# BENTON COUNTY
# TRANSPORTATION SAFETY ACTION PLAN

DATE: June 16, 2025

TO: Project Team

FROM: John Bosket, PE; Harshala Sardar, PE; Brianna Velasquez, EIT | DKS Associates

SUBJECT: Benton County Transportation Safety Action Plan

Existing Safety Conditions Memorandum Project #25003-000

Benton County is developing a Transportation Safety Action Plan (TSAP) that will serve as a guide for investing in transportation safety through a Safe System approach.

As part of this plan, a comprehensive evaluation of available crash records was conducted to assess the existing safety conditions of roadways within Benton County. This memorandum presents the findings of this analysis and identifies potential Emphasis Areas that should be considered to focus the TSAP and the County's resources on the prevailing risks for fatal and serious injury crashes.

## CRASH DATA ANALYSIS

Crash records from the most recent five years of available data (2018 to 2022) were obtained from the Oregon Department of Transportation (ODOT) and analyzed to assess recent trends on roadways within Benton County. The following sections summarize the key findings regarding crash trends and highlight high-crash locations.

### CRASH DATA

ODOT crash records provide all data collected by the reporting officer, including crash identification (jurisdiction, route and milepost, location, date, time), demographics (age, gender) environmental conditions (lighting, weather, road surface), and crash details (primary collision factor, type of collision, vehicle type, severity).

For this safety analysis, crash severity is categorized as follows:

- **Fatal (K):** A collision that results in the death of a person within 30 days of the collision.
- **Serious Injury (A):** A collision that results in life-altering injuries.

- **Minor Injury (B):** A collision that results in other visible injuries that are not life-altering, such as minor lacerations and bruising.
- **Possible Injury (C):** A collision that results in the complaint of non-visible pain/injury, such as confusion, limping, and soreness.
- **No Apparent Injury (PDO):** 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."

## COUNTYWIDE CRASH TRENDS

Within Benton County, there were 3,830 crashes reported between 2018 and 2022, which is an average of 766 crashes per year. As a result, there were 40 crashes where at least one-person lost their life and 166 crashes where at least one person was severely injured.

Figure 1 and Table 1 below present a summary of crash severity by year. The total number of crashes per year has fluctuated over time, with the lowest crash frequency in 2020 (likely reflective of the overall reduction in vehicle miles traveled during the COVID-19 pandemic). The total number of crashes in recent years is lower than pre-pandemic levels, yet the number and proportion of fatal and serious injury crashes has increased. As shown in Figure 2, the proportion of fatal and serious injury crashes reached a peak of 8% in 2022, double the proportion of 2018 (4%).

ODOT's preliminary crash data for 2023 (fatal and serious injury only) and 2024 (fatal only) was reviewed to gain some insight into how the fatal and serious injury crash trends may have changed in more recent years. In 2023, 8 fatal crashes and 42 crashes resulting in serious injury are reported, which are similar as those experienced in 2021. The 2024 data also reported 8 fatal crashes (data on serious injury crashes is not yet available).

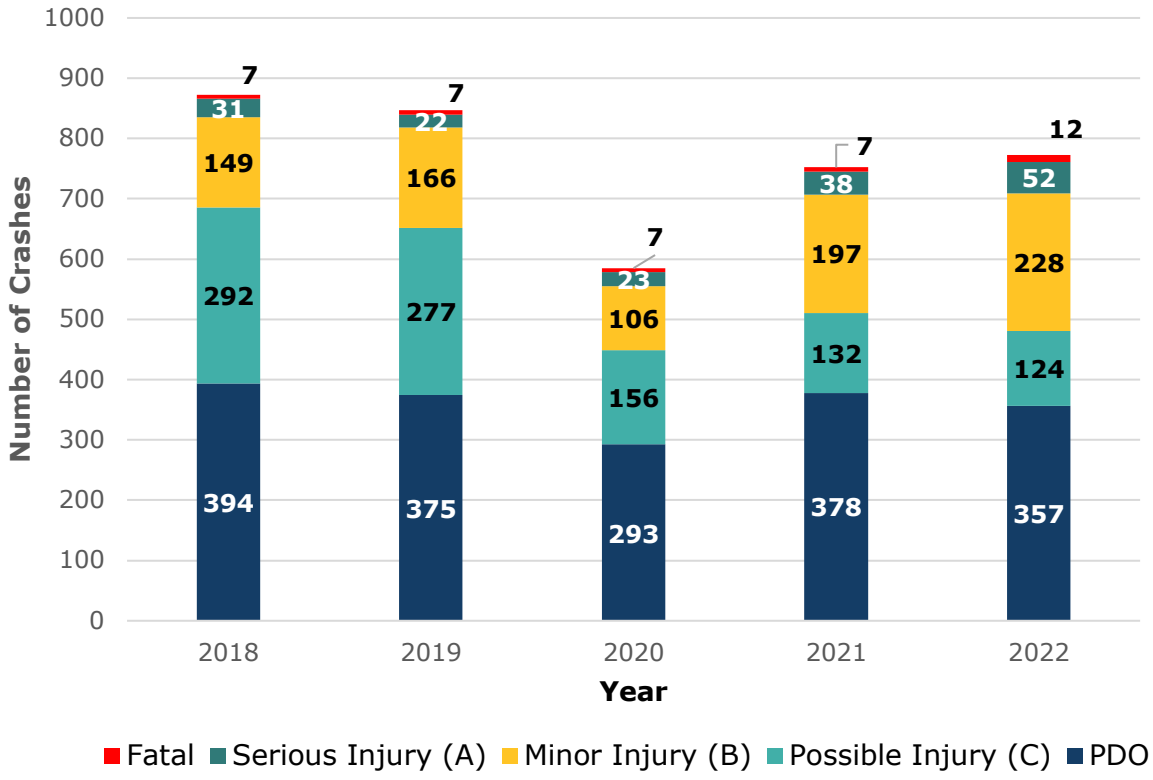


**FIGURE 1: BENTON COUNTY CRASH SEVERITY BY YEAR (2018 TO 2022)**

**TABLE 1: SUMMARY OF CRASH SEVERITY BY YEAR (2018-2022)**

| Crash Severity | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|---|---|---|---|---|---|---|
| Fatal | 7 | 7 | 7 | 7 | 12 | **40** |
| Serious Injury (A) | 31 | 22 | 23 | 38 | 52 | **166** |
| Minor Injury (B) | 149 | 166 | 106 | 197 | 228 | **846** |
| Possible Injury (C) | 292 | 277 | 156 | 132 | 124 | **981** |
| Property Damage Only (PDO) | 394 | 375 | 293 | 378 | 357 | **1,797** |
| **Total** | **873** | **847** | **585** | **752** | **773** | **3,830** |

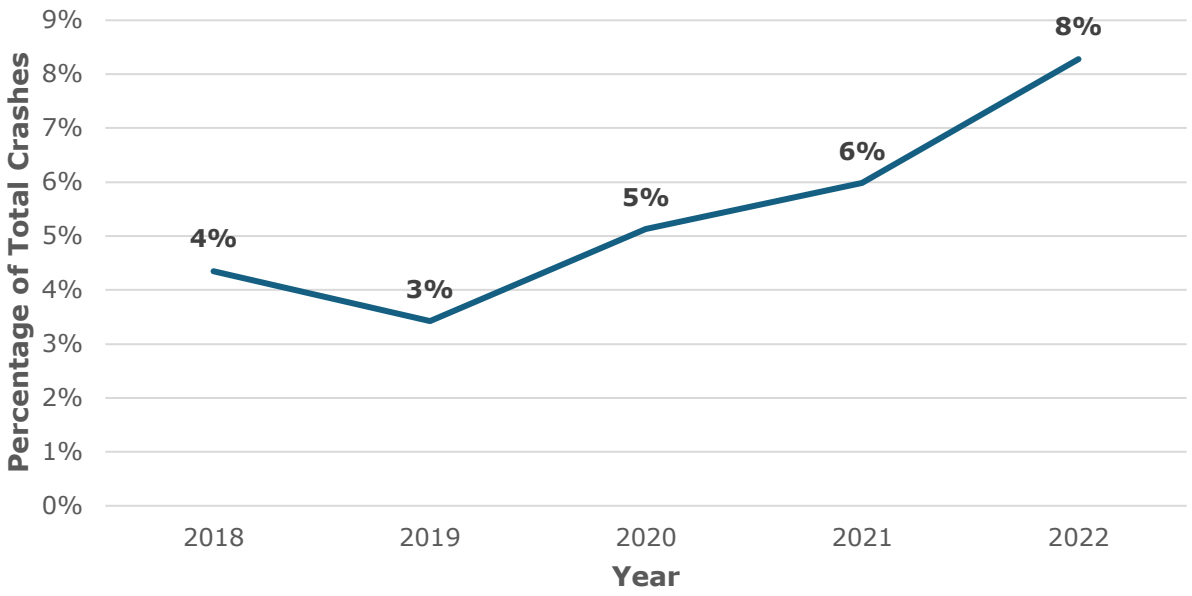


**FIGURE 2. PERCENT OF CRASHES RESULTING IN FATAL OR SERIOUS INJURY BY YEAR (2018-2022)**

## CRASH ATTRIBUTES

Table 2 summarizes Benton County crashes by different crash characteristics like collision type, crash cause, impairment, lighting condition, roadway characteristics, driver age, etc. Comparing the percentage difference between total crashes and fatal and serious injury crashes, if the percentage of fatal and serious injury crashes is greater than total crashes, then that crash characteristic is flagged (**bold and highlighted**), indicating it is more likely to result in fatal and serious injury outcomes.

Rear-end, turn, fixed object, angle, and sideswipe overtaking crashes, are among the top five crash types, contributing to 85% of all crashes. Among the fatal and serious injury crashes, the top three crash types are fixed object (33%), turn (17%), and head-on (12%). Key contributing factors to these crashes include speed, failure to yield, inattention, and other improper driving (e.g., failure to navigate the roadway alignment, not following regulatory signs).

