RESOLUTION NO. 74 -2024

A Resolution of the Kitsap County Board of Commissioners adopting the 2024 Kitsap County Comprehensive Safety Action Plan.

WHEREAS, the 2024 Kitsap County Traffic Comprehensive Safety Action Plan aligns with Vision Zero, which is based on the Safe System Approach and Target Zero, which is the Washington State Strategic Highway Safety Plan 2019. Both are committed to the goal of reaching zero deaths and serious injuries because of roadway collisions, and

WHEREAS, the six principles of the Safe System Approach are:

- Death and serious injuries are unacceptable.
- Humans make mistakes but those mistakes don't have to lead to serious injuries or death.
- Humans are vulnerable and have physical limitations for tolerating crash forces.
- Responsibility is shared and all stakeholders are vital for preventing serious injuries and fatalities on our roadways.
- Safety is proactive and should identify and address safety issues before collisions occur instead of reacting to collisions afterwards.
- Redundancy is crucial and requires all parts of the transportation system to be strengthened so that if one part fails, the other parts still protect people, and

WHEREAS, the life, safety and health of residents, employees and visitors to Kitsap County is of highest priority to the Kitsap County Board of Commissioners, and

WHEREAS, between 2017 and 2021, there were 185 collisions that resulted in a fatality or serious injury, which is about 4% of the total collisions in unincorporated Kitsap County, and

WHEREAS, cities, counties, and states around the country, including the State of Washington, have established action plans aligned with the Safe System Approach, and

WHEREAS, the 2024 Kitsap County Traffic Safety Action Plan initiatives and strategies are helping our community mobilize to address the crisis of traffic deaths and serious injuries, and

WHEREAS, Kitsap County currently implements several traffic safety programs, services and standards intended to promote roadway safety, and

WHEREAS, projects generated by the 2024 Kitsap County Comprehensive Safety Action Plan will require funding support. Grant funding through state, federal, and other sources is periodically available to support these traffic safety efforts, including the federal Safe Streets and Roads for All (SS4A) grant program.

NOW, THEREFORE BE IT RESOLVED by the Board of Kitsap County Commissioners (BOCC), in the interest of public safety:

The BOCC adopts the 2024 Kitsap County Comprehensive Safety Action Plan as part of a comprehensive effort to strive to achieve zero traffic deaths and serious injuries on Kitsap County's road network by 2030.

AD ADOPTED this, 13 day of May, 2024,

BOARD OF COUNTY COMMISSIONERS
KITSAP COUNTY, WASHINGTON

Katherine T. Walters

KATHERINE T. WALTERS, Chair

Christine Rolfes

CHRISTINE ROLFES, Commissioner

Charlotte Garrido

CHARLOTTE GARRIDO, Commissioner

ATTEST: Dana Daniels

Dana Daniels, Clerk of the Board

2024
Kitsap County Traffic Safety Action Plan

Traffic Division
Kitsap County Public Works

614 Division Street, MS-26
Port Orchard, WA 98366-5678
www.kitsapgov.com

Published April 2024
Adopted May 2024

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Under 23 U.S. Code§ 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

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List of Abbreviations

AASHTO	American Association of State Highway Transportation Officials
CMF	Crash Modification Factor
FAT	Fatal Collision
FHWA	Federal Highway Administration
HSM	Highway Safety Manual
LOS	Level of Service
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Program
SI	Serious Injury Collision
WSDOT	Washington State Department of Transportations

Our Vision Zero Pledge

Kitsap County strives to reach zero serious injury and fatal traffic collisions by 2030 using the Safe Systems Approach to build redundant safety measures throughout our local agency.

1 Introduction

Kitsap County aligns with both Vision Zero and Target Zero with the goal of reaching zero serious injury or fatal collisions by 2030. In the past, the County has aligned with Target Zero from Washington State's Strategic Highway Safety Plan which focuses on serious injury and fatal collisions. Target Zero lists safety priorities for mitigation based on collision types and contributing circumstances. It is a systemic approach to identify high risk road characteristics and mitigate them before collisions occur. While the County continues to utilize Target Zero, it is also expanding the traffic safety program to include the Safe System Approach from Vision Zero. The Safe System Approach is a holistic and comprehensive approach which focuses on creating safety redundancies within the transportation system by building multiple layers of protection to prevent collisions and minimize the impact of collisions that do occur to make it safer for all road users.

2 Serious Injury and Fatal Collision Data Analysis

While overall traffic collisions are trending down between 2017 and 2021, serious injury and fatal collisions increased. Serious injury and fatal collisions involving pedestrians and bicyclists dipped to a low of 2 in 2019 and spiked to 9 in 2021. The COVID pandemic may have impacted collision data during this time. Collision trends for 2017 to 2021 are shown in Figures 1 and 2.

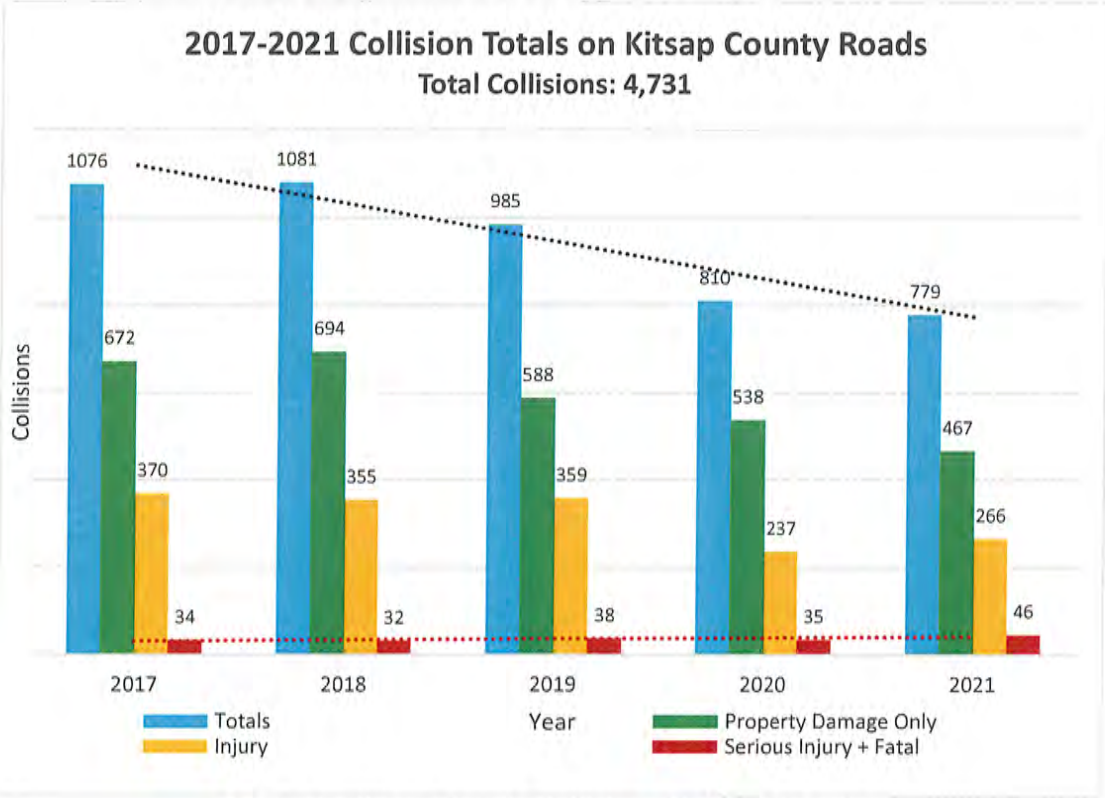

Figure 1 – Kitsap County Collision Totals by Severity

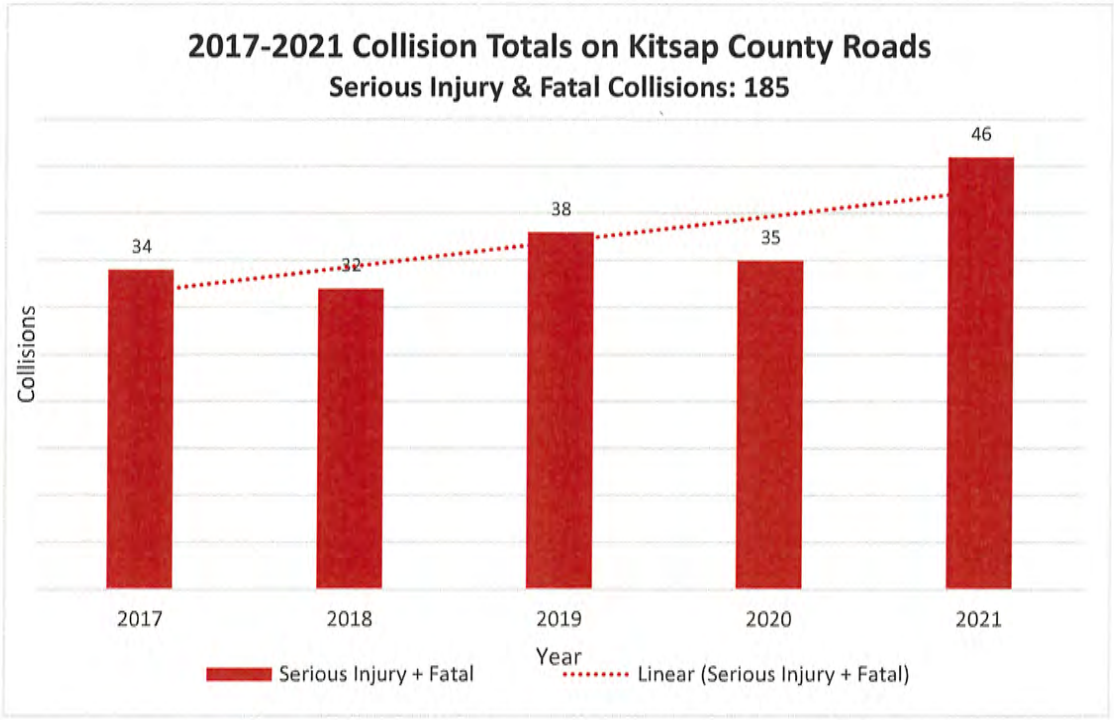

Figure 2 – Serious Injury and Fatal Collisions by Year

Serious injury and fatal collisions are occurring throughout the north, central, and south parts of the County except for a concentration of collisions in the Silverdale area. There are a few corridors with a significant number of serious injury and fatal collisions. Roadways with three or more serious injury and fatal collisions are listed in Table 1. A map of all serious injury and fatal collisions is shown in Figure 3. Corridors with multiple collisions are highlighted in yellow.

Table 1 – Corridors with High Serious Injury and Fatal Collisions

Road Name	Serious Injury and Fatal Collisions
BETHEL BURLEY RD SE / BETHEL RD SE	12
SIDNEY RD SW	9
SEABECK HIGHWAY NW	6
BEACH DR E	5
CENTRAL VALLEY RD NW	5
CLEAR CRK RD NW	5
COLUMBIA ST (NE) / PORT GAMBLE RD (NE)	5
GLENWOOD RD SW	5
MILE HILL DR (SE)	5
MILLER BAY RD NE	5
SILVERDALE WAY NW	5
ANDERSON HILL RD (NW)	4
HANSVILLE RD NE	4
LAKE FLORA RD (SW)	4
PROVOST RD NW	4
BUCKLIN HILL RD (NW)	3
PINE RD (SW)	3
SEABECK-HOLLY RD NW	3
SOUTHWORTH DR (SE)	3
TRACYTON BLVD NW	3

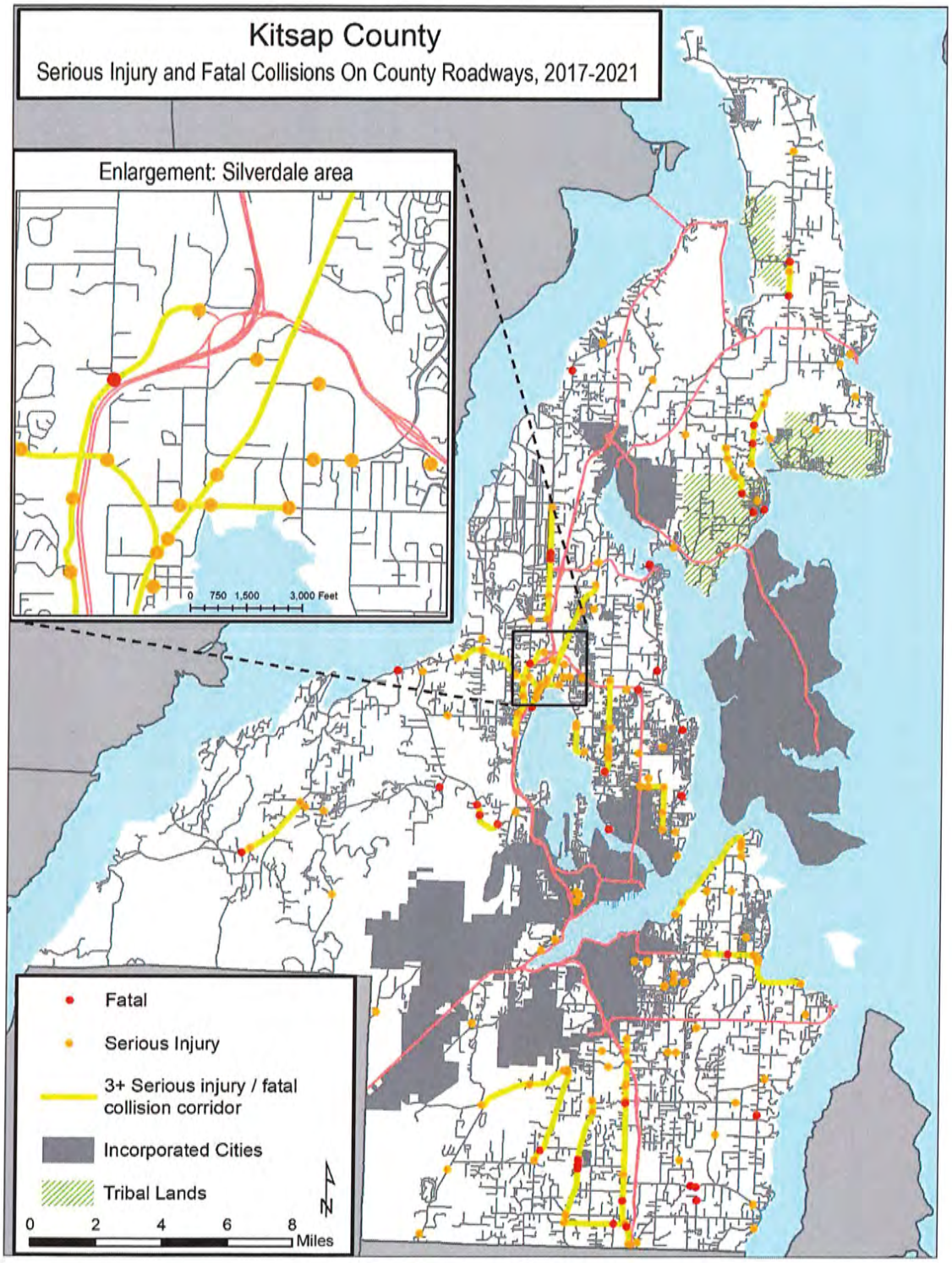

Figure 3 – Serious Injury and Fatal Collisions Map

Pedestrians and bicyclists are vulnerable road users. While pedestrians and bicyclists are involved in fewer total collisions, they are disproportionately represented in severe injury and fatal collisions. Pedestrian and bicycle collisions by severity are shown in in Figure 4. A map of all pedestrian and bicycle collisions is shown in Figure 5. Corridors with multiple pedestrian and bicycle collisions are highlighted in yellow.

