study period, the data does not provide discernable trends as to when such crashes might be more or less frequent over the course of the day.

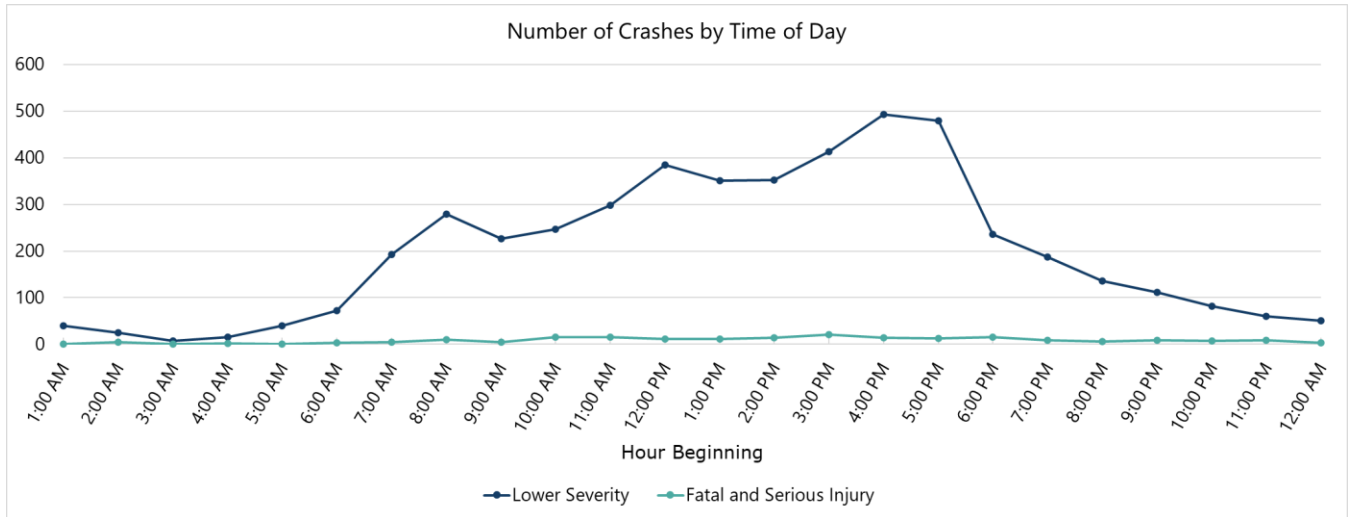


Chart 6. Crashes by Time of Day and Severity (2019-2023)

Crash Types and Contributing Factors

This section summarizes crash types, causes, and contributing factors to crashes reported in the study area over the five-year period.

Crash Type

Chart 7 and Chart 8 summarize the crash types for all crash severities and for only fatal and serious injury crashes, respectively. Turning, fixed-object, angle, rear end, and pedestrian made up higher proportions of fatal and serious injury crashes compared to the proportions of total crashes, indicating that these crash types are more likely to result in severe outcomes.

Top 5 crash types (all severities), accounting for 87% of all crashes:

- Rear End
- Turning
- Angle
- Fixed Object
- Sideswipe-Overtaking

Top 5 crash types (fatal and serious injury), accounting for 79% of high-severity crashes:

- Turning
- Fixed Object
- Angle
- Rear End
- Pedestrian-Involved²

² This only includes crashes in which a pedestrian was struck as the first harmful crash event, not crashes when a pedestrian was struck after the first harmful event. See the **ODOT 2024 Motor Vehicle Traffic Crash Analysis and Code Manual** (p. 103) for more details.

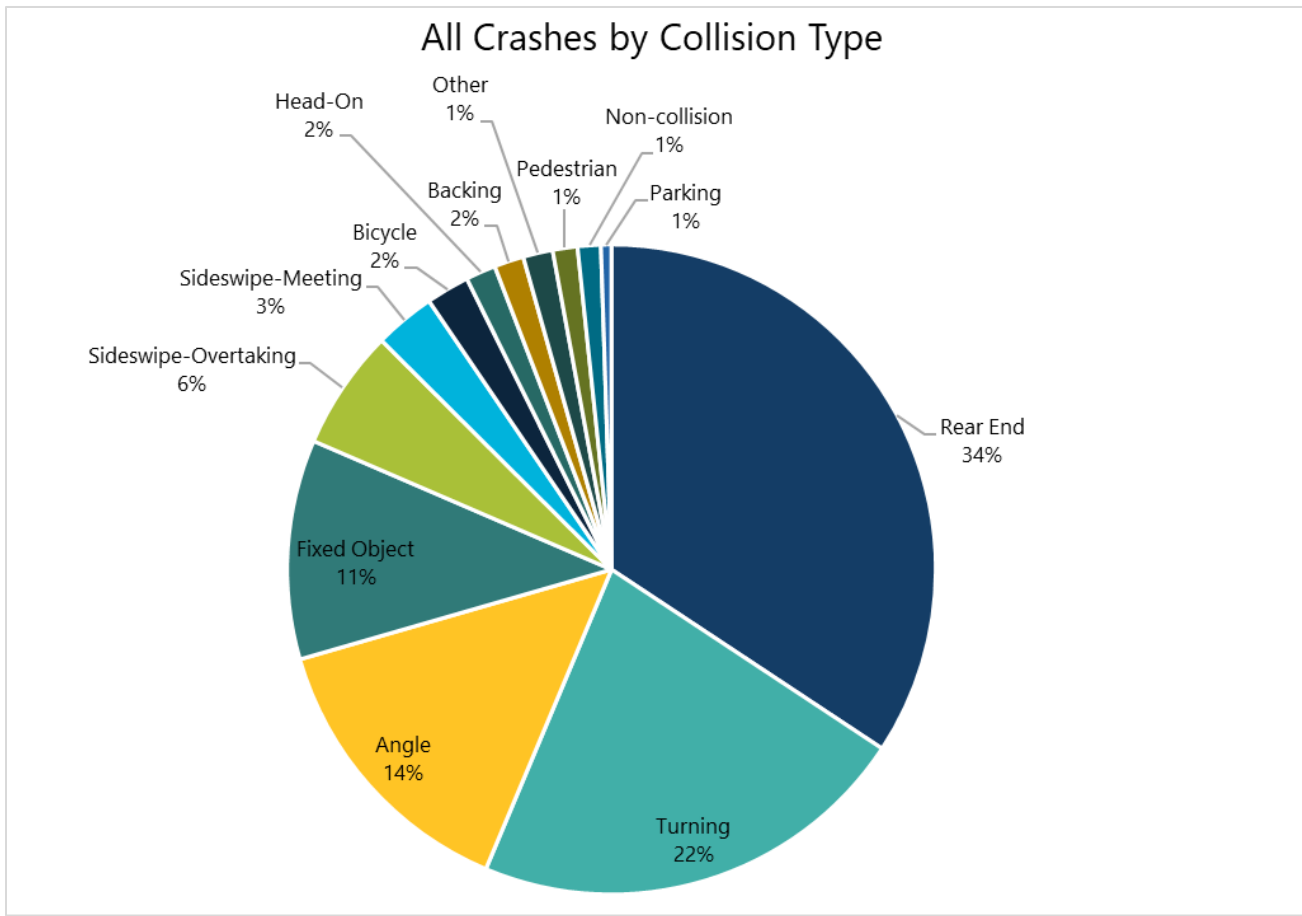


Chart 7. Crashes by Collision Type

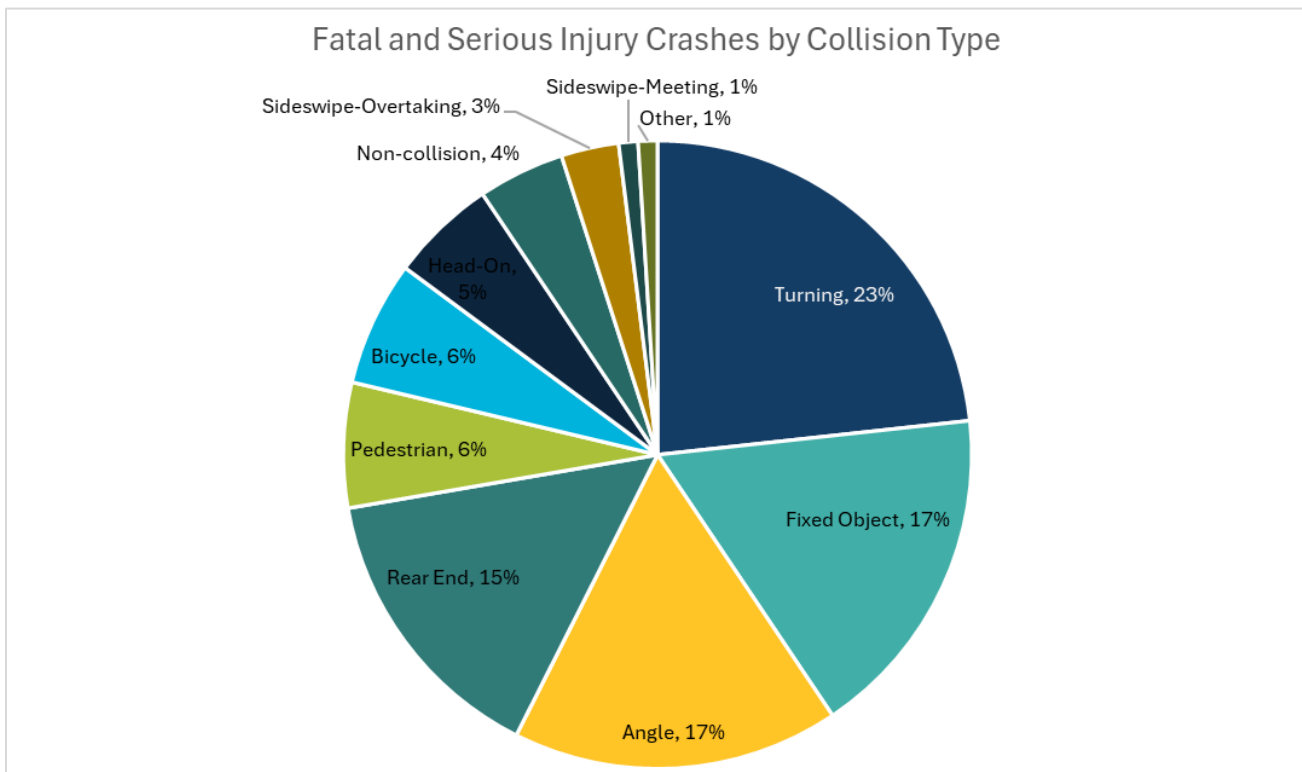


Chart 8. Fatal and Serious Injury Crashes by Collision Type



Crash Cause

As shown in Chart 9, the most reported crash cause was failure to yield the right of way (24% of lower severity crashes and 27% of fatal and serious injury crashes). Other common causes of fatal and serious injury crashes were careless driving³ (9% of fatal and serious injury crashes), and speeding [16% combined from driving too fast for conditions (8% of fatal and serious injury crashes), and speeding (8% of fatal and serious injury crashes)].

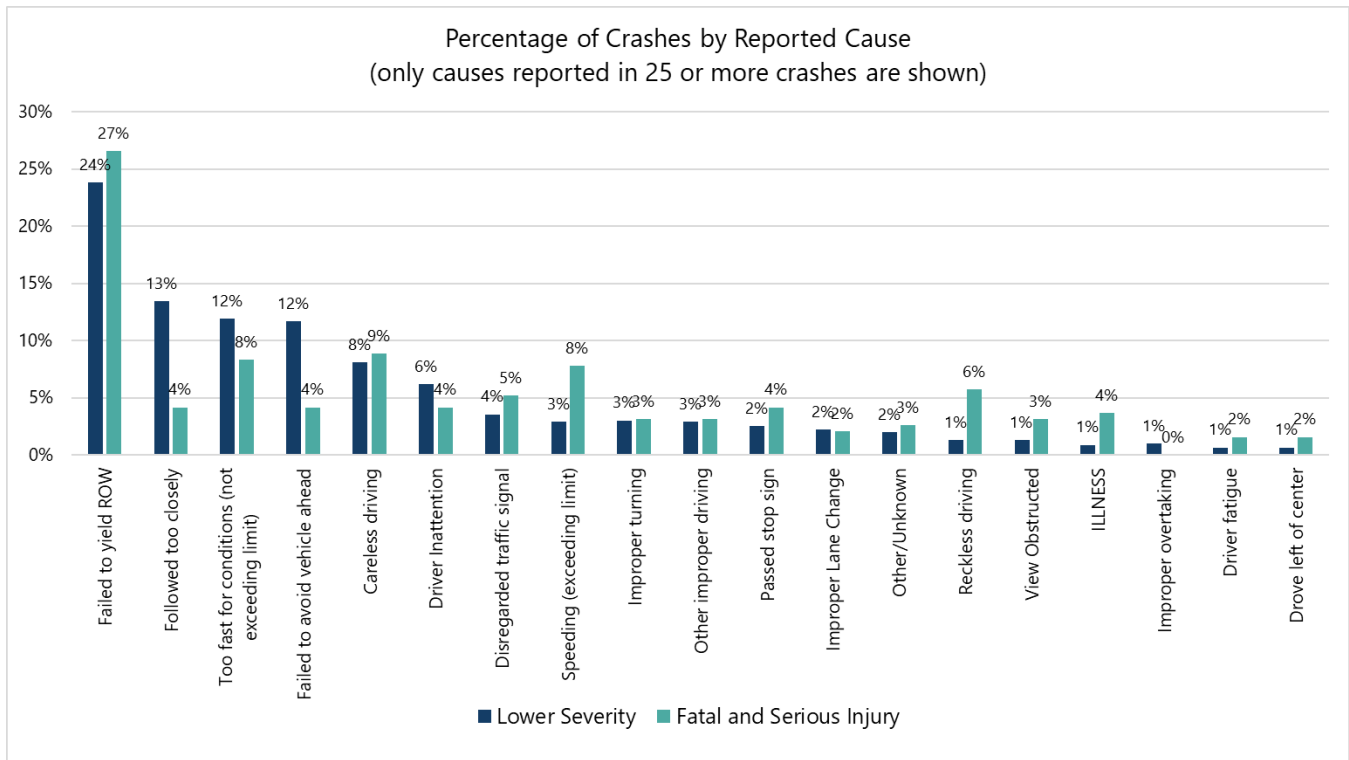


Chart 9. Crashes by Cause and Severity (2019-2023)

³ Careless driving refers to situation in which multiple poor driving choices were involved. See the [ODOT 2024 Motor Vehicle Traffic Crash Analysis and Code Manual](#) (p. 301) for more details.



Weather and Road Surface Conditions

As shown in Chart 10 and Chart 11, the majority of all crashes occurred under dry, clear conditions. Inclement weather, and more specifically a wet, snowy, or icy road surface was present in 21% of all crashes, compared to 13% of fatal and serious injury crashes. While this trend may be counterintuitive, it likely reflects the vehicle speeds during such conditions, not a direct correlation between less severe outcomes and inclement weather.

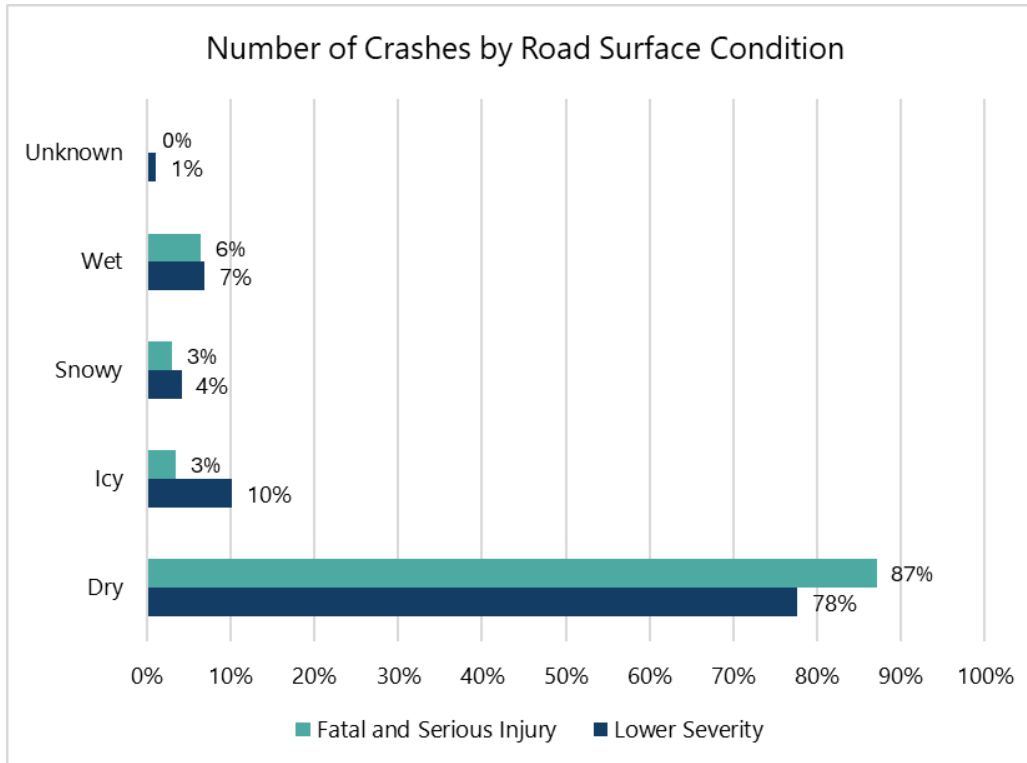


Chart 10. Crashes by Road Surface Condition (2019-2023)

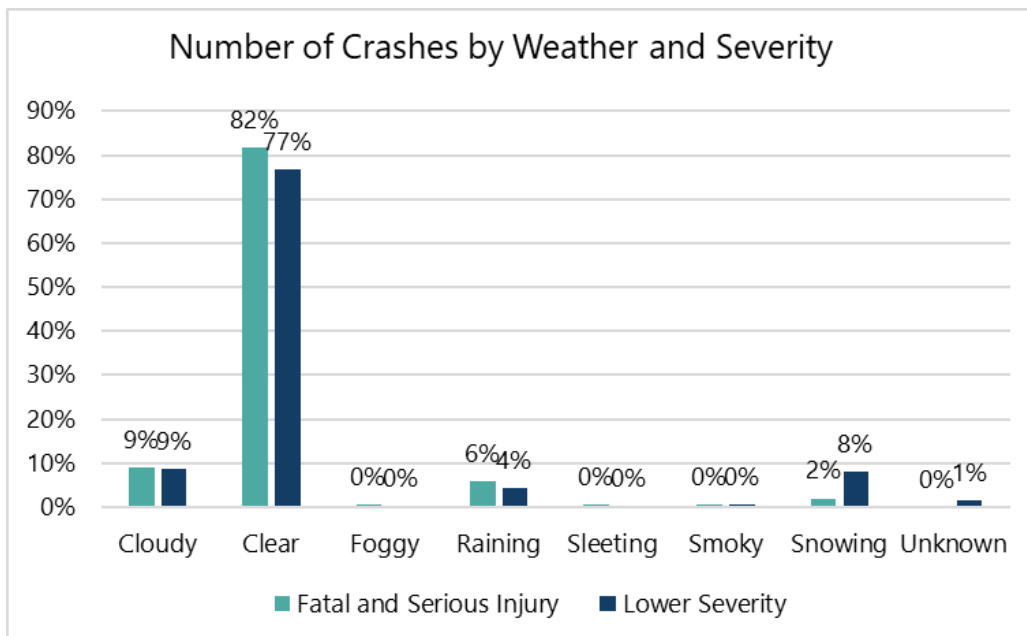


Chart 11. Crashes by Weather Condition and Severity (2019-2023)



Roadway Characteristics

This section summarizes crashes by roadway features, including street functional classification, intersection traffic control devices, and lighting conditions.

Functional Classification

Throughout the five-year period, the largest proportion of crashes occurred on urban arterials (Chart 12), accounting for 73% of lower severity crashes and 80% of fatal and serious injury crashes. These roadway classifications are derived from ODOT’s crash database and may not align with the MPO’s corresponding classifications.