**TABLE 2. LEADING CRASH CHARACTERISTICS IN BENTON COUNTY (2018-2022)**

| CHARACTERISTIC | ALL SEVERITIES | | FATAL AND SERIOUS INJURY (KA) [a] | |
|---|---|---|---|---|
| | COUNT | PERCENTAGE | COUNT | PERCENTAGE |
| **TOP CRASH TYPES** | | | | |
| FIXED OBJECT | 759 | 20% | 68 | 33% |
| TURNING | 779 | 20% | 36 | 17% |
| HEAD-ON | 54 | 1% | 24 | 12% |
| REAR-END | 990 | 27% | 21 | 10% |
| ANGLE | 542 | 14% | 15 | 7% |
| SIDESWIPE – OVERTAKING | 161 | 4% | 1 | 0.5% |
| PEDESTRIAN | 91 | 2% | 19 | 9% |
| BICYCLE | 119 | 3% | 9 | 4% |
| SINGLE VEHICLE NON-COLLISION[1] | 49 | 1% | 12 | 6% |
| **TOP CRASH CAUSES** | | | | |
| SPEED-RELATED (EXCEEDING SPEED LIMIT) | 406 | 11% | 36 | 17% |
| OTHER IMPROPER DRIVING[2] | 180 | 5% | 21 | 10% |
| DID NOT YIELD RIGHT-OF-WAY | 948 | 25% | 44 | 21% |
| DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING LIMIT) | 191 | 5% | 22 | 11% |
| FAILED TO AVOID VEHICLE AHEAD | 502 | 13% | 6 | 3% |
| DISTRACTION/INATTENTION | 236 | 6% | 19 | 9% |
| RECKLESS DRIVING | 128 | 3% | 16 | 8% |

[1] Involves rollover crashes or other crashes not involving another vehicle/pedestrian/bicycle

[2] Often self-reported but can include incidents such as failure to navigate the roadway alignment, not following regulatory signs, vehicle stalling, or driving a defective vehicle.

| CHARACTERISTIC | ALL SEVERITIES | | FATAL AND SERIOUS INJURY (KA) [a] | |
|---|---|---|---|---|
| | COUNT | PERCENTAGE | COUNT | PERCENTAGE |
| FATIGUE | 103 | 3% | 7 | 3% |
| IMPROPER OVERTAKING | 26 | 1% | 3 | 1% |
| MADE IMPROPER TURN | 102 | 3% | 4 | 2% |
| SPEED RACING | 106 | 3% | 6 | 3% |
| ILLNESS | 43 | 1% | 13 | 6% |
| ROAD DEPARTURE | | | | |
| VEHICLE LEFT ROADWAY | 858 | 22% | 96 | 47% |
| DRIVER IMPAIRMENT | | | | |
| ALCOHOL-IMPAIRED | 116 | 3% | 18 | 9% |
| DRUG-IMPAIRED | 48 | 1% | 19 | 9% |
| LIGHTING CONDITIONS | | | | |
| DARK/DUSK/DAWN | 671 | 18% | 41 | 20% |
| ROAD SURFACE CONDITIONS | | | | |
| WET OR ICY | 966 | 25% | 48 | 23% |
| NON-PASSENGER CAR MOTOR VEHICLE TYPE INVOLVED | | | | |
| MOTORCYCLE | 62 | 2% | 24 | 12% |
| ROADWAY CHARACTERISTIC | | | | |
| AT INTERSECTION OR INTERSECTION RELATED[3] | 1,919 | 50% | 73 | 35% |
| TRAFFIC SIGNAL | 686 | 18% | 21 | 10% |

[3] Includes all intersections (Stop-controlled, signalized, and state highway intersections).

| CHARACTERISTIC | ALL SEVERITIES | | FATAL AND SERIOUS INJURY (KA) [a] | |
|---|---|---|---|---|
| | COUNT | PERCENTAGE | COUNT | PERCENTAGE |
| STOP SIGN[4] | 884 | 23% | 32 | 16% |
| STRAIGHT SEGMENT | 1,423 | 37% | 83 | **40%** |
| HORIZONTAL CURVE | 325 | 8% | 33 | **16%** |
| VERTICAL CURVE | 32 | 1% | 12 | **6%** |
| AT DRIVEWAY OR DRIVEWAY-RELATED | 306 | 8% | 12 | 6% |
| ROAD USER DEMOGRAPHIC | | | | |
| YOUNGER DRIVER (AGE <22 | 491 | 13% | 33 | **16%** |
| OLDER DRIVER (AGE >64) | 428 | 11% | 51 | **25%** |

[a] **BOLD and Highlighted** values indicate the crash attributes are more likely to result in fatal or serious injuries in Benton County.

### CRASH LOCATION

- While not overrepresented, crashes that are at or related to intersections are common, making up 35% of fatal and serious injury crashes and 50% of all crashes.
- Crashes on straight segments are also common and are overrepresented among fatal and serious injury crashes, accounting for 40% of fatal and serious injury crashes, and 37% of total crashes.
- Approximately 80% of all crashes take place in day/daylight conditions.
- Crashes on horizontal or vertical (grade) curves are more likely to result in fatalities and serious injuries. Sixteen percent of fatal and serious injury crashes compared to 8% of total crashes occurred on horizontal curves. On vertical curves, 6% of fatal and serious injury crashes occurred compared to just 1% of total crashes.

[4] Crashes at stop-controlled intersections are only reported with this roadway characteristic when a stop sign is posted. It is not uncommon for rural intersections to not have a posted stop sign even if the intersection is considered stop-controlled.

### COLLISION TYPE

- In fatal and serious injury intersection-related crashes, the primary contributing factors are failure to yield (42%), disregard of signal (10%), and inattention (7%).
- Approximately half of all fatal and serious injury crashes (47%) in Benton County involved a driver leaving their lane or the roadway, and 61% of these resulted in a vehicle hitting a fixed object. Half of fixed object crashes occurred on straight segments. Sixty-six percent of these fixed object crashes involved speeding or risky driving behaviors (i.e., careless, reckless, inattention), both of which are more likely to result in fatal and serious injury crash outcomes. Approximately 43% of fixed object crashes involved a roadside ditch, 14% involved a tree, and another 14% involved a curb.
- A person riding a bicycle was involved in 3% of total crashes, while people walking were involved in 2%. The majority of these crashes took place at intersections. People walking are more likely to be involved in a fatal and serious injury crash, accounting for 9% of fatal and serious injury crashes, compared to bicyclists accounting for 4%. The leading causes of these fatal and serious injury crashes were failure to yield (47%) and a non-motorist illegally in the roadway (13%).

### IMPAIRED DRIVING

- Drug and/or alcohol impaired driving represents 4% of total crashes compared to 18% of fatal and serious injury crashes.
- 71% of impaired driving crashes involved a driver leaving their lane or roadway, and 30% also involved speeding.

### YOUNG DRIVERS

- Approximately 13% of crashes involved young drivers, of which 63% occurred at an intersection or was intersection related; the majority took place at stop-controlled intersections (31%).
- Among the crashes involving young drivers, 13% involved speeding and 1% involved a driver impaired by drugs and/or alcohol. In total, 18% of these crashes occurred in dark/dawn/dusk lighting conditions.

### AGING DRIVERS

- Crashes involving aging drivers represent 11% of total crashes but 25% of fatal and serious injury crashes.
- Among the crashes involving aging drivers, 9% took place in dark lighting conditions.
- 24% of these crashes occurred at stop-controlled intersections and 16% involved the driver leaving their lane or roadway.

### TEMPORAL TRENDS

Figure 3, Figure 4, and Figure 5 present summaries of crashes by time of day, day of week, and month, respectively.

- The highest number of fatal and serious injury crashes occurs during the evening peak hours between 2:00 p.m. and 6:00 p.m., which generally coincides with peak travel times.
- During the week, the highest percentage of fatal and serious injury crashes occurred on Tuesday (18%), followed by Monday (17%) and Wednesday (17%). The highest percentage of total crashes occurs on Friday.
- October has the highest occurrence of total crashes and fatal and serious injury crashes. Overall, winter months had more crashes compared to warmer months.