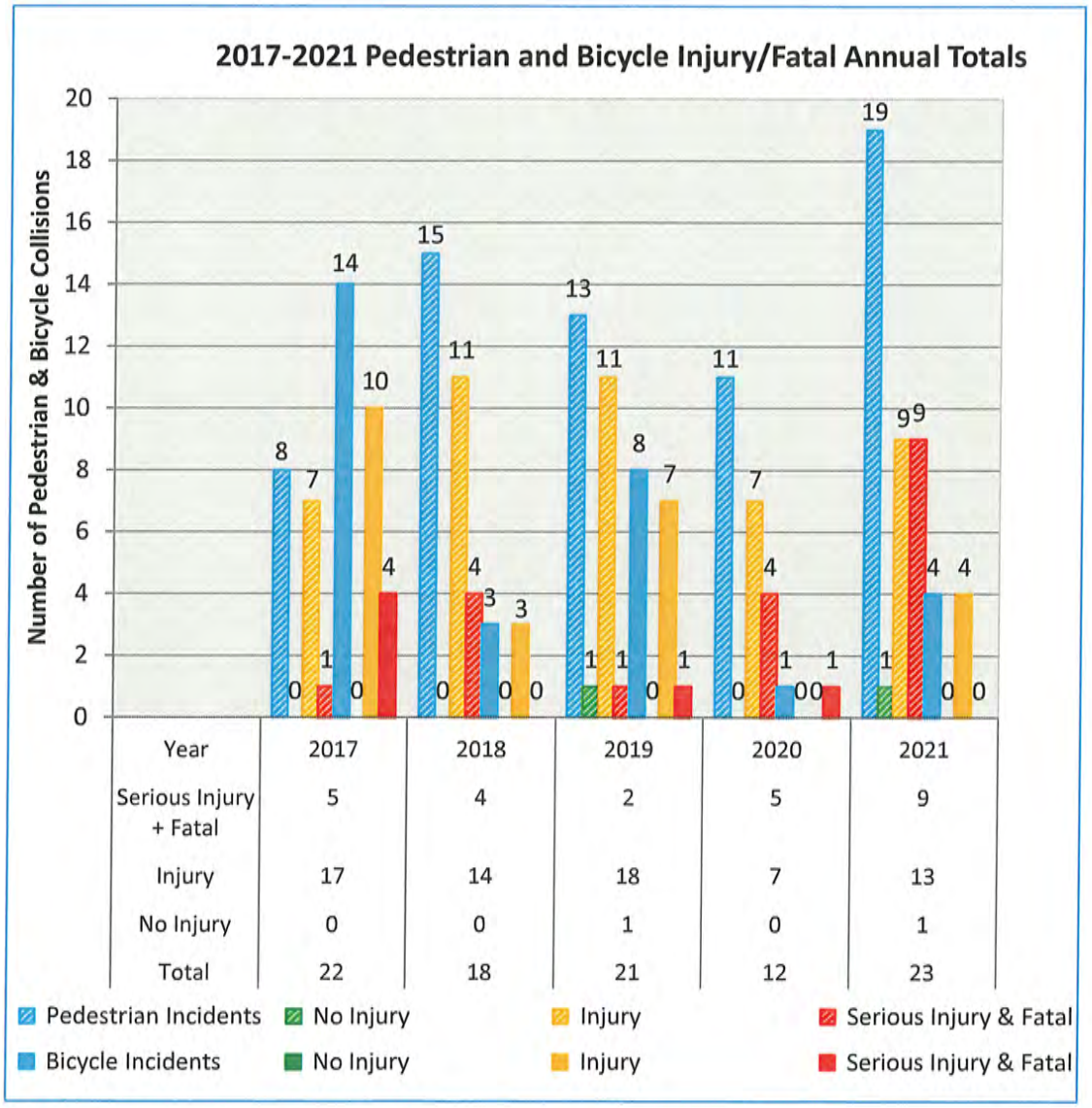

Figure 4 – Pedestrian and Bicyclist Collisions by Severity

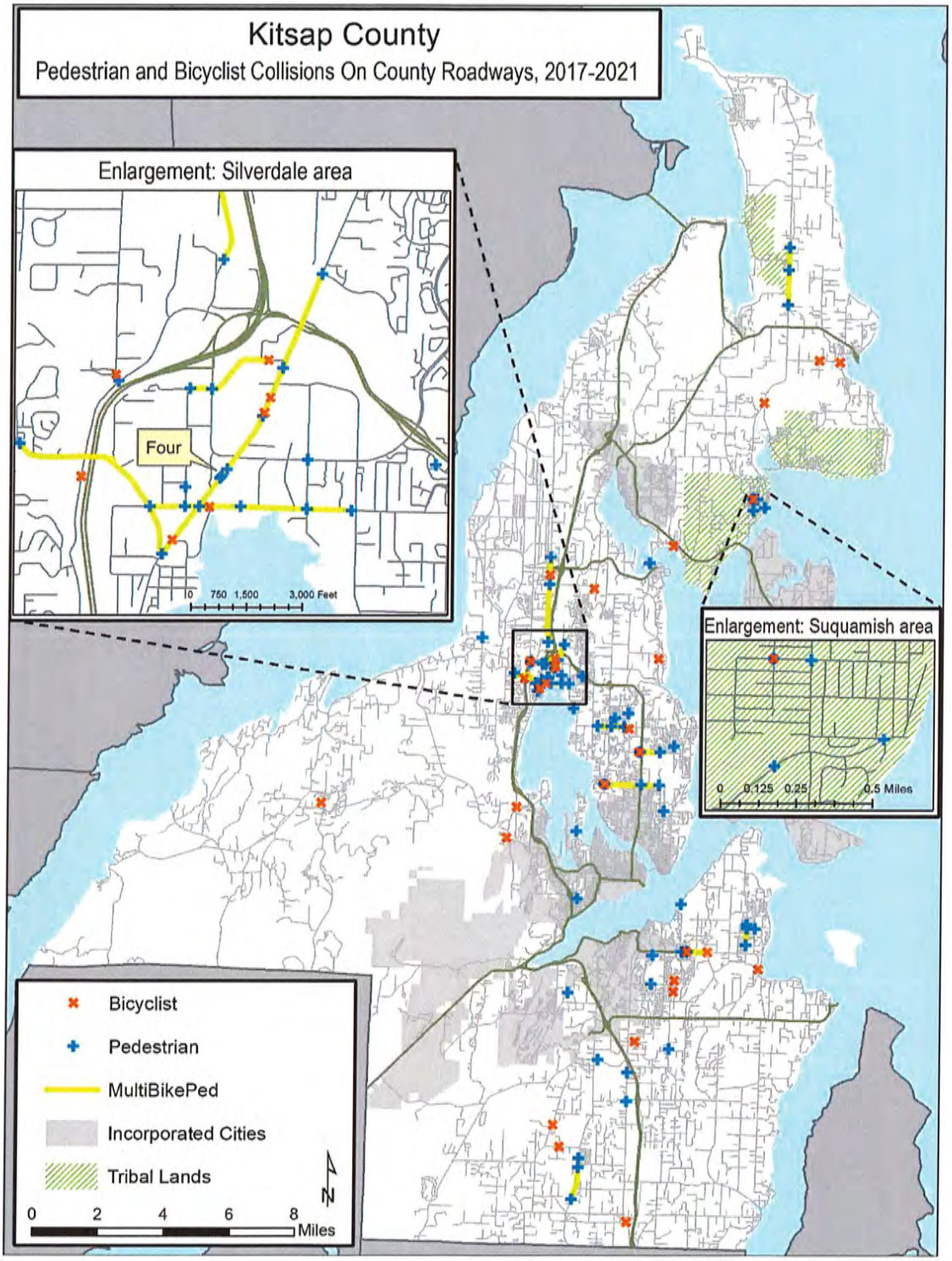

Figure 5 – Pedestrian and Bicyclist Collisions Map

3 Safe System Approach

Vision Zero is a strategy using the Safe Systems Approach to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. The Safe System Approach is a holistic and comprehensive approach that provides a guiding framework to make routes safer for all modes of travel. It consists of six principles and five objectives as shown in Figure 6.

Figure 6 – Safe System Approach

Six Principles of the Safe System Approach:

- Death and serious injuries are unacceptable.
- Humans make mistakes but those mistakes don't have to lead to serious injuries or death.
- Humans are vulnerable and have physical limitations for tolerating crash forces.
- Responsibility is shared and all stakeholders are vital for preventing serious injuries and fatalities on our roadways.
- Safety is proactive and should identify and address safety issues before collisions occur instead of reacting to collisions afterwards.
- Redundancy is crucial and requires all parts of the transportation system to be strengthened so that if one part fails, the other parts still protect people.

Five Objectives of the Safe System Approach:

- Safer People: encourage safe, responsible driving and behavior by all road users.
- Safer Roads: design roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.
- Safer Vehicles: expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.
- Safer Speeds: promote safer speeds in all roadway environments through a combination of thoughtful, equitable, context-appropriate roadway design, appropriate speed-limit setting, targeted education, outreach campaigns, and enforcement.
- Post-Crash Care: enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices.

4 Equity

The Safe System Approach puts a high emphasis on equity and improving underserved communities. Kitsap County is committed to creating equal and safe mobility across the County's roadway network for all users regardless of race, socioeconomic status, age, ability, legal status, gender identity, sexual orientation, etc. The Washington State -Traffic Safety Commission has compiled fatality data for the state by demographic for the years 2011 to 2020. The breakout of traffic fatalities in Kitsap County by demographic between 2017 and 2020 is shown in Figure 7. Data from 2021 was unavailable. No serious injury collision data was included. This data shows all traffic fatalities within Kitsap County including collisions on incorporated roads which are outside of Kitsap County's jurisdiction. Fatality rates per 100,000 population were not calculated for any race/ethnicity with fewer than ten traffic fatalities. There were nine non-white traffic fatalities in Kitsap County between 2017 and 2020 – 2 American Indian/Alaska Native, 0 Asian/Pacific Islander, 1 Black, 5 Hispanic, and 1 Multiracial. The National Highway Traffic Safety Administration (NHTSA) has also compiled collision demographic data which is included in the 2017-2021 Kitsap County Traffic Safety Plan in Appendix A of this report. The data does not identify any underserved communities in the County.

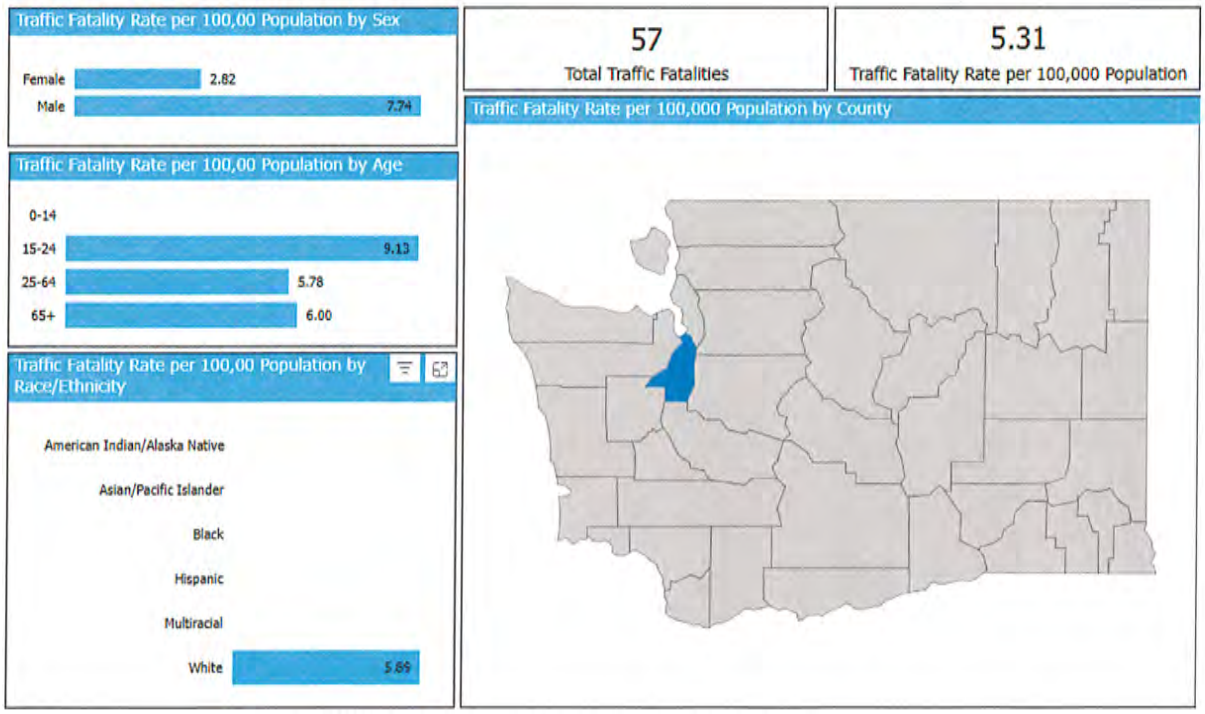

Figure 7 – Fatality Data by Demographic

5 Safety Action Items

5.1 Safer People

Safer people involves encouraging safe, responsible driving and behavior. The County does not currently have an education and outreach program for traffic. Occasionally the engineering staff will give a presentation at community meetings. However, the County could benefit from a traffic education and outreach program to help promote non-motorized and driver safety by partnering with the school districts and community groups to remind all road users of the importance of practicing safe habits. The County's strategies for creating safer people are outlined in Table 2.

Table 2 – Strategies for Creating Safer People

No.	Strategy	Department	Status
1	Develop an education and outreach program	Kitsap County Public Works - Traffic	Planning
2	Engineering staff presents at community meetings	Kitsap County Public Works - Traffic	Ongoing
3	Partner with school districts to present in classrooms	Kitsap County Public Works - Traffic	Ongoing
4	Partner with school districts to create Safe Routes to School	Kitsap County Public Works - Traffic	Ongoing

5.2 Safer Roads

Safer roads involves designing roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users. Appendix A of this report is the 2017-2021 Kitsap County Traffic Safety Plan which focuses on the County's methods for analyzing safer roads both systemically and locally. The County's strategies for creating safer roads are outlined in Table 3.

Table 3 – Strategies for Creating Safer Roads

No.	Strategy	Department	Status
1	2017-2021 Kitsap County Traffic Safety Plan	Kitsap County Public Works - Traffic	Ongoing
	- Capital project: roundabout conversion		Fully funded: federal grant awarded. In design.
	- In-house, low-cost mitigations		Ongoing
	- Code Green: signal timing software installation		Hard costs funded: federal grant awarded. Ongoing.
3	Pavement Preservation Program	Kitsap County Public Works - Roads	Annual
4	Roadway maintenance	Kitsap County Public Works - Roads	Ongoing
	- Signage		Ongoing
	- Striping		Annual
	- Signals		Ongoing
	- Street lights		Ongoing
	- Vegetation management		Ongoing
6	Special signs policy	Kitsap County Public Works - Traffic	Ongoing
	- Deaf children		
	- Deer crossing		
	- Memorial		
7	Kitsap County Non-Motorized Facility Plan	Kitsap County Public Works - Planning, Non-Motorized Committee	Ongoing
8	2024-2029 Kitsap County Transportation Improvement Program	Kitsap County Public Works - Traffic, Kitsap County Public Works - Planning, Kitsap County Public Works - Design	Annual, Ongoing
9	Street lights policy	Kitsap County Public Works - Traffic	Ongoing
10	Roundabout policy	Kitsap County Public Works - Traffic	Ongoing
11	Neighborhood Traffic Calming Program	Kitsap County Public Works - Traffic	Ongoing
12	Work Zone Safety Policy	Kitsap County Public Works - Roads	Ongoing
13	Road Duty After Hours Call Out	Kitsap County Public Works - Traffic	Ongoing

5.3 Safer Vehicles

Safer vehicles involves expanding the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants. The design of vehicles is not in the scope of this report nor in the purview of the County. However, the County realizes that creating safer vehicles can go beyond vehicle design. There are about 300 collisions per year in Washington State resulting from unsecured loads. Encouraging people to secure their loads will make it safer for all road users. The County's strategies for creating safer vehicles are outlined in Table 4.

Table 4 – Strategies for Creating Safer Vehicles

No.	Strategy	Department	Status
1	Unsecured loads campaign: education and outreach, fines at transfer stations	Kitsap County Public Works - Solid Waste	Implemented
2	Ordinance to improve law enforcement of commercial vehicles: regulation of size, weight, and load	Kitsap County Sheriff, Kitsap County Public Works - Traffic	In draft
3	Truck routes policy	Kitsap County Public Works - Traffic	Ongoing
4	Youth Bicycle Helmet Program	Central Kitsap Fire & Rescue, South Kitsap Fire & Rescue	Ongoing
5	Fleet Management and Maintenance	Kitsap County Policy	Ongoing

5.4 Safer Speeds

Safer speeds involves promoting safer speeds in all roadway environments through a combination of thoughtful, equitable, context-appropriate roadway design, appropriate speed-limit setting, targeted education, outreach campaigns, and enforcement. The County strives to design roads and set speed limits to promote an appropriate speed for each roadway. There is currently only one Kitsap County deputy whose sole job is speed enforcement which is insufficient to patrol the entire county. The County's strategies for creating safer speeds are outlined in Table 5.

Table 5 – Strategies for Creating Safer Speeds

No.	Strategy	Department	Status
1	Review and modify as needed traffic speed limit setting policies	Kitsap County Public Works - Traffic	Ongoing
2	Ball bank all new or resurfaced curves for appropriate signage	Kitsap County Public Works - Traffic	Ongoing
3	Neighborhood Traffic Calming Program	Kitsap County Public Works - Traffic	Ongoing
4	Design new projects with speed control in mind	Kitsap County Public Works - Design	Ongoing
5	Install speeding cameras	Kitsap County Sheriff	Planning
6	School zone speed limits policy	Kitsap County Public Works - Traffic	Ongoing

5.5 Post-Crash Care

Post-crash care involves enhancing the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices. All medical care is outside of the County's purview. However, the County can minimize emergency response times by ensuring that emergency vehicles have sufficient access to collision sites. The County's strategies for post-crash care are outlined in Table 6.

Table 6 – Strategies for Improving Post-Crash Care

No.	Strategy	Department	Status
1	Review all new developments for emergency vehicle access	Kitsap County Department of Community Development, Kitsap County Fire Marshall, Kitsap County Public Works - Traffic	Ongoing
2	Periodically test all signals for their responsiveness to the Opticom	Kitsap County Public Works - Traffic	Ongoing
3	Central Kitsap Fire & Rescue Capital Facilities Plan: strategically combine, replace, and update fire stations across Central Kitsap	Central Kitsap Fire & Rescue	Phase 1
4	Child Car Seat Inspections	South Kitsap Fire & Rescue	Ongoing
5	Coordinate storm response with Emergency Medical Services	Kitsap County Public Works - Traffic	Ongoing
6	Coordinate with Emergency Medical Services to create traffic control management plans for capital projects (alternate emergency medical services routes during construction)	Kitsap County Public Works - Traffic, Kitsap County Fire Marshall, Kitsap County Sheriff	Ongoing

Appendix A. 2017-2021 Kitsap County Traffic Safety Plan

2017-2021
KITSAP COUNTY TRAFFIC SAFETY PLAN

Kitsap County Public Works
Traffic Division

614 Division Street, MS 26
Port Orchard, WA 98366-4614
(360) 337-5777 Fax (360) 337-5678

Published February 2024

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ABBREVIATIONS USED

AASHTO	American Association of State Highway Transportation Officials
APMVM	Accidents per Million Vehicle Miles
APMEV	Accidents per Million Entering Vehicles
FHWA	Federal Highway Administration
HFST	High Friction Surface Treatment
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
PDO	Property Damage Only
SI/FAT	Serious Injury / Fatal
TRB	Transportation Research Board
WSDOT	Washington State Department of Transportation

TERMS USED

Collision Frequency is the total number of collisions occurring at the study location over the five-year study period.