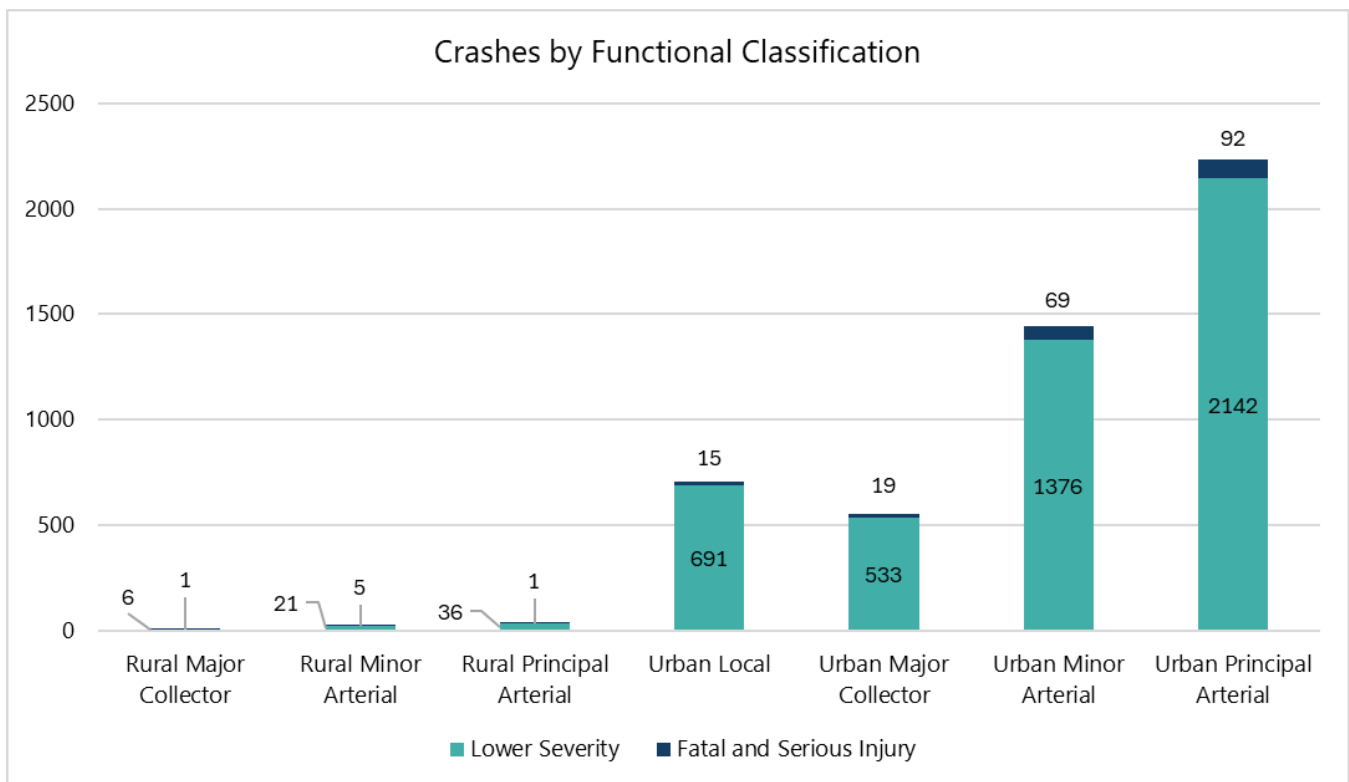


Chart 12. Crashes by Functional Classification and Severity (2019-2023) ⁴

Note: Rural local and rural minor collector streets are not included because they had no fatal or serious injury crashes and fewer than 10 total crashes.

⁴ These classifications are based on Federal Highway Administration **guidance**. FHWA defines these classifications as:

Principal Arterial: Serve major centers of metropolitan areas, provide a high degree of mobility through urban or rural areas, and serve abutting land use directly.

Minor Arterials: provide service for trips of moderate length, serve geographic areas that are smaller than their higher Arterial counterparts and offer connectivity to the higher Arterial system.

Major and Minor Collectors: Provide land access, traffic circulation, and connections to the Arterial system. Have longer lengths, fewer driveways, and higher speed limits than Minor Collectors.

Local Roads: Intended for short distances and a high degree of access to abutting land uses. Usually have low speed limits and may discourage through traffic.



Intersection Traffic Control

As shown in Chart 13, 50% of intersection crashes occurred at stop-controlled intersections while 26% occurred at traffic signals. However, less than 2% of intersections in the study area are signalized, likely demonstrating an overrepresentation of crashes for this traffic control. Of crashes at traffic signals, 38% were rear-ends and 35% were turning crashes. Other less common traffic control types include yield control and pedestrian signals. Roundabout intersections are not distinctly defined in ODOT’s crash data currently, and therefore they are not specifically shown in Chart 13. Roundabouts are sometimes represented by the “Yield Sign” category but not always.

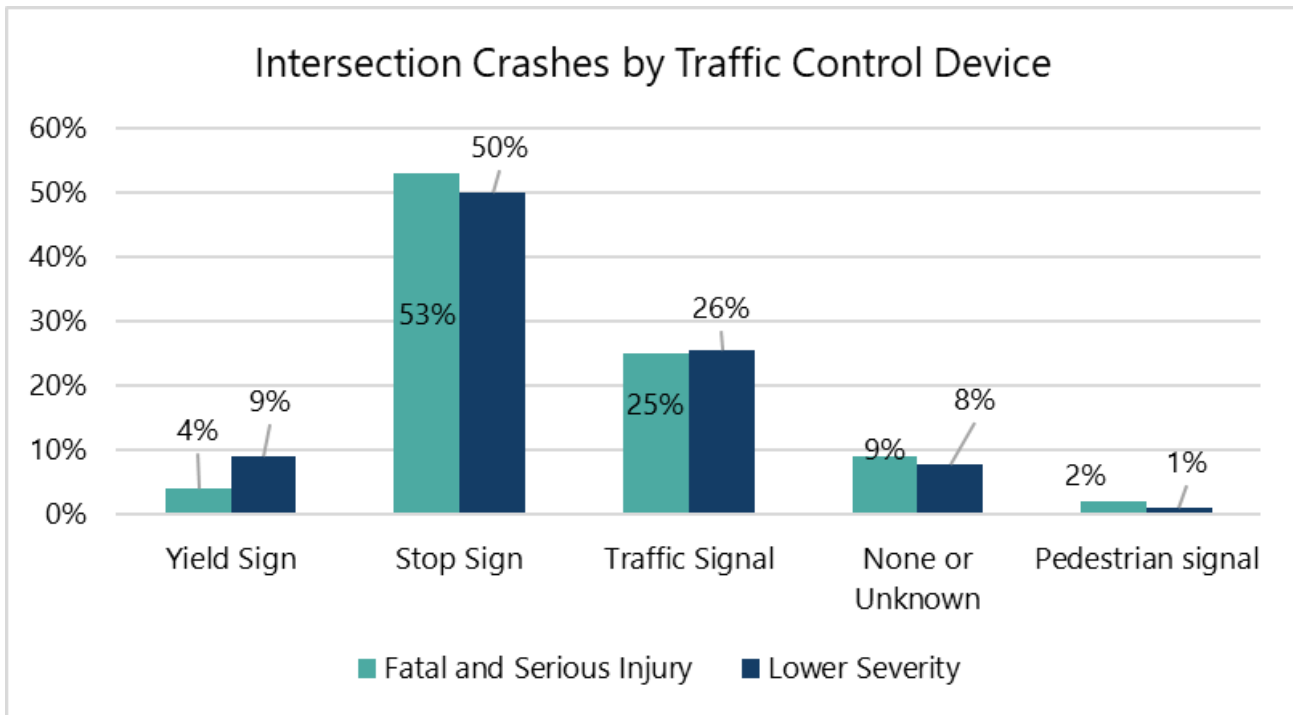


Chart 13. Intersection Crashes by Traffic Control Device (2019-2023)

In the 2019 City of Bend TSAP, a similar proportion of crashes occurred at each of these traffic control devices, with the exception of a lower proportion at stop signs (43% compared to 53% in the MPO) and a higher proportion at signals (32% compared to 25% in the MPO). This pattern may be due to the fact that the MPO includes more outlying areas with stop-controlled intersections that are not in the City of Bend.



Lighting Conditions

As shown in Chart 14, crashes primarily occurred under daylight conditions, followed by darkness with streetlights. The proportions of crashes occurring during dark (with or without streetlights), dawn, and dusk conditions are higher among fatal and serious injury crashes compared to all crash severities (31% and 24%, respectively). While more crashes occurred in dark conditions with streetlights compared to dark conditions without streetlights, this should not be interpreted to mean that streetlights increase the likelihood of crashes. The data for this attribute is often less reliable than others, and it is not possible to determine if crashes in areas with streetlights are overrepresented compared to areas without streetlights.

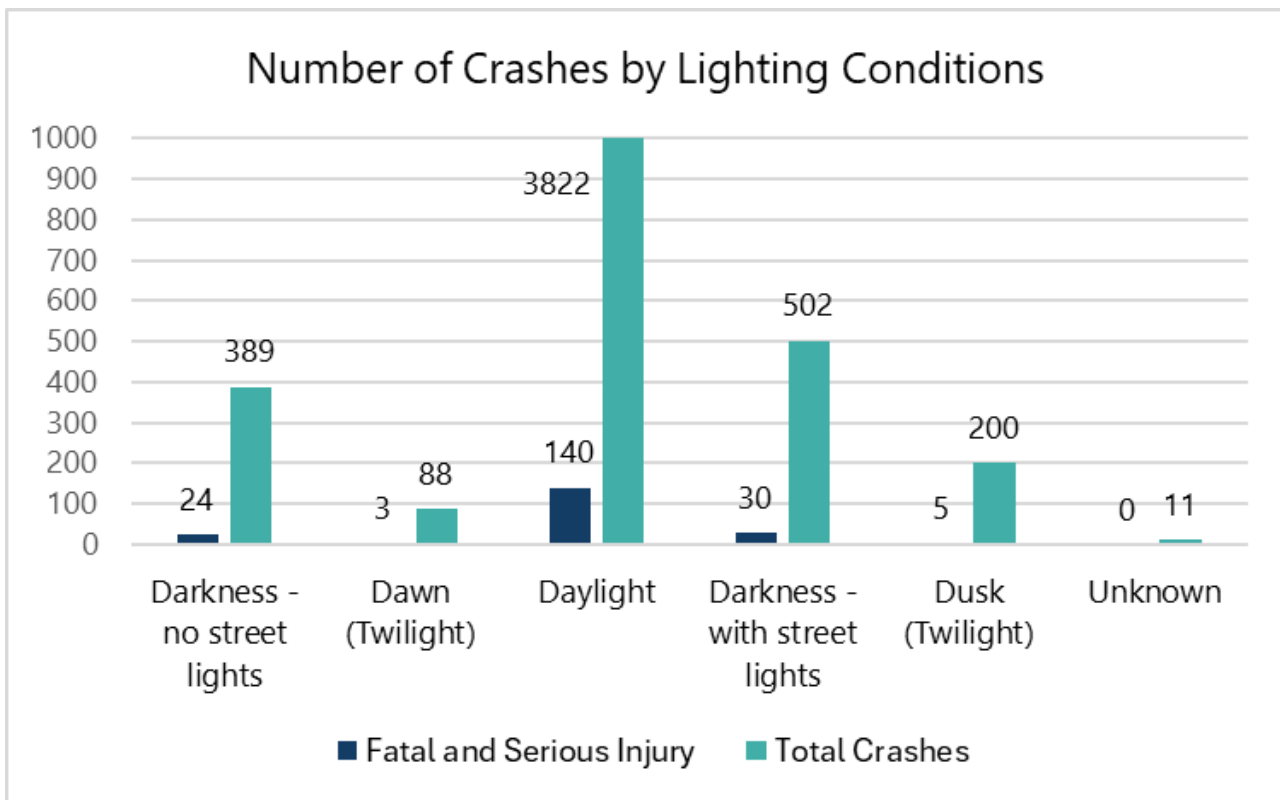


Chart 14. Crashes by Lighting Condition (2019-2023)

Note: The y-axis scale has been adjusted to show the number of crashes for the non-daylight categories.



Behavioral Characteristics

This section summarizes driver behavioral characteristics reported in the five-year crash dataset, including speeding, impaired and/or distracted driving, and use of protective equipment.

Speeding

Crashes flagged as “speed-involved” include drivers who were exceeding the posted speed or driving too fast for conditions (but not exceeding the posted speed limit). Approximately 19% of fatal and serious injury crashes involved speeding, which is similar to the overall percentage of speed-involved crashes (17%)⁵.

Impaired Driving

Based on how ODOT’s crash data is structured, impairment includes being under the influence of drugs, alcohol, and/or marijuana. Alcohol impairment is most prevalent, contributing to 18% of fatal and serious injury crashes and 6% of all crashes. As illustrated in Chart 15, 20 percent of fatal and serious injury crashes involved some sort of impairment. That proportion is more than double when considering fatal crashes only, of which 56% involved impaired driving.

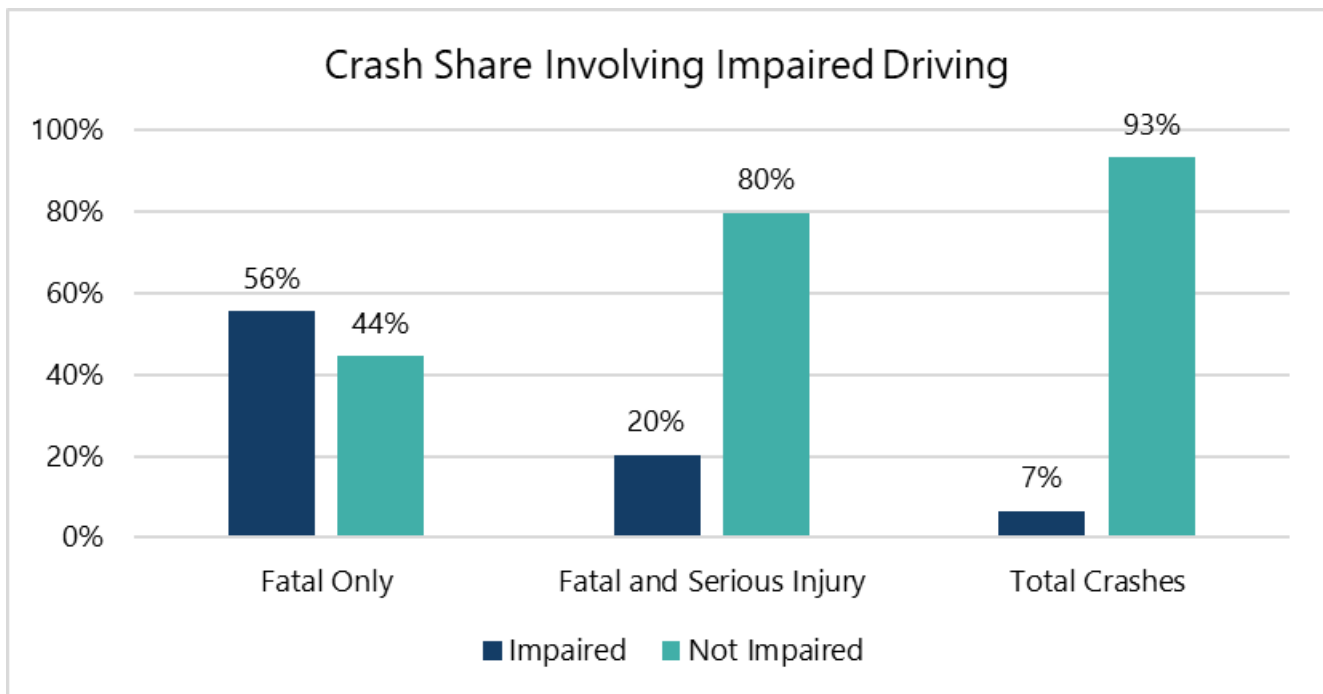


Chart 15. Impairment Crashes by Severity (2019-2023)

⁵ The “speed-involved” attribute includes all crashes where speed was a factor, so the percentage of crashes with this attribute differs from the percentage of crashes with “too fast for conditions” or “driving in excess of posted speed” or similar as the primary cause.



Distracted Driving

Six percent (6%) of all fatal and serious injury crashes were reported to involve distracted driving⁶. While distracted driving is a risky driving behavior nationwide, distracted driving often goes unreported (particularly in self-reporting states, like Oregon, where drivers must admit to distraction) and therefore these numbers likely do not accurately reflect distracted driving in the study area.

Vulnerable Road Users

Vulnerable road users are typically users that are at a greater risk of fatalities and serious injuries when involved in a roadway crash. For the purpose of this analysis, vulnerable road users include pedestrians, bicyclists, motorcyclists, people younger than 18, or people older than 65⁷.

⁶ Careless driving refers to situation in which multiple poor driving choices were involved. See the **ODOT 2024 Motor Vehicle Traffic Crash Analysis and Code Manual** (p. 301) for more details.

⁷ The federal definition of a vulnerable road user only includes people walking, biking, using mobility aids (e.g., wheelchairs), and people using micromobility devices (motorized or not), but not people on motorcycles. See 23 U.S. Code (U.S.C.) 148 (a)(15) and FHWA Vulnerable Road User Research Plan (2023), <https://highways.dot.gov/sites/fhwa.dot.gov/files/FHWA-Vulnerable-Road-User.pdf>



Pedestrian and Bicycle Crashes

Throughout the five-year period, there were 66 pedestrian crashes and 109 bicycle crashes⁸. As shown in Chart 16, 13 of the pedestrian crashes (20%) and 13 of the bicycle crashes (12%) were fatal or serious injury crashes. While pedestrian and bicycle crashes made up 4% of all crashes, they accounted for 12% of fatal and serious injury crashes.

The data in the 2019 City of Bend TSAP showed that among pedestrian crashes, 24% were fatal or serious injury compared to 20% for the MPO for 2019-2023. However, the 2019 City of Bend TSAP also showed a lower percentage of bicycle crashes resulted in fatal or serious injuries compared to this MPO data (7% compared to 12%).

Pedestrian crashes occurred more often in dark conditions compared to motor-vehicle-only crashes (36% vs. 24%), while bicycle crashes occurred less often in dark conditions (17%).

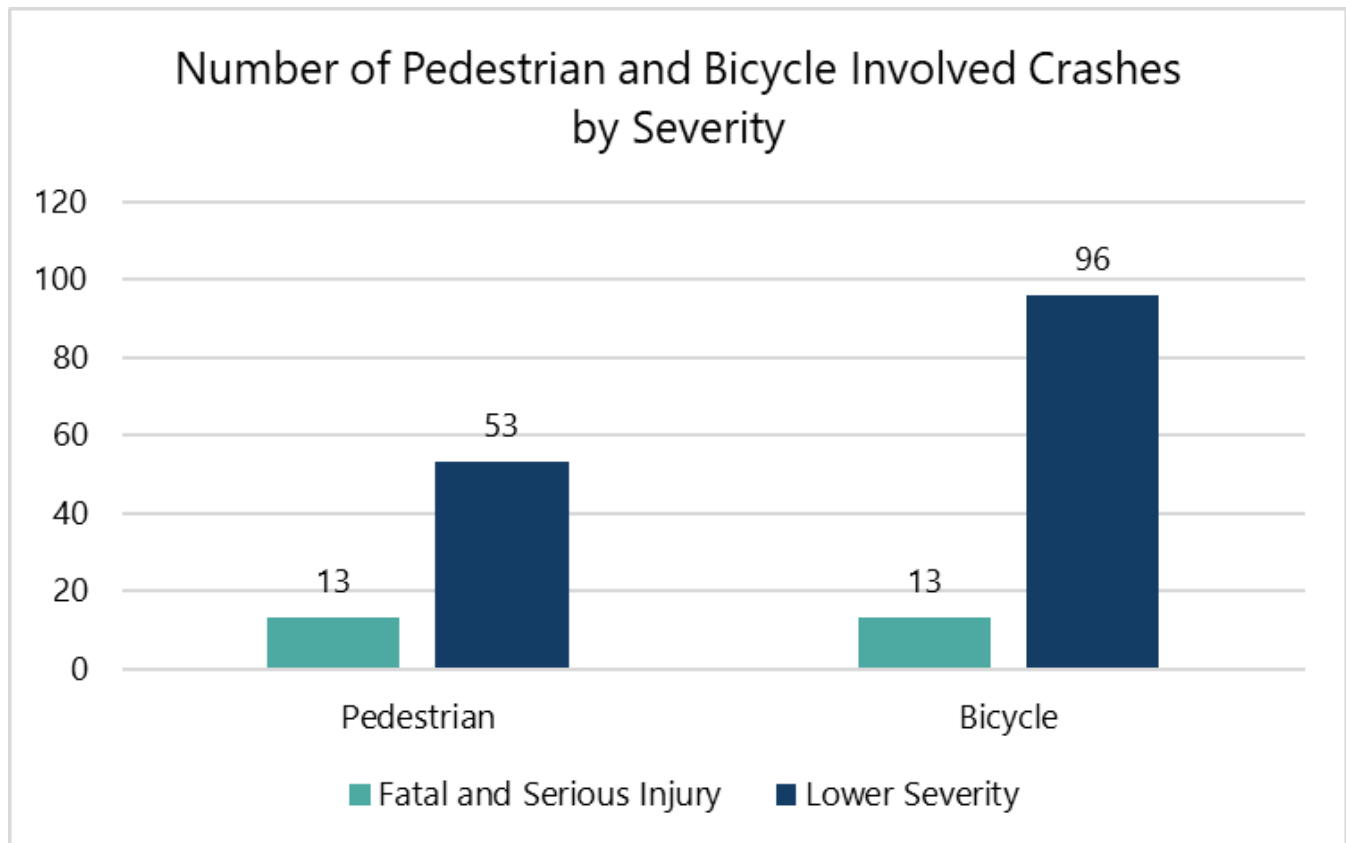


Chart 16. Pedestrian and Bicycle Crashes by Severity (2019-2023)

⁸ E-bikes are included in bicycle crashes for 2022 data onward; previous to 2022, e-bikes were coded inconsistently in the crash data.