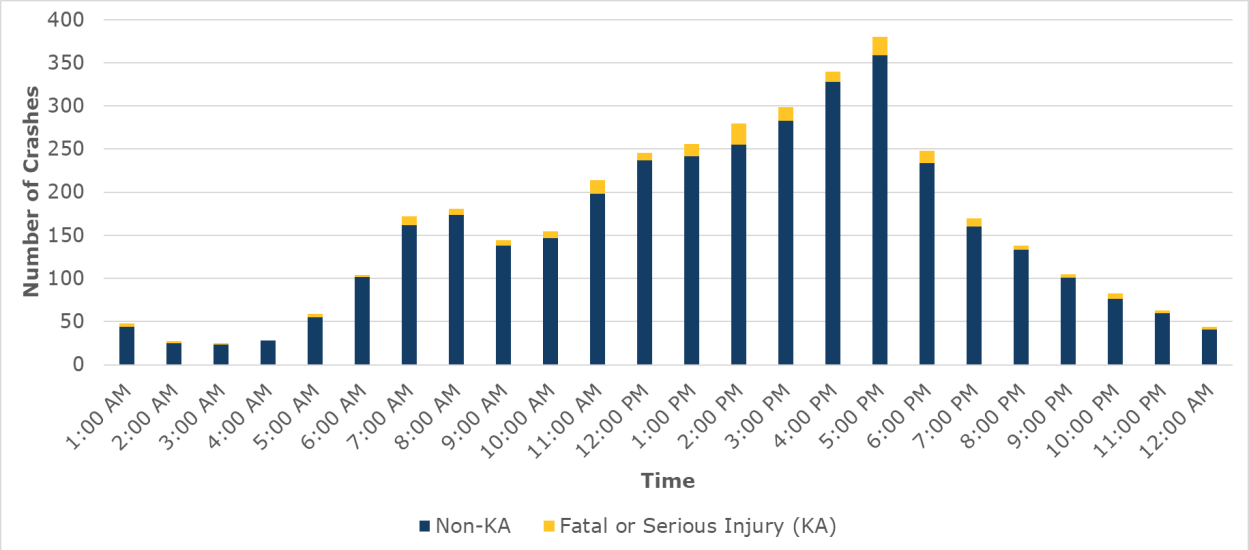


**FIGURE 3. SUMMARY OF CRASHES BY TIME OF DAY (2018-2022)**

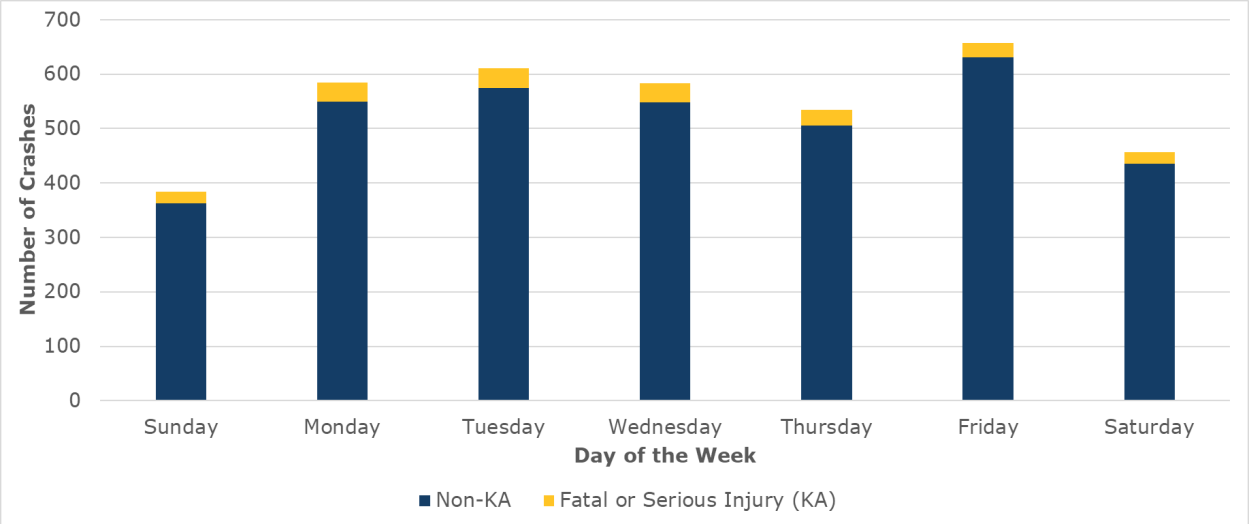


**FIGURE 4. SUMMARY OF CRASHES BY DAY OF WEEK (2018-2022)**

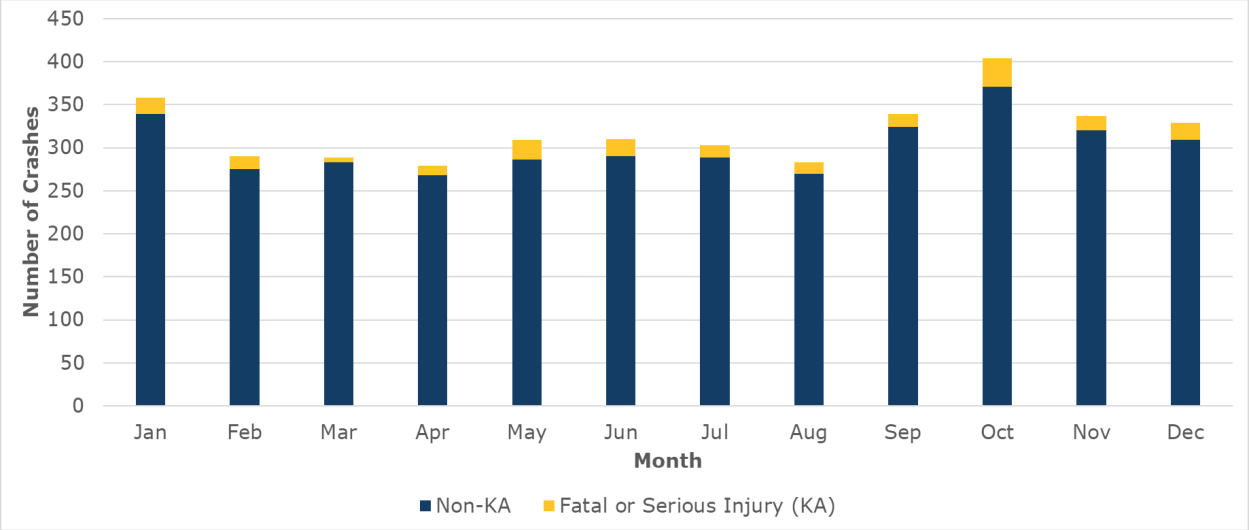


**FIGURE 5. SUMMARY OF CRASHES BY MONTH (2018-2022)**

## EMPHASIS AREAS

According to the Oregon Statewide TSAP (OTSAP), Emphasis Areas provide a strategic framework for developing and implementing a TSAP. Emphasis Areas are near-term implementation focus areas directly related to the TSAP's long-term goals, policies, and strategies.

The crash data analysis findings will be combined with input from project partners and the community to finalize the list of Emphasis Areas that will guide the framework of the TSAP and the County's investment in safety strategies and projects.

### CRASH DATA CHARACTERISTICS

Preliminary Emphasis Areas were identified based on a data-driven process of evaluating Benton County crash data patterns and characteristics that are most predominant or that are overly represented in fatal and serious injury crashes compared to lower severity crashes. The areas were compared to Oregon statewide crash data patterns and characteristics to identify those that were of higher prominence in Benton County (Figure 6 below). Potential Emphasis Areas are presented given consideration to all roads within Benton County, as well as to only those roads outside of the City of Corvallis, which is concurrently developing their own TSAP.

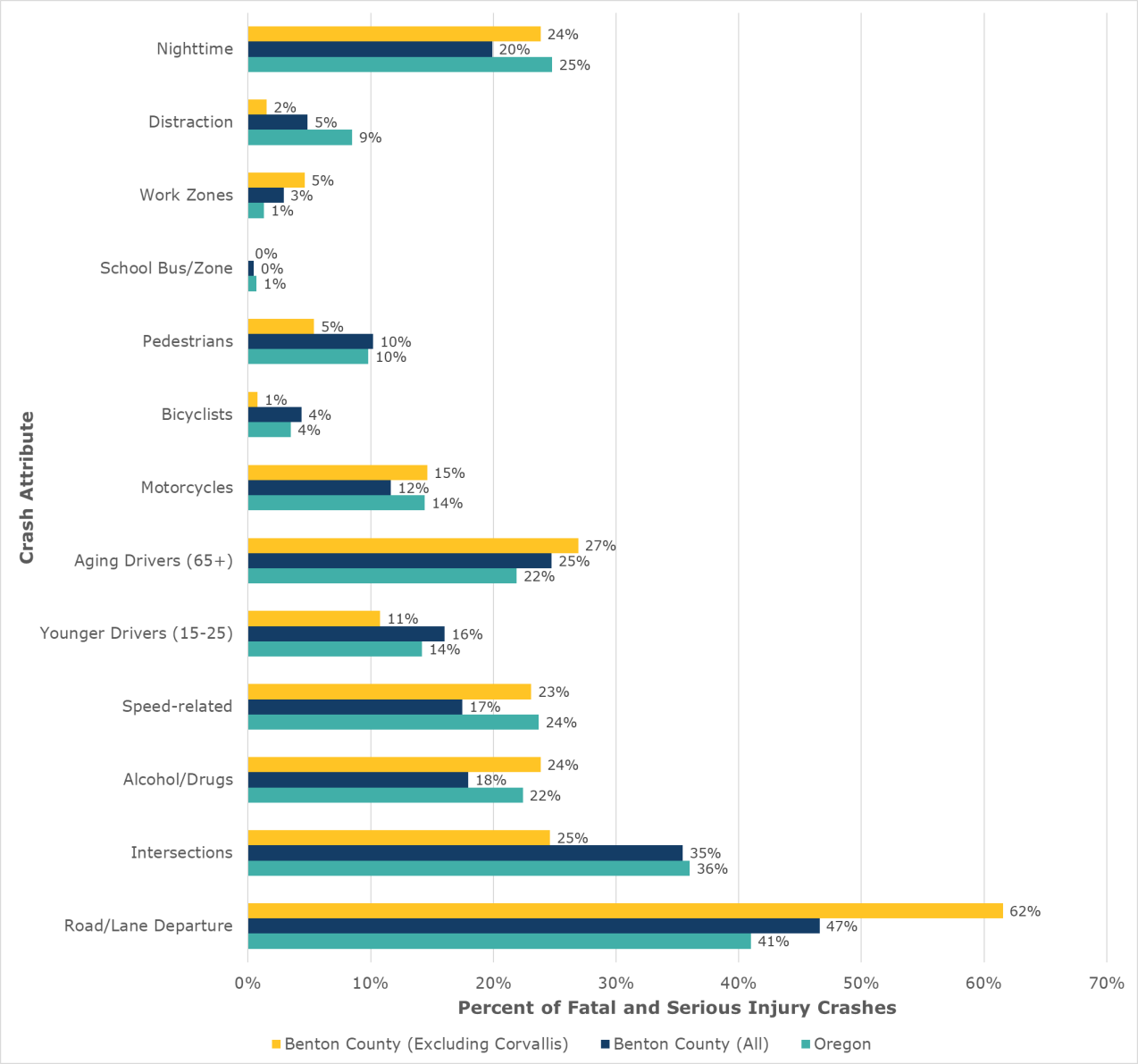


**FIGURE 6. BENTON COUNTY EMPHASIS AREAS RELATIVE TO STATEWIDE CRASH STATISTICS**

Table 3 below indicates whether the following "flags" are true for each crash attribute. These flags help identify trends and patterns in the crash attributes and how the crashes within the Benton County boundary compare to statewide data.

- **Flag 1 – Predominant Crash Attribute:** The crash attribute is present in more than 10% of fatal and serious injury crashes in Benton County.
- **Flag 2 – More Prevalent than Statewide:** The proportion of fatal and serious injury crashes for the crash attribute on Benton County roadways is greater than the

proportion of fatal and serious injury crashes for the crash attribute statewide as reported in the OTSAP.

- **Flag 3 – High Severity Indicator:** The proportion of fatal and serious injury crashes on Benton County roadways is greater than the percentage of all severity crashes on Benton County roadways for the crash attribute.

The crash data attributes in the OTSAP and the percentage of fatal & serious injury crashes for each attribute are shown in Table 3 below. Since the City of Corvallis is developing its TSAP simultaneously with a similar methodology to identify emphasis areas specific to roadways in the city, this analysis did not consider the roadways within the city. The right-most column in Table 3 indicates which of the three flags were met for each attribute.