Collision Location is an intersection, segment, or driveway that experiences five or more collisions during the five-year study period.

Collision Rate (R) is a measure of crash frequency at a given location that is dependent on the number of collisions, amount of traffic or ADT, and the study period. This report uses a five-year study period. Results are given in units of accident per million entering vehicles (APMEV) for intersections and accident per million vehicle miles (APMVM) for segments and driveways.

Distraction/Distracted Driver refers to any collision resulting from a distracted driver including but not limited to any collision where one or more of the contributing circumstances is listed as any form of distraction or inattention, and any driver action such as grooming, eating, drinking, operating handheld devices, operating radio, etc.

Driveway Related Locations are locations where specific access points intersect with the roadway.

Equivalent Property Damage Only (EPDO) is a weighted severity measure that represents injury and fatal collisions as an equivalent number of property damage only (PDO) collisions. In this report, injury collisions are weighted at five times greater than a PDO collision and fatal collisions are weight at ten times greater. The sum of the weighted values is reported as the number of corresponding EPDO collisions.

Lane Departure refers to any collision resulting from leaving the travel lane including but not limited to fixed object collisions, parked car collisions, sideswipes (any direction), head-on collisions, overturned vehicles, etc.

Intersection Locations are locations where two or more roads meet.

Safety Location is a collision location that has experienced 5 or more collisions during the study period and has a collision rate greater than the average collision rates for similar locations within the County.

Segment Locations are portions of the roadway at least one-tenth of a mile in length outside the operational area of any intersection.

Serious Injury Collision (SI) is defined in the Washington State Police Collision Report Instruction Manual as any injury other than fatal that results in one or more of the following: severe lacerations resulting in exposure of underlying tissues, muscles, organs, or resulting in significant loss of blood; broken or distorted extremity; crush injuries; suspected skull, chest, or abdominal injury other than bruises or minor lacerations; significant burns; unconsciousness when taken from the scene; paralysis.

Severity Index is the average weighted severity for a given location ranging from 1 to 10. It is equal to the total weighted severity of all the collisions (EPDO) divided by the total number of collisions occurring at the location.

Executive Summary

This report presents the Local Road Safety Plan (LRSP). The safety plan consists of two parts. Part One focuses only on serious injury and fatal collision occurring in the County. Part Two focuses on the county-wide analysis of the total reported collisions on Kitsap County roads.

The county traffic safety efforts are aligned with *The Washington State Strategic Highway Safety Plan 2019* and Target Zero Priorities. By identifying locations with calculated risk factors and proactively applying known countermeasures for focused collision types, the County's goal is to reduce the number and severity of all roadway collisions. By the year 2030, the County hopes to have zero serious injury and fatal collisions.

Part One of this Local Road Safety Plan provides the evaluation and methodology for implementing a systemic approach to address fatal and serious injury collisions occurring on the Kitsap County roadway network.

Serious injury and fatal collisions are trending upwards. The collision type with the highest serious injury and fatal collisions is lane departures followed by opposite direction, pedestrian/bicycle, and angle entry collisions. The leading contributing circumstance for serious injury and fatal collisions is impaired driving followed by speeding, failure to grant right-of-way, and distracted driving. The proposed countermeasures for 2023 resulting from the Part One evaluation of serious injury and fatal collision analysis focus on intersections and are as follows:

- Sidney Rd SW & SW Pine Rd intersection conversion from two-way stop-controlled to roundabout. Appendix F contains preliminary design plans and project estimate for the construction of the proposed roundabout.
- Installing Code Green technology by Rhythm Engineering at 21 signalized intersections in Silverdale to improve the signal timing will result in increasing intersection level of service and reducing delay thereby reducing the collision frequency and severity at these locations. A list of proposed intersections is shown below. Appendix G includes the contract with Rhythm Engineering and an overview of Code Green.

    1. Silverdale Way NW & NW Byron Street
    2. Silverdale Way NW & NW Anderson Hill Road
    3. Silverdale Way NW & NW Bucklin Hill Road
    4. Silverdale Way NW & Kitsap Mall Blvd NW/Ridgetop Blvd NW
    5. Silverdale Way NW & East Side Mall Entrance/Plaza Entrance
    6. Silverdale Way NW & NW Myhre Road
    7. Silverdale Way NW & NW Randall Way
    8. NW Bucklin Hill Road & NW Anderson Hill Road
    9. NW Bucklin Hill Road & Silverdale Plaza Entrance
    10. NW Bucklin Hill Road &NW Randall Way
    11. NW Bucklin Hill Road & Mickelberry Road NW
    12. NW Bucklin Hill Road & Tracyton Blvd NW
    13. NW Myhre Road & Ridgetop Blvd NW
    14. NW Myhre Road & Lowes Entrance
    15. Mickelberry Road NW & Ridgetop Blvd NW

16. Mickelberry Road NW & NW Myhre Road
17. Kitsap Mall Blvd NW & NW Plaza Road
18. Kitsap Mall Blvd NW & NW Randall Way
19. NW Randall Way & North Point/North Mall Entrance
20. Provost Road NW & NW Anderson Hill Road
21. Clear Creek Road NW & NW Greaves Way

Part Two of this LRSP presents a County-wide analysis of the total reported collisions on Kitsap County roads as well as detailed discussions of the method used to identify safety locations (intersections, road segments, and driveways); of collision trends and patterns; and countermeasures selection process for the study period from calendar year 2017 through 2021. During that time, there were 4,731 reported collisions. Current collision totals for the County are shown in Figure 0.1 below.

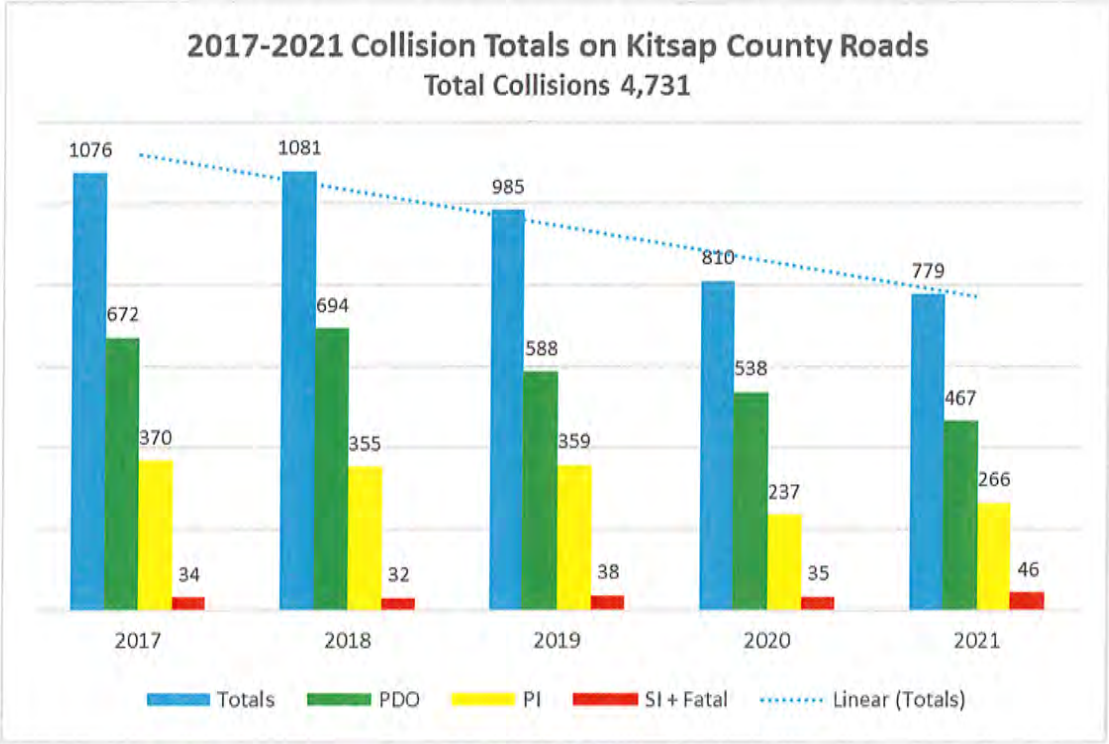

Figure 0.1 – Kitsap County Road Collision Trends

The total number of collisions is trending downward. The collision type with the highest number of total collisions is lane departures followed by rear-end, angle entry, and opposite direction collisions. The leading contributing circumstance for total collisions is distracted driving followed by failure to grant right-of-way, speeding, and impaired driving. Lists were generated for the intersections, segments, and driveways with the most collisions based on the criteria shown in Appendix B. In Part Two the County will focus mitigations on localized intersections and segments with the most collisions.

Listed below are the top 10 intersection, segment, and driveway safety locations with proposed mitigation measures. Complete lists from the evaluation are found in Appendix C. Complete lists of the mitigation measures for the intersection and segment locations are found in Appendix D.

INTERSECTION LIST

1. SIDNEY RD SW & SW PINE RD
   (Roundabout conversion with grant funding)
2. NW MYHRE RD & SILVERDALE WAY NW
   (Install chicken tracks on westbound left turn. Part of the Silverdale Way Preservation Project. Part of Code Green.)
3. NW GREAVES WAY & CLEAR CREEK RD NW
   (Part of Code Green)
4. KITSAP MALL BLVD NW & NW RANDALL WAY
   (Part of the Silverdale Way Preservation Project. Part of Code Green.)
5. NW 64TH ST/NW MC WILLIAMS RD & CENTRAL VALLEY RD NW
   (Roundabout conversion on TIP)
6. NW BUCKLIN HILL RD & SILVERDALE WAY NW
   (Part of Code Green.)
7. CENTRAL VALLEY RD NW & NW FAIRGROUNDS RD
   (Monitor)
8. OLD FRONTIER RD NW & NW GREAVES WAY
   (Monitor. Recent roundabout conversion.)
9. SE LAKEWAY BLVD & BETHEL BURLEY RD SE
   (Run channelization warrants for northbound left turn.)
10. JACKSON AVE SE & SE LUND AVE
    (Monitor)

SEGMENT LIST

1. DICKEY RD NW: 90-degree corner to 100 ft. East of HOOT RIDGE LN NW
   (Sleeve curve warning signs, large arrows, and chevrons. Check reflectivity)
2. SW LAKE FLORA RD: 201 ft. West of PILGRAM FIRS to 0.11 mi. East of PILGRAM FIRS
   (Monitor)
3. W. BELFAIR VALLEY RD: 401 ft. S. of MINARD RD W to 354 ft. W. of UNION RIVER BRIDGE
   (Add to high friction surface treatment (HFST) grant list)
4. TRACYTON BLVD NW: 0.15 mi. NW of SILVER BEACH DR NW to 0.12 mi. E. of DARLING RD NW
   (Upsize and Sleeve NB turn warning sign and large arrow. Install 25 MPH speed advisory to large arrow.)
5. RIDGETOP BLVD NW: 11 ft. East of SILVERDALE WAY NW to 232 ft. W. of BLAINE AVE NW
   (Monitor)
6. TRACYTON BLVD NW: 502 ft. South of NW FAIRGROUNDS RD to 0.10 mi. North of NW FAIRGROUNDS RD
   (Monitor)

7. SEABECK HIGHWAY NW: 417 ft. West of LONEROCK LN NW to 0.20 mi. West of END LITTLE BEEF BRIDGE
   (Install diamond on 35 MPH sign)
8. NW BUCKLIN HILL RD: 48 ft. West of TRACYTON BLVD NW to 16 ft. West of FREDRICKSON RD NW
   (Install "STOP FOR PEDESTRIAN" sign southbound on Myhre Rd at Tracyton Blvd and Bucklin Hill Rd)
9. NW ANDERSON HILL RD: 100 ft. NW of STOLI LN NW to 11 ft. East of BN RR OVERPASS
   (Monitor)
10. W. SHERMAN HEIGHTS RD: 0.10 mi. SW of QUARRY ST W to 0.12 mi. NE of W. SHIPVIEW CT
    (Add to HFST grant list)

DRIVEWAY LIST

1. SE LUND AVE: 90 ft. East of AM/PM & 7-11 to 42 ft. East of JACKSON AVE SE
2. SE MILE HILL DR: 79 ft. East of VILLAGE LN SE to 100 ft. West of WARNER AVE SE
3. SILVERDALE WAY NW: 42 ft. SW of POPLARS AVE NW to 132 ft. NE of 2ND ENTRANCE TO BURGER KING
4. NW BUCKLIN HILL RD: 11 ft. East of BAY SHORE DR NW to 48 ft. West of BLAINE AVE NW
5. CHICO WAY NW: 74 ft. South of ERLANDS POINT RD NW to 42 ft. North of HANK'S
6. NE MC WILLIAMS RD: at SAFEWAY ENTRANCE to 116 ft. East of SAFEWAY ENTRANCE
7. NW RANDALL WAY: 354 ft. West of KITSAP MALL BLVD NW to 148 ft. West of KITSAP MALL BLVD NW
8. RIDGETOP BLVD NW: 48 ft. East of MICKELBERRY RD NW to at BEST BUY
9. MICKELBERRY RD NW: at COSTCO ENTRANCE to 190 ft. North of COSTCO ENTRANCE
10. OLD FRONTIER RD NW: 42 ft. North of NW ANDERSON HILL RD to 132 ft. North of NW ANDERSON HILL RD

PART ONE
Systemic Serious Injury and Fatal Analysis

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1.0 Introduction

Part One of this Local Road Safety Plan (LRSP) provides the evaluation and methodology for implementing a systemic approach to address fatal and serious injury collisions occurring on the Kitsap County roadway network. The process used to identify focused issues and prioritize specific locations for collision mitigation is outlined in this report.

County traffic safety efforts are aligned with *The Washington State Strategic Highway Safety Plan 2019* and Target Zero Priorities. By identifying locations with calculated risk factors and proactively applying known countermeasures for focused collision types, the County's goal is to reduce the number and severity of all roadway collisions.

The Washington State Strategic Highway Safety Plan 2019 - Target Zero highlights the importance of data driven crash reduction strategies. The 2019 Target Zero Plan evaluated data for 2015-2017 and grouped the primary factors found in fatal and serious injury collisions into the current priority levels one and two. Through the County's Traffic Safety Program, low-cost safety enhancements are identified which can be applied County-wide to proactively address specific roadway safety issues.

1.1. Target Zero Priorities

The current Target Zero Priorities utilized to identify locations and specific strategies for the Kitsap County traffic safety program are as follows:

Priority Level 1: Contributing factors that are involved in 25% or more of the traffic fatalities or serious injuries.

Priority Level 2: Contributing factors that are involved in less than 25% of the traffic fatalities or serious injuries.

Figure 1.1 shows the 2019 Target Zero priorities one and two based on Washington State collisions from 2015 – 2017. Priorities are grouped into the following categories: high-risk behavior, crash type and road users.

Target Zero Priorities

Washington State 2015–2017		Fatalities		Serious Injuries	
		Number	% Total	Number	% Total
		1,650	100%	6,537	100%
High Risk Behavior					
1	Impairment	958	58.1%	1,215	18.6%
1	Distraction	502	30.4%	1,933	29.6%
1	Speeding	485	29.4%	1,579	24.2%
2	Unrestrained Occupants	312	18.9%	701	10.7%
Crash Type					
1	Lane Departures	796	48.2%	2,458	37.6%
1	Intersections	377	22.8%	2,256	34.5%
Road Users					
1	Young Drivers 16–25	512	31.0%	2,243	34.3%
2	Pedestrians and Bicyclists	329	19.9%	1,333	20.4%
2	Motorcyclists	236	14.3%	1,209	18.5%
2	Older Drivers 70+	223	13.5%	599	9.2%
2	Heavy Trucks	178	10.8%	442	6.8%
Other Monitored Emphasis Areas					
Drowsy Drivers		44	2.7%	236	3.6%
Work Zones		18	1.1%	70	1.1%
Vehicle-Train		12	0.7%	4	0.1%
Wildlife		8	0.5%	53	0.8%
School Buses		4	0.2%	17	0.3%

Figure 1.1 – Target Zero Priorities

1.2. Identification of Priorities

Collision data for crashes occurring on Kitsap County roads was downloaded from the Mobility online database administered by the County Road Administration Board (CRAB) for a five-year study period from January 1, 2017, to December 31, 2021. The collision data found in Mobility was provided by Kitsap County Sheriff's Department and other law enforcement agencies.

Figure 1.2 is a map showing the distribution of serious injury and fatal collisions throughout the County. Geographically, no patterns emerged from the collision analysis.