Motorcycle Crashes

Chart 17 summarizes the share of motorcycle crashes and all crashes by severity. Forty percent (40%) of motorcycle crashes resulted in a fatal or serious injury, compared to 4% of all crashes. This pattern indicates that special attention may be needed to prevent motorcycle crashes.

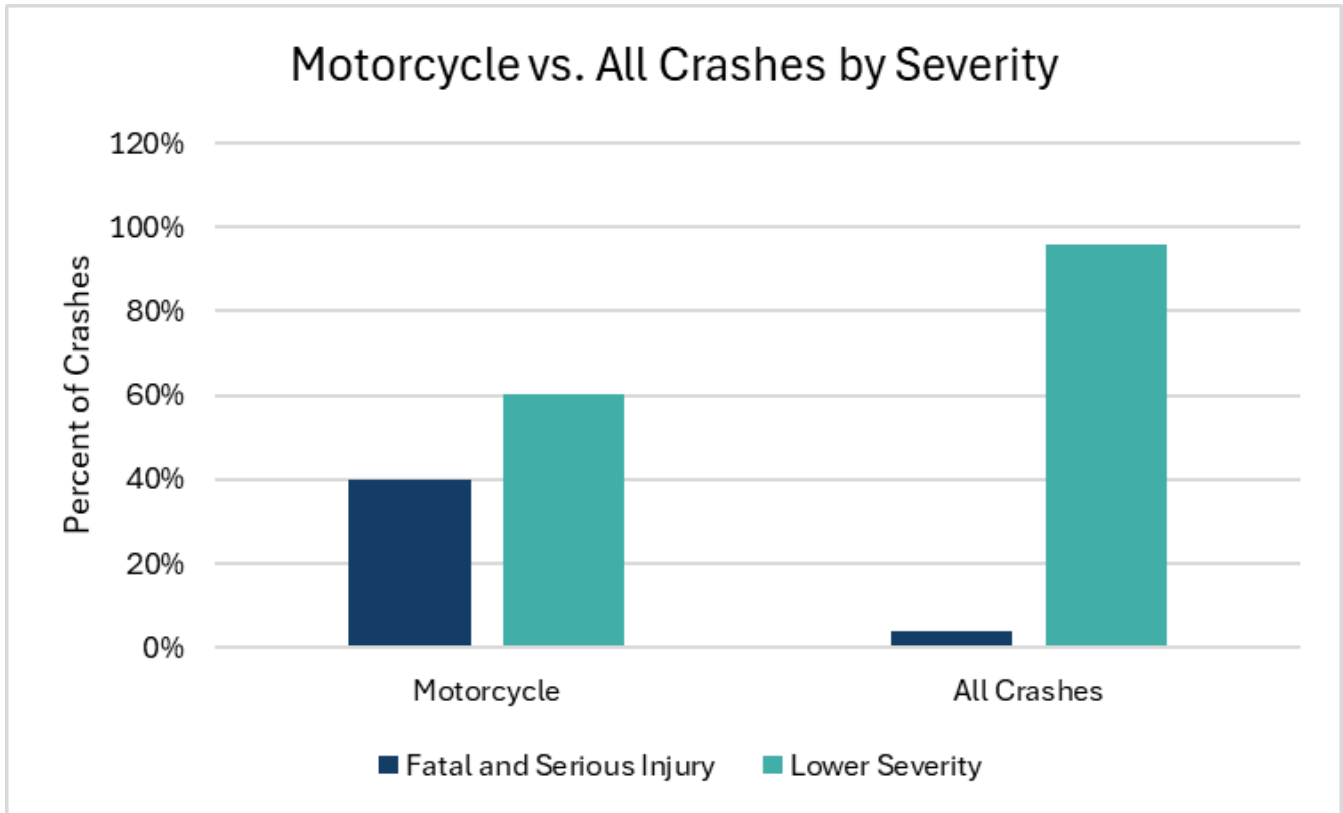


Chart 17. Proportion of fatal and serious injury crashes vs. lower severity crashes for motorcycle crashes and all crashes (2019-2023)



Driver Age

Participant-level information, like age, is not reported for property damage only (PDO) crashes. Therefore, the following key findings related to driver age apply only to fatal and injury crashes. This section reflects individuals (drivers), not crashes, because a single crash can involve more than one driver.

Chart 18 summarizes the share of drivers involved in crashes by age group and crash severity, as well as the respective proportion of the area’s population in each age group. This chart highlights that drivers in the 65+ age group were involved in a higher proportion of fatal and serious injury crashes than the proportion of their involvement in total crashes (all severities). Drivers between 18 and 24 were involved in a disproportionate number of crashes relative to their share of population.

When considering the primary contributing causes of crashes, failure to yield the right-of-way is the most common among all age groups (Chart 19).

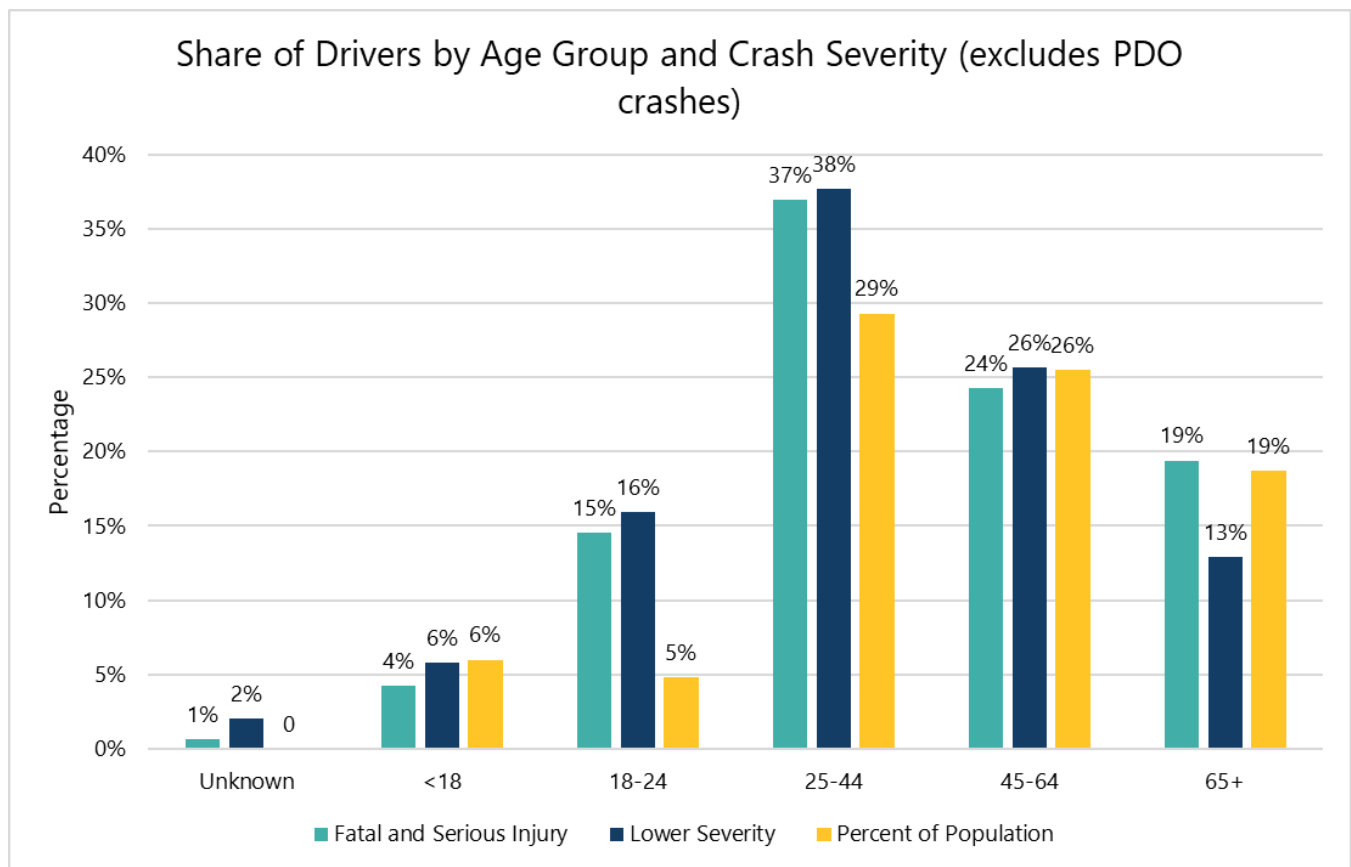


Chart 18. Share of Drivers by Age Group and Crash Severity (2019-2023)

Note: The percentage of the population is from 2024 American Community Survey 5-year estimate data (Table S0101) for the Bend Census County Division, which approximates the Bend MPO boundary. Population data for the <18 age category is shown for the 15-19 age range.

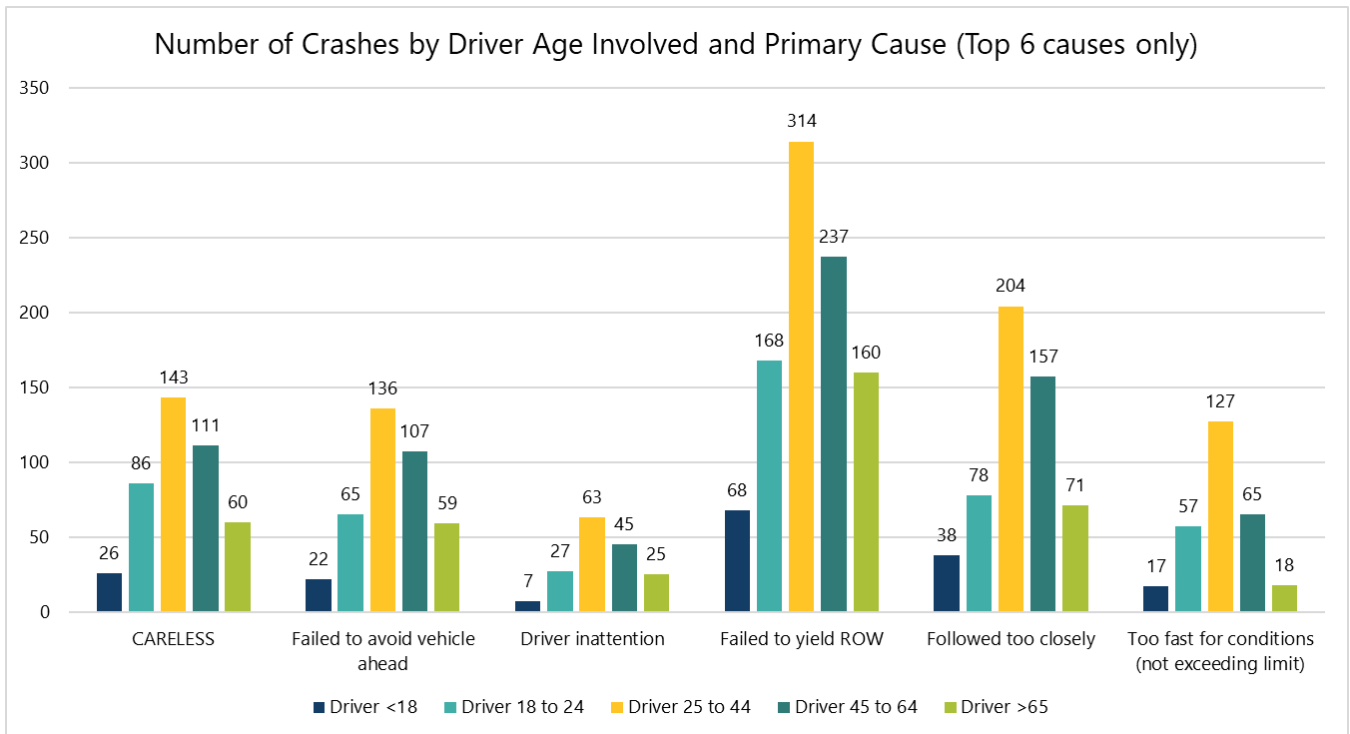


Chart 19. Share of Drivers by Age Group and Cause (2019-2023)

Note that the population in the Bend Census County Division falls into the following categories⁹:

- 15-19: 6%
- 18-24: 5%
- 25-44: 29%
- 45-64: 19%
- 65+: 19%

⁹ Data from US Census American Community Survey 5-Year (2020-2024) Estimate Table S010 for the Bend Census County Division, which approximates the Bend MPO boundary.



Emphasis Areas

Emphasis areas are commonly developed by studying the crash characteristics that are most predominant or that are over-represented in fatal and serious injury crashes compared to all crashes. For example, motorcycle-involved crashes may represent a small percentage of all crashes, but comprise a much higher percentage of fatal and serious injuries. If so, an agency may choose to focus on motorcycle safety as an emphasis area as they are more likely to be seriously injured or killed when involved in a crash.

The in-progress 2026 Oregon TSAP contains a comprehensive crash attribute table for the State of Oregon that was used as a comparison for the MPO's crash patterns. The comparison was performed by assigning the following "flags" to crash attributes when they meet specific criteria.

- **Flag 1 – Predominant Crash Attribute:** The crash attribute is present in more than 10% of fatal and serious injury crashes in the study area.
- **Flag 2 – More Prevalent than Statewide:** The proportion of fatal and serious injury crashes for the crash attribute in the study area is greater than what is reported statewide in the 2026 Oregon TSAP.
- **Flag – 3 High Severity Indicator:** The crash attribute has a higher share of fatal and serious injury crashes in the study area than its overall share of total crashes (e.g., pedestrian crashes contribute to 6% of all fatal and serious injury crashes but only 1% of all crashes).

Table 3 below indicates whether the "flags" are true for each crash attribute in the study, with respect to the criteria listed above. The more flags a given attribute has, the more likely that attribute is contributing to fatal and serious injury crashes.



Table 3. Emphasis Area Flags

Crash Attribute	Flag 1: Predominant Crash Attribute	Flag 2: More Prevalent than Statewide	Flag 3: High Severity Indicator
Roadway / Lane Departures	✓		✓
Alcohol and/or Drug Use Involved	✓		✓
Speed-Related	✓		✓
Young Drivers (15-20) Involved	✓	✓	✓
Alcohol Use Only	✓	✓	✓
Motorcyclists Involved	✓		✓
Distracted Driving Involved			
Work Zones Involved		✓	✓
School Bus / School Zone Involved			✓
Aging Drivers (65+) Involved	✓	✓	✓
Bicyclists Involved		✓	✓
Pedestrians Involved			✓
Intersections	✓	✓	
Nighttime (Dark/Dawn/Dusk) Conditions	✓	✓	✓



Based on the screening in Table 3, the following crash attributes were flagged as contributing to a high proportion of fatal and serious injury crashes, or are attributes more likely to result in fatal or serious injuries when a crash occurs, and could be considered as potential emphasis areas for the MPO. Bold attributes were flagged three times, while non-bold attributes were flagged twice.

- **Young drivers (15-20) involved**
- **Alcohol impairment**
- **Aging drivers (over 65)**
- **Nighttime (dark/dawn/dusk)**
- Roadway or lane departure
- Alcohol and/or drug impairment
- Speed-related
- Motorcycle involved
- Work zones
- Bicyclist involved
- Intersections

There is no requirement for emphasis areas to be derived solely from the crash data, and final selection of emphasis areas should reflect the priorities of MPO and City staff and the community. The selected emphasis areas will provide a guiding framework for the TSAP and, ultimately, future investment in safety strategies and projects by the MPO and City. It is recommended that between 4 and 6 emphasis areas be selected. Too many emphasis areas can dilute the value of the plan as too many strategies and actions can be infeasible to implement. However, too few emphasis areas can result in missed opportunities to reduce fatal and serious injury crash risks. The MPO and City may also elect to combine related emphasis areas into one (e.g., a "Risky Behaviors" emphasis area may include impairment, speeding, and distraction).



Network Screening Evaluation

The network screening evaluation helps to identify intersections and segments within the study area transportation network that have the greatest need for site-specific safety improvements. As indicated in *Tech Memo #2 (Safety Analysis Framework)*, the network screening evaluation applies the *Highway Safety Manual (HSM)* Equivalent Property Damage Only (EPDO) performance measure to intersections and street segments to identify locations within the system that have the highest overall ranking, based on both their quantity and severity of crashes. The following sections describe the analysis and present the results.

This information helps inform which locations within the study area should be prioritized for safety improvements. The following sections also compare the safety performance of the study area’s transportation system today with that of 2019, as documented in the current TSAP. This includes:

- Assessing 2019 Bend TSAP priority locations where recommended strategies have been implemented and if those strategies have reduced crashes, as applicable; and,
- Evaluating today’s most severe locations to understand if and how these have changed since 2019 and if there is a relationship to safety projects implemented prior to this effort.

EPDO Analysis

The EPDO analysis was completed for all public and private streets within the study area using Geographic Information System (GIS) software. The performance of intersections was evaluated separately from that of street segments. The EPDO analysis results in an overall crash severity score for intersections and roadway segments so that they can be ranked based on the frequency and severity of their crash histories. The crash severity scores are determined by weighting crashes according to their severity, as shown in Table 4. These weights are based on the ODOT’s Safety Priority Index System (SPIS), an industry-standard methodology used statewide to prioritize locations with higher crash severity.

Table 4. Analysis Weights by Crash Severity

Crash Severity Score	Weight
Fatal (K)	100
Serious Injury (A)	100
Major Injury (B)	10
Minor Injury (C)	10
PDO (O)	1

Source: ODOT SPIS

These weights are estimated relative to the cost that a single property-damage-only (PDO) crash has on society (e.g., cost of infrastructure repair, medical costs, work-loss costs, value of quality of life, etc.), which is the lowest cost out of all the severities.



As shown in Table 4, serious injury and fatal crashes have the greatest cost to society and are weighed similarly. The weights prioritize fatal and serious injury crashes equally to recognize that a death versus a serious injury is often a function of the health of the individual involved and/or of the emergency response time. The following sections describe how the evaluation was completed for intersections and street segments separately.

Intersections

Crashes were defined as intersection or segment related based on their proximity to an intersection. For this evaluation, an intersection crash is defined as any crash that occurred within 100 feet of an intersection that is not roundabout controlled. Given that the footprint of roundabouts tend to be larger in size compared to other intersection traffic control, roundabout locations were reviewed in greater detail to determine the appropriate size of boundaries to capture intersection crashes. These boundaries ranged between 250 and 500 feet to ensure all roundabout-related crashes were captured. Where intersections were less than 100, 250, or 500 feet from each other, crashes were assigned to the nearest of the two intersections. Crashes occurring outside of these parameters were used in the segment analysis summarized in the next section.

A crash severity score was calculated for each intersection in the street network by multiplying each weight and the total crashes for the associated severity (by intersection type) and summing the results, as follows:

Crash Severity Score

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

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

Segments

An EPDO analysis was completed for street segments based on reported crashes that occurred outside of the intersection boundaries described above. The street network was split into overlapping half-mile segments, spaced every quarter mile, or a 'sliding window'. This method allows each location along the corridor to be evaluated within the context of adjacent roadway conditions. Because these segments were overlapping, each crash could be assigned to more than one segment; as a result, cumulative crash totals across all segments are higher than the number of unique crashes. This duplication is intentional and does not indicate additional crashes but rather helps identify consistent spatial patterns and concentrations of crash severity along the corridor. As with the intersection methodology described above, crashes were summarized by severity and crash totals were multiplied by the crash severity weights in Table 4. The weighted crash severity scores were totaled and annualized by the number of



years of crash data (five) to generate an annualized crash severity score. The segment EPDO network screening results are summarized and illustrated under the High Priority Locations section below.

Potential High Priority Locations

This section presents the results of the EPDO analysis described above, highlighting the intersections and segments with the highest crash severity scores. These locations can inform the MPO and City’s selection of 10 priority sites for site-specific project development, including five improvement concepts, in the TSAP Update. The EPDO results are also presented alongside key demographic data for the Bend area to provide an equity lens for the priority location selection process.

The community includes people of all ages, abilities, and incomes, each with varying transportation needs and levels of access to the existing system. Certain populations are statistically more likely to be “transportation disadvantaged,” meaning they may have limited ability to provide their own transportation or rely on public options. These populations include individuals with disabilities, youth (under 18), seniors (65 and older), people with Limited English Proficiency (LEP), individuals living below the federal poverty level, non-white populations, and households without access to a vehicle.

ODOT uses a Transportation Disadvantaged Index (TDI) to assign a score to each Census block group in Oregon based on the concentration of these populations. This information is available through the MPO’s Equity Demographic Viewer. Higher TDI scores indicate greater concentrations of transportation-disadvantaged populations. Maps in the following sections include ODOT’s TDI scores across Bend, shown as “Equity Disparity.”