**TABLE 3. BENTON COUNTY CRASH ATTRIBUTE TABLE**

| ATTRIBUTE | COLUMN 1: STATEWIDE PROPORTION OF F&SI CRASHES (2014-2018) | COLUMN 2: BENTON COUNTY (EXCLUDING CORVALLIS) PROPORTION OF ALL CRASHES (2017-2021) | COLUMN 3: BENTON COUNTY (EXCLUDING CORVALLIS) PROPORTION OF F&SI CRASHES (2017-2021)[1] | FLAGS MET |
|---|---|---|---|---|
| ROADWAY OR BENTON DEPARTURE CRASHES | 41% | 42% | 62% | Flag 1, Flag 2, Flag 3 |
| CRASHES INVOLVING ALCOHOL AND/OR DRUGS | 22% | 6% | 24% | Flag 1, Flag 2, Flag 3 |
| CRASHES INVOLVING MOTORCYCLES | 14% | 3% | 15% | Flag 1, Flag 2, Flag 3 |
| CRASHES INVOLVING AGING DRIVER (65+) | 22% | 11% | 27% | Flag 1, Flag 2, Flag 3 |
| SPEED-RELATED CRASHES | 24% | 19% | 23% | Flag 1, Flag 3 |
| CRASHES INVOLVING ALCOHOL ONLY | 17% | 4% | 11% | Flag 1, Flag 3 |
| CRASHES IN WORK ZONES | 1% | 1% | 5% | Flag 2, Flag 3 |
| CRASHES INVOLVING SCHOOL BUS OR SCHOOL ZONE | 0.7% | 0.3% | 0.8% | Flag 2, Flag 3 |

| ATTRIBUTE | COLUMN 1: STATEWIDE PROPORTION OF F&SI CRASHES (2014-2018) | COLUMN 2: BENTON COUNTY (EXCLUDING CORVALLIS) PROPORTION OF ALL CRASHES (2017-2021) | COLUMN 3: BENTON COUNTY (EXCLUDING CORVALLIS) PROPORTION OF F&SI CRASHES (2017-2021)[1] | FLAGS MET |
|---|---|---|---|---|
| CRASHES INVOLVING YOUNG DRIVER (15-21) | 14% | 12% | 11% | Flag 1 |
| CRASHES INVOVLING BICYCLISTS | 4% | 0% | 1% | Flag 3 |
| CRASHES INVOLVING PEDSTRIANS | 10% | 1% | 5% | Flag 3 |
| INTERSECTION CRASHES | 36% | 31% | 25% | Flag 1 |
| NIGHTTIME (DARK/DAWN/DUSK) CRASHES | 25%[a] | 28% | 24% | Flag 1 |
| CRASHES INVOVLING DISTRACTED DRIVERS | 9% | 3% | 2% | None |

[a] Nighttime crash proportion for statewide is based on 2017-2021 data because it is not published in the OTSAP.

While there is no requirement for a certain number of Emphasis Areas, it is recommended that between three to five Emphasis Areas be selected. Too many Emphasis Areas can dilute the value of the Plan with too many strategies and actions to feasibly implement, while too few can result in missed opportunities to reduce fatal and serious injury crash risks. The trends highlighted in Figure 6 and Table 3 were discussed with the TSAP Task Force members, who ultimately recommended the use of the following Emphasis Areas for the Benton County TSAP.

- Roadway and Lane Departure
- Risky Behaviors (Drug and Alcohol Impairment, Distracted Driving, and Speeding)
- Intersections
- Aging Drivers (65+ years of age)
- Bicyclists

## HIGH INJURY NETWORK

A High Injury Network (HIN) identifies roadway segments and intersections within the county that experience the highest concentration of fatal and serious injury crashes. These locations were determined using the Equivalent Property Damage Only (EPDO) method, which accounts for all crashes but assigns greater weight to crashes of higher severity.

The weighting factor is based on the severities' associated societal costs. The following weighting factors from ODOT's Safety Priority Index System (SPIS) were used:

- **Fatal & Serious Injury (Injury A) Crash** = 100
- **Minor (Injury B) or Possible Injury (Injury C) Crash** = 10
- **Property Damage Only (PDO) Crash** = 1

The fatal and serious injury crashes are equivalent to 100 PDO crashes, while the minor and possible injury crashes are equivalent to 10 PDO crashes. For example, an intersection with 1 fatal, 2 serious injury, 3 minor, 4 possible injury and 6 PDO crashes, has a total EPDO score calculated as follows:

$$\mathbf{EPDO} = [1\ (fatal) * 100] + [2(serious\ injury) * 100] + [3(minor\ injury) * 10] + [4(possible\ injury) * 10] + 6(PDO) = \mathbf{376}$$

To identify high-risk roadway segments, the EPDO rate per mile was calculated instead. To prevent smaller segments from being overrepresented, any segment shorter than a half-mile was assigned an EPDO rate based on a minimum segment length of 0.5 miles.

To determine which roadway segments and intersections to include in the HIN, the "Natural Breaks Method" (Jenks optimization) was used. Through this method, the data is categorized into naturally clustered groups to maximize differences between classes — in this case, EPDO scores or rates. Three classes were generated, with the highest EPDO class representing high-injury locations. Additionally, any segments or intersections with fatal or serious injury crashes not captured by this method were also included in the HIN.

Table 4 and Table 5**Error! Reference source not found.** below present the HIN roadway segments and intersections, respectively, from highest to lowest EPDO rate/score to reflect crash severity. Corresponding HIN maps for roadway segments and intersections are shown in Figures 7, 8, 9, and 10 below. Note that locations in the tables that are under City of Corvallis jurisdiction were scored and ranked for reference, but removed from consideration (greyed out in the tables) for Benton County's HIN since the City is prioritizing HIN locations for their own TSAP.

Overall, the HIN represents 2% of the roadway centerline miles and accounts for 41% of fatal and serious injury crashes.

**TABLE 4: HIGH INJURY SEGMENTS IN BENTON COUNTY**

| Ref # | Location | Ownership | Map Quadrant | Length | Fatal Crashes | Serious Injury Crashes | Total Crashes (2018-2022) | EPDO per Mile |
|---|---|---|---|---|---|---|---|---|
| 1 | OR 99W [4th St] (Western Blvd to Twin Oaks Cir South) | ODOT | NE | 0.5 | 3 | 3 | 21 | 1392 |
| 2 | 9th St (Sequoia Ave to Buchanan Ave) | City of Corvallis | | 1.2 | 0 | 5 | 95 | 869 |
| 3 | US 20 [Philomath Blvd] (53rd St to Country Club Dr) | ODOT | NE | 0.9 | 1 | 3 | 48 | 737 |
| 4 | Circle Blvd (Highland Dr to 9th St) | City of Corvallis | | 0.4 | 0 | 2 | 15 | 534 |
| 5 | Conifer Blvd (OR 99W to Cambridge Cir) | City of Corvallis | | 0.2 | 0 | 2 | 6 | 408 |
| 6 | OR 99W (Walnut Blvd to Cornell Ave Overpass) | ODOT | NE | 1.2 | 3 | 1 | 6 | 345 |
| 7 | US 20 (County Boundary to Corvallis City Limits) | ODOT | NE | 9.5 | 8 | 15 | 161 | 334 |
| 8 | US 20 [Philomath Blvd] (ODOT Driveway to RR overpass) | ODOT | NE | 1.3 | 0 | 1 | 38 | 274 |
| 9 | 53rd St (Campus Way to Reservoir Ave) | County | NE | 0.1 | 0 | 1 | 4 | 242 |
| 10 | Circle Blvd (Kings Blvd to 17th St) | City of Corvallis | | 0.2 | 0 | 1 | 4 | 242 |
| 11 | Kings Blvd (Circle Blvd to Elmwood Dr) | City of Corvallis | | 0.1 | 0 | 1 | 4 | 242 |
| 12 | Highland Dr (Meadow Ridge Pl to Conifer Blvd) | City of Corvallis | | 0.3 | 0 | 1 | 3 | 240 |
| 13 | OR 34 [Van Buren Ave] (1st St to County Boundary) | ODOT | NE | 0.1 | 0 | 0 | 16 | 230 |
| 14 | US 20 [Main St] (26th St to Newton St) | ODOT | NW | 0.2 | 1 | 0 | 4 | 224 |
| 15 | West Hills Rd (Bullevard St to Reservoir Ave) | County | NW | 0.2 | 1 | 0 | 3 | 222 |
| 16 | 15th St (Western Blvd to E Ave) | City of Corvallis | | 0.2 | 0 | 1 | 3 | 222 |

| Ref # | Location | Ownership | Map Quadrant | Length | Fatal Crashes | Serious Injury Crashes | Total Crashes (2018-2022) | EPDO per Mile |
|---|---|---|---|---|---|---|---|---|
| 17 | Springhill Dr (Pointe Dr to Benton Pl) | County | NE | 0.2 | 0 | 1 | 2 | 220 |
| 18 | Western Blvd (Deon Dr to Ivy Pl) | City of Corvallis | | 0.1 | 0 | 1 | 2 | 220 |
| 19 | Springhill Dr (Westminster Way to Ferguson Dr) | County | NE | 2.7 | 0 | 5 | 26 | 218 |
| 20 | West Hills Rd (19th St to Bailey St) | County | NW | 0.2 | 1 | 0 | 3 | 204 |
| 21 | US 20 (Priest Rd to Lone Star Rd) | ODOT | NW | 3.0 | 2 | 3 | 28 | 203 |
| 22 | OR 34 (Gray Creek Lane to Henkle Way) | ODOT | SW | 0.3 | 0 | 1 | 2 | 202 |
| 23 | 10th St (Beca Ave to Buchanan Ave) | City of Corvallis | | 0.2 | 0 | 1 | 2 | 202 |
| 24 | Cascade Heights Dr (Alpine Meadow to Cascade Falls Ct) | City of Albany | NE | 0.0 | 1 | 0 | 1 | 200 |
| 25 | Gibson Hill Rd (Grandview Dr to North Heights Dr) | City of Albany | NE | 0.2 | 0 | 1 | 1 | 200 |
| 26 | North Albany Rd (Thorton Lake Dr to Jones Ave) | City of Albany | NE | 0.2 | 0 | 1 | 1 | 200 |
| 27 | Thornton Lake Dr (Edgewood Dr to Thornton Lake Pl West) | County | NE | 0.3 | 0 | 1 | 1 | 200 |
| 28 | Wood Duck Ln (Mallard Ln to Extents) | Private | NE | 0.0 | 1 | 0 | 1 | 200 |
| 29 | Marys River Estates Rd (Cascara Ln to Chicory Ln) | Private | NW | 0.1 | 1 | 0 | 1 | 200 |
| 30 | Pioneer St (Tasman Pl to Adelaide Dr) | City of Philomath | NW | 0.1 | 0 | 1 | 1 | 200 |
| 31 | US 20 [Main St] (17th St to 18th St) | ODOT | NW | 0.1 | 0 | 1 | 1 | 200 |
| 32 | Airport Ave (OR 99W to Lowe St) | County | SE | 0.3 | 0 | 1 | 1 | 200 |
| 33 | OR 34 (Hill Top Rd to Digger Creek Rd) | ODOT | SW | 0.1 | 0 | 1 | 1 | 200 |
| 34 | Coon Rd (Cherry Creek Rd to Elbett Ln) | County | SE | 0.1 | 0 | 1 | 1 | 200 |