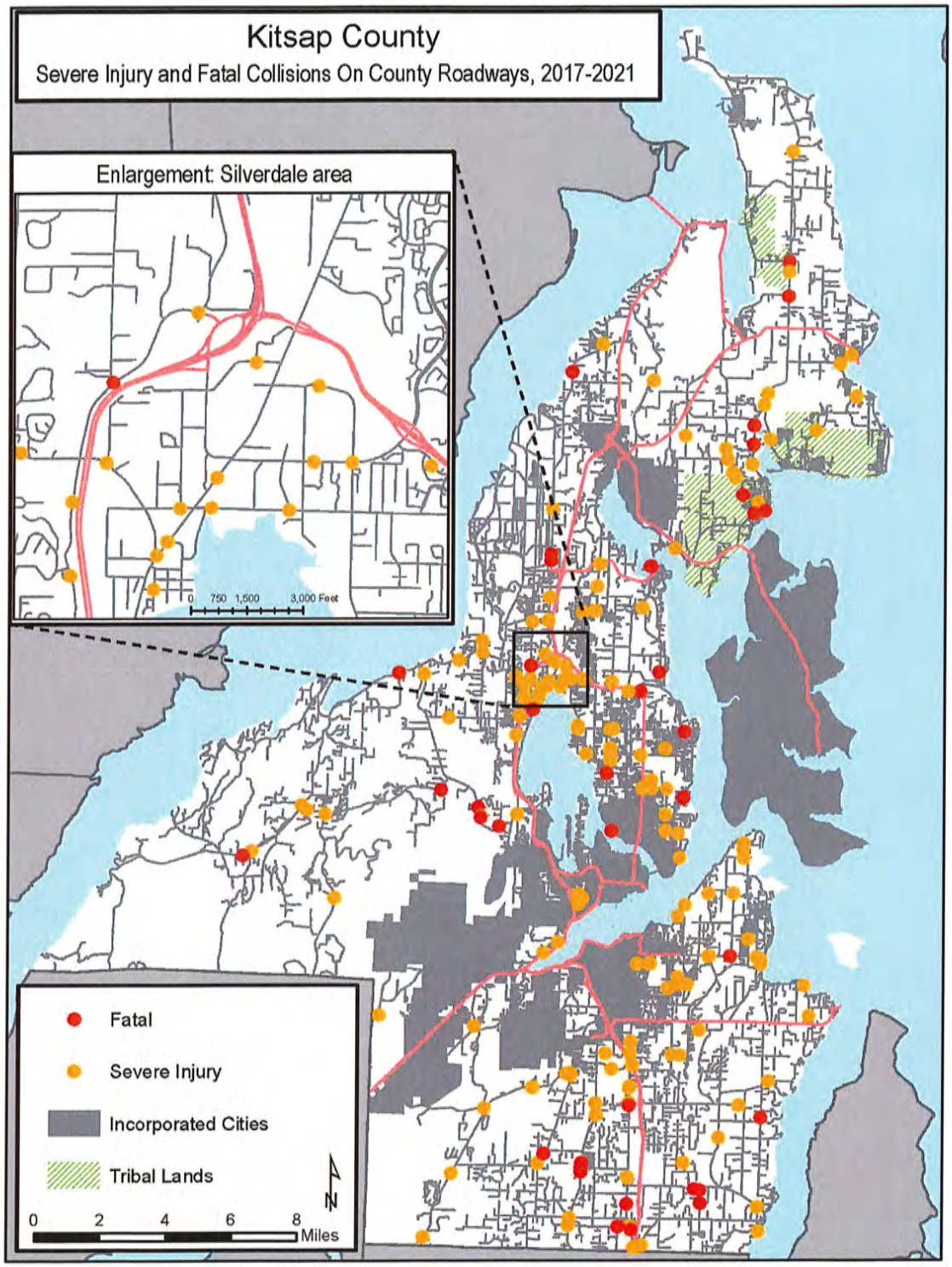

Figure 1.2 – Serious Injury and Fatal Collisions Map

During the study period from calendar years 2017-2021, there were a total of 4,731 collisions on Kitsap County roads. Of these crashes, 185 involved a serious injury or fatality. Figure 1.3 is a collision tree that breaks down these 185 collisions into different collision types to help identify where to concentrate our safety efforts. Table 1.1 summarizes the total number of serious/fatal collisions occurring in each year of the study period. Trends analysis showed a spike of 46 fatal collisions in 2021.

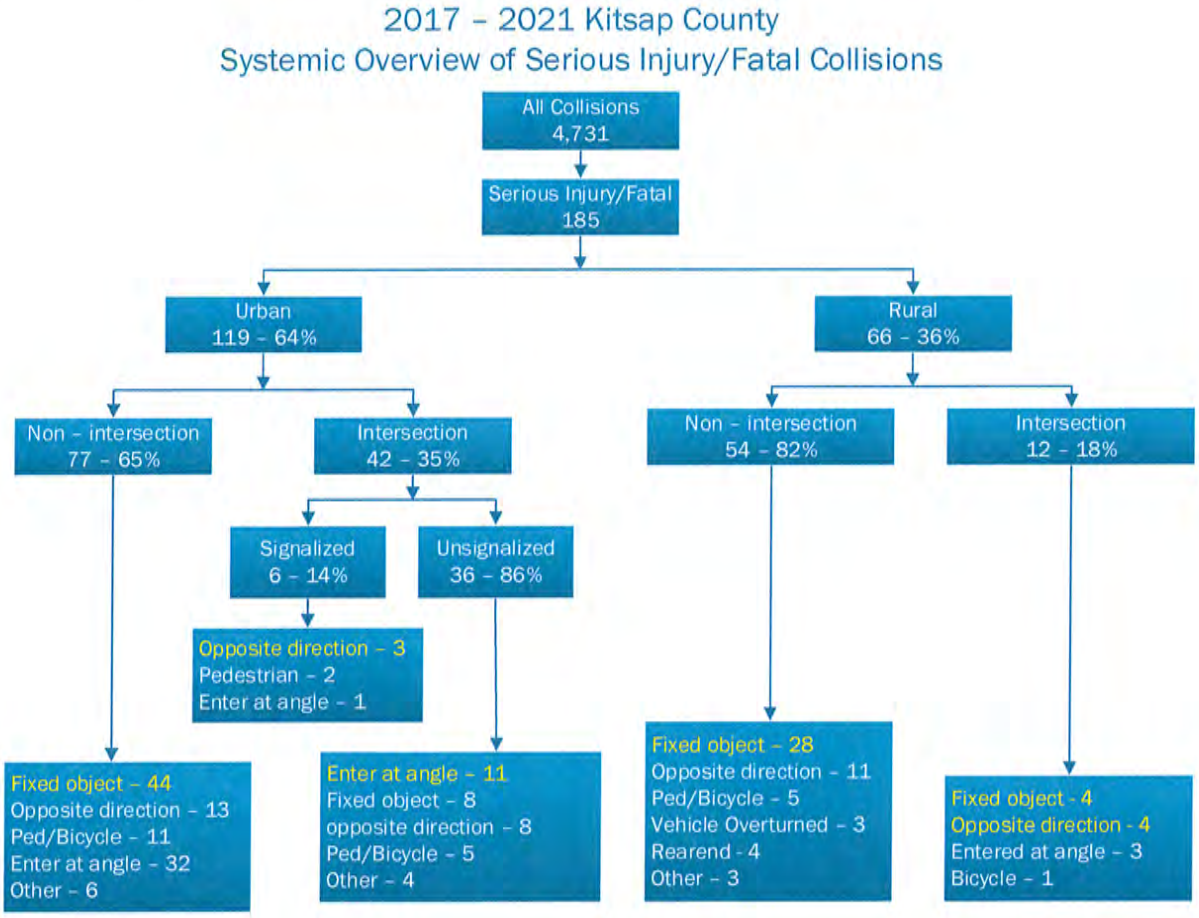

Figure 1.3 – Collision Tree of the 2017 - 2021 Serious Injury/Fatal Collisions

Table 1.1 – Serious Injury and Fatal Collision Annual Totals

Year	Number of Collisions
2017	34
2018	32
2019	38
2020	35
2021	46
Total	**185**

A full analysis of the serious injury and fatal collisions by location type, collision type, and contributing circumstance is shown in Appendix A. Table 1.2 shows the top 4 serious injury and fatal collision types occurring in Kitsap County from 2017 to 2021. The *Washington State Strategic Highway Safety Plan 2019* (Target Zero) defines lane departure collisions as crashes that involve a vehicle unintentionally leaving its lane of travel. Following that definition, the County includes fixed object, vehicle overturned, head-on, involving parked car, and sideswipe collisions in determining a total number of lane departure collisions. Of the top four collision types, Lane Departure crashes contribute 50% of the total number of fatal and serious injury collisions. Out of the total 185 serious injury and fatal collisions, 31% were intersection related and 69% were non-intersection related.

Table 1.2 – Serious Injury and Fatal Collision by Collision Type

Top 4 Collision Types	Count	Percentage
Lane Departure	92	50%
From opposite direction	39	21%
Pedestrian/ Bicycle	25	14%
Entering at angle	18	10%

Contributing circumstances were also analyzed to help identify potential priorities for the County. Table 1.3 shows the top 4 serious injury and fatal collision contributing circumstances occurring during this study. Collisions involving impaired drivers contribute 24% of the total number of serious injury and fatal collisions followed by speed related collisions with 19%.

Table 1.3 – Serious Injury and Fatal Collision by Contributing Circumstances

Top 4 Contributing Circumstances	Count	Percentage
Under Influence of Alcohol or Drugs	45	24%
Speed Related	35	19%
Did Not Grant ROW to Vehicle	26	14%
Inattention	23	12%

The data from Table 1.2 and Table 1.3 shows that lane departure, impaired driving, and intersection collisions are significant areas of concern. The state provided collision breakdowns can be found in Appendix E. Note that the County's data shows 185 fatal and serious injury collisions, and the state data shows 194 fatal and serious injury collisions. This is most likely due to a different data cutoff. The County typically downloads collision data at the end of March following the year of the of the study period and all collision data may not be available in the database for that final year.

Table 1.4 shows the total count and percentage of each Target Zero Priority for all collisions occurring in the County during the study period. Of the 4,731 total collisions in Kitsap County over the last five years, 2,043 (43%) collisions involved lane departures, 1,589 (34%) occurred at intersections, and 419 (9%) collisions involved an impaired driver as a contributing circumstance. Some types of collisions disproportionately result in a serious injury or fatality, whereas other collision types are more likely to result in a less severe collision.

Table 1.4 – Total Collisions by Target Zero Priority

Target Zero Priorities		Count (Total 4,731)	Percentage
Priority Level One	Lane Departures	2043	43%
	Young Drivers 16-25	1893	40%
	Intersections	1589	34%
	Distraction	1263	27%
	Speeding	552	12%
	Impairment	419	9%
Priority Level Two	Older Drivers 70+	538	11%
	Motorcyclists	153	3%
	Heavy Trucks	98	2%
	Pedestrians and Bicyclists	79	2%

1.2.1. Collision Demographics

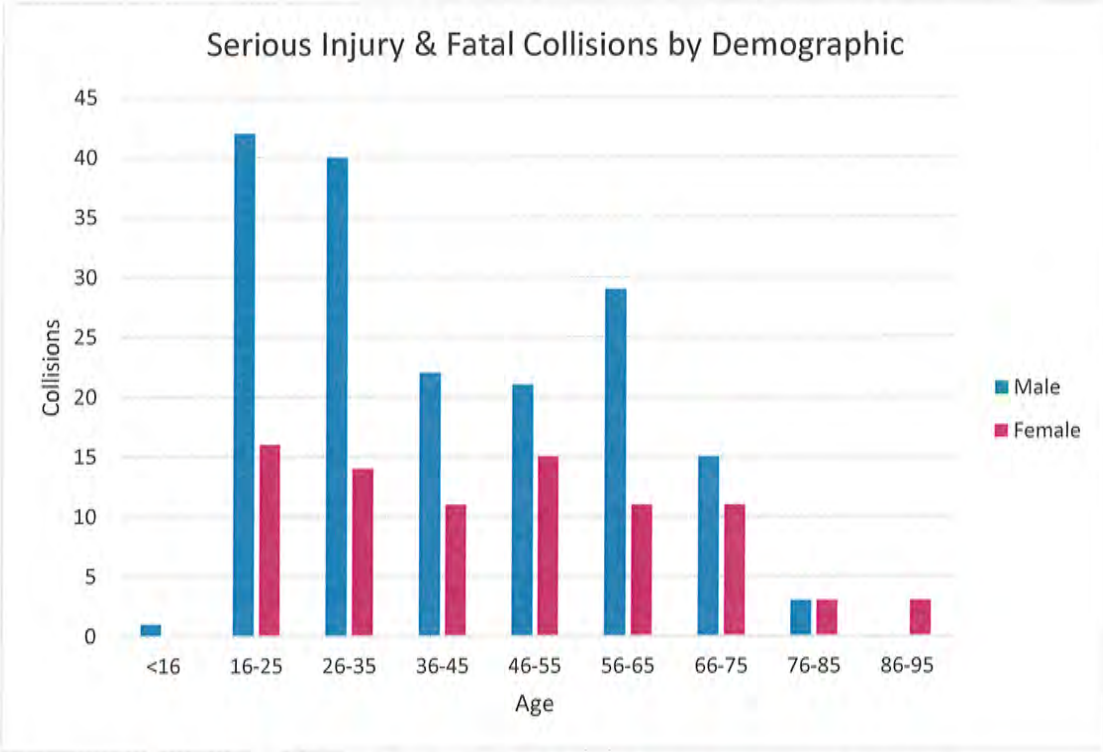

Figure 1.4 – Collision Tree of the 2017 - 2021 Serious Injury/Fatal Collisions

Figure 1.4 shows that young, male drivers are involved in the greatest number of collisions. As male drivers age, they are in fewer collisions. Female drivers at any age are consistently in fewer collisions than males.

1.3. Identification of Areas of Focus

Based on the collision statistics, the Target Zero crash type with the most collisions in the County is lane departure crashes and the Target Zero high risk behavior with the most collisions in the County is impaired driving.

In previous years, the County has elected to pursue mitigations to decrease the number and severity of lane departure collisions for the County's fatal and serious injury collisions. Mitigations the County has implemented:

- Installation of new guardrail
- Replacement of substandard guardrail
- Installation of high friction surface treatment

In addition, spot illumination at rural and urban intersections has also been utilized at intersections where 50 percent of the collisions occurred outside daylight hours.

As far as addressing the high-risk behavior of impaired driving, the County realizes, that although driving under the influence of drugs and alcohol can be partially addressed by creating more forgiving and recoverable roadsides, not all collision types can be remedied through engineering efforts alone. Partnerships with law enforcement and public education outreach to encourage changes in driver behavior would be needed, neither of which can be funded with the federal Highway Safety Improvement Program and therefore cannot be part of this grant request.

Given the relatively high percentage of intersection collisions in both total crashes as well as fatal and serious injury crashes, Kitsap County's 2017-2021 LRSP will focus on addressing intersection safety concerns.

1.4. Countermeasures

Proposed countermeasures for 2023 include:

- Sidney Rd SW & SW Pine Rd intersection conversion from two-way stop-controlled to roundabout.
- Installing Code Green technology at 21 signalized intersections in Silverdale, WA.

On-going and future countermeasures include:

- Guardrail Upgrade (replace non-standard guardrail systems and non-crash worthy end-treatments)
- New Guardrail Installation
- Clear Zone Improvements
- High Friction Surface Treatment (HFST)
- Installation of Streetlighting
- Rumble Strips and Rumble Stripes

Other focused collision types and safety concerns to be evaluated in future updates to this plan include:

- Pedestrian and Bicycle
- Entering at an angle
- Opposite Direction Left Turns

1.5. Prioritized Project Locations

The intersection of **Sidney Road SW & SW Pine Road** at the south end of Kitsap County has been a location with longstanding safety concerns. Several rounds of mitigations have been tried (including signing changes, warning beacons, modifying the adjacent cut slope to improve sight distance) with varying degrees of temporary success; however, no previous mitigations have provided the long-term solution the County is trying to achieve. This location is currently the County's number one intersection safety concern and regularly ranks at the top of the County's prioritized intersection list. Because the intersection continues to consistently be identified as a safety issue, a more substantial solution seems to be in order. This location is affected by several of the top listed collision types and contributing circumstances (e.g., speeding, entering at an angle, and failing to grant right-of-way). By converting the current two-way stop-controlled intersection into a roundabout, traffic would travel at slower speeds and experience fewer conflict points reducing the number and severity of collisions occurring at this location. See Appendix F for a conceptual design.

Additionally, in this LRSP, Kitsap County hopes to address opposite direction collisions occurring at our signalized intersections given that this collision type makes up 27.8% of the fatal and serious injury collisions occurring at intersections in general and that 10 out of the 25 top intersection locations identified in the County's annual safety review are signalized intersections. The intersection safety list is found in Appendix C with the 8 of the 21 selected signalized intersections highlighted in green. The other intersections, while not currently on the intersection safety list, were added to the Code Green list as a systemic approach to safety mitigations as well as to improve the level of service of all signal operations in Silverdale. Due to the consistent peak hour congestion and intersection delay, the County is looking to improve the roadway network through more efficient signal timing and operations. The County is proposing the installation of Code Green technology by Rhythm Engineering that can generate signal timing plans in real-time. These implemented plans result in less delay and fewer intersection related collisions. Appendix G contains the cost estimate for the installation of the Code Green Technology at these 21 locations. Appendix G also contains information about Rhythm Engineering and the Code Green Technology. Click on this link for more information: code|GREEN Why - Rhythm Engineering (rhythmtraffic.com).

1.6. 2023 Recommended Project List

The 2023 proposed countermeasures include two projects. The first project consists of converting a two-way, stop-controlled intersection to a roundabout at the intersection of Sidney Rd SW & SW Pine Rd in Port Orchard, Washington. Appendix F contains preliminary design plans and project estimate for the construction of the proposed roundabout.

The second project involves the installation of the Code Green technology by Rhythm Engineering at 21 signalized intersections within the Silverdale grid for signal timing improvements which will result in improving the intersection level of service and reducing delay thereby reducing the collision frequency and severity at these locations. The list of proposed intersections is shown in Table 1.5. Appendix G contains an estimate for the installation of the Code Green technology at the listed intersections.