Intersections

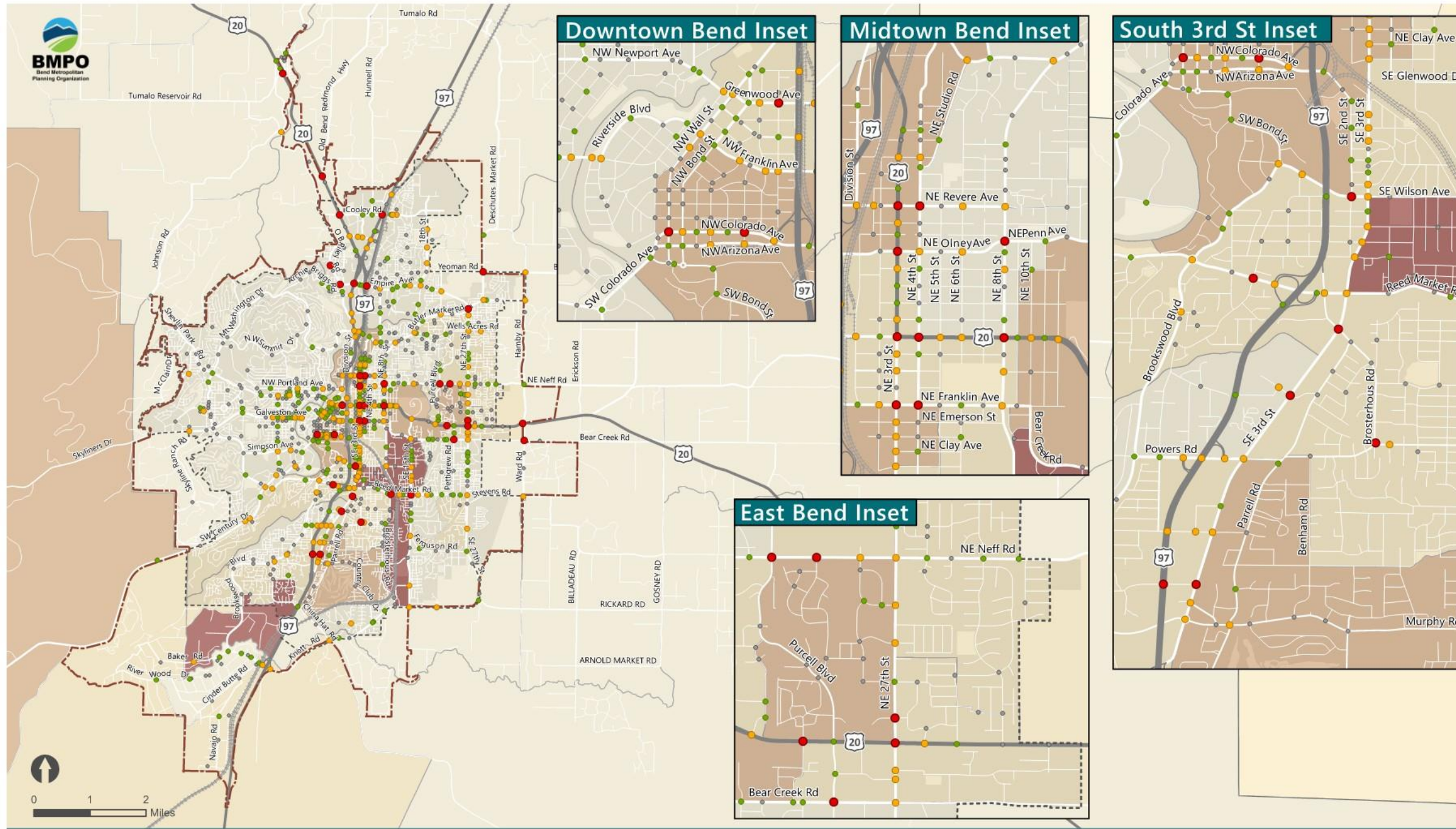
The intersection EPDO analysis was performed at over 3,000 intersections of all public and private streets in the study area to understand intersection safety needs; the results are presented in Figure 2. The accompanying tables provide the following:

- Table 5 lists the intersections from Figure 2 that are ranked in the top 1% of crash severity scores. Table 5 also indicates if a top 1% intersection has received an improvement since 2019 (the first year of the crash data analyzed for this study) that could change the observed crash trends at that location (e.g., construction of a roundabout).
- Table 6 compares the top 1% intersections from Table 5 with their counterparts from the 2019 TSAP. Of the 39 intersections in the 2026 top 1% sites, 9 also appeared previously in the 2019 top 1% list, shown in bold. Some intersections have dropped off the list, while new ones have been added. Similarly, this table highlights if intersections have been improved or plan to be improved.

Attachment B contains the list of sites ranking in the top 5% (includes top 1% sites) to provide additional potential priority locations for consideration.



Figure 2. Network Screening Evaluation – Intersection EPDO Analysis



- Top 1% (32.2 or Greater)
 - Top 5% (6.6 to 32.1)
 - Top 10% (2.2 to 6.5)
 - Bottom 90% (2.1 or Less)
- ▭ Bend MPO Boundary
 - ▭ Bend Urban Growth Boundary
 - ▭ City of Bend
 - ▭ National Forest, Park, or Golf Course
- Equity Disparity
 - ▭ High
 - ▭ Medium/High
 - ▭ Low/Medium
 - ▭ Low

Bend MPO TSAP

Figure 1: Network Screening Evaluation – Intersection EPDO Analysis



Table 5. Intersections with Highest Crash Severity Scores (Top 1% Sites)

Rank	Intersection	Existing Traffic Control	Jurisdiction	Crash Severity Score	Total Crashes			Intersection Improvement Status
					Fatal / Serious Injury	Major / Minor Injury	PDO	
1	NE Greenwood Ave / US 20 / SE 27 th St	Signalized	ODOT	105.8	3	21	19	Evaluated as part of US20 Refinement Plan. Improvements identified that enhance mobility along US 20, including at the intersection, but no funding programmed. New detection and signal controllers installed. ¹
2	Cook Ave / US 20 / O.B. Riley Rd	Roundabout	ODOT	104.6	3	21	13	Roundabout constructed in 2023. ¹
3	3 rd St / SE Division St / Brosterhous Rd	Signalized	City of Bend	87.4	2	22	17	Signal timing modifications implemented in 2024.
4	US 20 / NE Greenwood Ave / Dean Swift Rd	TWSC	ODOT	78.8	3	9	4	
5	NW Colorado Ave / NW Sisemore St	TWSC	City of Bend	76.2	3	7	11	Modal filter constructed in 2026. ¹
6	SE Reed Market Rd / American Ln	Signalized	City of Bend	75.8	3	7	9	Intersection is western limit of planned Reed Market Overcrossing Project and will see roadway reconstruction tied to the bridge approach. ¹
7	US 97 / NE Cooley Rd	Signalized	ODOT	67.2	2	12	16	Intersection is no longer on US 97 mainline after North Corridor Project completed in 2024. The project may reduce congestion at this intersection, which may improve safety.
8	US 20 / Old Bend Redmond Hwy	Roundabout	ODOT	66.8	2	13	4	Roundabout constructed in 2023. ¹
9	SE 15 th St / Reed Market Rd	Roundabout	City of Bend	66.4	1	21	22	Project programmed to widen to two-lane roundabout. ¹
10	Brosterhous Rd / Chase Rd / News Ln	None/No connection	City of Bend	62.2	3	1	1	Roundabout is programmed. ¹
11	SE Wilson Ave / SE 2 nd St	TWSC	City of Bend	61.8	2	10	9	Modal filter and turning movement restriction improvements completed in 2024. ¹



Rank	Intersection	Existing Traffic Control	Jurisdiction	Crash Severity Score	Total Crashes		PDO	Intersection Improvement Status
					Fatal / Serious Injury	Major / Minor Injury		
12	NE 3 rd St / US 97 Business / NE Franklin Ave	Signalized	City of Bend	61.0	1	19	15	Signal adjustments, added enhanced bike lanes, adjusted Franklin vehicle lanes completed in 2019 ¹ . Additional improvements are expected as part of Franklin Avenue corridor CIP project. Construction is expected in 2027. ¹
13	Cooley Rd / US 20	Roundabout	ODOT	59.0	2	9	5	Roundabout constructed in 2023. ¹
14	NE 27 th St / Butler Market Rd / Empire Ave	Roundabout	City of Bend	57.2	0	23	56	Empire Avenue extension (north leg) added and roundabout constructed in 2020. ¹
15	NE 3 rd St / US 20 / NE Olney Ave	Signalized	ODOT	55.8	2	7	9	ADA and signal detection improvements constructed in 2023. Recent pedestrian/bicycle improvements constructed along Olney Ave through intersection. No other improvements programmed. ¹
16	NE 4 th St / NE Greenwood Ave / US 20	TWSC	ODOT	55.4	2	7	7	Median island constructed in 2024/2025. ¹
17	NW Greenwood Ave / NW Hill St	TWSC	City of Bend	53.2	2	6	6	Intersection lanes reconfigured in 2024. Greenwood Avenue project lane reallocation from 4 to 3 lanes. Marked crosswalk. No improvements programmed. ¹
18	NE Greenwood Ave / US 20 / NE 8 th St	Signalized	ODOT	46.8	1	12	14	Evaluated as part of US20 Refinement Plan. Improvements identified but no funding programmed. New ADA ramps constructed in 2026. Pedestrian/bicycle crossing improvement planned. ¹
19	Deschutes Market Rd / Yeoman Rd	Roundabout	City of Bend	46.4	2	3	2	Roundabout constructed in 2025. ¹
20	NE 27 th St / Micks Dr / Grand Way	Signalized	City of Bend	45.2	1	11	16	
21	SW Pinebrook Blvd / US 97	TWSC	ODOT	44.8	2	2	4	



Rank	Intersection	Existing Traffic Control	Jurisdiction	Crash Severity Score	Total Crashes			Intersection Improvement Status
					Fatal / Serious Injury	Major / Minor Injury	PDO	
22	NE Neff Rd / NE Williamson Blvd	TWSC	City of Bend	44.0	2	2	0	Shared use path programmed along Neff Road through intersection. ¹
23	NE 3 rd St / US 20 / NE Revere Ave	Signalized	ODOT	43.0	1	11	5	
24	NE Olney Ave / NE Penn Ave / NE 8 th St	Signalized	City of Bend	41.4	1	10	7	Project programmed, likely a roundabout. ¹
25	O.B. Riley Rd / Firerock Rd	TWSC	City of Bend	40.0	2	0	0	Street restriped to narrow lanes and add buffered bike lane in 2024. ¹
26	O.B. Riley Rd / NW Crusher Ave / Empire Ave	TWSC	City of Bend	39.6	1	9	8	Roundabout programmed; converted to interim all way stop in 2024. ¹
27	NE Empire Ave / US 97 NB Off-Ramp / US 97 NB On-Ramp	Signalized	ODOT	38.8	1	8	14	Future project with ODOT to construct higher capacity connection at this and other Parkway interchanges. Additional coordination with ODOT required. ¹
28	Bear Creek Rd / Pettigrew Rd / Purcell Blvd	Roundabout	City of Bend	36.6	1	7	13	Roundabout constructed in 2025, including multi-modal improvements. ¹
29	Empire Ave / US 20	Signalized	ODOT	36.2	1	7	11	Congestion relief and safety project planned (signal improvements, operational changes, potential turn lane addition). ¹
30	NE Greenwood Ave / US 20 / NE 3 rd St / US 97 Business	Signalized	ODOT	36.0	1	7	10	ODOT All Roads Transportation Safety (ARTS) project programmed.
31	NE Revere Ave / NE 4 th St	AWSC	City of Bend	35.4	1	7	7	Project programmed, likely a signal. ¹
32	US 97 Business / Reed Ln / Meyer Drive	Signalized	City of Bend	34.8	1	7	4	
33	SW Pinebrook Blvd / NE 3 rd St / US 97 Business	TWSC	City of Bend	33.6	1	6	8	Safe crossing constructed, including RRFB, in 2023. ¹
34	NE Purcell Blvd / NE Neff Rd	Signalized	City of Bend	33.6	1	6	8	Recent intersection improvements constructed. Shared use path programmed along Neff Road through intersection. ¹
35	Hamby Rd / US 20 / Ward Rd	Roundabout	ODOT	33.4	0	16	7	Roundabout constructed in 2022. ¹



Rank	Intersection	Existing Traffic Control	Jurisdiction	Crash Severity Score	Fatal / Serious Injury	Total Crashes Major / Minor Injury	PDO	Intersection Improvement Status
36	NE 4 th St / NE Franklin Ave	TWSC	City of Bend	33.2	1	6	6	Multimodal improvements constructed in 2025. Additional changes currently being implemented as part of Midtown Crossings and Crosstown Bikeway projects. ¹
37	Bear Creek Rd / Ward Rd	TWSC	City of Bend	33.0	1	6	5	
38	NW Colorado Ave / NW Wall St	Signalized	City of Bend	32.4	1	6	2	
39	SW Reed Marked Rd / SW Silverlake Blvd	TWSC	City of Bend	32.2	1	6	1	

AWSC = All-way stop control

TWSC = Two-way stop control at 4-legged intersections and one-way stop control at "T" intersections

¹ Project constructed, programmed, or planned may or may not include sufficient provisions to address crash patterns; investigating additional safety improvements may be needed.



Table 6. Comparison of EPDO Scores of 2019 and 2026 Top 1% Sites

2019 Top 1% Sites				2026 Top 1% Sites			
Rank	Intersection	Crash Severity Score	Intersection Improvement Status	Rank	Intersection	Crash Severity Score	Intersection Improvement Status
1	NE Greenwood Ave / US 20 / SE 27th St	87.8	Evaluated as part of US20 Refinement Plan. Improvements identified that enhance mobility along US 20, including at the intersection, but no funding programmed. New detection and signal controllers installed. ¹	1	NE Greenwood Ave / US 20 / SE 27th St	105.8	Evaluated as part of US20 Refinement Plan. Improvements identified that enhance mobility along US 20, including at the intersection, but no funding programmed. New detection and signal controllers installed. ¹
2	NE Greenwood Ave / US 20 / NE 8th St	77.6	Evaluated as part of US20 Refinement Plan. Improvements identified but no funding programmed. New ADA ramps constructed in 2026. Pedestrian/bicycle crossing improvement planned. ¹	2	Cook Ave / US 20 / O.B. Riley Rd	104.6	Roundabout constructed in 2023. ¹
3	Purcell Blvd / Pettigrew Rd / Bear Creek Rd	71.2	Roundabout constructed in 2025, including multi-modal improvements. ¹	3	3rd St / SE Division St / Brosterhous Rd	87.4	Signal timing modifications implemented in 2024. ¹
4	NE 3 rd St / US 97 Business/ Butler Market Rd / Mt Washington Dr	66.6	The 2019 TSAP provides two concept options for this location. Partial funding included in GO Bond, but no ODOT funding is available. Funding will likely be moved to another project.	4	US 20 / NE Greenwood Ave / Dean Swift Rd	78.8	
5	NE 3rd St / US 20 / NE Olney Ave	65.8	ADA and signal detection improvements constructed in 2023. Recent pedestrian/bicycle improvements constructed along Olney Ave through intersection. No other improvements programmed. ¹	5	NW Colorado Ave / NW Sisemore St	76.2	Modal filter and curb extensions constructed. ¹
6	SE 3 rd St / US 97 Business/ Reed Market Rd	63.4	Red light cameras programmed for 2026. Lighting improvements constructed in 2021. City of Bend CIP project. Funding programmed for FY2028-29. ¹	6	SE Reed Market Rd / American Ln	75.8	Intersection is western limit of planned Reed Market Overcrossing Project and will see roadway reconstruction tied to the bridge approach. ¹



2019 Top 1% Sites				2026 Top 1% Sites			
Rank	Intersection	Crash Severity Score	Intersection Improvement Status	Rank	Intersection	Crash Severity Score	Intersection Improvement Status
7	US 97 / Powers Rd	59.8	The 2019 TSAP provides a concept for this location. Interchange identified in US97 Bend Parkway Plan. Partial funding included in GO Bond, but no ODOT funding is available. Funding will likely be moved to another project. ADA and lighting improvements constructed in 2022. ¹	7	US 97 / NE Cooley Rd	67.2	Intersection is no longer on US 97 mainline after North Corridor Project completed in 2024. The project may reduce congestion at this intersection, which may improve safety.
8	NE 3rd St / US 97 Business/ NE Franklin Ave	58.0	Signal adjustments, added enhanced bike lanes, adjusted Franklin vehicle lanes completed in 2019. Additional improvements are expected as part of Franklin Avenue corridor CIP project. Construction is expected in 2027. ¹	8	US 20 / Old Bend Redmond Hwy	66.8	Roundabout constructed in 2023. ¹
9	US 20 / NE Greenwood Ave / NE Purcell Blvd	56.4	Evaluated as part of US20 Refinement Plan. Improvements identified but no funding is programmed. New ADA ramps constructed in 2026. ¹	9	SE 15 th St / Reed Market Rd	66.4	Project programmed to widen to two-lane roundabout. ¹
10	SE Wilson Ave / SE 3 rd St / US 97 Business	55.8	Wilson Avenue corridor CIP project included new traffic signals, protected intersection, and enhanced bicycle and pedestrian infrastructure. Construction occurred in FY25. ¹	10	Brosterhous Rd / Chase Rd / News Ln	62.2	Roundabout is programmed. ¹
11	3 rd St / US 97 Business / Powers Rd	55.4	Red light cameras and signal timing upgrades with new mast arm and addition of westbound left-turn signal programmed for 2026. ¹	11	SE Wilson Ave / SE 2nd St	61.8	Modal filter and turning movement restriction improvements completed in 2024. ¹
12	Miller Avenue / 3 rd St / US 97 Business	53.2	The 2019 TSAP provides a concept for this location. Intersection included in the Aune St corridor CIP project. Construction scheduled for 2027. ¹	12	NE 3rd St / US 97 Business / NE Franklin Ave	61.0	Signal adjustments, added enhanced bike lanes, adjusted Franklin vehicle lanes completed in 2019. ¹ Additional improvements are expected as part of Franklin Avenue corridor CIP project. Construction is expected in 2027. ¹



2019 Top 1% Sites				2026 Top 1% Sites			
Rank	Intersection	Crash Severity Score	Intersection Improvement Status	Rank	Intersection	Crash Severity Score	Intersection Improvement Status
13	Neff Rd / Purcell Blvd	53.2	Recent intersection improvements constructed. Shared use path programmed along Neff Road through intersection. ¹	13	Cooley Rd / US 20	59.0	Roundabout constructed in 2023. ¹
14	NW Greenwood Ave / NW Hill St	50.2	Intersection lanes reconfigured in 2024. Greenwood Avenue project lane reallocation from 4 to 3 lanes. Marked crosswalk. No improvements programmed. ¹	14	NE 27 th St / Butler Market Rd / Empire Ave	57.2	Empire Avenue extension (north leg) added and roundabout constructed in 2020. ¹
15	2 nd St / Franklin Ave	48.6	2022 study identifies improvement options along Franklin Ave including at 2nd Street intersection; ARTS grant funds dedicated to illumination deficiencies. ¹ Part of the Midtown Crossings Project. Franklin Avenue corridor CIP project. Construction expected in 2027.	15	NE 3rd St / US 20 / NE Olney Ave	55.8	ADA and signal detection improvements constructed in 2023. Recent pedestrian/bicycle improvements constructed along Olney Ave through intersection. No other improvements programmed. ¹
16	NE 27 th St / Neff Rd	47.0	Added merge arrows and removed median to accommodate full bike lane (part of 2024 pavement preservation project). Accessible pedestrian signal buttons added in 2025. No improvements programmed. Red light cameras planned for 2026. ¹	16	NE 4th St / NE Greenwood Ave / US 20	55.4	Median island and RRFB constructed in 2024/2025. ¹
17	US 97 / Robal Ln	46.2	Intersection is no longer on US 97 mainline after North Corridor Project completed in 2024. Project may reduce congestion at this intersection, which may improve safety.	17	NW Greenwood Ave / NW Hill St	53.2	Intersection lanes reconfigured in 2024. Greenwood Avenue project lane reallocation from 4 to 3 lanes. Marked crosswalk. No improvements programmed. ¹
18	NE Greenwood Ave / US 20 / NE 15th St	42.8	Evaluated as part of US20 Refinement Plan. Improvements identified but no funding programmed. 15 th St corridor safety and capacity improvements planned beginning at US 20; operational improvements along US 20 planned starting at 15 th St. ¹ ADA improvements constructed in 2026. ¹	18	NE Greenwood Ave / US 20 / NE 8th St	46.8	Evaluated as part of US20 Refinement Plan. Improvements identified but no funding programmed. New ADA ramps constructed in 2026. Pedestrian/bicycle crossing improvement planned. ¹