| Ref # | Location | Ownership | Map Quadrant | Length | Fatal Crashes | Serious Injury Crashes | Total Crashes (2018-2022) | EPDO per Mile |
|---|---|---|---|---|---|---|---|---|
| 35 | Witham Hill Dr (Canary Pl to Elmwood Dr) | City of Corvallis | | 0.1 | 0 | 1 | 1 | 200 |
| 36 | Mulkey Ave (23rd St to Kings Blvd) | City of Corvallis | | 0.1 | 0 | 1 | 1 | 200 |
| 37 | Kings Blvd (Grant Ave to Beca Ave) | City of Corvallis | | 0.0 | 0 | 1 | 1 | 200 |
| 38 | Western Blvd (Stamm Pl to Poplar Pl) | City of Corvallis | | 0.1 | 0 | 1 | 1 | 200 |
| 39 | Walnut Blvd (Garryanna Dr to 13th St) | City of Corvallis | | 0.1 | 0 | 1 | 1 | 200 |
| 40 | US 20 (OR 180 to Davis Rd West) | ODOT | NW | 1.3 | 0 | 2 | 11 | 195 |
| 41 | OR 501 (OR 34 to Rycraft Ln) | ODOT | SW | 0.5 | 1 | 0 | 1 | 194 |
| 42 | Fern Rd (Powderhouse Rd North to Powderhouse Rd South) | County | SE | 0.6 | 1 | 0 | 3 | 188 |
| 43 | OR 99W (Crane Ln to Arboretum Rd) | ODOT | NE | 1.3 | 0 | 2 | 10 | 188 |
| 44 | OR 34 (Greasy Creek Rd to Decker Rd) | ODOT | SW | 0.6 | 0 | 1 | 4 | 185 |
| 45 | OR 99W (Territorial Hwy to Schultz Rd) | ODOT | SE | 2.6 | 0 | 4 | 20 | 181 |
| 46 | Independence Hwy (Pettibone Dr to US 20) | County | NE | 0.7 | 0 | 1 | 7 | 180 |
| 47 | OR 223 (Alexander Rd to Zenczak Ln) | ODOT | NW | 0.6 | 0 | 1 | 1 | 179 |
| 48 | Pettibone Dr (Avalon Dr to Haugen Rd) | County | NE | 0.6 | 0 | 1 | 1 | 173 |
| 49 | Independence Hwy (Camp Adair Rd to Gilmour Ln) | County | NE | 0.6 | 0 | 1 | 2 | 172 |
| 50 | OR 99W (Camp Adair Rd to Adair Frontage Rd North) | ODOT | NE | 0.7 | 0 | 1 | 7 | 161 |
| 51 | US 20 (West of Blodgett Rd West to County boundary) | ODOT | NW | 2.2 | 1 | 2 | 13 | 157 |
| 52 | Sulphur Springs Rd (Forest Springs Ln to Wildview Pl) | County | NE | 1.7 | 0 | 2 | 8 | 143 |

| Ref # | Location | Ownership | Map Quadrant | Length | Fatal Crashes | Serious Injury Crashes | Total Crashes (2018-2022) | EPDO per Mile |
|---|---|---|---|---|---|---|---|---|
| 53 | Ryals Ave (Birch Ln to Independence Hwy) | County | NE | 1.6 | 0 | 2 | 2 | 124 |
| 54 | Alpine Rd (Foster Rd to Alpine Cut Off Rd) | County | SE | 2.9 | 3 | 0 | 10 | 119 |
| 55 | Soap Creek Rd (Govier Pl North to Govier Pl South) | County | NE | 0.9 | 0 | 1 | 1 | 111 |
| 56 | Marys Peak Rd (West Point Spur to Summit) | Private | SW | 2.4 | 0 | 2 | 7 | 102 |
| 57 | OR 99W (3 Mile Ave to Barclay Ln) | ODOT | SE | 9.9 | 1 | 6 | 53 | 100 |
| 58 | OR 180 (Devitt Rd to Atticus Ln) | ODOT | NW | 1.3 | 0 | 1 | 3 | 91 |
| 59 | OR 34 (Salmonberry Rd to Vernon Rd) | ODOT | SW | 5.6 | 0 | 4 | 18 | 84 |
| 60 | Bellfountain Rd (Airport Ave to Llewellyn Rd) | County | SE | 1.7 | 0 | 1 | 7 | 80 |
| 61 | OR 34 (Marys Peak Rd to Cedar Creek Rd) | ODOT | SW | 2.6 | 1 | 0 | 19 | 70 |
| 62 | Marys River Rd (Hoskins Rd to Long Rd) | County | NW | 1.5 | 0 | 1 | 1 | 67 |
| 63 | OR 223 (Tatum Ln to County Boundary) | ODOT | NW | 2.0 | 0 | 1 | 5 | 64 |
| 64 | Llewellyn Rd (Venell Ln to OR 99W) | County | SE | 1.6 | 1 | 0 | 2 | 63 |
| 65 | Maxfield Creek Rd (Ward Rd to Maxfield Creek) | County | NW | 1.9 | 0 | 1 | 2 | 59 |
| 66 | South Fork Rd (Tobe Creek Rd to BLM Management Area) | County | SW | 2.2 | 1 | 0 | 2 | 50 |

**TABLE 5: HIGH INJURY INTERSECTIONS IN BENTON COUNTY**

| Ref # | Location | Ownership | Quadrant | Fatal Crashes | Serious Injury Crashes | Total Crashes (2018-2022) | EPDO Score |
|---|---|---|---|---|---|---|---|
| 1 | US 20 & Granger Ave | ODOT | NE | 1 | 8 | 51 | 1230 |
| 2 | US 20 & Independence Hwy | ODOT | NE | 0 | 4 | 25 | 556 |
| 3 | US 20 [Philomath Blvd] & 35th St | ODOT | NE | 0 | 3 | 29 | 497 |
| 4 | 9th St & Van Buren Ave | City of Corvallis | | 0 | 2 | 34 | 385 |
| 5 | 35th St & Western Blvd | City of Corvallis | | 0 | 3 | 13 | 346 |
| 6 | Llewellyn Rd & Bellfountain Rd | County | SE | 0 | 2 | 5 | 230 |
| 7 | OR 99W [3rd St] & Western Blvd | ODOT | NE | 1 | 0 | 20 | 227 |
| 8 | Walnut Blvd & Glenridge Dr | City of Corvallis | | 0 | 2 | 4 | 220 |
| 9 | OR 99W & Conifer Blvd | ODOT | NE | 0 | 1 | 21 | 210 |
| 10 | 9th St and Harrison Blvd | City of Corvallis | | 0 | 1 | 17 | 197 |
| 11 | US 20 & North Albany Rd | ODOT | NE | 0 | 1 | 17 | 197 |
| 12 | OR 99W [3rd St] & Van Buren Ave | ODOT | NE | 0 | 1 | 18 | 189 |
| 13 | 10th St & Buchanan Ave | City of Corvallis | | 0 | 1 | 15 | 168 |
| 14 | Ryals Ave & Independence Hwy | County | NE | 0 | 1 | 6 | 150 |
| 15 | US 20 [Main St] & 19th St | ODOT | NW | 0 | 1 | 14 | 149 |
| 16 | US 20 [Philomath Blvd] & Technology Lp | ODOT | NE | 0 | 1 | 13 | 148 |
| 17 | Garfield Ave & Highland Dr | City of Corvallis | | 0 | 1 | 5 | 140 |
| 18 | 5th St & Tyler Ave | City of Corvallis | | 0 | 1 | 5 | 140 |
| 19 | US 20 [Philomath Blvd] & Sunset Dr | ODOT | NE | 0 | 1 | 9 | 135 |
| 20 | Kings Blvd & Walnut Blvd | City of Corvallis | | 0 | 1 | 9 | 135 |
| 21 | 9th St & Garfield Ave | City of Corvallis | | 0 | 1 | 7 | 133 |
| 22 | Kings Blvd & Circle Blvd | City of Corvallis | | 0 | 1 | 7 | 133 |
| 23 | Harrison Blvd & 29th St | City of Corvallis | | 0 | 1 | 7 | 133 |
| 24 | Circle Blvd & Four Acre St | City of Corvallis | | 1 | 0 | 7 | 133 |
| 25 | 5th St & Jefferson Ave | City of Corvallis | | 0 | 1 | 6 | 132 |
| 26 | Adams Ave & 5th St | City of Corvallis | | 0 | 1 | 5 | 131 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 27 | 35th St & Jackson Ave | City of Corvallis | | 0 | 1 | 4 | 130 |
| 28 | Kings Blvd & Grant Ave | City of Corvallis | | 0 | 1 | 6 | 123 |
| 29 | OR 99W & Camp Adair Rd | ODOT | NE | 0 | 1 | 5 | 122 |
| 30 | Highland Dr & Lewisburg Ave | County | NE | 0 | 1 | 3 | 120 |
| 31 | Gibson Hill Rd & Gibson Way | City of Albany | NE | 0 | 1 | 3 | 120 |
| 32 | Springhill Dr & Independence Hwy | County | NE | 0 | 1 | 3 | 120 |
| 33 | Campus Way & 35th St | City of Corvallis | | 0 | 1 | 3 | 120 |
| 34 | OR 99W & Elliott Cir | ODOT | NE | 0 | 1 | 6 | 114 |
| 35 | Highland Dr & Sequoia Ave | City of Corvallis | | 0 | 1 | 3 | 111 |
| 36 | OR 99W & Mountain View Dr | ODOT | NE | 1 | 0 | 3 | 111 |
| 37 | Grant Ave & 11th St | City of Corvallis | | 0 | 1 | 3 | 111 |
| 38 | Washington Way & 15th St | City of Corvallis | | 0 | 1 | 3 | 111 |
| 39 | US 20 & Priest Rd | ODOT | NW | 0 | 1 | 3 | 111 |
| 40 | West Hills Rd & Rosecrest Dr | County | NW | 0 | 1 | 2 | 110 |
| 41 | US 20 & Merloy Ave | ODOT | NE | 0 | 1 | 2 | 110 |
| 42 | Lincoln Ave & 29th St | City of Corvallis | | 0 | 1 | 2 | 110 |
| 43 | Independence Hwy & Metge Ave | County | NE | 0 | 1 | 4 | 103 |
| 44 | OR 99W & Airport Ave | ODOT | SE | 0 | 1 | 3 | 102 |
| 45 | Arrowood Cir & 29th St | City of Corvallis | | 0 | 1 | 2 | 101 |
| 46 | OR 99W & Goodnight Ave | ODOT | NE | 1 | 0 | 2 | 101 |
| 47 | Hayes Ave & 23rd St | City of Corvallis | | 0 | 1 | 1 | 100 |
| 48 | 11th St & Campus Way | City of Corvallis | | 0 | 1 | 1 | 100 |
| 49 | 7th St & Western Blvd | City of Corvallis | | 0 | 1 | 1 | 100 |
| 50 | Washington Way & 17th St | OSU | | 0 | 1 | 1 | 100 |
| 51 | OR 99W & McKenzie Ave | ODOT | NE | 0 | 1 | 1 | 100 |
| 52 | OR 34 & Decker Rd | ODOT | SW | 1 | 0 | 1 | 100 |
| 53 | US 20 [Main St] & 8th St | ODOT | NW | 1 | 0 | 1 | 100 |
| 54 | US 20 & Rainwater Ln | ODOT | NE | 0 | 1 | 1 | 100 |
| 55 | Goodnight Ave & Midvale Dr | City of Corvallis | | 0 | 1 | 1 | 100 |