Table 1.5 – Code Green Installation Locations

No.	Signalized Intersections
1	**Silverdale Way NW** (#19515) MP 0.525 & **NW Byron Street** (#14100) MP 0.000
2	**Silverdale Way NW** (#19515) MP 0.708 & **NW Anderson Hill Road** (#13549) MP 4.493
3	**Silverdale Way NW** (#19515) MP 1.020 & **NW Bucklin Hill Road** (#57740) MP 0.250
4	**Silverdale Way NW** (#19515) MP 1.327 & **Kitsap Mall Blvd NW** (#57769) MP 0.000 /**Ridgetop Blvd NW** (#56791) MP 3.159
5	**Silverdale Way NW** (#19515) MP 1.450 & **East Side Mall Entrance/Plaza Entrance**
6	**Silverdale Way NW** (#19515) MP 1.760 & **NW Myhre Road** (#57720) MP 0.998
7	**Silverdale Way NW** (#19515) MP 1.878 & **NW Randall Way** (#57730) MP 1.150
8	**NW Bucklin Hill Road** (#57740) MP0.000 & **NW Anderson Hill Road** (#13549) MP 4.242
9	**NW Bucklin Hill Road** (#57740) MP 0.110 & **Silverdale Plaza Entrance**
10	**NW Bucklin Hill Road** (#57740) MP 0.183 & **NW Randall Way** (#57740) MP 0.000
11	**NW Bucklin Hill Road** (#57740) MP 0.799 & **Mickelberry Road NW** (#56770) MP 0.213
12	**NW Bucklin Hill Road** (#57740) MP 1.049 & **Tracyton Blvd NW** (#55275) MP 3.360
13	**NW Myhre Road** (#57720) MP 0.249 & **Ridgetop Blvd NW** (#56791) MP 0.620
14	**NW Myhre Road** (#57720) & **Lowes Entrance**
15	**Mickelberry Road NW** (#56770) MP 0.463 & **Ridgetop Blvd NW** (#56791) MP 0.367
16	**Mickelberry Road NW** (#56770) MP 0.835 & **NW Myhre Road** (#57720) MP 0.831
17	**Kitsap Mall Blvd NW** (#57769) MP 0.050 & **NW Plaza Road** (#57735) MP 0.124
18	**Kitsap Mall Blvd NW** (#57769) MP 0.444 & **NW Randall Way** (#57730) MP 0.700
19	**NW Randall Way** (#57730) MP 0.860 & **North Point/North Mall Entrance**
20	**Provost Road NW** (#19801) MP 2.670 & **NW Anderson Hill Road** (#13549) MP 3.800
21	**Clear Creek Road NW** (#57770) MP 0.000 & **NW Greaves Way** (#57768) MP 0.634

PART TWO
Countywide Collision Statistics

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2.0 Introduction

This portion of the report presents a County-wide analysis of the total reported collisions on Kitsap County roads as well as detailed discussions of the safety locations, collision trends, and countermeasures for the study period from calendar years 2017 through 2021. During that time, there were 4,731 reported collisions.

Kitsap County receives collision data from WSDOT by means of County Location Coding Forms (CLCF). The data is verified for accuracy using aerial maps and a scale or by field measurement. The collision milepost, road log ID, federal function class, intersecting road log ID and intersecting milepost are submitted using the WSDOT's CLCF updates webpage. This data is then uploaded into Mobility, the state-run online database. Mobility is maintained by the County Road Administration Broad (CRAB). The Mobility database includes collision data entered by County staff and by the law enforcement officer who filled out the original CLCF. The collision data can then be utilized by County staff for collision analysis.

Over the course of five years, the average number of collisions was about 947 per year. Prior to 2020 the annual average was about 1047 collisions a year. The pandemic years of 2020 and 2021 had a significantly lower number of collisions at an average of about 795 collisions. The significant change in traffic volumes and patterns during the pandemic makes any trend analysis skewed. The number of total and property damage only (PDO) collisions dropped be about 20 percent. The number of personal injury (PI) collisions decreased by about 30 percent during Covid; however, the number of serious injury (SI)/fatal (FAT) collisions increased slightly. The collision totals for each year by severity are shown in Figure 2.1

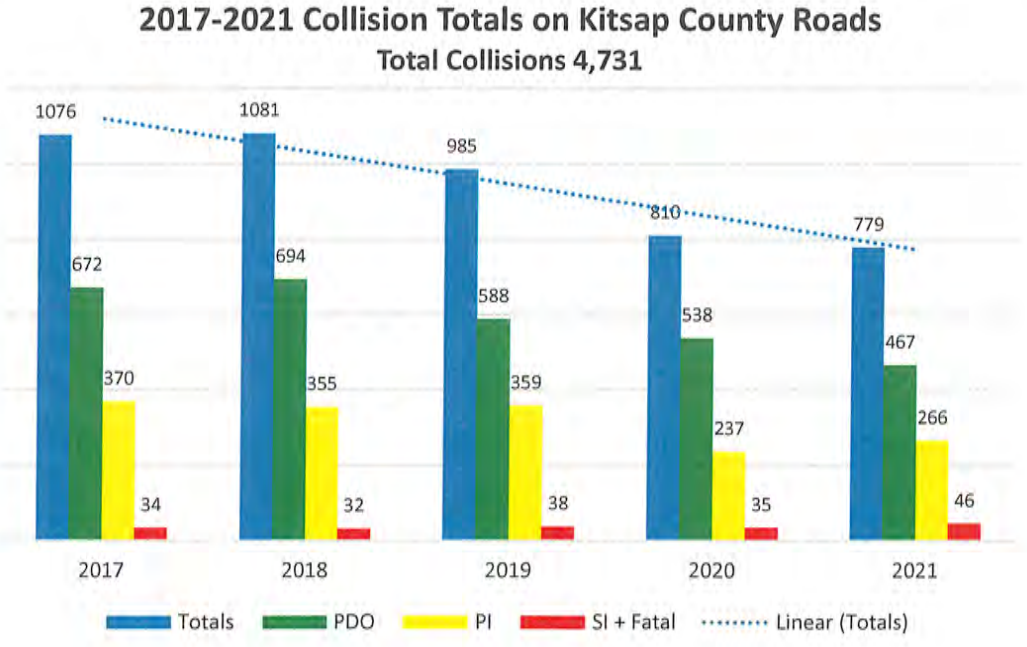

Figure 2.1 – Kitsap County Road Collision Trends

2.1. County Wide Overview

During the study period from year 2017 to year 2021, there were a total of 4,731 reported collisions on Kitsap County roads. This section of the report provides a breakdown of those collisions under different categories.

An analysis of collisions by month of year shows an average of 362 collisions per month from March through September and a slight increase to an average of 439 collisions per month from October through February.

The collision distribution by day of the week shows that weekday total is about 700 collisions Monday through Thursday, about 800 collisions on Friday, and about 575 collisions on weekend days.

Figure 2.2 shows the collision distribution by hour of day. For Total, Property Damage Only (PDO), and Personal Injury (PI) collisions there is a morning peak at 7:00 AM and an evening peak at 5:00 PM when most of these types of collisions occur.

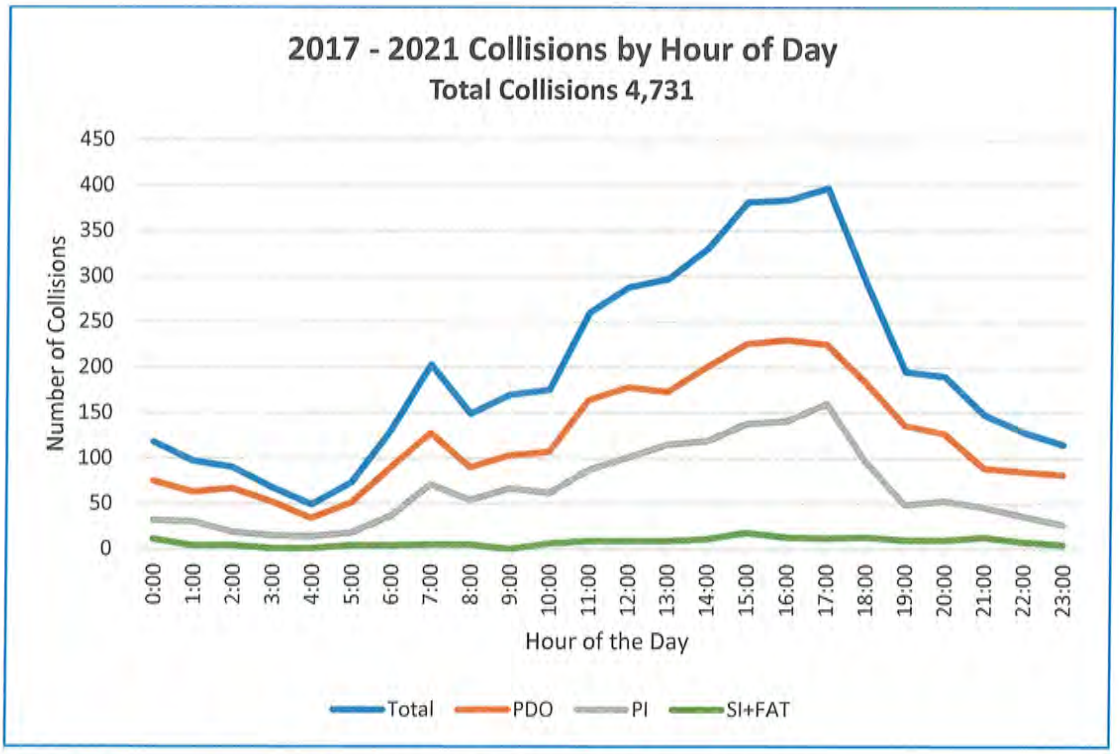

Figure 2.2 – Number of Collisions by Hour of Day

Figure 2.3 shows the collision distribution by hour of day for serious injury and fatal collisions. The majority of serious injury and fatal (SI+FAT) collisions occur between noon and midnight with the peak hour for serious injury and fatal collisions occuring at 3:00 PM.

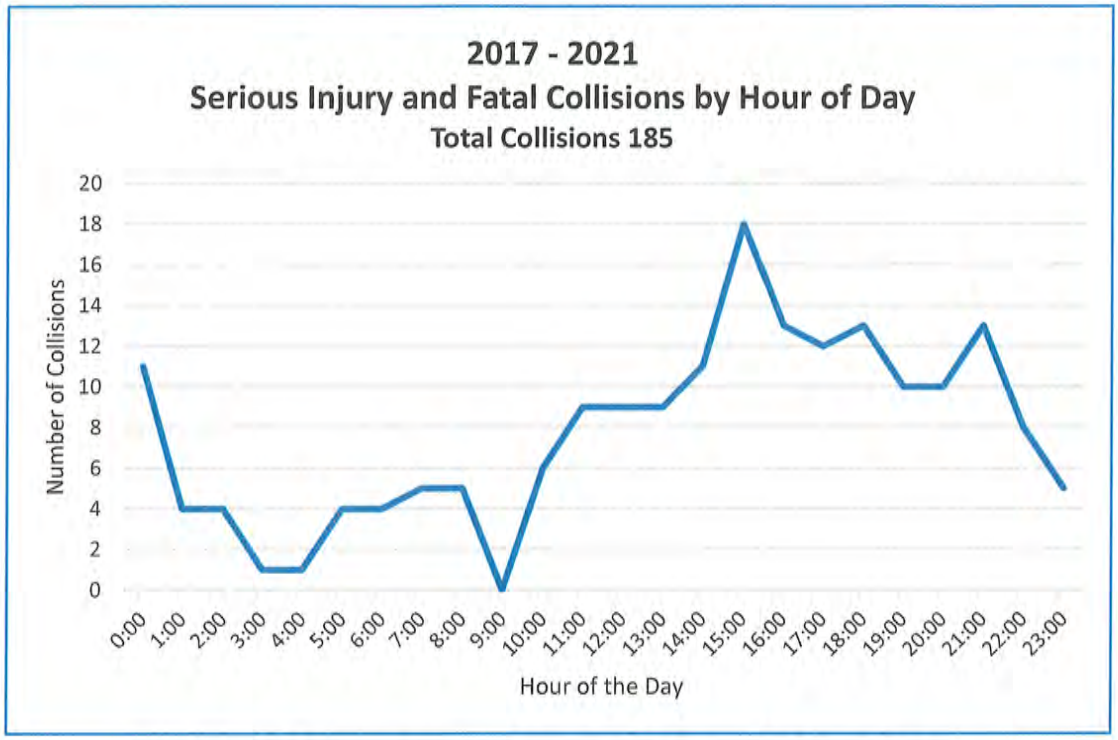

Figure 2.3 – Number of Serious Injury & Fatal Collisions by Hour of Day

2.1.1. General Collision Statistics

A breakdown of the number of vehicles involved, the location where collisions occurred, and the type of collisions by location category were studied. A table of results is given in Appendix A of this report.

Three types of locations were studied: intersection or related, non-intersection, and driveway or related. The results showed that out of the 4,731 total collisions in the study:

- 1,909 (40.4%) occurred at intersection or related locations
- 2,160 (45.7%) occurred at non-intersection locations
- 662 (14.0%) occurred at driveway or related locations

The top three collision types occurring at intersections or related locations are:

- rear-end
- angle entry
- lane departure

In addition, the top three collision types occurring at non-intersection locations are:

- lane departures,
- rear-end
- collisions involving animals.

The top three collision types for crashes occurring at driveways or related locations are:

- angle,
- rear-end and
- opposite direction collisions.

2.1.2. Collisions by Severity

Kitsap County looks at four different collision severity classifications: PDO, injury, serious injury and fatal. Injury and fatal collisions may involve more than one injured or fatal individual. The percentage breakdown based on collision severity is shown in Figure 2.4. Of the 4,731 total collisions that occurred during the study period:

- 185 (4%) were serious injury or fatal collisions,
- 1,587 (33.5%) were injury collisions and
- 2,959 (62.5%) were PDO collisions.

Appendix A includes collision totals and percentages of various collision types associated with each category of collision severity.

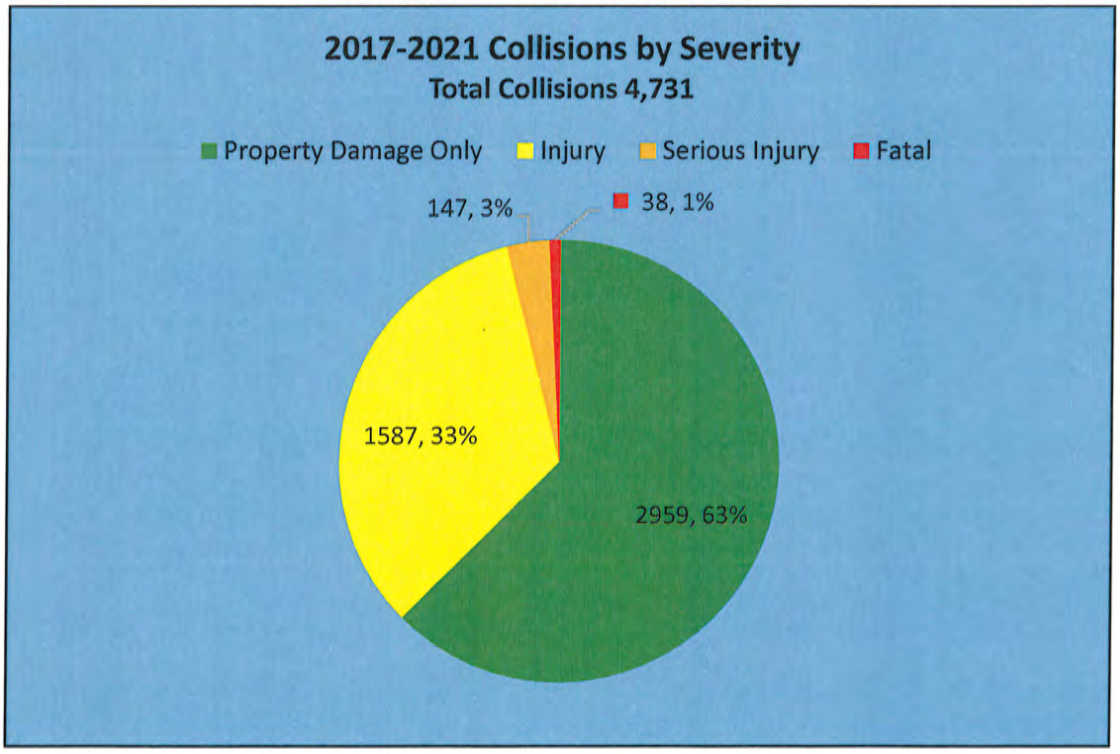

Figure 2.4 – Collisions by Severity Type

2.1.2.1. Injury Collision Analysis

During the study period from calendar years 2017-2021, there were 1,587 collisions which resulted in at least one injury and did not result in any serious injuries or fatalities.

Trend analysis shows that there was a decrease in the number of injury collisions between 2015 and 2019 except for an increase in two injury collisions between 2015 and 2016. Table 2.1 gives annual total number of injury collisions for each year of the study period.

Table 2.1 – Injury Collision Annual Totals

Year	Number of Injury Collisions
2017	370
2018	355
2019	359
2020	237
2021	266
Total	**1587**

Table 2.2 provides a breakdown of the number of injury collisions based on collision type. The leading collision types associated with injury collisions are lane departure (including fixed object, head-on, sideswipe and rollover collisions), rear-end, angle and opposite direction collisions.

Table 2.2 – Injury Collisions by Collision Type

Collision Type	Number of Collisions
Lane Departure	557
Rear-end	462
Entering at angle	295
Opposite Direction	187
Pedestrian/Bicycle	69
Animal	12
All other non-collision	4
Person fell or jumped or was pushed from vehicle	1
Total	**1587**

2.1.3. Night-time Collisions

There were 1,718 out of 4,731 total collisions happening during night-time hours. This constitutes about 36.3% of all collisions. Of the 1,887 night-time collisions:

- 83 (4.8%) were fatal or serious injury collisions,
- 485 (28.2%) were injury collisions and
- 1,150 (66.9%) were PDO collisions.

Most of these nighttime collisions happened at non-intersection locations. The top three collision types by frequency were lane departures, rear-end, and angle collisions. The top three contributing circumstances were distraction, impairment, and speed. In addition, Appendix A provides collision totals and percentages of the various types of collisions occurring during night-time hours.