2019 Top 1% Sites				2026 Top 1% Sites			
Rank	Intersection	Crash Severity Score	Intersection Improvement Status	Rank	Intersection	Crash Severity Score	Intersection Improvement Status
19	US 97 / NE Cooley Rd	39.2	Intersection is no longer on US 97 mainline after North Corridor Project completed in 2024. The project may reduce congestion at this intersection, which may improve safety.	19	Deschutes Market Rd / Yeoman Rd	46.4	Roundabout constructed in 2025. ¹
20	SW Pinebrook Blvd / NE 3rd St / US 97 Business	37.6	Safe crossing constructed, including RRFB, in 2023. ¹	20	NE 27th St / Micks Dr / Grand Way	45.2	
21	NE Medical Center Dr / NE Neff Rd	37.6	Signal timing improvements completed in 2022 (ARTS funding). Shared use path programmed along Neff Road through intersection. No other improvements programmed. ¹	21	SW Pinebrook Blvd / US 97	44.8	
22	US 20 / NE Greenwood Ave / NE 10 th St	37.4	Evaluated as part of US20 Refinement Plan. Improvements identified but no funding programmed. ADA improvements constructed in 2026. ¹	22	NE Neff Rd / NE Williamson Blvd	44.0	Shared use path programmed along Neff Road through intersection. ¹
23	SW Columbia St / SW Colorado St	37.2	Roundabout constructed, including multi-modal improvements, in 2021. ¹	23	NE 3rd St / US 20 / NE Revere Ave	43.0	
24	Cooley Rd / US 20	36.4	Roundabout constructed, including multi-modal improvements, in 2023. ¹	24	NE Olney Ave / NE Penn Ave / NE 8th St	41.4	Project programmed, likely a roundabout. ¹
25	Division St / NE Revere Ave / US 97 NB Off-Ramp / US 97 NB On-Ramp	36.2	Revere Avenue Urban Design Verification identifies improvements that could improve multimodal safety and connectivity near the intersection, and address conflicts between rail, roadway, bicycle, and pedestrian movements, but no funding is programmed. ¹	25	O.B. Riley Rd / Firerock Rd	40.0	Street restriped to narrow lanes and add buffered bike lane in 2024. ¹
<p>Fewer intersections were identified in the 2019 TSAP list of Top 1% sites compared to this 2026 study sites because the 2019 study area was smaller (confined to the Urban Growth Boundary as opposed to the MPO boundary), resulting in fewer intersections to analyze.</p>				26	O.B. Riley Rd / NW Crusher Ave / Empire Ave	39.6	Roundabout programmed; converted to interim all way stop in 2024 ¹ .
				27	NE Empire Ave / US 97 NB Off-Ramp / US 97 NB On-Ramp	38.8	Future project with ODOT to construct higher capacity connection at this and other Parkway interchanges. Additional coordination with ODOT required. ¹



2019 Top 1% Sites				2026 Top 1% Sites			
Rank	Intersection	Crash Severity Score	Intersection Improvement Status	Rank	Intersection	Crash Severity Score	Intersection Improvement Status
				28	Bear Creek Rd / Pettigrew Rd / Purcell Blvd	36.6	Roundabout constructed in 2025, including multi-modal improvements. ¹
				29	Empire Ave / US 20	36.2	Congestion relief and safety project planned (signal improvements, operational changes, potential turn lane addition). ¹
				30	NE Greenwood Ave / US 20 / NE 3rd St / US 97 Business	36.0	
				31	NE Revere Ave / NE 4th St	35.4	Project programmed, likely a signal. ¹
				32	US 97 Business / Reed Ln / Meyer Drive	34.8	
				33	SW Pinebrook Blvd / NE 3rd St / US 97 Business	33.6	Safe crossing constructed, including RRFB, in 2023. ¹
				34	NE Purcell Blvd / NE Neff Rd	33.6	Recent intersection improvements constructed. Shared use path programmed along Neff Road through intersection. ¹
				35	Hamby Rd / US 20 / Ward Rd	33.4	Roundabout constructed in 2022. ¹
				36	NE 4th St / NE Franklin Ave	33.2	Multimodal improvements constructed in 2025 ¹ . Additional changes currently being implemented as part of Midtown Crossings and Crosstown Bikeway projects. ¹
				37	Bear Creek Rd / Ward Rd	33.0	
				38	NW Colorado Ave / NW Wall St	32.4	
				39	SW Reed Marked Rd / SW Silverlake Blvd	32.2	

¹ Project constructed, planned, or programmed may or may not include sufficient provisions to address crash patterns; additional safety improvements may be needed.



Segments

Similar to the intersection EPDO analysis, the segment EPDO analysis was performed for segments of all public and private streets in the study area to understand street segment safety needs. The results of this analysis are illustrated in Figure 3 and summarized in Table 7. Top 1% crash severity scores for roadway segments are not available in the 2019 TSAP, and therefore, comparison tables like those presented for highly-ranked intersections are not provided.

Several segments in the top 1% occur on US 97 and US 20, both of which are owned and maintained by ODOT. While these state highway segments would not necessarily be prioritized for countermeasures within the BMPO TSAP update, they are important to acknowledge given their high severity performance. These locations highlight critical safety needs on key regional corridors and provide valuable context for coordination with ODOT.

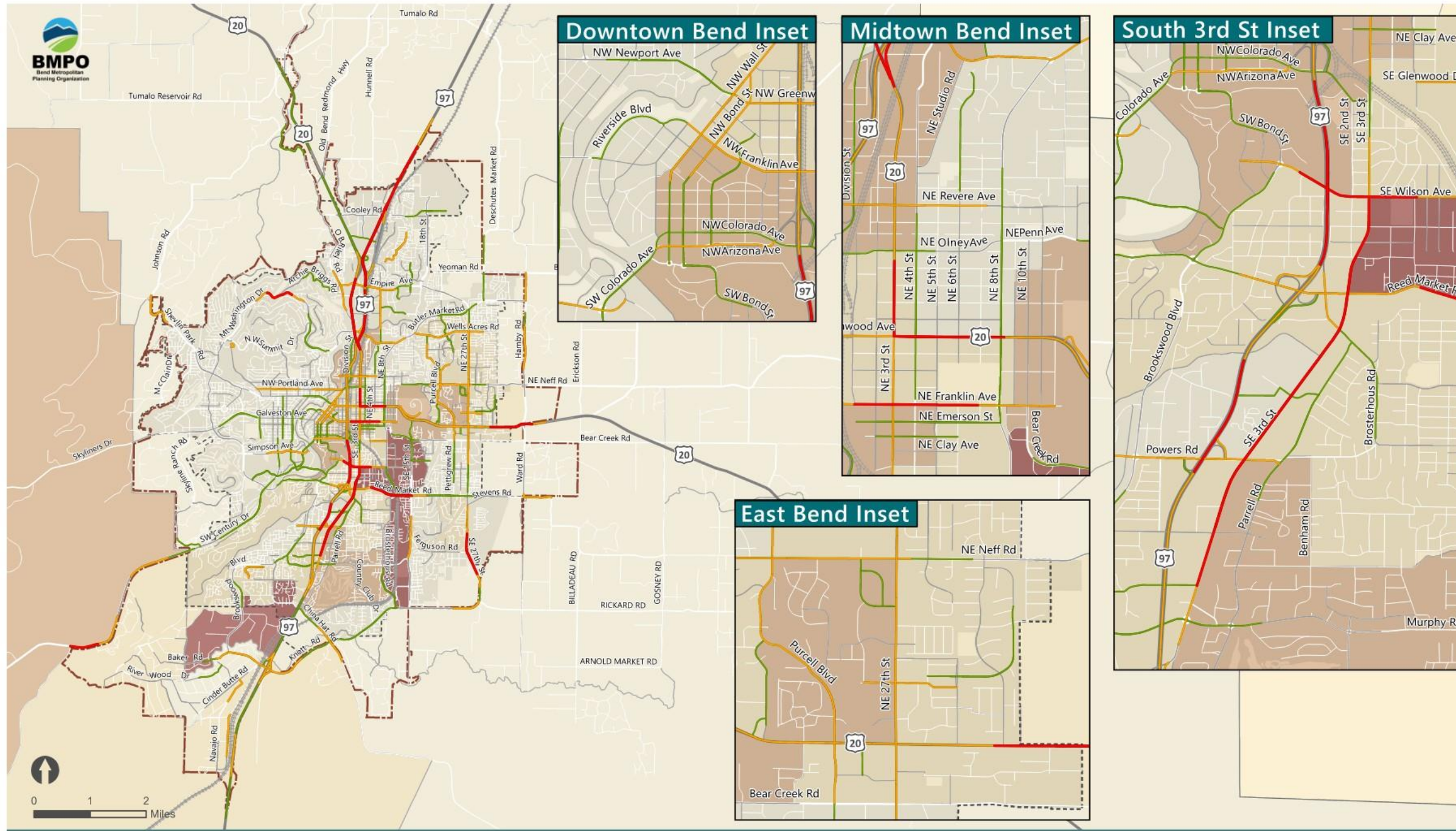
Notably of the analysis period of the study overlaps with completion of the Bend North Corridor Project which included significant reconfiguration of both US 20 and US 97 in the northern part of the city. These improvements were under construction from 2022 to 2024. As such, analysis results presented here consider before and during construction conditions, but are not reflective of the final reconfigured transportation network.

Several of the half-mile segments in the top 1% connect, so they are presented as corridors in Table 7, where applicable, rather than as individual segments.

Attachment A contains the list of sites ranking in the top 5% (includes top 1% sites) to provide additional potential priority locations for consideration.



Figure 3. Network Screening Evaluation – Segment EPDO Analysis



- | | | | | | | | |
|--|--------------------------|--|---------------------------------------|--|------------------|--|-------------|
| | Top 1% (38.6 or Greater) | | Bend MPO Boundary | | Equity Disparity | | High |
| | Top 5% (6.6 to 38.5) | | Bend Urban Growth Boundary | | | | Medium/High |
| | Top 10% (2.1 to 6.5) | | City of Bend | | | | Low/Medium |
| | Bottom 90% (2.0 or Less) | | National Forest, Park, or Golf Course | | | | Low |

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Figure 2: Network Screening Evaluation – Segment EPDO Analysis



Table 7. Roadway Segments with Highest Crash Severity Scores (Top 1% Sites)

Rank	Roadway	Extents	Length (Miles)	Crash Severity Score	Total Crashes			Segment Improvement Status
					Fatal / Serious Injury	Major / Minor Injury	PDO	
1	US 20 / US 97 Business	Empire Avenue to 300 feet north of NW Clausen Road (MP 133.85 to 135.46) ¹	1.61	115.2 - 58.6	5	71	57	
2	NE 3 rd Street / US 97 Business	SW Pinebrook Boulevard to SE Wilson Avenue (MP 1.09 to MP 2.84)	1.75	112.8 - 38.6	5	49	37	
3	US 20 / NE 3 rd St	475 feet north of Empire Avenue to 300 feet north of railroad overcrossing, near NE Webster Ave (MP 18.75 to MP 19.90)	1.15	98.2 – 41.2	4	31	17	Sidewalk infill, ADA ramps, bike lane improvements, signal improvements, and lighting improvements from Mervin Sampels to Greenwood (completed 2022 or 2023).
4	US 97	150 feet north of NE Butler Market Road to 400 feet south of NE Empire Avenue (MP 135.54 to MP 136.30)	0.76	78.4 – 54.0	3	10	16	
5	US 20	150 feet north of NE Norton Avenue to NE 8 th Street (McKenzie-Bend Hwy No. 017 MP 20.70 to MP 20.99 to Central Oregon Hwy No. 007 MP 0.51 to MP 0.96)	0.43	65.0 – 61.2	2	13	22	Design planned for active transportation needs (1st to 6th Street) to improve safety. Improvements constructed in 2024 (upgraded ADA curb ramps; upgraded signs at signalized intersections; new marked crosswalks with a pedestrian refuge at 4th St; sidewalks; mid-block crossing at Stonebriar; signal modifications at 27 th St; illumination at Arnett Way; multiuse path between Mt Washington and Division).
6	SE 27 th Street	975 feet south of Diamond Back Lane to 400 feet south of Wilderness Way (MP 0.50 to MP 1.26)	0.76	64.2 - 46.2	3	3	1	Curb, sidewalk, and bike lane planned for east side of road (Stevens Road to Ferguson Road); curb and sidewalk on east side, bike lanes for both directions planned (Ferguson Road to Diamondback Lane). ²
7	US 97	415 feet north of Fort Thompson Lane to 470 feet south of NW Clausen Drive (MP 132.74 to MP 133.99)	1.25	57.8 – 42.2	3	20	21	
8	NE Franklin Avenue	NE 1 st Street to NE 7 th Street (MP 0.58 to MP 1.09)	0.51	55.6	2	7	8	Project programmed as part of the Midtown Crossings and Crosstown Bikeway projects. ²
9	US 97	130 feet south of NE Scott Street to 260 feet north of SW Reed Market Road (MP 138.29 to MP 139.04)	0.75	50.6 - 48.6	3	8	3	



Rank	Roadway	Extents	Length (Miles)	Crash Severity Score	Fatal / Serious Injury	Total Crashes Major / Minor Injury	PDO	Segment Improvement Status
10	NW Mount Washington Drive	NW Wild Rye Circle to 700 feet west of NW Yosemite Drive (MP 1.84 to MP 2.35)	0.51	47.2	2	3	6	
11	SE Reed Market Road	70 feet west of SE 5 th Street to SE 15 th Street (MP 0.41 to MP 1.12)	0.71	44.2 – 42.6	1	16	16	Project programmed for 5 th street RRFB and railroad overcrossing. ²
12	US 20	1065 feet east of NE Dalton Street to 235 feet east of Hamby Road (MP 3.00 to MP 3.76)	0.76	44.2 – 44.0	3	2	1	
13	SW Century Drive	135 feet east of Seventh Mountain Resort Road to NFD Road 41 (MP 7.10 to MP 7.59)	0.49	42.4	2	1	2	
14	NE 3 rd Street / US 97 Business Off Ramp	NE 3 rd Street / US 97 Business Off Ramp Exit to US 97 NB On Ramp (MP 19.96 to MP 20.30)	0.34	42.0	2	1	0	
15	US 97	770 feet north of Reed Lane to Powers Road SB Off Ramp Interchange (MP 139.54 to MP 140.04)	0.50	41.6	1	12	11	Operational and safety improvements planned around Powers Road as part of the Bend GO Bond. Partial funding available in GO Bond, but no ODOT funding is available. Funding will likely be moved to another project. ²
16	SE Wilson Avenue	85 feet west of SW Hill Street to 40 feet east of SE 5 th Street (MP 0.10 to MP 0.60)	0.50	41.2	1	10	6	Project complete. Signal Enhancements at 3 rd Street to increase capacity and connectivity, and lastly four TSP 'key route' shared use path upgrades on Wilson from 2 nd Street to 15 th Street.

¹ Part of this segment no longer exists due to the completion of the Bend North Corridor Project.

² Project constructed, planned, or programmed may or may not include sufficient provisions to address crash patterns; additional safety improvements may be needed.



Latest Data on Fatal Crashes

ODOT manages a website tool, (Crash Analysis & Reporting) CAR Unit Initial Fatal Crash Information Viewer, that provides preliminary information on fatal crashes in Oregon for the years 2024, 2025, and 2026. The information is subject to change daily as more information becomes available and is evaluated by ODOT. The current information on recent fatal crashes indicates that twelve have been reported in the BMPO boundary in the last three years, beyond the study period for the TSAP. Those crashes are summarized in Table 8 as they relate to the crash pattern and EPDO analysis results summarized in previous sections of this memorandum.

Table 8. Reported Fatal Crashes from 2024 to March 2026 (Subject to Change)

Year	Location	Key Characteristics	Proximity to High-Crash Locations
2024	NE 3 rd Street / NE Revere Avenue	<ul style="list-style-type: none"> 82 year-old Drugs/alcohol flagged Angle crash 	Crash was at a top 1% intersection
2024	Highway 20 west of NE Dalton Street	<ul style="list-style-type: none"> Drugs/alcohol flagged Motorcyclist crash Angle crash 	Crash was within a top 5% segment
2024	Bear Creek Road / Dean Swift Road	<ul style="list-style-type: none"> Drugs/alcohol flagged Head-on crash 	Crash was within a top 10% segment
2024	SE Cessna Drive / SE Piper Drive	<ul style="list-style-type: none"> Drugs/alcohol flagged 	Crash was within a top 10% segment
2024	Knott Road west of China Hat Road	<ul style="list-style-type: none"> Drugs/alcohol involved 64 year-old / 61 year-old Sideswipe crash ('lane departure') 	Crash was within a top 10% segment
2025	NE Jones Road / NE Hoover Loop	<ul style="list-style-type: none"> 86 year-old Fixed-object crash ('roadway departure') 	Crash not within a top reported segment or intersection
2025	NE 3 rd Street / NE Underwood Avenue	<ul style="list-style-type: none"> Drugs/alcohol flagged Bicyclist crash 	Crash was at a top 5% intersection



Year	Location	Key Characteristics	Proximity to High-Crash Locations
2025	US 97 south of Murphy Road	<ul style="list-style-type: none"> • Drugs/alcohol flagged • Overturn crash ('roadway departure') 	Crash was within a top 5% segment
2025	3 rd Street near Murphy Road Ramps	<ul style="list-style-type: none"> • Drugs/alcohol flagged • Motorcyclist crash 	Crash was within a top 5% segment
2025	Knott Road / Newcastle Drive	<ul style="list-style-type: none"> • Drugs/alcohol flagged • Fixed-object crash ('roadway departure') • Motorcyclist crash 	Crash was at a top 10% intersection
2025	US 97 north of FS 1801	<ul style="list-style-type: none"> • Head-on crash 	Crash was within a top 5% segment
2025	US 97 north of FS 1801	<ul style="list-style-type: none"> • Drugs/alcohol flagged • 64 year-old • Fixed-object crash ('roadway departure') 	Crash was within a top 5% segment
2026	2 nd St / Miller Ave	<ul style="list-style-type: none"> • Intersection related • Drugs/alcohol flagged • Angle crash • 19 year-old • Motorcyclist crash 	Crash at a top 10% intersection



2019 TSAP Non-Infrastructure Actions Progress

In addition to the 2019 TSAP infrastructure projects identified in previous sections of this memorandum as either completed or programmed for design and construction, the MPO, City, and partners have implemented several of the non-infrastructure, multidisciplinary actions from the 2019 plan. Such actions are intended to increase safety culture across Bend and address crash patterns that are not typically corrected with infrastructure changes. Examples of these include items like the following:

- *Create and implement a Regional Multidisciplinary Transportation Safety Committee to coordinate on transportation safety and implement the Action Items identified in the TSAP.*
- *Provide educational materials to visitors through partnerships with Visit Bend and local hotels/resorts.*
- *Reduce (optimize) response time to crashes. Work with the EMS Council and Oregon Area Trauma Advisory Board to complete this.*

Attachment C provides the detailed list of the 2019 TSAP multidisciplinary actions and their statuses.

Next Steps

This memorandum documents the crash patterns, emphasis areas, and potential priority locations for the Bend TSAP Update based on the most recent five-year crash history in the study area. Based on feedback from the Project Management Team (PMT), Project Advisory Committee (PAC), BMPO Policy Board, Bend City Council, and community engagement, the information in this memorandum will serve as the basis for developing systemic safety countermeasures to address the emphasis areas across the study area, as well as potential project recommendations for priority locations selected by the PMT. Countermeasures will be developed from ODOT's crash reduction factor list and FHWA's Proven Safety Countermeasures to prepare for future funding opportunities through the All Roads Transportation Safety (ARTS) and Safe Streets and Roads for All (SS4A) grant programs.