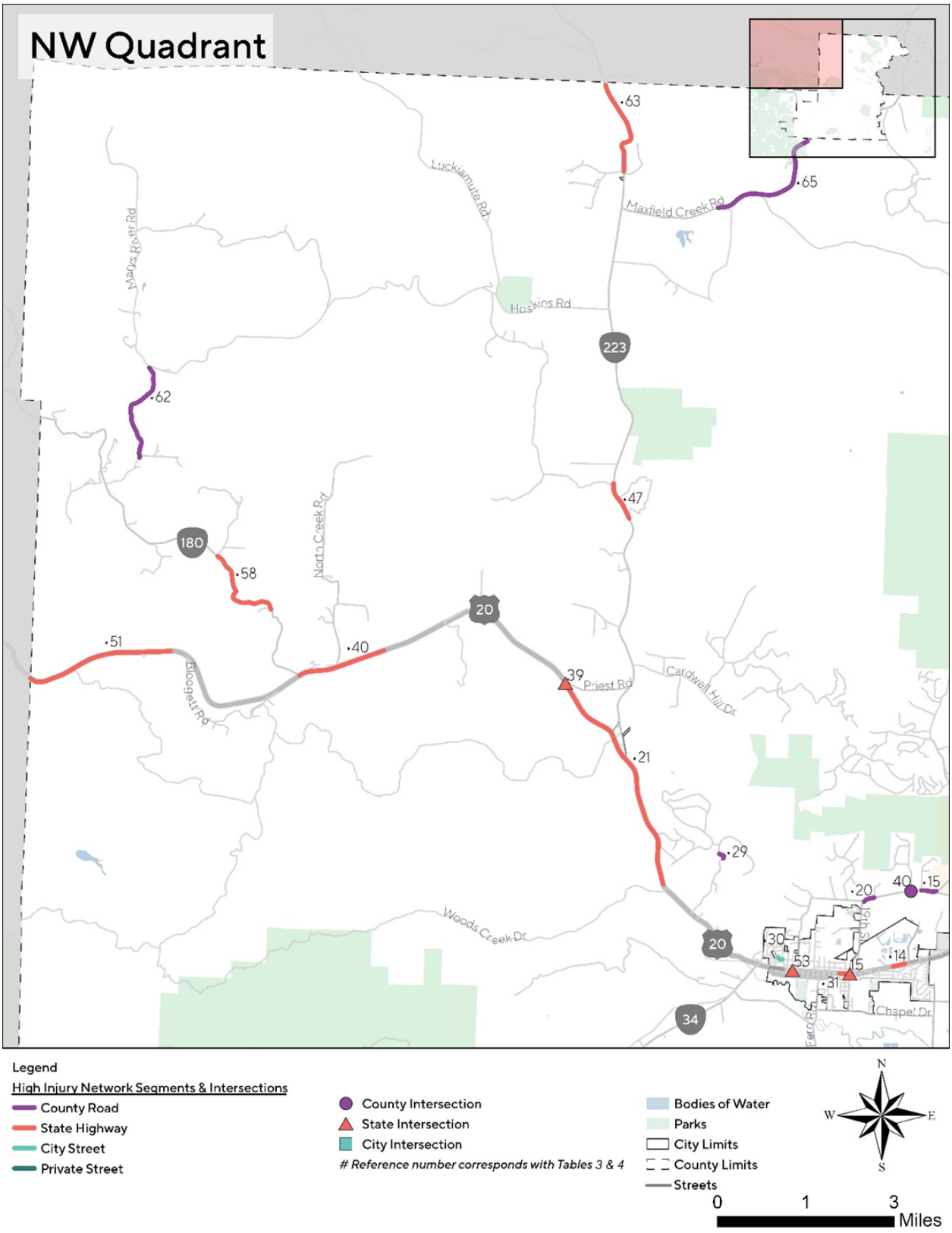


**FIGURE 7: BENTON COUNTY HIGH INJURY NETWORK SEGMENTS AND INTERSECTIONS IN NW QUADRANT**

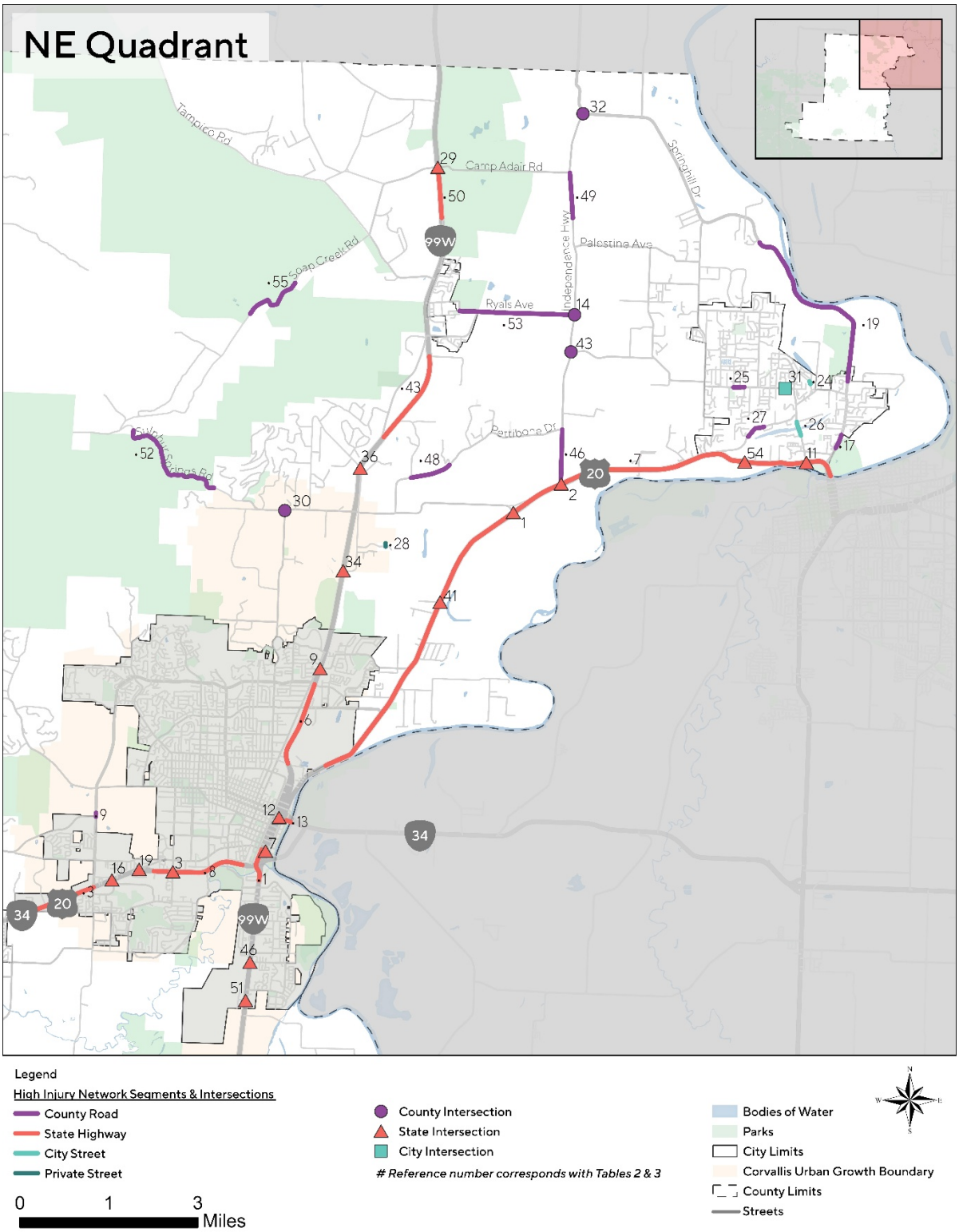


**FIGURE 8: BENTON COUNTY HIGH INJURY NETWORK SEGMENTS AND INTERSECTIONS IN NE QUADRANT**

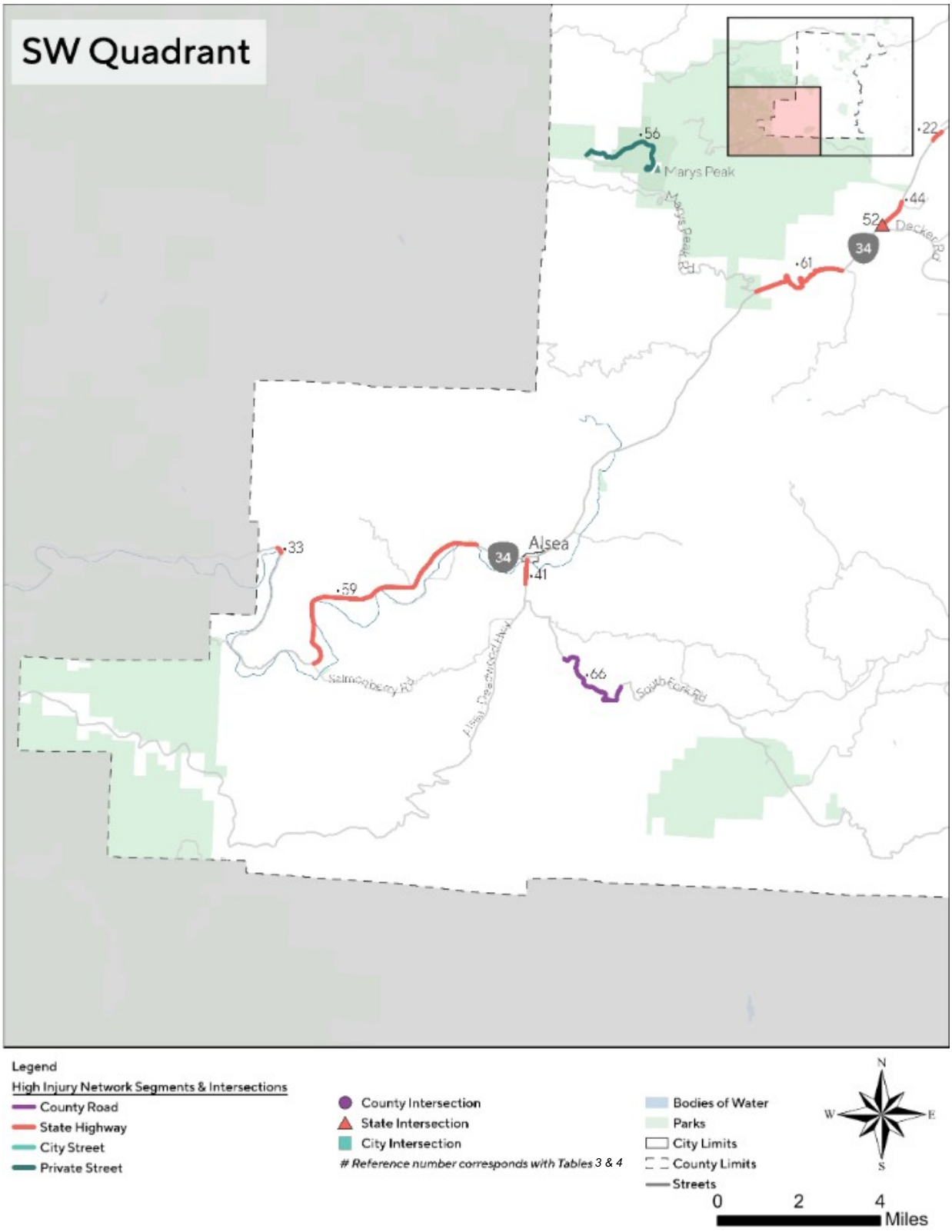


**FIGURE 9: BENTON COUNTY HIGH INJURY NETWORK SEGMENTS AND INTERSECTIONS IN SW QUADRANT**

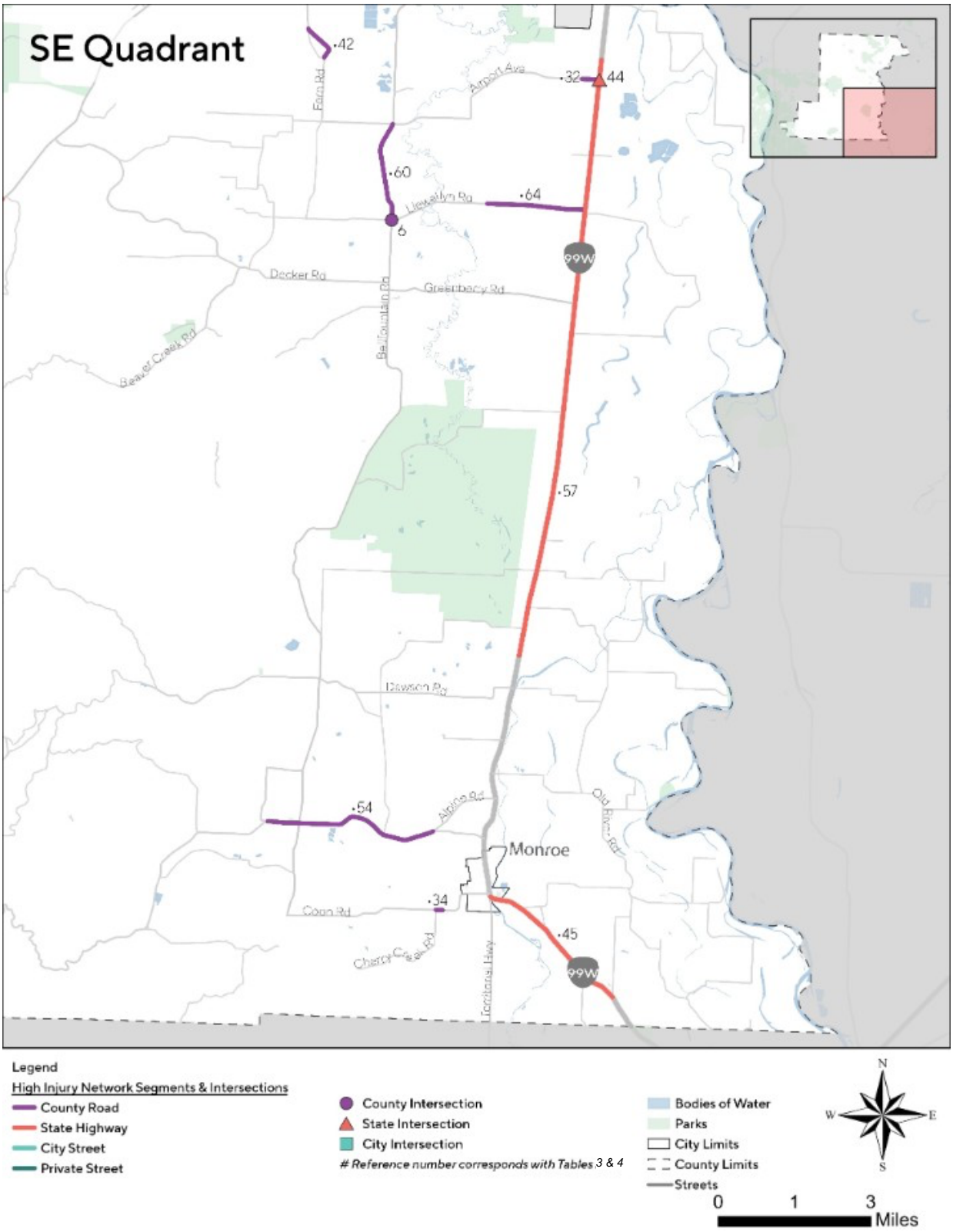


**FIGURE 10: BENTON COUNTY HIGH INJURY NETWORK SEGMENTS AND INTERSECTIONS IN SE QUADRANT**

## EQUITY ASSESSMENT

To understand how different communities may experience transportation safety across the county and help distribute investments equitably, the distribution of disadvantaged populations across the county and their exposure to crashes were analyzed utilizing the Oregon Social Equity Index (SEI) web map tool.[5]

ODOT developed the SEI tool using data from the American Community Survey to identify areas with concentrations of disadvantaged populations according to age, ability, income, language, race, and ethnicity. In an effort to prioritize equity, the SEI tool categorizes social equity areas as low, low-medium, medium-high, or high disparity; areas with higher disparity have a higher percentage of disadvantaged populations. For the purposes of this study, Medium-High Disparity and High Disparity tracts from the SEI tool are considered disadvantaged.