2.1.4. Collisions by Roadway Characteristics

There were 2,160 non-intersection collisions. Of these collisions:

- 1,264 (58.5%) were reported to have occurred on straight sections of roadway,
- 788 (36.5%) were reported to have occurred on curved sections of roadway.
- 108 (5.0%) did not report roadway characteristic.

Appendix A of this report provides collision totals and percentages of non-intersection collisions by various other roadway characteristics combinations that include straight, curve, level, grade, hill, and sag.

2.1.5. Collisions by Target Zero Priorities

The federal Moving Ahead for Progress in the 21st Century Act (MAP-21), 23 USC 148, requires each state to have a Strategic Highway Safety Plan (SHSP). The *Washington State Department of Transportation Strategic Highway Plan* is called Target Zero. It sets statewide priorities based on collision type or contributing circumstance, provides strategies to address each priority, and monitors statewide results with the overall goal of zero serious injury and zero fatal collisions in 2030.

Table 2.3 lists the number of collisions and percentage totals for Target Zero Priorities for which Mobility has downloadable data. Appendix A of this report provides a breakdown for each Priority showing single vs. multiple vehicle collision, collision location, severity, and collision type or contributing circumstance for each.

Table 2.3 – Target Zero Priority Collision Totals and Percentages

Target Zero Priorities				
	Total Collisions – 4,731		SI/FAT Collisions – 185	
Category	**Collisions**	**Percentage**	**Collisions**	**Percentage**
Priority Level One				
Lane Departure	2,043	43.2%	92	49.7%
Young Drivers (16-25)	1,893	40.0%	59	31.9%
Intersections	1,589	33.6%	55	29.7%
Distraction	1,263	33.6%	23	12.4%
Speeding	552	11.7%	36	19.5%
Impairment	419	8.9%	47	25.4%
Priority Level Two				
Older Drivers (70+)	538	11.4%	22	11.9%
Motorcyclists	153	3.2%	40	21.6%
Heavy Trucks	98	2.1%	2	1.1%
Pedestrians & Bicyclists	79	1.7%	20	10.8%

The charts in Figure 2.5 and Figure 2.6 summarize the Target Zero statewide priority totals for Kitsap County.

Figure 2.5 – Target Zero Priority One Summary Chart

Figure 2.6 – Target Zero Priority Two Summary Chart

2.1.5.1. Pedestrian and Bicycle

Pedestrian and bicyclist collisions are Priority Level Two items within the *Washington State Strategic Highway Plan 2019 – Target Zero*. Figure 2.7 highlights pedestrian and bicycle collision totals by severity.

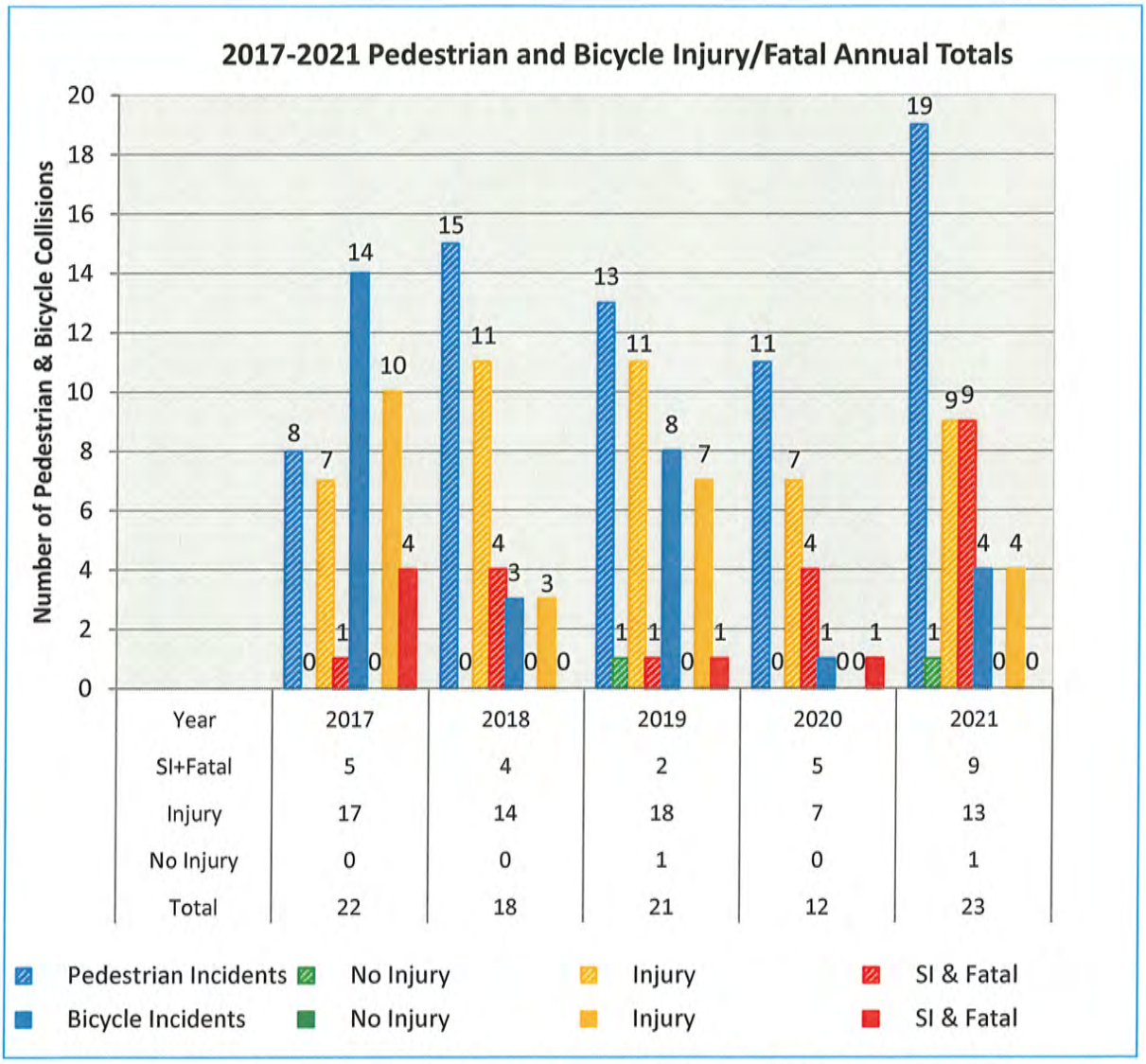

Figure 2.7 – 2017-2021 Pedestrian and Bicycle Injury/Fatal Chart

During the study period from calendar years 2017-2021, there were 66 pedestrian collisions and 30 bicycle collisions. Of these collisions, 25 resulted in a serious injury or fatality. As shown in Figure 2.7, only two of the total 96 pedestrian and bicycle collisions resulted in no injury.

Table 2.4 gives annual collision totals per year for pedestrians and bicycles.

Figure 2.8 is a map showing the distribution of pedestrian and bicycle collisions throughout the County followed by an individual listing of each collision in Table 2.5 and Table 2.6. Pedestrian and bicycle collisions were more frequent in urban areas where traffic congestion and higher pedestrian and bicycle volumes result in greater conflict risk.

Table 2.4 – Annual Collision Totals for Pedestrians and Bicycles

Year	Pedestrian Collisions	Bicycle Collisions
2017	8	14
2018	15	3
2019	13	8
2020	11	1
2021	19	4
Total	66	30

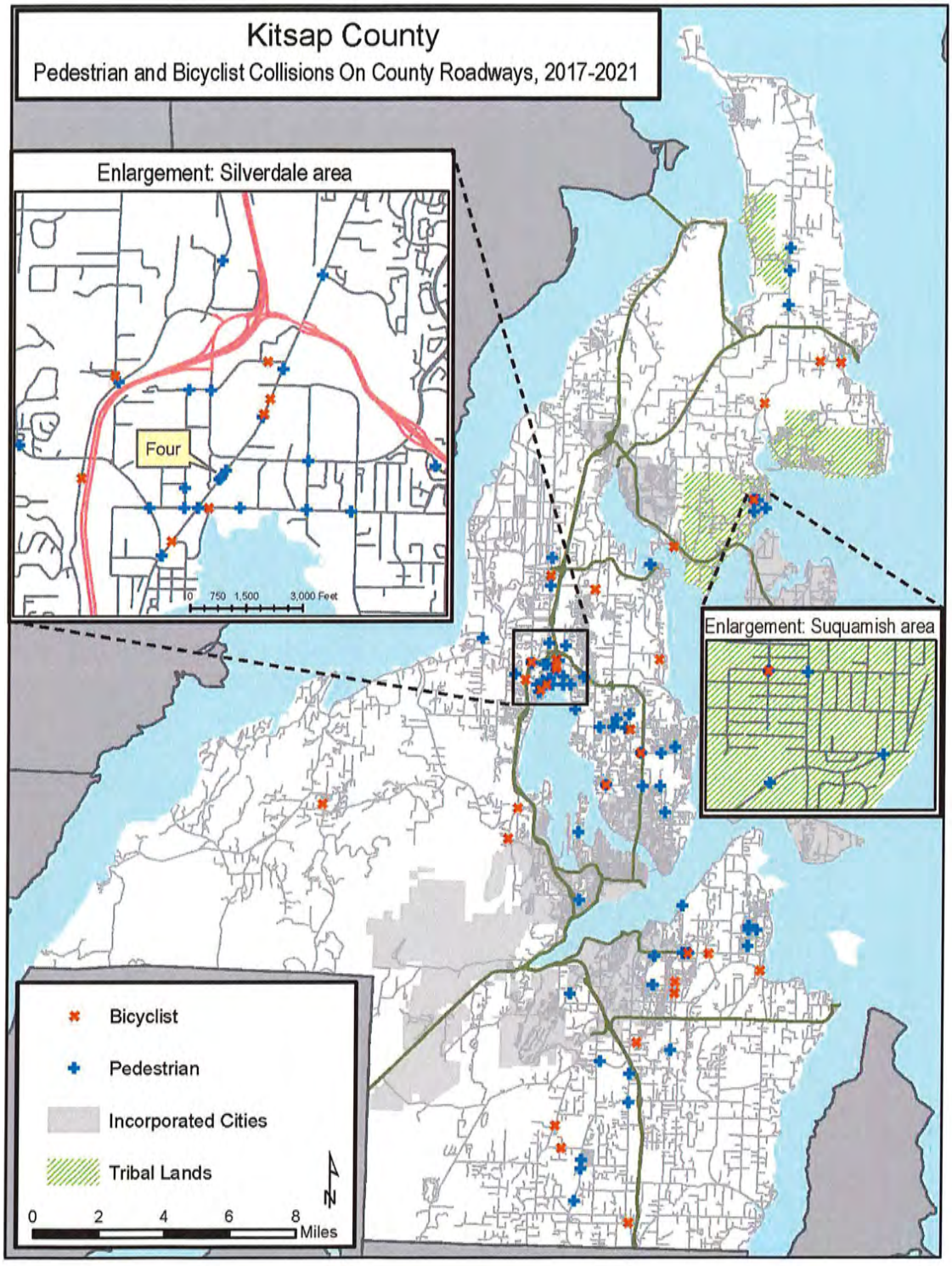

Figure 2.8 – Pedestrian and Bicycle Collision Map

Table 2.5 – 2017 – 2021 Pedestrian Collision Location List*

No.	Road Name	MP	LOCATION	Year
1	AEGEAN BLVD NE	0.003	16 ft. West of SUNSET AVE NE	2019
2	ALASKA AVE SE	0.748	at VAN BUREN ST (E)	2018
3	ANDERSON HILL RD (NW)	4.242	at BUCKLIN HILL RD (NW)	2019
4	ANDERSON HILL RD (NW)	3.450	148 ft. SE of SIROCCO CIR NW	2017
5	BEACH DR E	5.298	0.20 mi. NE of SACCO LN (E)	2020
6	BETHEL BURLEY RD SE	5.361	at KIRA ST (SE)	2017
7	BETHEL BURLEY RD SE	4.480	401 ft. South of MULLENIX RD (SE)	2020
8	BROCKTON AVE NE	0.162	at GENEVA ST (NE)	2018
9	BUCKLIN HILL RD (NW)	0.799	at MICKELBERRY RD NW	2020
10	BUCKLIN HILL RD (NW)	0.183	at RANDALL WAY (NW)	2021
11	BUCKLIN HILL RD (NW)	0.460	at SILVERDALE PLAZA	2017
12	BUCKLIN HILL RD (NW)	1.040	48 ft. West of TRACYTON BLVD NW	2018
13	CALIFORNIA AVE E	1.129	at RAINTREE LN (E)	2019
14	CALIFORNIA AVE E	0.996	48 ft. South of VAN BUREN ST (E)	2019
15	CALIFORNIA AVE SE	0.505	11 ft. South of MCKINLEY ST (SE)	2020
16	CLEAR CRK RD NW	2.048	at MOUNTAIN VIEW RD (NW)	2019
17	CLEAR CRK RD NW	0.263	0.24 mi. North of PETE ROSS WAY (NW)	2021
18	CLEAR CRK RD NW	2.865	322 ft. North of ORWEILER RD (NW)	2021
19	CONIFER DR (NE)	0.161	at SILVER PINE DR (NE)	2018
20	DIVISION AVE NE	0.943	16 ft. South of GENEVA ST (NE)	2021
21	FAIRGROUNDS RD (NE)	1.435	132 ft. East of TANBARK DR NE	2021
22	FAIRGROUNDS RD (NW)	0.650	at BRIDLE VIEW CT NW	2018
23	FAIRGROUNDS RD (NW)	1.066	21 ft. West of SILVER PINE DR (NE)	2021
24	GRANDVIEW BLVD (NE)	0.038	5 ft. SE of ELWHA TER NE	2021
25	GREAVES WAY (NW)	0.001	5 ft. East of OLD FRONTIER RD NW	2017
26	HANSVILLE RD NE	0.669	275 ft. North of SUNNYWOODS LN (NE)	2019
27	HANSVILLE RD NE	1.717	48 ft. South of EVENING STAR LN (NE)	2021
28	HANSVILLE RD NE	2.393	5 ft. South of SALISH LN (NE)	2018
29	KARCHER RD SE	0.214	21 ft. South of LINCOLN AVE (SE)	2018
30	KITSAP MALL BLVD NW	0.444	at RANDALL WAY (NW)	2021
31	LIDER RD (SW)	0.691	0.11 mi. East of SIDNEY RD SW	2020
32	LUND AVE (SE)	1.109	48 ft. West of CHASE RD SE	2021
33	MC WILLIAMS RD (NE)	0.936	16 ft. East of SAFEWAY ENTRANCE	2019
34	MC WILLIAMS RD (NE)	1.582	201 ft. West of HANEBERG LN NE	2021
35	MICKELBERRY RD NW	0.463	at RIDGETOP BLVD NW	2020
36	MILE HILL DR (SE)	2.278	at FIRCREST DR SE	2019
37	MILE HILL DR (SE)	2.111	at VILLAGE LN SE	2018
38	OLD CLIFTON RD (SW)	4.512	502 ft. SW of LIESEKE LN SW	2019
39	OLD MILITARY RD NE	1.173	at CIMERON CT (NE)	2021
40	PERRY AVE NE	0.820	at SYLVAN WAY (NE)	2017

No.	Road Name	MP	LOCATION	Year
41	PHILLIPS RD SE	3.023	301 ft. North of BAKER RD (SE)	2020
42	PREBLE ST	0.008	42 ft. East of S NATIONAL AVE	2017
43	RANDALL WAY (NW)	0.586	0.11 mi. West of KITSAP MALL BLVD NW	2017
44	RANDALL WAY (NW)	0.096	100 ft. North of DANWOOD LN NW	2019
45	RIDDELL RD (NE)	1.988	at AUDREY LN NE (P)	2021
46	RIDDELL RD (NE)	1.444	74 ft. East of SR 303 (WHEATON WAY)	2018
47	RIDDELL RD (NW)	0.340	at TRACYTON BEACH RD NW	2018
48	ROCKY POINT RD NW	0.839	48 ft. South of HOLLY BEACH CT (NW)	2018
49	SID UHINCK DR (NW)	0.230	48 ft. NW of SANDHILL LN NW	2018
50	SIDNEY RD SW	1.527	216 ft. NE of SIDNEY HEIGHTS LN (SW)	2021
51	SIDNEY RD SW	2.528	0.12 mi. South of LAKEWAY BLVD (SW)	2018
52	SIDNEY RD SW	2.803	111 ft. North of ASHTON CT (SW)	2021
53	SILVERDALE WAY NW	1.190	at 2ND ENT. TO B.K.	2019
54	SILVERDALE WAY NW	1.190	at 2ND ENT. TO B.K.	2020
55	SILVERDALE WAY NW	0.708	at ANDERSON HILL RD (NW)	2018
56	SILVERDALE WAY NW	1.020	at BUCKLIN HILL RD (NW)	2019
57	SILVERDALE WAY NW	1.560	at ROSS PLAZA	2019
58	SILVERDALE WAY NW	2.346	0.19 mi. South of BRIDGE CENTER	2017
59	SILVERDALE WAY NW	1.840	201 ft. SW of RANDALL WAY (NW)	2018
60	SILVERDALE WAY NW	1.232	222 ft. NE of 2ND ENT. TO B.K.	2020
61	SILVERDALE WAY NW	1.177	69 ft. SW of 2ND ENT. TO B.K.	2021
62	SUQUAMISH WAY NE	1.538	11 ft. SW of SOUTH ST (NE)	2021
63	SUQUAMISH WAY NE	1.161	0.13 mi. SW of DIVISION AVE NE	2020
64	SYLVAN WAY (NE)	0.762	48 ft. West of PERRY AVE NE	2021
65	TRACYTON BLVD NW	2.593	at JOELS CT (NW)	2021
66	WILLAMETTE MER RD NW	0.655	at PADDINGTON CT (NW)	2020

*Collisions highlighted in red are serious injury or fatal collisions.