Attachment A: Top 5% Intersections

OBJECTID*	Intersection	Fatal Crashes	Serious Injury Crashes	Minor Injury Crashes	Possible Injury Crashes	PDO Crashes	Total Crashes	Fatal Score	Serious Injury Score	Minor Injury Score	Possible Injury Score	PDO Score	Crash Severity Score	Rank
1	3436_27TH ST & Hwy 20	0	3	9	12	19	43	0	60	18	24	3.8	105.8	Top 1%
2	COOK AVE & Hwy 20 & OB RILEY RD	1	2	12	9	13	37	20	40	24	18	2.6	104.6	Top 1%
3	1898_3RD ST (Business Hwy 97) & BROSTERHOUS RD & DIVISION ST	0	2	6	16	17	41	0	40	12	32	3.4	87.4	Top 1%
4	3237_DEAN SWIFT RD & Hwy 20	1	2	5	4	4	16	20	40	10	8	0.8	78.8	Top 1%
5	1663_COLORADO AVE & SISEMORE ST	0	1	3	4	11	22	0	60	6	8	2.2	76.2	Top 1%
6	2507_AMERICAN LN & REED MARKET RD	1	2	4	3	9	19	20	40	8	6	1.8	75.8	Top 1%
7	2363_Business US 97 & COOLEY RD	0	2	3	9	16	30	0	40	6	18	3.2	67.2	Top 1%
8	Hwy 20 & OLD BEND REDMOND HWY	0	2	8	5	4	19	0	40	16	10	0.8	66.8	Top 1%
9	15TH ST & REED MARKET RD	0	1	4	17	22	44	0	20	8	34	4.4	66.4	Top 1%
10	2028_BROSTERHOUS RD & CHASE RD & NEWS LN	0	3	0	1	1	5	0	60	0	2	0.2	62.2	Top 1%
11	1939_2ND ST & WILSON AVE	0	2	4	6	9	21	0	40	8	12	1.8	61.8	Top 1%
12	2006_3RD ST (Business Hwy 97) & FRANKLIN AVE	0	1	7	12	15	35	0	20	14	24	3	61	Top 1%
13	COOLEY RD & Hwy 20	1	1	8	1	5	16	20	20	16	2	1	59	Top 1%
14	27TH ST & BUTLER MARKET RD & EMPIRE AVE	0	0	8	15	56	79	0	0	16	30	11.2	57.2	Top 1%
15	2016_Hwy 20 & OLNEY AVE	1	1	2	5	9	18	20	20	4	10	1.8	55.8	Top 1%
16	2080_4TH ST & Hwy 20	0	2	3	4	7	16	0	40	6	8	1.4	55.4	Top 1%
17	1782_GREENWOOD AVE & HILL ST	0	2	4	3	6	14	0	40	2	10	1.2	53.2	Top 1%
18	2396_8TH ST & Hwy 20	0	1	5	7	14	27	0	20	10	14	2.8	46.8	Top 1%
19	DESCHUTES MARKET RD & YEOMAN RD	0	2	0	3	2	7	0	40	0	6	0.4	46.4	Top 1%
20	3433_27TH ST & GRAND WAY & MICKS DR	0	1	4	7	16	28	0	20	8	14	3.2	45.2	Top 1%
21	1360_Bend Pkwy/Hwy 97 & PINEBROOK BLVD	0	2	2	0	4	8	0	40	4	0	0.8	44.8	Top 1%
22	3262_NEFF RD & WILLIAMSON BLVD	0	2	0	2	0	4	0	40	0	4	0	44	Top 1%
23	2019_Hwy 20 & REVERE AVE	0	1	2	9	5	17	0	20	4	18	1	43	Top 1%
24	2402_8TH ST & OLNEY AVE & PENN AVE	0	1	5	5	7	18	0	20	10	10	1.4	41.4	Top 1%
25	1619_FIREROCK RD & OB RILEY RD	1	1	0	0	0	2	20	20	0	0	0	40	Top 1%
26	1749_EMPIRE AVE & OB RILEY RD & CRUSHER AVE	0	1	4	5	8	18	0	20	8	10	1.6	39.6	Top 1%
27	2111_EMPIRE AVE & NB PARKWAY OFFRAMP 1358 & NB PARKWAY ONRAMP 1358	0	1	4	4	14	23	0	20	8	8	2.8	38.8	Top 1%
28	BEAR CREEK RD & PETTIGREW RD & PURCELL BLVD	0	1	1	6	13	21	0	20	2	12	2.6	36.6	Top 1%
29	1911_EMPIRE AVE & Hwy 20	0	1	3	4	11	19	0	20	6	8	2.2	36.2	Top 1%
30	2013_3RD ST (Business Hwy 97) & Hwy 20 & GREENWOOD AVE	0	1	4	3	10	19	0	20	8	6	2	36	Top 1%
31	2090_4TH ST & REVERE AVE	0	1	2	5	7	15	0	20	4	10	1.4	35.4	Top 1%
32	1796_3RD ST (Business Hwy 97) & REED LN	0	1	0	7	4	12	0	20	0	14	0.8	34.8	Top 1%
33	1471_3RD ST (Business Hwy 97) & PINEBROOK BLVD	0	1	4	2	8	15	0	20	8	4	1.6	33.6	Top 1%
34	3159_NEFF RD & PURCELL BLVD	0	1	2	4	8	15	0	20	4	8	1.6	33.6	Top 1%
35	HAMBY RD & Hwy 20 & WARD RD	0	0	11	5	7	23	0	0	22	10	1.4	33.4	Top 1%
36	2075_4TH ST & FRANKLIN AVE	0	1	5	1	6	13	0	20	10	2	1.2	33.2	Top 1%
37	3824_BEAR CREEK RD & WARD RD	0	1	2	4	5	12	0	20	4	8	1	33	Top 1%
38	1428_COLORADO AVE & WALL ST	0	1	2	4	2	9	0	20	4	8	0.4	32.4	Top 1%
39	1651_REED MARKET RD & SILVER LAKE BLVD	0	1	3	3	1	8	0	20	6	6	0.2	32.2	Top 1%
40	15TH ST & BEAR CREEK RD	1	0	1	4	4	10	20	0	2	8	0.8	30.8	Top 5%
41	2810_15TH ST & Hwy 20	0	1	3	2	1	7	0	20	6	4	0.2	30.2	Top 5%
42	2010_3RD ST (Business Hwy 97) & IRVING AVE	0	1	1	3	9	14	0	20	2	6	1.8	29.8	Top 5%
43	3441_27TH ST & NEFF RD	0	0	6	8	9	23	0	0	12	16	1.8	29.8	Top 5%
44	1488_Bend Pkwy/Hwy 97 & POWERS RD	0	1	3	1	8	13	0	20	6	2	1.6	29.6	Top 5%
45	1743_FRANKLIN AVE & HARRIMAN ST	0	1	2	2	3	8	0	20	4	4	0.6	28.6	Top 5%
46	1853_DIVISION ST & REED MARKET RD	0	1	1	3	3	8	0	20	2	6	0.6	28.6	Top 5%
47	1626_3RD ST (Business Hwy 97) & POWERS RD	0	0	3	10	9	22	0	0	6	20	1.8	27.8	Top 5%
48	1228_RIVERSIDE BLVD & TUMALO AVE	1	0	1	2	3	7	20	0	2	4	0.6	26.6	Top 5%
49	1739_MEYER DR & REED LN	0	1	2	1	2	6	0	20	4	2	0.4	26.4	Top 5%
50	2186_Business US 97 & ROBAL LN	0	0	5	7	12	24	0	0	10	14	2.4	26.4	Top 5%
51	3443_27TH ST & CONNERS AVE	1	0	0	3	2	6	20	0	0	6	0.4	26.4	Top 5%
52	18TH ST & EMPIRE AVE	0	1	2	1	2	6	0	20	4	2	0.4	26.4	Top 5%
53	2512_Bend Pkwy/Hwy 97 & GRANDVIEW DR	0	1	1	2	1	5	0	20	2	4	0.2	26.2	Top 5%
54	2905_NEWBERRY DR & REED MARKET RD	0	1	1	2	1	5	0	20	2	4	0.2	26.2	Top 5%
55	1188_9TH ST & PORTLAND AVE	0	0	2	10	7	19	0	0	4	20	1.4	25.4	Top 5%
56	2009_3RD ST (Business Hwy 97) & HAWTHORNE AVE	0	0	5	7	5	17	0	0	10	14	1	25	Top 5%
57	1633_GREENWOOD AVE & NEWPORT AVE & WALL ST	0	1	0	2	4	7	0	20	0	4	0.8	24.8	Top 5%
58	2023_Hwy 20 & UNDERWOOD AVE	0	1	2	0	4	7	0	20	4	0	0.8	24.8	Top 5%
59	2400_8TH ST & NORTON AV	0	1	1	1	4	7	0	20	2	2	0.8	24.8	Top 5%
60	2775_15TH ST & FERGUSON RD & SHERWOOD FOREST DR	0	1	0	2	3	6	0	20	0	4	0.6	24.6	Top 5%
61	1197_GALVESTON AVE & RIVERFRONT ST & RIVERSIDE BLVD	0	1	0	2	2	5	0	20	0	4	0.4	24.4	Top 5%
62	1662_ARIZONA AVE & SISEMORE ST	0	1	2	0	2	5	0	20	4	0	0.4	24.4	Top 5%
63	3449_27TH ST & WELLS ACRES RD	0	0	5	7	2	14	0	0	10	14	0.4	24.4	Top 5%
64	27TH ST & WILDERNESS WAY & WILDERNESS WY	0	1	0	2	2	5	0	20	0	4	0.4	24.4	Top 5%
65	1987_3RD ST (Business Hwy 97) & WILSON AVE	0	0	2	10	1	13	0	0	4	20	0.2	24.2	Top 5%
66	2004_3RD ST (Business Hwy 97) & DE KALB AVE	0	0	1	1	1	4	0	20	2	2	0.2	24.2	Top 5%
67	2237_6TH ST & REVERE AVE	0	1	1	1	1	4	0	20	2	2	0.2	24.2	Top 5%
68	1872_DIVISION ST & NB PARKWAY OFFRAMP 137 & NB PARKWAY ONRAMP 137 & REVERE AVE	0	0	4	7	10	21	0	0	8	14	2	24	Top 5%
69	1604_CHINA HAT RD & KNOIT RD	1	0	0	1	6	8	20	0	0	2	1.2	23.2	Top 5%
70	2233_6TH ST & OLNEY AVE	0	1	0	1	2	4	0	20	0	2	0.4	22.4	Top 5%
71	2586_12TH ST & Hwy 20	0	1	0	1	2	4	0	20	0	2	0.4	22.4	Top 5%
72	2845_NEFF RD & SHEPARD RD	0	1	1	0	2	4	0	20	2	0	0.4	22.4	Top 5%
73	3451_27TH ST & JILL AVE & JILL CT	0	1	1	0	2	4	0	20	2	0	0.4	22.4	Top 5%
74	14TH ST & NEWPORT AVE	1	0	0	1	2	4	20	0	0	2	0.4	22.4	Top 5%
75	1836_Bend Pkwy/Hwy 97 & HAWTHORNE AVE	0	0	1	7	31	39	0	0	2	14	6.2	22.2	Top 5%
76	1977_3RD ST (Business Hwy 97) & MCKINLEY AVE	0	1	1	0	1	3	0	20	2	0	0.2	22.2	Top 5%
77	3846_KNOIT RD & RAINTREE CT	0	1	1	0	1	3	0	20	2	0	0.2	22.2	Top 5%
78	433_CAMPBELL RD & CENTURY DR & MT BACHELOR DR	1	0	0	1	1	3	20	0	0	2	0.2	22.2	Top 5%
79	MURPHY RD & PARRELL RD	0	1	1	0	1	3	0	20	2	0	0.2	22.2	Top 5%
80	1128_GALVESTON AVE & HARMON BLVD	0	1	0	1	0	2	0	20	0	2	0	22	Top 5%
81	1420_BROOKSWOOD BLVD & HILLWOOD CT	0	1	1	0	0	2	0	20	2	0	0	22	Top 5%
82	2068_BROSTERHOUS RD & DAYBREAK CT	1	0	0	1	0	2	20	0	0	2	0	22	Top 5%
83	COLUMBIA ST & SIMPSON AVE	0	1	0	0	10	11	0	20	0	0	2	22	Top 5%
84	1788_REVERE AVE & SB PARKWAY OFFRAMP 137 & SB PARKWAY ONRAMP 137 & WALL ST	0	0	6	3	17	26	0	0	12	6	3.4	21.4	Top 5%
85	1998_3RD ST (Business Hwy 97) & MILLER AVE	0	0	3	7	6	16	0	0	6	14	1.2	21.2	Top 5%
86	2018_Hwy 20 & QUIMBY AVE	0	1	0	0	4	5	0	20	0	0	0.8	20.8	Top 5%
87	3843_HILL ST & FRANKLIN AVE	0	1	0	0	3	4	0	20	0	0	0.6	20.6	Top 5%
88	1916_3RD ST (Business Hwy 97) & REED MARKET RD	0	0	4	5	12	21	0	0	8	10	2.4	20.4	Top 5%

89 2265 BUTLER MARKET RD & STUDIO RD	0	1	0	0	2	3	0	20	0	0	0.4	20.4 Top 5%
90 2529 COOLEY RD & HUNTERS CIR	0	1	0	0	2	3	0	20	0	0	0.4	20.4 Top 5%
91 BUTLER MARKET RD & PURCELL BLVD	0	0	4	6	2	12	0	0	8	12	0.4	20.4 Top 5%
92 1365 BADGER RD & Bend Pkwy/Hwy 97	0	0	3	6	11	20	0	0	6	12	2.2	20.2 Top 5%
93 1920 LYTLE ST & REVERE AVE	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
94 1976 COSTCO DR & ROBAL LN	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
95 2794 15TH ST & BRONZEWOOD AVE	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
96 3014 18TH ST & CANAL VIEW DR & RORICK DR	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
97 592 CENTURY DR & MAMMOTH DR	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
98 973 13TH ST & GALVESTON AVE	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
99 MT BACHELOR DR & REED MARKET RD	0	1	0	0	1	2	0	20	0	0	0.2	20.2 Top 5%
100 118 CHIANTI LN & LOBINIE CT	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
101 138 BAKER RD & SIOUX LN	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
102 1470 BADGER RD & COOMBS PL	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
103 1884 MOUNTAIN HIGH LOOP & TETON CT	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
104 199 CHARBONNEAU ST & YORK DR	1	0	0	0	0	1	20	0	0	0	0	20 Top 5%
105 2393 8TH ST & HAWTHORNE AVE	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
106 2590 COOLEY RD & HIGH STANDARD DR & STACY LN	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
107 2796 15TH ST & LOSTINE CIR	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
108 3018 18TH ST & EGYPT DR	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
109 3596 ALFENGLLOW PL & WELLS ACRES RD & ZWECKAL PL	1	0	0	0	0	1	20	0	0	0	0	20 Top 5%
110 3852 OB RILEY RD & TUMALO RESERVOIR RD	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
111 853 15TH ST & GALVESTON AVE	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
112 15TH ST & CALDERA DR	0	1	0	0	0	1	0	20	0	0	0	20 Top 5%
113 2640 9TH ST & REED MARKET RD	0	0	6	2	15	23	0	0	12	4	3	19 Top 5%
114 3507 BENSON WAY & Hwy 20	0	0	5	4	4	13	0	0	10	8	0.8	18.8 Top 5%
115 1714 GREENWOOD AVE & HARRIMAN ST	0	0	2	7	3	12	0	0	4	14	0.6	18.6 Top 5%
116 CENTURY DR & SIMPSON AVE	0	0	1	7	3	11	0	0	2	14	0.6	16.6 Top 5%
117 3RD ST (Business Hwy 97) & MURPHY RD	0	0	3	4	13	20	0	0	6	8	2.6	16.6 Top 5%
118 1870 1ST ST & GREENWOOD AVE	0	0	2	6	2	10	0	0	4	12	0.4	16.4 Top 5%
119 BUTLER MARKET RD & ROCKY PL & WELLS ACRES RD	0	0	3	4	7	14	0	0	6	8	1.4	15.4 Top 5%
120 2335 BOYD ACRES RD & EMPIRE AVE	0	0	2	5	6	13	0	0	4	10	1.2	15.2 Top 5%
121 2408 8TH ST & REVERE AVE	0	0	2	5	6	13	0	0	4	10	1.2	15.2 Top 5%
122 2094 4TH ST & UNDERWOOD AVE	0	0	3	4	5	12	0	0	6	8	1	15 Top 5%
123 2045 HUNNEL RD & ROBAL LN	0	0	6	1	4	11	0	0	12	2	0.8	14.8 Top 5%
124 2497 10TH ST & Hwy 20	0	0	1	6	4	11	0	0	2	12	0.8	14.8 Top 5%
125 3439 27TH ST & MEDICAL CENTER DR	0	0	2	5	4	11	0	0	4	10	0.8	14.8 Top 5%
126 1946 2ND ST & FRANKLIN AVE	0	0	0	7	3	10	0	0	0	14	0.6	14.6 Top 5%
127 1569 ARIZONA AVE & COLORADO AVE & US 97 SB RAMPS	0	0	4	2	11	17	0	0	8	4	2.2	14.2 Top 5%
128 Hwy 20 & ROBAL LN	0	0	1	5	6	12	0	0	2	10	1.2	13.2 Top 5%
129 1429 POWERS RD & SB PARKWAY ONRAMP POWERS RD	0	0	0	6	5	11	0	0	0	12	1	13 Top 5%
130 1435 Hwy 20 & OB RILEY RD	0	0	0	6	5	11	0	0	0	12	1	13 Top 5%
131 1474 BOND ST & COLORADO AVE	0	0	2	4	5	11	0	0	4	8	1	13 Top 5%
132 747 BAKER RD & HIGHWAY 97 RAMPS KNOTT & BAKER CT	0	0	1	5	5	11	0	0	2	10	1	13 Top 5%
133 1891 Hwy 20 & RIVER MALL AVE	0	0	4	2	3	9	0	0	8	4	0.6	12.6 Top 5%
134 2112 Business US 97 & NELS ANDERSON PL	0	0	3	3	3	9	0	0	6	6	0.6	12.6 Top 5%
135 1455 3RD ST (Business Hwy 97) & OLD MURPHY RD	0	0	3	3	2	8	0	0	6	6	0.4	12.4 Top 5%
136 1840 Bend Pkwy/Hwy 97 & LAFAYETTE AVE	0	0	3	2	12	17	0	0	6	4	2.4	12.4 Top 5%
137 1882 Hwy 20 & MERVIN SAMPLES	0	0	3	3	2	8	0	0	6	6	0.4	12.4 Top 5%
138 3437 27TH ST & LIVINGSTON DR	0	0	5	1	2	8	0	0	10	2	0.4	12.4 Top 5%
139 9TH ST & WILSON AVE	0	0	3	3	2	8	0	0	6	6	0.4	12.4 Top 5%
140 1525 3RD ST (Business Hwy 97) & BADGER RD	0	0	3	3	1	7	0	0	6	6	0.2	12.2 Top 5%
141 1913 BUTLER MARKET RD & Hwy 20 & MT. WASHINGTON DR	0	0	1	4	10	15	0	0	2	8	2	12 Top 5%
142 1769 OLNEY AVE & PORTLAND AVE & WALL ST	0	0	3	2	8	13	0	0	6	4	1.6	11.6 Top 5%
143 COLORADO AVE & COLUMBIA ST	0	0	4	1	7	12	0	0	8	2	1.4	11.4 Top 5%
144 3440 27TH ST & BEAR CREEK RD	0	0	3	2	6	11	0	0	6	4	1.2	11.2 Top 5%
145 820 HIGHWAY 97 RAMPS KNOTT & KNOTT RD	0	0	3	2	6	11	0	0	6	4	1.2	11.2 Top 5%
146 3111 AZURE DR & Hwy 20	0	0	5	0	5	10	0	0	10	0	1	11 Top 5%
147 1979 BUTLER MARKET RD & SB PARKWAY OFFRAMP 136	0	0	1	4	4	9	0	0	2	8	0.8	10.8 Top 5%
148 2011 Hwy 20 & KEARNEY AVE	0	0	2	3	4	9	0	0	4	6	0.8	10.8 Top 5%
149 3435 27TH ST & MARY ROSE PL	0	0	0	5	4	9	0	0	0	10	0.8	10.8 Top 5%
3918 YEOMAN RD & BUTLER MKT RD	0	0	3	2	4	9	0	0	6	4	0.8	10.8 Top 5%
150 3438 27TH ST & TWIN KNOLLS DR	0	0	1	4	3	8	0	0	2	8	0.6	10.6 Top 5%
151 BOND ST & WILSON AVE	0	0	1	4	3	8	0	0	2	8	0.6	10.6 Top 5%
152 3020 ADMIRAL WAY & REED MARKET RD	0	0	1	4	2	7	0	0	2	8	0.4	10.4 Top 5%
153 2015 Hwy 20 & NORTON AV	0	0	4	1	1	6	0	0	8	2	0.2	10.2 Top 5%
154 2145 5TH ST & Hwy 20	0	0	3	2	1	6	0	0	6	4	0.2	10.2 Top 5%
155 1530 FRANKLIN AVE & WALL ST	0	0	1	4	0	5	0	0	2	8	0	10 Top 5%
156 1999 3RD ST & 3RD ST (Business Hwy 97) & DAVIS AVE	0	0	3	2	0	5	0	0	6	4	0	10 Top 5%
157 CENTURY DR & MT. WASHINGTON DR & REED MARKET RD	0	0	2	2	6	10	0	0	4	4	1.2	9.2 Top 5%
158 8TH ST & FRANKLIN AVE	0	0	2	2	6	10	0	0	4	4	1.2	9.2 Top 5%
159 8TH ST & BUTLER MARKET RD	0	0	1	3	5	9	0	0	2	6	1	9 Top 5%
160 15TH ST & WILSON AVE	0	0	3	1	5	9	0	0	6	2	1	9 Top 5%
161 EMPIRE AVE & PURCELL BLVD	0	0	1	3	5	9	0	0	2	6	1	9 Top 5%
162 1511 AWBREY RD & PORTLAND AVE	0	0	0	4	4	8	0	0	0	8	0.8	8.8 Top 5%
163 1985 3RD ST (Business Hwy 97) & ROOSEVELT AVE	0	0	2	2	4	8	0	0	4	4	0.8	8.8 Top 5%
164 2002 3RD ST (Business Hwy 97) & CLAY AVE	0	0	2	2	4	8	0	0	4	4	0.8	8.8 Top 5%
165 2086 4TH ST & OLNEY AVE	0	0	1	3	4	8	0	0	2	6	0.8	8.8 Top 5%
166 3827 BUTLER MARKET RD & HAMBY RD	0	0	3	1	4	8	0	0	6	2	0.8	8.8 Top 5%
167 3348 MEDICAL CENTER DR & NEFF RD	0	0	2	2	3	7	0	0	4	4	0.6	8.6 Top 5%
168 879 BROOKSWOOD BLVD & LODGEPOLE DR	0	0	2	2	3	7	0	0	4	4	0.6	8.6 Top 5%
169 15TH ST & KNOTT RD & TEXAS RD	0	0	2	2	3	7	0	0	4	4	0.6	8.6 Top 5%
170 BUTLER MARKET RD & DESCHUTES MARKET RD	0	0	2	2	3	7	0	0	4	4	0.6	8.6 Top 5%
171 1657 FRANKLIN AVE & LAVA RD	0	0	1	3	2	6	0	0	2	6	0.4	8.4 Top 5%
172 1965 3RD ST (Business Hwy 97) & CLEVELAND AVE	0	0	1	3	1	5	0	0	2	6	0.2	8.2 Top 5%
173 1553 ARIZONA AVE & LAVA RD	0	0	0	4	0	4	0	0	0	8	0	8 Top 5%
174 2226 6TH ST & Hwy 20	0	0	2	2	0	4	0	0	4	4	0	8 Top 5%
175 3007 18TH ST & BRIGHTWATER PL & MORNINGSTAR DR	0	0	1	3	0	4	0	0	2	6	0	8 Top 5%
176 3419 27TH ST & REED MARKET RD	0	0	2	1	7	10	0	0	4	2	1.4	7.4 Top 5%
177 1552 NB PARKWAY ONRAMP POWERS RD & POWERS RD	0	0	0	3	6	9	0	0	0	6	1.2	7.2 Top 5%
178 1810 HILL ST & WILSON AVE	0	0	1	2	6	9	0	0	2	4	1.2	7.2 Top 5%