The following analysis excludes the influence of the City of Corvallis, for which a separate equity analysis was completed as part of their SS4A project. Figure 11 presents the fatal and serious injury crash rates by area, population and roadway lane miles. The SEI disadvantaged tracts include 13% of the county's area, 15% of the county's population, and 21% of the county's road miles, but experience 28% of total crashes and 34% of the fatal and serious injury crashes. Therefore, crashes, and specifically the crashes resulting in serious injuries and fatalities, are over-represented in SEI-disadvantaged tracts.

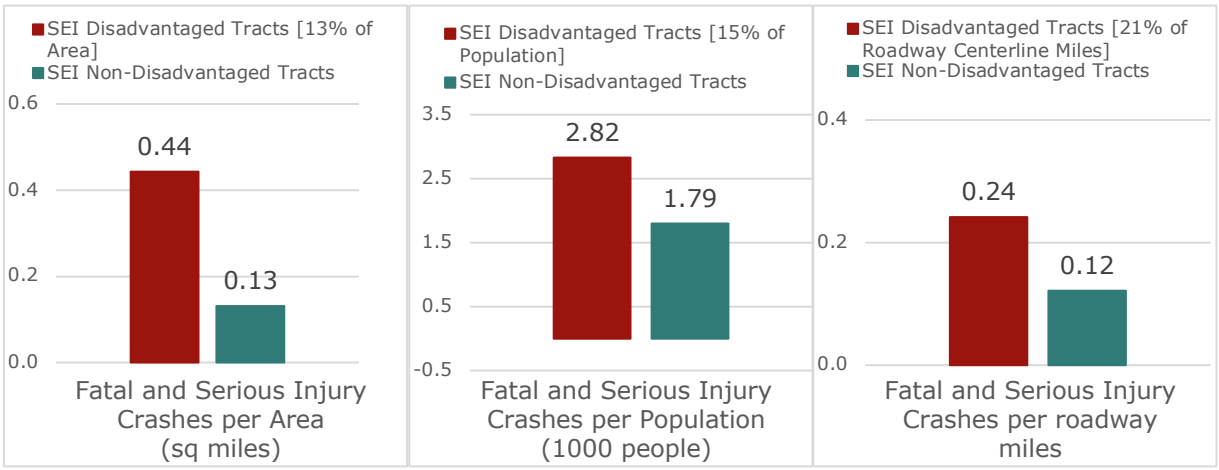


**FIGURE 11. FATAL AND SERIOUS INJURY CRASH RATE BY AREA, POPULATION, AND ROADWAY LANE MILES IN DISADVANTAGED VS NON-DISADVANTAGED AREAS**

[5] Oregon Social Equity Index web app, Oregon Department of Transportation. https://www.arcgis.com/apps/View/index.html?appid=bbd3d9861fcd40ffa4085d457e4361a7

Roadway and lane departure, intersections, and nighttime crashes are the top three Emphasis Areas overrepresented in fatal and serious injury crashes in the SEI-disadvantaged tract areas in Benton County (excluding Corvallis).