Table 2.6 – 2017 – 2021 Bicycle Collision Location List*

No.	Road Name	MP	Location	Year
1	BAY SHORE DR NW	0.316	5 ft. South of BUCKLIN HILL RD (NW)	2018
2	BETHEL BURLEY RD SE	0.785	at SPRUCE RD (SE)	2019
3	BROWNSVILLE HWY NE	1.857	0.16 mi. South of MADISON RD (NE)	2019
4	CEDAR RD (SE)	0.502	100 ft. West of HILLWOOD LN (SE)	2017
5	CHICO WAY NW	1.146	74 ft. South of ERLANDS POINT RD NW	2017
6	CLEAR CRK RD NW	2.332	at NORTH STAR DR (NW)	2017
7	COHO RUN (NW)	0.796	at BONKLA LN (NW)	2018
8	GENEVA ST (NE)	0.124	at BROCKTON AVE NE	2019
9	GLENWOOD RD SW	4.150	0.12 mi. North of KENDORA LN (P) (SW)	2017
10	KINGSTON RD (NE W)	2.091	at BANNISTER ST NE	2017
11	KINGSTON RD NE (S)	3.700	at ARNESS CO. PARK	2020
12	LONG LAKE RD SE	6.011	at MILE HILL DR (SE)	2021
13	LUND AVE SE	0.348	11 ft. North of CONIFER PK DR (SE)	2017
14	MC WILLIAMS RD (NE)	0.933	at SAFEWAY ENTRANCE	2017
15	MILE HILL DR (SE)	2.120	48 ft. West of VILLAGE LN SE	2017
16	MILLER BAY RD NE	2.654	0.11 mi. NE of INDIANOLA RD NE	2017
17	NORTHLAKE WAY NW	0.902	201 ft. North of LEBERS LN NW	2021
18	OLD FRONTIER RD NW	0.462	201 ft. North of GREAVES WAY (NW)	2021
19	OLD MILITARY RD NE	0.703	201 ft. North of KNIGHTS CT (NE)	2017
20	PROVOST RD NW	2.570	0.10 mi. South of OLD FRONTIER RD NW	2017
21	RANDALL WAY (NW)	1.062	111 ft. West of ENT. TO ALLEY TO POST OFFICE	2019
22	RIDDELL RD (NW)	0.340	at TRACYTON BEACH RD NW	2019
23	SILVERDALE WAY NW	1.677	143 ft. NE of MCDONALDS	2019
24	SILVERDALE WAY NW	1.528	42 ft. North of NAPA ENTRENCE	2017
25	SILVERDALE WAY NW	1.587	69 ft. South of RED ROBIN	2021
26	SILVERDALE WAY NW	4.326	0.10 mi. South of MOUNTAIN VIEW RD (NW)	2017
27	SKOOKUM RD NE	0.000	at LAUREL GROVE (NE)	2017
28	SOUTHWORTH DR (SE)	0.490	at MC GREGOR DRIVE SE	2019
29	WESTMINSTER DR SE	0.298	at WESTLAND CT SE	2019
30	WILDWOOD RD (SW)	0.453	at ABBEY LN SW	2018

*Collisions highlighted in red are serious injury or fatal collisions.

2.1.6. Collisions by Roadway Federal Function Classification

Figure 2.9 shows the distribution of the number of collision and percent totals by roadway federal function classification (FFC). Appendix A provides a table of this data and gives a breakdown of the number of collisions by severity and collision type for each roadway FFC.

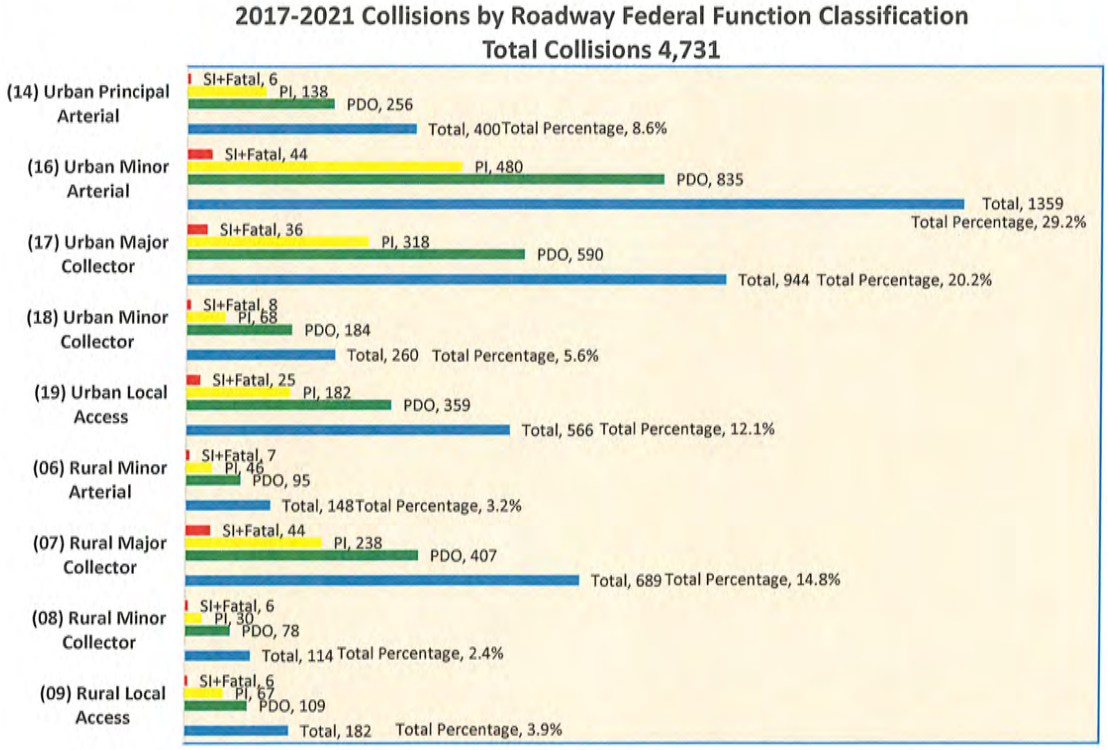

Figure 2.9 – Collisions by Roadway FFC

2.2. Analysis Methods

Kitsap County conducts both a systemic county-wide analysis based on collision type and a localized analysis to identify individual locations (intersection, segment, and driveway) where safety improvements would be beneficial. This report provides results from the five-year study period that included collisions occurring on Kitsap County roads from 2017 to 2021. The localized collision analysis methods are discussed in Appendix B of this report.

Kitsap County uses Highway Safety Manual (HSM) analysis techniques to prioritize countermeasures when appropriate. HSM analysis compares the collision frequency of the study location to the collision frequency of similar sites nationwide. The result is a numeric value that indicates the potential for improving the safety at the given location. The greater the numeric value the greater the potential for safety improvement.

2.2.1. Intersection Safety Locations

There are 70 intersections that warranted further consideration for safety mitigation in this study. The lower the matrix score for a location the higher its overall rank for safety mitigation consideration. The final matrix ranking for the top ten intersection locations is shown in Table 2.7. The complete matrix table and intersection location details are presented in Appendix C.

Table 2.7 – Intersections Location

Rank	Intersections Locations		Ranking Values for Matrix Scoring					Matrix Score
			Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero	
1	SIDNEY RD SW	PINE RD (SW)	7	4	9	4	8	52
2	MYHRE RD (NW)	SILVERDALE WAY NW	2	16	32	2	2	54
3	GREAVES WAY (NW)	CLEAR CRK RD NW	14	7	11	10	12	54
4	KITSAP MALL BLVD NW	RANDALL WAY (NW)	1	3	49	1	1	55
5	64TH ST (NW)	CENTRAL VALLEY RD NW	19	14	5	12	17	67
6	BUCKLIN HILL RD (NW)	SILVERDALE WAY NW	3	29	32	3	3	70
7	CENTRAL VALLEY RD NW	FAIRGROUNDS RD (NW)	9	21	19	7	16	72
8	OLD FRONTIER RD NW	GREAVES WAY (NW)	15	27	10	10	13	75
9	LAKEWAY BLVD (SE)	BETHEL BURLEY RD SE	15	17	21	16	14	83
10	JACKSON AVE SE	LUND AVE (SE)	6	24	41	7	6	84

2.2.2. Segment Safety Locations

There are 52 segments that warranted further consideration for safety mitigation in this study. The lower the matrix score for a location the higher its overall rank for safety mitigation consideration. The final matrix ranking for the top ten segments is shown in Table 2.8. The complete matrix table and segment location details are presented in Appendix C.

Table 2.8 – Segment Locations

Rank	Segment Locations	BMP	EMP	Ranking Values for Matrix Scoring					Matrix Score
				Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero	
1	DICKEY RD NW	0.502	0.607	8	1	3	2	6	20
2	LAKE FLORA RD (SW)	5.035	5.185	10	12	9	6	12	49
3	BELFAIR VALLEY RD (W)	0.712	0.863	3	15	28	7	2	55
4	TRACYTON BLVD NW	0.993	1.041	24	6	1	13	16	60
5	RIDGETOP BLVD NW	0.002	0.111	3	38	14	4	10	69
6	TRACYTON BLVD NW	1.947	2.142	8	45	10	5	7	75
7	SEABECK HIGHWAY NW	7.354	7.780	2	57	15	3	3	80
8	BUCKLIN HILL RD (NW)	1.040	1.140	15	25	16	14	13	83
9	ANDERSON HILL RD (NW)	3.341	3.639	1	52	35	1	1	90
10	SHERMAN HEIGHTS RD (W)	0.406	0.695	3	32	40	11	4	90

2.2.3. Driveway Safety Locations

There are 21 driveways identified as safety locations based on final matrix scoring. The lower the matrix score for a location the higher its overall rank. The final matrix ranking for the top ten driveway locations is shown in Table 2.9. The complete matrix table and driveway location details are presented in Appendix C.

Table 2.9 – Driveway Locations

Rank	Road Name	Location	Ranking Values for Matrix Scoring					Matrix Score
			Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero	
1	LUND AVE (SE)	42 ft. East of JACKSON AVE SE	7	2	10	3	7	29
2	MILE HILL DR (SE)	100 ft. West of WARNER AVE SE	1	18	12	1	1	33
3	SILVERDALE WAY NW	132 ft. NE of 2ND ENT. TO B.K.	5	17	3	2	6	33
4	BUCKLIN HILL RD (NW)	48 ft. West of BLAINE AVE NW	2	15	11	3	3	34
5	CHICO WAY NW	42 ft. North of HANK'S	3	21	7	1	2	34
6	MC WILLIAMS RD (NE)	116 ft. East of SAFEWAY ENTRANCE	4	20	5	3	4	36
7	RANDALL WAY (NW)	148 ft. West of KITSAP MALL BLVD NW	8	1	14	4	11	38
8	RIDGETOP BLVD NW	at BEST BUY	15	8	2	5	9	39
9	MICKELBERRY RD NW	190 ft. North of COSTCO ENT	6	16	13	2	4	41
10	OLD FRONTIER RD NW	132 ft. North of ANDERSON HILL RD (NW)	10	9	8	2	14	43

2.3. Countermeasure Selection Process

Once safety locations are identified, countermeasures are developed and presented at a Traffic Division roundtable meeting. These countermeasures can vary from low-cost safety improvements, such as signing or striping revisions, to larger proposed projects for the Transportation Improvement Program, such as intersection improvements, roundabout conversions, or roadway realignment projects. From the roundtable meeting, a list of proposed actions for each location is generated. The final mitigation is then implemented and monitored for effectiveness.

2.3.1. Countermeasures

Countermeasures are the result of the preliminary review process, which include collision analysis, field review, and site history review. Collision diagrams are used to highlight patterns and identify target collision types to mitigate. An example of a collision diagram is shown in Figure 2.10.

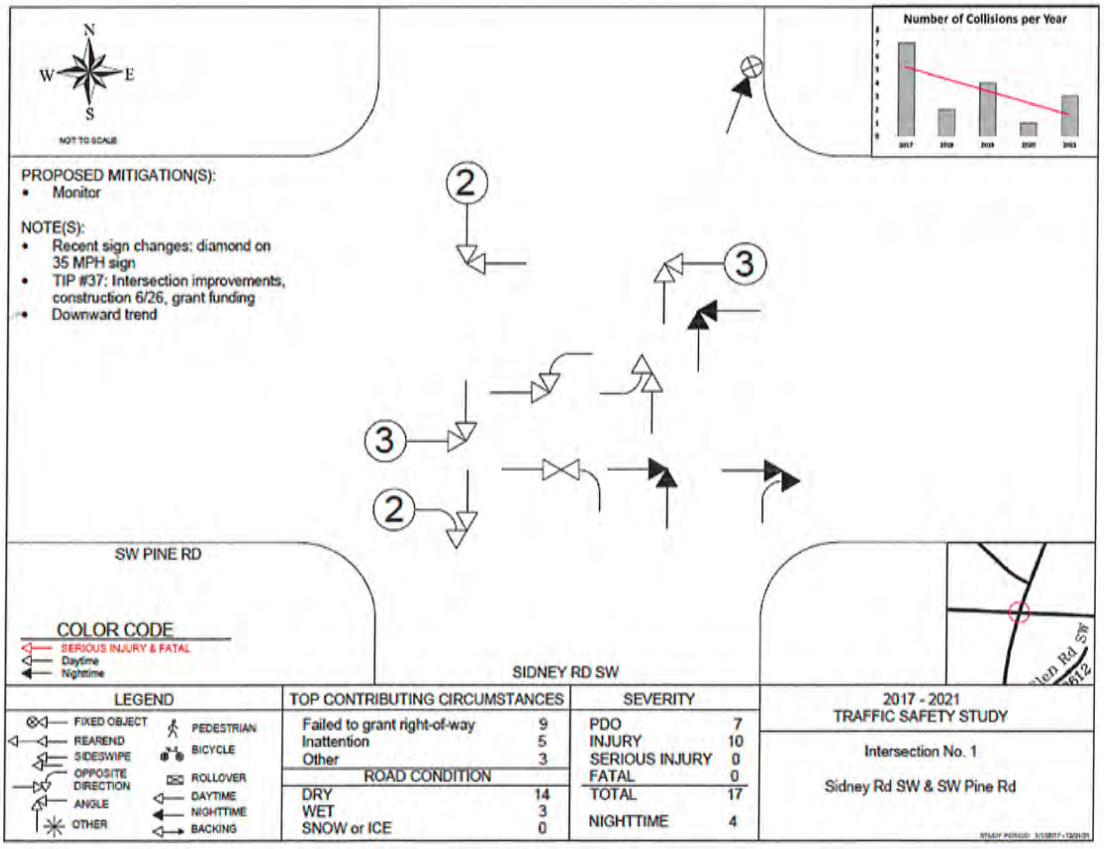

Figure 2.10 – Collision Diagram Example

Collision patterns are identified and the site history is reviewed. The site history includes a detailed description of the location, the collision frequency trend at that location, and a list of previously implemented countermeasures.

Based on the collision patterns and site history, documented countermeasures known to address the targeted collision pattern are listed and considered for further discussion. Countermeasures are found in the *Highway Safety Manual* as well as the Crash Modification Factors Clearinghouse website and in several National Cooperative Highway Research Program (NCHRP) reports.

2.3.2. Final Mitigations

Final mitigations are the implemented countermeasures applied to the collision sites, which are then tracked to determine the effectiveness of each countermeasure. The mitigations that came out of the roundtable meeting include signing revisions, striping revisions, and vegetation management. A list of the 2023 safety mitigations can be found in Appendix D.

2.4. National, State, and County Collision Statistics

Appendix E contains national, state and county collision statistics from the National Highway Traffic Safety Administration (NHTSA) and WSDOT.