179 1715_REED MARKET RD & SB PARKWAY OFFRAMP 136	0	0	1	2	5	8	0	0	2	4	1	7 Top 5%
180 2773_EMPIRE AVE & HIGH DESERT LN	0	0	1	2	5	8	0	0	2	4	1	7 Top 5%
181 CENTURY DR & CHANDLER AVE & COLORADO AVE	0	0	0	3	5	8	0	0	0	6	1	7 Top 5%
182 BROOKSWOOD BLVD & LARKWOOD DR & MURPHY RD	0	0	0	3	5	8	0	0	0	6	1	7 Top 5%
183 1610_BROOKS ST & NEWPORT AVE	0	0	1	2	4	7	0	0	2	4	0.8	6.8 Top 5%
184 1968_3RD ST (Business Hwy 97) & YEW LN	0	0	2	1	4	7	0	0	4	2	0.8	6.8 Top 5%
185 SKYLINE RANCH RD & SKYLINERS RD	0	0	1	2	4	7	0	0	2	4	0.8	6.8 Top 5%
186 11TH ST & NEWPORT AVE	0	0	2	1	4	7	0	0	4	2	0.8	6.8 Top 5%
187 BOND ST & BROOKSWOOD BLVD & REED MARKET RD	0	0	1	2	4	7	0	0	2	4	0.8	6.8 Top 5%
188 1494_LOUISIANA AVE & WALL ST	0	0	1	2	3	6	0	0	2	4	0.6	6.6 Top 5%
189 1554_COLORADO AVE & LAVA RD	0	0	0	3	3	6	0	0	0	6	0.6	6.6 Top 5%
190 1927_Hwy 20 & SB PARKWAY ONRAMP 136 & DIVISION ST	0	0	3	0	3	6	0	0	6	0	0.6	6.6 Top 5%
191 1997_3RD ST (Business Hwy 97) & WOODLAND BLVD	0	0	3	0	3	6	0	0	6	0	0.6	6.6 Top 5%
192 2001_3RD ST (Business Hwy 97) & BURNSIDE AVE	0	0	1	2	3	6	0	0	2	4	0.6	6.6 Top 5%
193 2005_3RD ST (Business Hwy 97) & EMERSON AVE	0	0	1	2	3	6	0	0	2	4	0.6	6.6 Top 5%
194 3816_STEVENS RD & WARD RD	0	0	2	1	3	6	0	0	4	2	0.6	6.6 Top 5%



Attachment B: Top 5% Segments

Roadway	Extents	Fatal/Serious	Minor/Possible	PDO	Total	Length	Crash Severity	Rank	Rank
		Injury Crashes	Injury Crashes	Crashes	Crashes	(miles)	Score Range		
US 20 / US 97 Business	Empire Avenue to 300 feet north of NW Clausen Road (MP 133.85 to 135.46)1	5	71	57	133	1.61	115.2 - 58.6	1	Top 1%
NE 3rd Street / US 97 Busine	SW Pinebrook Boulevard to SE Wilson Avenue (MP 1.09 to MP 2.84)	5	49	37	91	1.75	112.8 - 38.6	2	Top 1%
US 20 / NE 3rd St	475 feet north of Empire Avenue to 300 feet north of railroad overcrossing, near NE Webster Ave (MP 18.75 t	4	31	17	52	1.15	98.2 - 41.2	3	Top 1%
US 97	150 feet north of NE Butler Market Road to 400 feet south of NE Empire Avenue (MP 135.54 to MP 136.30)	3	10	16	29	0.76	78.4 - 54.0	4	Top 1%
US 20	150 feet north of NE Norton Avenue to NE 8th Street (McKenzie-Bend Hwy No. 017 MP 20.70 to MP 20.99 to)	2	13	22	37	0.43	65.0 - 61.2	5	Top 1%
SE 27th Street	975 feet south of Diamond Back Lane to 400 feet south of Wilderness Way (MP 0.50 to MP 1.26)	3	3	1	7	0.76	64.2 - 46.2	6	Top 1%
US 97	415 feet north of Fort Thompson Lane to 470 feet south of NW Clausen Drive (MP 132.74 to MP 133.99)	3	20	21	44	1.25	57.8 - 42.2	7	Top 1%
NE Franklin Avenue	NE 1st Street to NE 7th Street (MP 0.58 to MP 1.09)	2	7	8	17	0.51	55.6	8	Top 1%
US 97	130 feet south of NE Scott Street to 260 feet north of SW Reed Market Road (MP 138.29 to MP 139.04)	3	8	3	14	0.75	50.6 - 48.6	9	Top 1%
NW Mount Washington Drive	NW Wild Rye Circle to 700 feet west of NW Yosemite Drive (MP 1.84 to MP 2.35)	2	3	6	11	0.51	47.2	10	Top 1%
SE Reed Market Road	70 feet west of SE 5th Street to SE 15th Street (MP 0.41 to MP 1.12)	1	16	16	33	0.71	44.2 - 42.6	11	Top 1%
US 20	1065 feet east of NE Dalton Street to 235 feet east of Hamby Road (MP 3.00 to MP 3.76)	3	2	1	6	0.76	44.2 - 44.0	12	Top 1%
SW Century Drive	135 feet east of Seventh Mountain Resort Road to NFD Road 41 (MP 7.10 to MP 7.59)	2	1	2	5	0.49	42.4	13	Top 1%
NE 3rd Street / US 97 Busine	NE 3rd Street / US 97 Business Off Ramp Exit to US 97 NB On Ramp (MP 19.96 to MP 20.30)	2	1	0	3	0.34	42	14	Top 1%
US 97	770 feet north of Reed Lane to Powers Road SB Off Ramp Interchange (MP 139.54 to MP 140.04)	1	12	11	24	0.50	41.6	15	Top 1%
SE Wilson Avenue	85 feet west of SW Hill Street to 40 feet east of SE 5th Street (MP 0.10 to MP 0.60)	1	10	6	17	0.50	41.2	16	Top 1%
US 20/3rd St/Greenwood	4th St to 1,650ft west of Hamby	2	25	32	59	2.50	38.0-10.8	17	Top 5%
US 97/Parkway	990 ft north of Wilson to SB ramp at Butler Market	5	24	44	73	2.50	36.0-7.0	18	Top 5%
US 97/Parkway	3rd St Interchange to 320 ft south of Wilson	4	43	52	99	2.50	34.0-6.6	19	Top 5%
US 97/Parkway	760 ft south of Cooley Rd to 690 ft south of Suzanne Ln (MP 134.4-133.25)	3	10	11	24	1.00	33.6-24.6	20	Top 5%
Baker Rd	Brookwood Blvd to US 97	1	7	7	15	0.76	33.4-24.4	21	Top 5%
Powers Rd	west of Stardrift Dr to Parrell Rd	1	6	4	11	0.75	32.8-8.2	22	Top 5%
Hamby Rd	Butler Market Rd to Yeoman Rd	1	6	2	9	0.50	32.4	23	Top 5%
US 20/3rd St/Greenwood	Nels Anderson Rd to Bend Fire Training	1	6	3	10	0.75	32.4-20.6	24	Top 5%
27th St	Chilliwack Way to Nathan Dr	2	29	20	51	2.50	32.0-16.6	25	Top 5%
Revere Ave	Harriman St to 7th St	1	5	8	14	0.75	31.6-30.8	26	Top 5%
US 97/Parkway	Suzanne Ln to north MPO boundary (MP 133-132.2)	1	7	9	17	0.82	30.6-29.0	27	Top 5%
Mt. Washington Dr	680 ft west of Starview Dr to 170 ft west of Denali Ln	2	3	6	11	1.00	27.0-20.2	28	Top 5%
Empire Ave	OB Riley Rd to 200 ft east of Layton Ave	0	17	11	28	1.00	26.8-9.2	29	Top 5%
Knott Rd	US 97 to Bend City Limits	1	3	3	7	0.74	26.6-24.2	30	Top 5%
Shevlin Park Rd	Johnson Rd to 950 ft west of Park Commons Dr	1	3	2	6	0.76	26.4-26.2	31	Top 5%
3rd St	Railroad undercrossing to Greenwood	0	12	11	23	0.59	26.0-19.6	32	Top 5%
Portland Ave	College Way to 9th St	1	2	4	7	0.75	24.8-24.2	33	Top 5%
Arizona Ave	Colorado Ave to Colorado Ave	1	2	3	6	0.49	24.6	34	Top 5%
Simpson Ave	west of 15th St to Shevlin Hixon Dr	1	2	3	6	0.75	24.6-24.4	35	Top 5%
Century Dr	west of Seventh Mt Dr to east of Seventh Mt Dr	2	2	5	9	1.00	24.6-20.4	36	Top 5%
Forum Dr		1	2	2	5	0.38	24.4	37	Top 5%
Hamby Rd	780 ft south of Quail Ridge Rd (north) to 500 ft north of Paloma Dr	1	2	2	5	0.75	24.4-22.0	38	Top 5%
Wilson Ave	Bluff Dr to 8th St	1	10	8	19	1.00	24.4-17.2	39	Top 5%
27th St	Ferguson Rd to Sevens Ranch Rd	1	2	0	3	0.75	24.0-22.0	40	Top 5%
Century Dr	east of Meadow Campground Rd to west of Skyline Ranch Rd	1	2	0	3	0.75	24.0-22.0	41	Top 5%
Reed Market Rd	Chamberlain St to west of Paiute Way	0	17	30	47	1.00	22.8-19.8	42	Top 5%
Navajo Rd	Hopi Rd to Cinder Butte Rd	1	1	1	3	0.50	22.2	43	Top 5%
Boyd Acres	Warner Pl to 230 ft north of Empire	1	1	2	4	0.75	22.2-20.4	44	Top 5%
Wells Acres Rd	Butler Market Rd to Pecoraro Lp	2	1	4	7	0.13	22.2-20.2	45	Top 5%
US 20/3rd St/Greenwood	Kearney Ave to Division St	1	8	24	33	1.25	22.0-13.4	46	Top 5%
Butler Market Rd	US 20 to Broken Bow Dr	0	17	16	33	1.00	21.2-16.0	47	Top 5%
China Hat Rd	Mountain High Dr to north of Sunset View Dr	1	0	2	3	0.75	20.4	48	Top 5%
Boyd Acres	Shaniko Rd to Wandalea Dr	1	0	1	2	0.75	20.2	49	Top 5%
27th St	Diamondback Ln to Diamondback Ln	1	0	1	2	0.50	20.2	50	Top 5%
Glenwood Dr	5th St to 9th St	1	0	1	2	0.29	20.2	51	Top 5%
15th St	Murphy Rd to south of West View Dr	1	0	1	2	0.75	20.2-20.0	52	Top 5%
US 97/Parkway	Knott Rd Interchange	1	3	8	12	0.61	20.2-7.0	53	Top 5%
US 20/3rd St/Greenwood	420 ft west of Hamby to 2,040 ft east of Hamby	1	0	0	1	0.50	20	54	Top 5%
OB Riley Rd	Riverstone Dr to 1,250 ft north of US 20	1	0	0	1	0.76	20	55	Top 5%
NW Fawn Run Ln		1	0	0	1	0.14	20	56	Top 5%
Pilot Butte Access Rd		1	0	0	1	0.50	20	57	Top 5%
Ward Rd	Stevens Ranch Rd to Ward Rd	1	0	0	1	0.56	20	58	Top 5%
Chuckanut Dr	Targee Dr to Springcrest Dr	1	0	0	1	0.53	20	59	Top 5%
Cheyenne Rd	north of horizontal curve to Cherokee Rd	1	0	0	1	0.75	20	60	Top 5%
Portland Ave	5th St to Wall St	0	8	5	13	0.52	17	61	Top 5%
Reed Market Rd	At-grade RR crossing to west of Admiral Way	0	8	4	12	0.50	14.8	62	Top 5%
Purcelle Blvd	Bear Creek Rd to 560 ft north of Holiday Ave	0	9	15	24	1.59	14.0-6.6	63	Top 5%
US 97/Parkway	South end of MPO boundary	0	8	6	14	0.75	13.2-13.0	64	Top 5%
Neff Rd	east of Lee Haven Ln to east of 27th St	0	8	7	15	0.75	12.8-10.6	65	Top 5%
3rd St	south of Murphy Rd to north of Badger Rd	0	6	3	9	0.50	12.6	66	Top 5%
3rd St	Woodland Blvd to Cleveland Ave	0	5	9	14	0.50	11.8	67	Top 5%
US 97/Parkway	590 ft south of Empire to 270 ft north of Empire	0	9	8	17	0.50	11.2	68	Top 5%
Division St	3rd St to Parkway	0	5	0	5	0.25	10	69	Top 5%
Bond St	north of Idaho ave to Wall St	0	4	9	13	0.50	9.8	70	Top 5%
Wall St	South of Idaho Ave to Portland Ave	0	5	6	11	0.75	9.2-8.6	71	Top 5%
Franklin Ave	Broadway St to 1st St	0	5	6	11	0.58	9.0-8.6	72	Top 5%
Knott Rd	east of Raintree Dr to Rickard Rd	0	4	1	5	0.51	8.2	73	Top 5%
Greenwood Ave	Wall St to 3rd St	0	3	9	12	0.51	7.8	74	Top 5%



Attachment C: 2019 TSAP Non-Infrastructure Actions



Table 9. 2019 Bend TSAP General Safety Culture and Educational Action Items

Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A1	Create and implement a Regional Multidisciplinary Transportation Safety Committee to coordinate on transportation safety and implement the Action Items identified in the TSAP. This forum is critical to gathering the supporting agencies to address the multidisciplinary actions identified in the TSAP. Other representatives from various outreach or advocacy groups will also be helpful to help with outreach. City staff participation from various departments such as police, streets, capital projects, engineering, and community development will help promote coordination across departments and the share of resources and data to coordinate transportation safety efforts. Regular meetings should occur at which the committee share data/resources, implements the Deschutes County and Bend Area TSAP Action Items, and identifies new actions needed based on more recent crash history.	Safety Culture	ODOT or City of Bend	Deschutes County, City of Bend, Bend MPO, Redmond, Sisters, La Pine, Police, Sheriff, District Attorney's office, Emergency Services, OLCC, Department of Public Health	\$\$\$	1) Regional transportation safety committee (Central Oregon Safe Travels) formed. Initially coordinated by BMPO and now coordinated by COIC. Focused on regional safety messaging, coordinating multi-agency policing initiatives, and focused outreach. ODOT grant funding expires September 30, 2026, and was not renewed for FFY27. COST workgroup discussing opportunities to coordinate COST activities after September 30, 2026. City of Bend formed internal transportation safety communications team with goal of having City-focused transportation safety messaging in summer 2027.
A2	Create a staff position to lead the Regional Transportation Safety Committee and lead implementation of the Action Items in the TSAP. Staff may be part of Deschutes County or ODOT to better serve the full region. Seek funding for this position. ODOT Safety Division may have funding for first 2 years, local agencies may need to assist with funding after that.	Safety Culture	ODOT, Deschutes County	City of Bend, Bend MPO	\$\$	See information under Action A1.
A3	Create a Bend Area Safety Communications Plan, including an education and public outreach system, that promotes a roadway safety culture that emphasizes attentive driving, sober driving, calm driving, driving at appropriate speeds, and awareness of individual impact on roadway safety. This should be a comprehensive and ongoing program that follows national as well as local messaging.	Safety Culture	Bend MPO, City of Bend	Deschutes County, ODOT	\$\$	City of Bend formed internal transportation safety communications team with goal of having City-focused messaging in summer 2027.
A4	Develop a Safety Communications Calendar that provides monthly messages to emphasize in Bend. Develop a plan for recurring educational events throughout the year(s). Provide educational programs at community events.	Safety Culture	Bend MPO, City of Bend	Deschutes County, ODOT	\$\$	Instead of a monthly messaging campaign, COIC and the City of Bend are focusing messaging on a limited number of safety issues for longer durations. COIC is leading regional safety messaging. The City will launch safety messaging in spring 2027.
A5	Coordinate with the Bend Neighborhood (Associations) Leadership Alliance to provide outreach and additional funding for safety messaging.	Safety Culture	Bend MPO, City of Bend	Bend Neighborhood Leadership Alliance	\$\$	Not started.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A6	Provide educational materials to visitors through partnerships with Visit Bend and local hotels/resorts.	Safety Culture	Bend MPO, City of Bend	Visit Bend	\$\$	COIC is working with Old Mill/Hayden Homes Amphitheater on DUII messaging for 2026 concert season. City of Bend 2027 safety campaign may include coordination with Visit Bend, restaurants and hotels.
A7	Provide educational materials to residents through partnerships with major employers and schools.	Safety Culture	Bend MPO, City of Bend	Major Employers and Schools	\$\$	Not started.
A8	Develop and maintain policies to support the actions identified in the TSAP and to better incorporate safety into long-range planning and the project development process.	Safety Culture	Bend MPO, City of Bend		\$	Safety was a significant focus of 2020 GO Bond program, City of Bend CIP, and ODOT STIP. Multiple roundabouts have been constructed at high crash intersections. Two protected intersections have been constructed. Protected bicycle lanes have been constructed. Turn movement restrictions have been implemented at some intersections. Temporary traffic diverters have been installed on some residential streets to reduce vehicle speeds and cut-through traffic. The City and ODOT have installed protected crossings at many locations.
A9	Increase enforcement during highest risk times, based on the reported crash data patterns. Quarterly with time of day/day of week/changing trends to traffic team.	Safety Culture, Enforcement	Police, Oregon State Police	Bend MPO, City of Bend	\$\$	Central Oregon Multi-Agency Traffic Team (MATT) established to prevent fatal and serious injury crashes. MATT includes representatives from Bend, Redmond, Sunriver, Black Butte Ranch, Deschutes County and Oregon State Police. MATT uses grant funding for targeted enforcement (e.g., seat belts, DUII, speeding). The City of Bend has two officers dedicated to DUII enforcement. The City of Bend installed speeding and red-light running cameras at 3 high crash intersections in 2026. Additional signals may be added to the network in the future.
A10	Evaluate options for a pilot study for automated enforcement of speeding and red-light running in key locations.	Safety Culture, Enforcement, Aggressive Driving	Police, Oregon State Police	City of Bend, Deschutes County, ODOT	\$	City of Bend and City of Redmond launched automated enforcement pilot projects in 2026. Additional information listed under A9.
A11	Provide bystander training courses to the public to educate residents how to respond in an emergency event.	Emergency Response	Police, EMS, Hospitals		\$\$	City of Bend Fire Department provides monthly “stop the bleed” and CPR trainings.
A12	Reduce (optimize) response time to crashes. Work with the EMS Council and Oregon Area Trauma Advisory Board to complete this.	Emergency Response	EMS, Police, Oregon State Police		\$	The Oregon Office of Emergency Management is modernizing the state’s 911 emergency systems in 2026 and 2027. The City of Bend uses several software systems to optimize response times and on-scene response including: ProQA/Medical Priority Dispatch System, Live911, SPIDR Tech, and PulsePoint Respond.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A13	Develop a speed management program that would work to implement best practices in setting design speeds and speed limits, including implementing risk-based speed limits. The program may include components such as street design standards to promote lower speeds, a funded program for response to speed concerns submitted by citizens, and an expanded program for deployment of radar speed feedback signs and sharing of data with the police department, County, City staff, and the public.	Safety Culture, Aggressive Driving	City of Bend	Various departments within City of Bend, Police	\$\$	The City of Bend updated its road design standards in 2021 and is updating the standards in 2026. The updates include complete streets concepts and standards for low stress routes. The City implemented the Neighborhood Street Safety Program and worked with Neighborhood Associations to identify safety projects throughout Bend. The City has speed radar feedback signs and moves the signs around the City. The City has a "Bend Works" website and app where residents can log issues and concerns. City staff categorize and respond to the issues.
A14	Encourage employers and families to institute policies related to driving safely, including attentive driving, by sharing the National Safety Council's sample contract in its Distracted Driving Toolkit.	Safety Culture, Distracted Driving	City of Bend, Bend MPO	Employers	\$	Not started.
A15	Educate youth and adults on the importance of paying attention when using the transportation system.	Safety Culture, Distracted Driving	City of Bend, Bend MPO		\$	Commute Options created the Safe Driver Program. Commute Options coordinates bicycling and walking education and outreach in elementary and middle schools. Commute Options and the City of Bend created recommended walking and rolling route maps to many elementary and middle schools.
A16	Partner with other agencies such as Deschutes County to implement an unmarked car distracted driving program to increase compliance with distracted driving rules. Consider grants to do this.	Safety Culture, Distracted Driving, Enforcement	Police, Oregon State Police		\$\$	Not started.
A17	Work with alcohol/marijuana retailers/servers to encourage compliance checks to deter underage sales and over serving and to promote Oregon Liquor Control Commission's Responsible Vendor Program.	Impaired Driving	OLCC		\$	OLCC actively leads enforcement and outreach efforts statewide.
A18	Develop an educational campaign to promote sober driving. Provide educational posters, social media posts, and public service announcements to inform the public about the dangers of impaired driving, including alcohol and drugs. Work in schools to educate students on the consequences of impaired driving. Emphasize that driving while or after using marijuana is impaired driving.	Safety Culture, Impaired Driving	Bend MPO, City of Bend		\$	BMPO funded DUII awareness TV and radio commercials in 2024. Sober bicycle posters and drink coasters were created and distributed in 2022. No recent activities.
A19	Increase Driving Under the Influence and impaired driving enforcement through data-driven saturation patrols and provide officers with Drug Recognition Expert Training and standardized field sobriety tests training.	Impaired Driving, Enforcement	Police, Sheriff, Oregon State Police		\$\$	The City of Bend Police Department has two officers dedicated to DUII enforcement. Central Oregon MATT (section A9) coordinates DUII enhanced DUII enforcement throughout Central Oregon