Figure 12 below displays the SEI tool overlaid on top of the HIN in Benton County. From the TSAP HIN sites, 21 out of 55 HIN intersections are located in a priority tract, as well as 27 out of 66 HIN segments.

Proactive investment in SEI-disadvantaged tracts is essential to address existing disparities and to ensure equitable access to safe transportation infrastructure. In the next steps of the TSAP, crash history, Emphasis Areas, equity impacts as well as input from the Task Force and community members will be compiled to select up to 10 High-Priority Safety Corridors to develop solutions for.

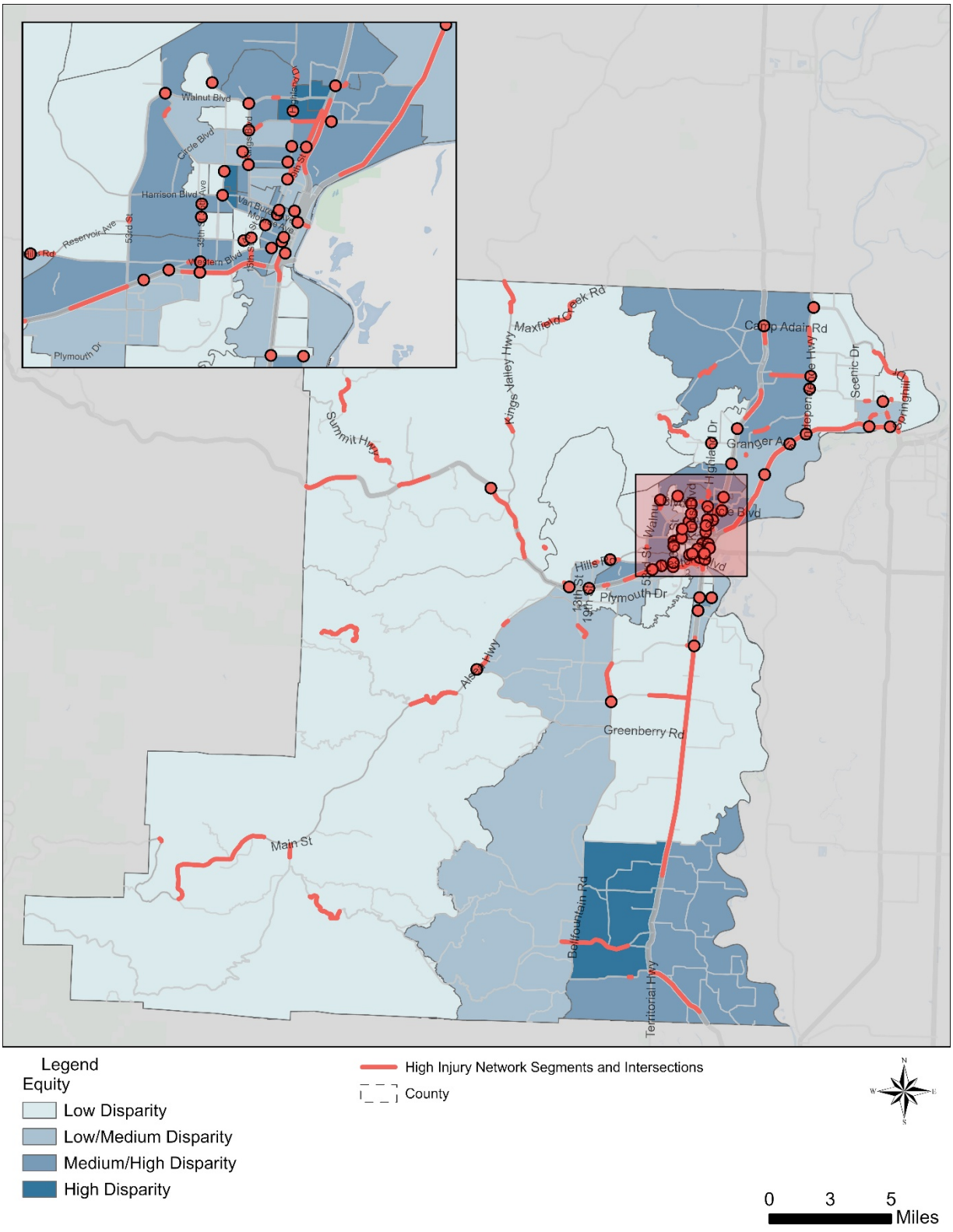


**FIGURE 12. BENTON COUNTY HIGH INJURY NETWORK AND OREGON SOCIAL EQUITY INDEX**

## MULTIMODAL CORRIDOR SAFETY

Prior planning efforts, including the 2019 update of Benton County's Transportation System Plan, have identified a need to improve safety on rural roadways that are shared by large trucks and people biking. In response, Benton County's TSAP will include special attention to that specific topic.

The key "multimodal corridors" of interest include the pairs of parallel corridors described below and highlighted in Figure 13. The project team will analyze speed, volume, and crash data and will conduct interviews with affected parties (e.g., freight haulers, residents, cyclists) to better understand how these corridors are being used, the safety hazards experienced, and the types of solutions that should be considered.

## NORTH COUNTY CORRIDORS OF INTEREST

### INDEPENDENCE HIGHWAY

- Traffic Volumes: 3,500 – 4,000 vehicles per day
- Truck Volumes: 900 trucks per day
- Speed: 63 mph (85th percentile speed)
- Crash History (2018 – 2022):
    - 34 crashes (5 resulting in serious injury)
    - 21 crashes involved a vehicle leaving the roadway

### SPRINGHILL DRIVE

- Traffic Volumes: 3,000 – 3,500 vehicles per day
- Truck Volumes: 100 trucks per day
- Speed: 59 mph (85th percentile speed)
- Crash History (2018 – 2022):
    - 63 crashes (6 resulting in serious injury)
    - 32 crashes involved a vehicle leaving the roadway
    - 2 crashes involved people biking

## SOUTH COUNTY CORRIDORS OF INTEREST

### BELLFOUNTAIN ROAD

- Traffic Volumes: 2,000 – 2,500 vehicles per day
- Truck Volumes: 450 trucks per day
- Speed: 63 mph (85th percentile speed)
- Crash History (2018 – 2022):
    - 40 crashes (3 resulting in serious injury)
    - 15 crashes involved a vehicle leaving the roadway

### FERN ROAD

- Traffic Volumes: 1,500 – 2,000 vehicles per day
- Truck Volumes: 300 trucks per day
- Speed: 52 mph (85th percentile speed)
- Crash History (2018 – 2022):
    - 12 crashes (1 resulting in a fatality)
    - 6 crashes involved a vehicle leaving the roadway

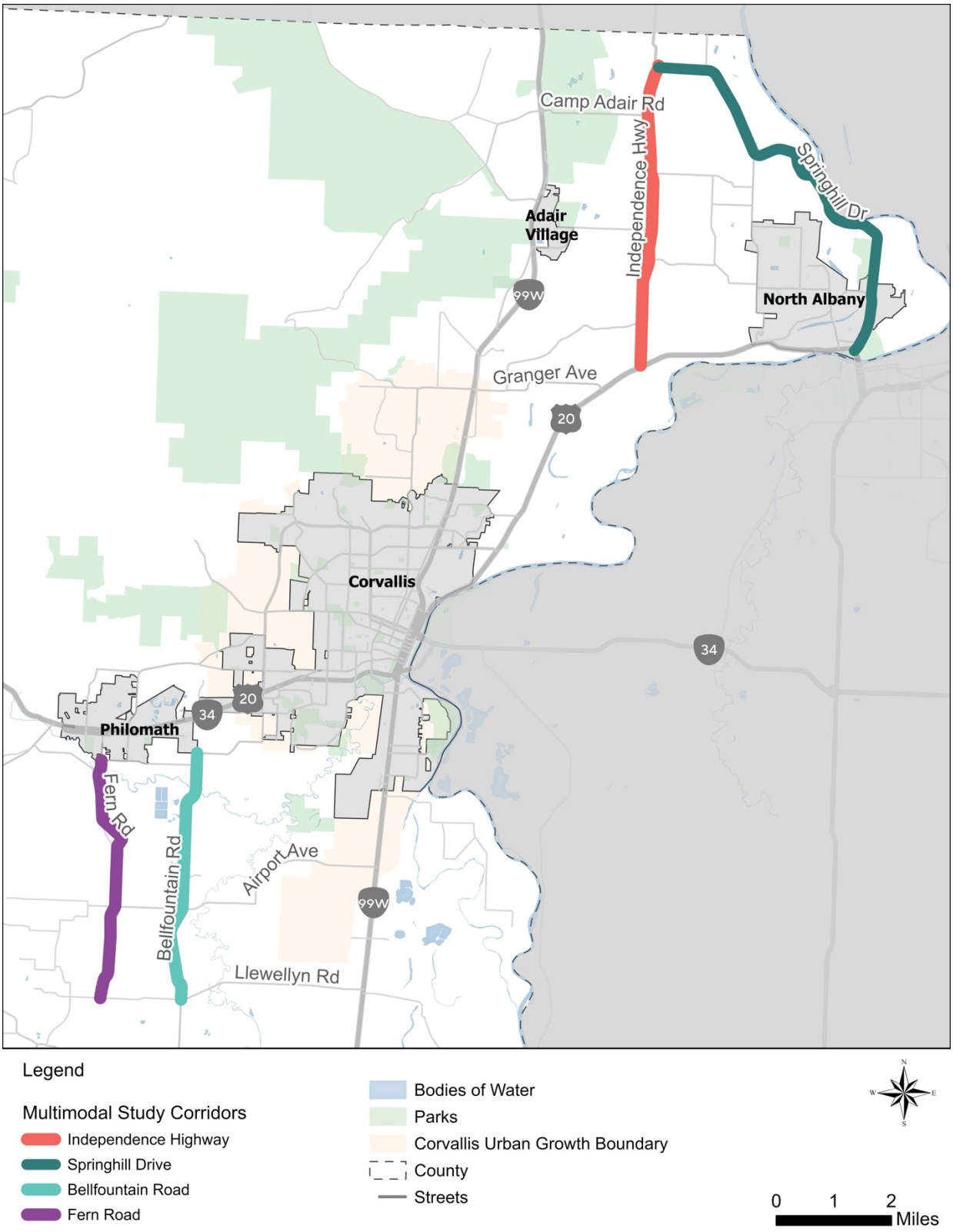


**FIGURE 13. MULTIMODAL CORRIDORS OF INTEREST**