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A20	Partner with Deschutes County to support the Shared Future Coalition and increase education about the consequences of impaired driving (alcohol and drugs). Education should emphasize the effects of marijuana on the body to help drivers understand that driving while or after using marijuana is impaired driving. Grow partnerships and support existing efforts to reduce underage drinking, underage marijuana use, and drug use through funding, educational outreach, and coalition membership. Partner with substance abuse treatment programs.	Safety Culture, Impaired Driving	Deschutes County		\$\$	The Shared Future Coalition is active and provides messaging and outreach on youth impaired driving.
A21	Develop repeat DUI driver offender programs focused on treating the causes of DUI.	Impaired Driving	Deschutes County (Shared Future Coalition)		\$	Not started.
A22	Formalize rideshare locations in the downtown area and near locations with multiple restaurants, bars, and pubs to encourage greater use of cabs and rideshare options.	Safety Culture, Impaired Driving	Bend MPO, City of Bend	Downtown Bend, Restaurants and Bars, Cab and Rideshare companies	\$\$	There are no formalized locations. The City of Bend encourages users to meet drivers in designated 15-minute loading zones or at the Troy Field Mobility Hub.
A23	Coordinate with local bars, businesses, and rideshare companies to develop and offer a program that provides users with a discount for taking a cab or rideshare to or from drinking establishments.	Safety Culture, Impaired Driving	Bend MPO, City of Bend	Downtown Bend, Old Mill, Visit Bend, Chamber of Commerce, Restaurants and Bars, Cab and Rideshare companies	\$	Not started.
A24	Coordinate with area business groups and event promoters to develop and offer a program that provides users with a discount for taking a cab or rideshare to or from special events (such as Bite of Bend, Summerfest, etc.).	Safety Culture, Impaired Driving	Bend MPO, City of Bend	Downtown Bend, Old Mill, Visit Bend, Chamber of Commerce, Restaurants and Bars, Cab and Rideshare companies	\$	Targeted outreach about safe options will occur at Hayden Homes Amphitheater for the 2026 concert season. No other significant progress.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A25	Conduct targeted outreach using various means, relationships, and venues to encourage a change in safety culture to convince motorcyclists to enact safe riding practices. Work with motorcycle shops to educate riders about the behaviors associated with higher risk such as discouraging group rides. Provide educational posters, social media posts, and educational placards to inform motorcyclists of the consequences of crashes and promote safe riding practices, safety equipment, gear choice (full face helmets, full gloves, appropriate jackets and pants, boots, etc. and All the Gear All the Time (ATGATT)), the importance of not riding impaired, and motorcycle handling skills and maintenance.	Safety Culture, Motorcycles	City of Bend, ODOT	Motorcycle shops and groups.	\$	Not started.
A26	Encourage more education programs for riders who have taken a break from riding and more ongoing training. Work with motorcycle retailers to encourage education for new riders and encourage training to continue after receiving their endorsement.	Safety Culture, Motorcycles	City of Bend, ODOT	Motorcycle shops and groups.	\$	Not started.
A27	Continue to support partnership with Commute Options and the Deschutes County Bicycle and Pedestrian Advisory Committee (BPAC).	Safety Culture, Pedestrians / Bicyclists	City of Bend, Bend MPO		\$	BMPO has provided grant funding to Commute Options for bicycling and walking education in public schools. BMPO provided a small grant to BPAC for its annual conference.
A28	Continue to provide local educational programs at schools and other venues (safety fairs, community events, etc.) for both students and parents, including: educate parents about traffic safety, including safe parking locations when lining up for school pick-up; educate students and parents on safe pedestrian and bicycle practices including safe crossing practices and not playing behind vehicles or near streets; educate about the importance of adult supervision; provide educational materials for students to share with parents about the risks associated with distracted driving, including distracted pedestrians; educate students and adults on the importance of gear, lighting, and conspicuity; educate students and adults on the appropriate directions (with/against traffic) for riding and walking; educate adults on the importance of not riding/walking while impaired.	Safety Culture, Pedestrians / Bicyclists	Commute Options		\$\$	Commute Options continues to provide bicycle and pedestrian education in elementary and middle schools in Bend. Commute Options developed the Safe Driver program. In the past Commute Options also provided bicycle and pedestrian safety classes for adults.
A29	Collaborate with the Department of Public Health to work on active transportation, safe routes to school, health impact assessments, and rural access to health care. Include transportation safety in public health education programming.	Safety Culture	Deschutes County Health Department		\$	Commute Options and the City of Bend have mapped walking and biking routes to many public schools. Commute Options leads bicycle and walking training in elementary and middle schools. Deschutes County Public Health has had various campaigns related to cannabis use, alcohol use, and illegal drug use. These are broad campaigns.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A30	Create Bend Area Safe Routes to School program.	Pedestrians / Bicyclists	Bend MPO, City of Bend	Commute Options	\$\$	See notes under A29 related to Safe Routes to Schools. The City of Bend is building safe routes infrastructure, including protected crossings, sidewalks, trails, and protected bike lanes.
A31	Continue the "Friendly Driver" program for truck drivers and expand it beyond truck drivers to include drivers associated with businesses and business activities. This program currently educates truck drivers on how to operate in the presence of people walking and biking. Offer incentive programs to encourage businesses to expand this program beyond truck drivers.	Safety Culture; Pedestrians/ Bicyclists	Commute Options	Local Businesses	\$\$	Commute Options developed the Safe Driver Program. It is now used statewide. The program was expanded to include all drivers, not just truck drivers.
A32	Evaluate where opportunities exist for new educational and promotional programs for pedestrians and bicyclists over time.	Safety Culture; Pedestrians/ Bicyclists	Commute Options	Bend MPO, City of Bend	\$	The City of Bend and Commute Options have partnered to develop safety messaging for e-bikes.
A33	Conduct adult pedestrian and bicycle outreach, such as safe crossing practices and new pedestrian/bicycle infrastructure education.	Safety Culture; Pedestrians/ Bicyclists	Commute Options	Bend MPO, City of Bend	\$	In the past, Commute Options led bicycle and pedestrian safety classes for adults. The City of Bend will be conducting outreach in 2026 and 2027 for new bike and pedestrian infrastructure (e.g., diverters, protected lanes).
A34	Educate drivers and bicyclists about bicycle transportation, including proper driver and bicyclist behavior and rules of the road for bicyclists, when to dismount, how to use sidewalks and crosswalks, how to ride through roundabouts, common crash types, etc.	Safety Culture; Pedestrians/ Bicyclists	Bend MPO, City of Bend	Commute Options	\$	See notes under A31, A32 and A33.
A35	Coordinate with BPAC to reintroduce placards with rules for bicyclists, pedestrians, and motor vehicle drivers.	Safety Culture; Pedestrians/ Bicyclists	BPAC		\$	This program was discontinued.
A36	Design roadways integrating pedestrian and bicyclist safety considerations by providing appropriate pedestrian and bicyclist infrastructure, encouraging slower motor vehicle speeds, and minimizing conflict points between pedestrians, bicyclists, and motorists. Treatments may include: Sidewalks, pathways, and other walkways separating pedestrians from motor vehicles along roadways; Enhanced roadway crossings; Shared lane markings, wayfinding, traffic calming for lower speed and volume roadways, and enhanced striping (striping, buffers, rumble strips) to facilitate striping durability on higher volume roadways; Increasing physical separation between people biking and motor vehicles as motor vehicle volumes and speeds increase, including physical barriers at higher speeds and volumes.	Pedestrians/ Bicyclists	City of Bend; ODOT	Deschutes County	\$\$	The City of Bend updated its road design standards in 2021 and is updating the standards in 2026. The updates include complete streets concepts and standards for low stress routes.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A37	Continue the neighborhood greenways program to implement the identified major corridors to encourage walking and biking and implement a low stress bicycle network.	Pedestrians/ Bicyclists	City of Bend; Bend MPO	Bend Park and Recreation District	\$\$	The City of Bend constructed improvements on neighborhood greenways, is building the low stress network, and has constructed protected bike lanes, protected crossings and protected intersections. ODOT has constructed protected crossings on US20.
A38	Develop and promote a wayfinding system to educate bicyclists about the network and encourage use of lower stress routes instead of higher stress routes.	Pedestrians/ Bicyclists	City of Bend; Bend MPO	ODOT, Deschutes County, Visit Bend, Chamber of Commerce	\$\$	The City of Bend is installing bicycle and pedestrian wayfinding signs on key corridors in 2026. Additional signage may be installed in the future.
A39	Develop a plan for closing gaps in the sidewalk system and providing appropriate designed crossings to work towards a long-term goal of completing the sidewalk system throughout the City.	Pedestrians/ Bicyclists	City of Bend	ODOT, Deschutes County; Neighborhood Leadership Alliance	\$\$\$	The City of Bend completed the Pedestrian Implementation Plan in 2023. It does not cover the entire city but is focused on key areas and routes. The Plan geography may be expanded in the future.
A40	Review procedures for maintaining bike lane markings to consider other treatments such as rumble strips or buffers where striping is commonly worn down by vehicles encroaching on the bike lane.	Pedestrians/ Bicyclists	City of Bend; ODOT		\$	The City of Bend is installing protected bicycle lanes and protected intersections on key corridors.
A41	Encourage conversations and expand a safety culture about safe driving between families of senior drivers, health care professionals, and community groups such as churches, meals on wheels, etc. Since seniors are more likely to be taking medications, teach people about the impact of medicines on their ability to think clearly and react quickly.	Safety Culture; Senior Drivers	Health Care Professionals and Community Groups	Bend Park and Recreation District	\$	AARP regularly holds Smart Driver classroom courses at the Larkspur Community Center. AARP also offers the Smart Driver on-line course.
A42	Support training sessions through AARP, AAA, and insurance companies to help seniors maintain driving skills.	Senior Drivers	AAA, AARP, Insurance Companies		\$	See A41.
A43	Provide transportation options through infrastructure that allows for transit, walking, and other forms of transportation. Partner with transportation assistance programs to promote non-driving options for seniors.	Senior Drivers	COIC, CET, City of Bend, ODOT		\$\$	CET provides paratransit services for people over age 60. Services are provided 7 days a week.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A44	Support driver education programs and safety education for younger drivers. Support peer-based safe driving marketing efforts and outreach programs in high schools to provide driver and non-motorized travel safety education. Support family-based driver education to leverage parental influence.	Safety Culture; Young Drivers	ODOT, Commute Options	Insurance Companies; Bend Park and Recreation District	\$	The High Desert ESD coordinates driver education programs throughout Central Oregon. A private business also provides drivers education courses.
A45	Begin safety education before young people reach driving age, as early as preschool. Partner with groups such as Safety Towns and school districts.	Safety Culture; Young Drivers	Commute Options, Safety Towns, School District	Bend Park and Recreation District	\$	See A45.
A46	Seasonally educate drivers about proper driving behavior and vehicle preparations for winter conditions.	Safety Culture; Winter Driving	ODOT, City of Bend	Deschutes County		Future City of Bend transportation safety messaging may include pre-winter messaging.
A47	Integrate technology advancements to improve transportation safety.	Technology	City of Bend, Bend MPO	ODOT, Deschutes County	\$\$	The City of Bend is building a robust transportation data system. The City is seeking grant funding to purchase equipment for counting and to assess near-miss activity. The City installed new bicycle and pedestrian detection technology at the Portland/Olney/Wall intersection.
A48	Continue to monitor technology enhancements to reduce severe crashes at traffic signals.	Technology	City of Bend, Bend MPO	ODOT, Deschutes County	\$	The City of Bend and ODOT have upgraded traffic signal control systems over the past few years. The City of Bend installed speeding and red-light running cameras at a few high crash intersections. This program may be expanded to additional intersections in the future.
A49	Evaluate options to use traffic volume, near-misses, and other data to understand where perceived safety issues may exist	Technology	City of Bend, Bend MPO	ODOT, Deschutes County	\$\$	See A47.
A50	Evaluate the ability to use crowdsourcing technology to identify risks and locations for additional assessment	Technology	City of Bend, Bend MPO	ODOT, Deschutes County	\$\$	The City of Bend "Bend Works" website and app allow users to identify potential safety issues. The 2026 Bend TSAP update included an online mapping tool to allow residents to identify potential safety issues.
A51	Evaluate opportunities or pilot studies to use lidar, radar, and/or photo enforcement	Technology	City of Bend, Bend MPO, Police	ODOT, Deschutes County	\$\$	See A10.
A52	Implement the Annual Update Procedure, summarized in Section 8 of the TSAP.	Monitoring	City of Bend, Bend MPO		\$	Not started. In the future, the City of Bend and BMPO will strive for minor updates every 2-3 years and major update every 5 years.



Action Item	Description	Emphasis Area(s)	Lead Agency or Partner	Supporting Agencies	Funding Need	2026 Status
A53	Coordinate with Bend Park and Recreation District to evaluate the standardizing of pavement markings and signage where trails cross roadways.	Pedestrians/ Bicyclists	City of Bend; Bend Park and Recreation District		\$	The City of Bend is updating its street design standards in 2026. The City and BPRD have a trail maintenance agreement that addresses trail/road crossings. The City and BPRD have worked to improve trail/road crossings at several locations.
A54	Pursue Safe Route to Parks program grant to help underserved community members access parks, trails, and recreation.	Pedestrians/ Bicyclists	Commute Options; Bend Park and Recreation District		\$	The City of Bend and BPRD are expanding "Key Routes"—off-street paths and traffic-calmed corridors designed for low-stress, safe walking and cycling to key destinations, including parks.
A55	Report matter-of-fact crash statistics in a manner meant to inform potential riders of the risks associated with choosing the motorcycle as a mode of transportation.	Safety Culture; Motorcycles	ODOT; City of Bend; Bend MPO; Deschutes County		\$	Not started.



Table 10. 2019 TSAP Initial Implementation Activities Tracking

TSAP Section	TSAP Implementation Activity	Implementation Objective	2026 Status
1.5 Plan Development Process	1. Establish a TSAP governance structure, which could include an executive committee, Emphasis Area (“E”)-level committees, etc.	A TSAP governance document detailing structure and actions of safety-focused teams and individual roles.	Development of formal structure not started.
2.3 Emphasis Areas	2. Develop an approach to each Emphasis Area (e.g., identify a champion, establish an emphasis area team, etc.)	Number of Emphasis Areas with a documented implementation approach.	<p>No defined process has been established, but emphasis areas are being addressed in several ways.</p> <ol style="list-style-type: none"> 1) The Bend Police Dept (PD) has two dedicated DUII enforcement officers. 2) The City has installed speeding and red-light running cameras at 3 intersections. Additional intersections may be added in the future. 3) Central Oregon Multi-Agency Traffic Team (MATT) established to prevent fatal and serious injury crashes. MATT includes representatives from Bend, Redmond, Sunriver, Blak Butte Ranch, Deschutes County and Oregon State Police. MATT uses grant funding for targeted enforcement (e.g., seat belts, DUII, speeding). 4) City of Bend CIP and GO Bond projects include protected crossings, roundabouts, protected bike lanes, protected intersections, and neighborhood street safety projects. 5) City of Bend and ODOT have used ARTS funding for low-cost systemic improvements (e.g., reflective backer plates on signal heads). 6) City of Bend has received grant funding for safe routes to schools projects and other multi-modal projects. 7) ODOT has funded multiple projects that include significant safety components (e.g., roundabouts on US20, US97 North Corridor). 8) Regional transportation safety committee (Central Oregon Safe Travels) formed. Initially coordinated by BMPO and now coordinated by COIC. Focused on regional safety messaging, coordinating multi-agency policing initiatives, and focused outreach. 9) The City of Bend updated its road design standards in 2021 and is updating the standards in 2026. The updates include complete streets concepts and standards for low stress routes. 10) Commute Options created the Safe Driver Program. 11) Commute Options coordinates bicycling and walking education and outreach in elementary and middle schools. 12) Commute Options and the City of Bend created recommended walking and rolling route maps to many elementary and middle schools.
2.3 Emphasis Areas	3. Prioritize the Emphasis Areas based on need, funding, and staff capacity, and develop an implementation plan to consider each area in safety planning.	Prioritized list of Emphasis Areas	Development of implementation plan not started.



TSAP Section	TSAP Implementation Activity	Implementation Objective	2026 Status
2.3 Emphasis Areas	4. For each Emphasis Area: Prioritize sub-areas by need and feasible systemic and hot spot countermeasures (Section 4 and 6 of the TSAP)	Prioritized list of sub-areas for each Emphasis Area	Development of prioritization process not started.
2.3 Emphasis Areas	5. For each Emphasis Area (will vary by EA): Develop a strategic plan for meeting as a team, identifying needs, conducting activities to meet those needs, and track progress	Emphasis Area Team strategic plans (as applicable)	Development of strategic plans not started.
2.3 Emphasis Areas	6. For each Emphasis Area (will vary by EA): Identify safety stakeholders, including those not directly involved in the TSAP development, for collaboration opportunities.	Number of partners and collaborative meetings/events with them (as applicable)	No formal progress but collaboration occurs with partners for specific CIP projects and other transportation system improvements.
6. Systemic Solutions	7. Revise City of Bend standard drawings and specifications to incorporate proven safety countermeasures into future arterials roadway designs.	Number of safety countermeasures added to standard plan	The City of Bend updated its road design standards in 2021 and is updating the standards in 2026. The updates include complete streets concepts and standards for low stress routes.
3.1 Transportation Safety Effectiveness Performance Measures	8. Maintain a data warehouse of installed safety treatments to support before-after safety calculations and quantify return on investment analyses.	A safety treatments database	The City of Bend maintains an asset database and is updating it to include detailed multi-modal asset information.