2.5. References

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Appendix A - Countywide Collision Statistics

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Kitsap County: 2017 - 2021 Collision Statistics
Total number of collisions - 4,731

Single Vehicle vs. Multiple Vehicles

	No. of collisions	Percentage of Total	Percentage of Subgroup
Single vehicle	2007	42.4%	
Multiple vehicles	2724	57.6%	
Total Collisions	**4731**		

Location and Number of Vehicles

	No. of collisions	Percentage of Total	Percentage of Subgroup
Non-intersection	**2160**	45.7%	
Single vehicle	1523		70.5%
Multiple vehicles	637		29.5%
Intersection or related	**1909**	40.4%	
Single vehicle	431		22.6%
Multiple vehicles	1478		77.4%
Driveway or related	**662**	14.0%	
Single vehicle	53		8.0%
Multiple vehicles	609		92.0%
Total Collisions	**4731**		

Severity			
	No. of collisions	**Percentage of Total**	**Percentage of Subgroup**
Property Damage Only	2959	62.5%	
Injury	1587	33.5%	
Serious Injury	147	3.1%	9.3%
Fatal	38	0.8%	
Total Collisions	**4731**		

Day vs Night-time Collisions			
	No. of collisions	**Percentage of Total**	**Percentage of Subgroup**
Daytime Collisions	2984	63.1%	
Night-time Collisions	1718	36.3%	
Dark-No Street Lights	869		50.6%
Dark-Street Lights On	618		36.0%
Dusk	134		7.8%
Dawn	73		4.2%
Dark-Street Lights Off	24		1.4%
Unknown	29	0.6%	
Other	0	0.0%	
Total Collisions	**4731**		

Collision Type by Location			
Non-intersection		**Percentage of Total**	**Percentage of Subgroup**
	153		
Lane Departure	8		71.2%
Rear-end	335		15.5%
Opposite Direction	126		5.8%
Animal	112		5.2%
Pedestrian/Bicycle	34		1.6%
All other non-collision	11		0.5%
Entering at angle	2		0.1%
Person fell or jumped or was pushed from vehicle	1		0.0%
Equipment Failure	1		0.0%
	216		
Total	**0**	41.5%	
Intersection or related			
Rear-end	617		32.3%
Entering at angle	568		29.8%
Lane Departure	443		23.2%
Opposite Direction	235		12.3%
Pedestrian/Bicycle	40		2.1%
Animal	4		0.2%
Person fell or jumped or was pushed from vehicle	2		0.1%
All other non-collision	0		0.0%
Equipment Failure	0		0.0%
	190		
Total	**9**	36.7%	
Driveway or related			
Rear-end	194		29.3%
Entering at angle	292		44.1%
Lane Departure	62		9.4%
Opposite Direction	92		13.9%
Pedestrian/Bicycle	22		3.3%
Animal	0		0.0%
Person fell or jumped or was pushed from vehicle	0		0.0%
All other non-collision	0		0.0%
Equipment Failure	0		0.0%
Total	**662**	12.7%	

Contributing Circumstance by Location			
Non-intersection		**Percentage of Total**	**Percentage of Subgroup**
Distracted Driver	518		24.0%
Speed	349		16.2%
Other	667		30.9%
Impaired Driver	337		15.6%
None	0		0.0%
Drowsy Driver	137		6.3%
Improper Maneuver	73		3.4%
Equipment Failure	0		0.0%
ROW	35		1.6%
Follow Too Closely	42		1.9%
Disregard Traffic Control	2		0.1%
Total	**2160**	41.5%	
Intersection or related			
Distracted Driver	564		29.5%
ROW	394		20.6%
Speed	175		9.2%
Other	338		17.7%
Disregard Traffic Control	89		4.7%
Impaired Driver	141		7.4%
Improper Maneuver	120		6.3%
None	0		0.0%
Follow Too Closely	58		3.0%
Drowsy Driver	30		1.6%
Equipment Failure	0		0.0%
Total	**1909**	36.7%	
Driveway or related			
Distracted Driver	184		27.8%
ROW	248		37.5%
Improper Maneuver	80		12.1%
Other	85		12.8%
None	0		0.0%
Speed	30		4.5%
Follow Too Closely	18		2.7%
Impaired Driver	17		2.6%
Equipment Failure	0		0.0%
Total	**662**	12.7%	

Collision Type by Collision Severity			
Property Damage Only		**Percentage of Total**	**Percentage of Subgroup**
	139		
Lane Departure	4		47.1%
Rear-end	676		22.8%
Entering at angle	549		18.6%
Opposite Direction	227		7.7%
Animal	103		3.5%
All other non-collision	7		0.2%
Pedestrian/Bicycle	2		0.1%
Equipment Failure	1		0.0%
Person fell or jumped or was pushed from vehicle	0		0.0%
	295		
Total	**9**	56.9%	
Injury			
Lane Departure	557		35.1%
Rear-end	462		29.1%
Entering at angle	295		18.6%
Opposite Direction	187		11.8%
Pedestrian/Bicycle	69		4.3%
Animal	12		0.8%
All other non-collision	4		0.3%
Person fell or jumped or was pushed from vehicle	1		0.1%
Equipment Failure	0		0.0%
	158		
Total	**7**	30.5%	
Serious Injury			
Lane Departure	75		51.0%
Opposite Direction	30		20.4%
Pedestrian/Bicycle	17		11.6%
Entering at angle	15		10.2%
Rear-end	7		4.8%
Person fell or jumped or was pushed from vehicle	2		1.4%
Animal	1		0.7%
All other non-collision	0		0.0%
Equipment Failure	0		0.0%
Total	**147**	2.8%	

Fatal

Lane Departure	17	44.7%
Opposite Direction	9	23.7%
Pedestrian/Bicycle	8	21.1%
Entering at angle	3	7.9%
Rear-end	1	2.6%
All other non-collision	0	0.0%
Animal	0	0.0%
Equipment Failure	0	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%
Total	**38**	0.7%
	4731	

Contributing Circumstance by Collision Severity			
Property Damage Only		**Percentage of Total**	**Percentage of Subgroup**
Distracted Driver	772		26.1%
Other	748		25.3%
ROW	405		13.7%
Speed	358		12.1%
Impaired Driver	283		9.6%
Improper Maneuver	183		6.2%
Drowsy Driver	84		2.8%
Follow Too Closely	78		2.6%
Disregard Traffic Control	48		1.6%
None	0		0.0%
Equipment Failure	0		0.0%
Total	**2959**	56.9%	
Injury			
Distracted Driver	471		29.7%
Other	311		19.6%
ROW	244		15.4%
Impaired Driver	165		10.4%
Speed	160		10.1%
Improper Maneuver	80		5.0%
Drowsy Driver	75		4.7%
Disregard Traffic Control	41		2.6%
Follow Too Closely	40		2.5%
None	0		0.0%
Equipment Failure	0		0.0%
Total	**1587**	30.5%	
Serious Injury			
Impaired Driver	35		23.8%
Speed	29		19.7%
ROW	25		17.0%
Other	22		15.0%
Distracted Driver	19		12.9%
Improper Maneuver	8		5.4%
Drowsy Driver	7		4.8%
Disregard Traffic Control	2		1.4%
None	0		0.0%
Equipment Failure	0		0.0%
Total	**147**	2.8%	

Fatal

Impaired Driver	12		31.6%
Other	9		23.7%
Speed	7		18.4%
Distracted Driver	4		10.5%
ROW	3		7.9%
Improper Maneuver	2		5.3%
Drowsy Driver	1		2.6%
None	0		0.0%
Follow Too Closely	0		0.0%
Total	**38**	0.7%	

Daytime Collisions			
Number of Vehicles	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Single vehicle	873	16.8%	29.3%
Multiple vehicles	2111	40.6%	70.7%
Total Daytime Collisions	**2984**	57.4%	
Location			
Non-intersection	1150	22.1%	38.5%
Intersection or related	1311	25.2%	43.9%
Driveway or related	523	10.1%	17.5%
Severity			
Property Damage Only	1784	34.3%	59.8%
Injury	1099	21.1%	36.8%
Serious Injury	81	1.6%	2.7%
Fatal	20	0.4%	0.7%
Collision Type			
Rear-end	947	18.2%	31.7%
Lane Departure	935	18.0%	31.3%
Entering at angle	677	13.0%	22.7%
Opposite Direction	309	5.9%	10.4%
Pedestrian/Bicycle	64	1.2%	2.1%
Animal	42	0.8%	1.4%
All other non-collision	7	0.1%	0.2%
Person fell or jumped or was pushed from vehicle	2	0.0%	0.1%
Equipment Failure	1	0.0%	0.0%
Contributing Circumstance			
Distracted Driver	901	17.3%	30.2%
Other	609	11.7%	20.4%
ROW	551	10.6%	18.5%
Speed	304	5.8%	10.2%
Improper Maneuver	197	3.8%	6.6%
Impaired Driver	170	3.3%	5.7%
Follow Too Closely	97	1.9%	3.3%
Drowsy Driver	94	1.8%	3.2%
Disregard Traffic Control	61	1.2%	2.0%

Night-time Collisions			
Number of Vehicles	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Single vehicle	1106	23.4%	64.4%
Multiple vehicles	612	12.9%	35.6%
Total Night-time Collisions	**1718**	36.3%	
Location			
Non-intersection	988	20.9%	57.5%
Intersection or related	592	12.5%	34.5%
Driveway or related	138	2.9%	8.0%
Severity			
Property Damage Only	1150	24.3%	66.9%
Injury	485	10.3%	28.2%
Serious Injury	66	1.4%	3.8%
Fatal	17	0.4%	1.0%
Collision Type			
Lane Departure	1080	22.8%	62.9%
Rear-end	199	4.2%	11.6%
Entering at angle	185	3.9%	10.8%
Opposite Direction	144	3.0%	8.4%
Animal	74	1.6%	4.3%
Pedestrian/Bicycle	31	0.7%	1.8%
All other non-collision	4	0.1%	0.2%
Person fell or jumped or was pushed from vehicle	1	0.0%	0.1%
Equipment Failure	0	0.0%	0.0%
Contributing Circumstance			
Other	470	9.9%	27.4%
Distracted Driver	354	7.5%	20.6%
Impaired Driver	324	6.8%	18.9%
Speed	244	5.2%	14.2%
ROW	126	2.7%	7.3%
Drowsy Driver	73	1.5%	4.2%
Improper Maneuver	76	1.6%	4.4%
Disregard Traffic Control	30	0.6%	1.7%
Follow Too Closely	21	0.4%	1.2%

Roadway Characteristics			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Non-intersection			
Curve & Grade	407		51.6%
Curve & Level	359		45.6%
Curve at Hillcrest	19		2.4%
Curve in Sag	3		0.4%
Curve Total	**788**	**15.2%**	
Straight & Level	765		60.5%
Straight & Grade	448		35.4%
Straight at Hillcrest	26		2.1%
Straight in Sag	25		2.0%
Straight Total	**1264**	**24.3%**	
Unknown	2	0.0%	
(blank)	106	2.0%	
Non-intersection Total	**2160**	**41.5%**	

Roadway Surface Condition			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Dry	3059	64.7%	
Wet	1401	29.6%	
Ice	136	2.9%	
Snow/Slush	88	1.9%	
Unknown	30	0.6%	
Other	6	0.1%	
Oil	2	0.0%	
Standing Water	5	0.1%	
Sand/Mud/Dirt	4	0.1%	
Total Collisions	**4731**		

Fixed Object Collisions by Object Struck			
Object Struck	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Roadway Ditch	382	7.3%	23.7%
Tree or Stump (stationary)	219	4.2%	13.6%
Utility Pole or Box	187	3.6%	11.6%
Earth Bank or Ledge	167	3.2%	10.4%
Over Embankment - No Guardrail Present	113	2.2%	7.0%
Fence	111	2.1%	6.9%
Mailbox	83	1.6%	5.1%
Wood Sign Post	77	1.5%	4.8%
Guardrail - Face	66	1.3%	4.1%
Culvert and/or other Appurtenance in Ditch	48	0.9%	3.0%
Other Objects	22	0.4%	1.4%
Metal Sign Post	25	0.5%	1.6%
Retaining Wall (concrete/rock/brick/etc)	16	0.3%	1.0%
Boulder (stationary)	19	0.4%	1.2%
Street Light Pole or Base	13	0.3%	0.8%
Fire Hydrant	14	0.3%	0.9%
Guardrail - Leading End	10	0.2%	0.6%
Guardrail - Through or Over or Under	9	0.2%	0.6%
Rock Bank or Ledge	3	0.1%	0.2%
Buidling	10	0.2%	0.6%
Into River/Lake/Swamp/etc	3	0.1%	0.2%
Concrete Barrier/Jersey Barrier - Face	3	0.1%	0.2%
Bridge Rail - Face	3	0.1%	0.2%
Crash Cushions - Impact Attenuators	3	0.1%	0.2%
Traffic Signal Pole or Box	0	0.0%	0.0%
Miscellaneous Object or Debris on Road	1	0.0%	0.1%
Guide Post	1	0.0%	0.1%
Temporary Traffic Sign or Barricade	2	0.0%	0.1%
Concrete Barrier/Jersey Barrier - Leading End	1	0.0%	0.1%
Railway Crossing Gate	1	0.0%	0.1%
Total	**1612**		

Target Zero Priorities		
Priority Level One:	No.of collisions	Percentage of Total
Impaired Driver	495	9.5%
Distracted Driver	1266	24.4%
Speed	554	10.7%
Lane Departure	2043	39.3%
Intersection or related	1909	36.7%
Young Driver (16 - 25)	1892	36.4%
Priority Level Two:	No. of collisions	Percentage of Total
Pedestrians and Bicyclists	96	1.8%
Motocyclists	153	2.9%
Older Driver (age 70+)	538	10.3%
Heavy Truck	106	2.0%
Other Monitored Areas:	No. of collisions	Percentage of Total
Drowsy Driver	167	3.2%
Wildlife	106	2.0%
School Buses	18	0.3%

Impaired Driver			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**495**	10.5%	
Number of Vehicles			
Single	384	8.1%	77.6%
Multiple	111	2.3%	22.4%
Location			
Non-intersection	337	7.1%	68.1%
Intersection or related	141	3.0%	28.5%
Driveway or related	17	0.4%	3.4%
Severity			
Property Damage Only	283	6.0%	57.2%
Injury	165	3.5%	33.3%
Serious Injury	35	0.7%	7.1%
Fatal	12	0.3%	2.4%
Collision Type			
Lane Departure	408	8.6%	82.4%
Opposite Direction	28	0.6%	5.7%
Rear-end	28		
Entering at angle	24	0.5%	4.8%
Pedestrian/Bicycle	7	0.1%	1.4%
All other non-collision	0	0.0%	0.0%
Animal	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%

Distracted Driver			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**1266**	26.8%	
Number of Vehicles			
Single	376	7.9%	29.7%
Multiple	890	18.8%	70.3%
Location			
Non-intersection	518	10.9%	40.9%
Intersection or related	564	11.9%	44.5%
Driveway or related	184	3.9%	14.5%
Severity			
Property Damage Only	772	16.3%	61.0%
Injury	471	10.0%	37.2%
Serious Injury	19	0.4%	1.5%
Fatal	4	0.1%	0.3%
Collision Type			
Rear-end	600	12.7%	47.4%
Lane Departure	414	8.8%	32.7%
Entering at angle	176	3.7%	13.9%
Opposite Direction	54	1.1%	4.3%
Pedestrian/Bicycle	20	0.4%	1.6%
Animal	2	0.0%	0.2%
All other non-collision	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%

Speed			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**554**	11.7%	
Number of Vehicles			
Single	378	8.0%	68.2%
Multiple	176	3.7%	31.8%
Location			
Non-intersection	349	7.4%	63.0%
Intersection or related	175	3.7%	31.6%
Driveway or related	30	0.6%	5.4%
Severity			
Property Damage Only	358	7.6%	64.6%
Injury	160	3.4%	28.9%
Serious Injury	29	0.6%	5.2%
Fatal	7	0.1%	1.3%
Collision Type			
Lane Departure	403	8.5%	72.7%
Rear-end	78	1.6%	14.1%
Opposite Direction	40	0.8%	7.2%
Entering at angle	32	0.7%	5.8%
Animal	1	0.0%	0.2%
All other non-collision	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Pedestrian/Bicycle	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%

Lane Departure			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**2043**	**43.2%**	
Number of Vehicles			
Single	1784	37.7%	87.3%
Multiple	259	5.5%	12.7%
Location			
Non-intersection	1538	32.5%	75.3%
Intersection or related	443	9.4%	21.7%
Driveway or related	62	1.3%	3.0%
Severity			
Property Damage Only	1394	29.5%	68.2%
Injury	557	11.8%	27.3%
Serious Injury	75	1.6%	3.7%
Fatal	17	0.4%	0.8%
Causing Circumstance			
Other	564	11.9%	27.6%
Distracted Driver	414	8.8%	20.3%
Impaired Driver	408	8.6%	20.0%
Speed	403	8.5%	19.7%
Drowsy Driver	140	3.0%	6.9%
Improper Maneuver	49	1.0%	2.4%
ROW	44	0.9%	2.2%
Disregard Traffic Control	12	0.3%	0.6%
Follow Too Closely	9	0.2%	0.4%

Intersection or Related			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**1909**	40.4%	
Number of Vehicles			
Single	431	9.1%	22.6%
Multiple	1478	31.2%	77.4%
Severity			
Property Damage Only	1167	24.7%	61.1%
Injury	687	14.5%	36.0%
Serious Injury	46	1.0%	2.4%
Fatal	9	0.2%	0.5%
Contributing Circumstance			
Distracted Driver	564	11.9%	29.5%
ROW	394	8.3%	20.6%
Other	338	7.1%	17.7%
Speed	175	3.7%	9.2%
Impaired Driver	141	3.0%	7.4%
Improper Maneuver	120	2.5%	6.3%
Disregard Traffic Control	89	1.9%	4.7%
Follow Too Closely	58	1.2%	3.0%
Drowsy Driver	30	0.6%	1.6%
None	0	0.0%	0.0%

Young Driver (16 - 25)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**1892**	40.0%	
Number of Vehicles		0.0%	
Single	670	14.2%	35.4%
Multiple	1222	25.8%	64.6%
Location			
Non-intersection	762	16.1%	40.3%
Intersection or related	859	18.2%	45.4%
Driveway or related	271	5.7%	14.3%
Severity			
Property Damage Only	1157	24.5%	61.2%
Injury	676	14.3%	35.7%
Serious Injury	45	1.0%	2.4%
Fatal	14		
Contributing Circumstance			
Distracted Driver	566	12.0%	29.9%
Other	346	7.3%	18.3%
ROW	296	6.3%	15.6%
Speed	275	5.8%	14.5%
Impaired Driver	137	2.9%	7.2%
Improper Maneuver	121	2.6%	6.4%
Follow Too Closely	57	1.2%	3.0%
Drowsy Driver	55	1.2%	2.9%
Disregard Traffic Control	39	0.8%	2.1%

Pedestrians and Bicyclists			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**96**	2.0%	
Number of Vehicles			
Single	94	2.0%	97.9%
Multiple	2	0.0%	2.1%
Location			
Non-intersection	34	0.7%	35.4%
Intersection or related	40	0.8%	41.7%
Driveway or related	22	0.5%	22.9%
Severity			
Property Damage Only	2	0.0%	2.1%
Injury	69	1.5%	71.9%
Serious Injury	17	0.4%	17.7%
Fatal	8	0.2%	8.3%
Contributing Circumstance			
Other	39	0.8%	40.6%
Distracted Driver	20	0.4%	20.8%
ROW	20	0.4%	20.8%
Improper Maneuver	7	0.1%	7.3%
Impaired Driver	7	0.1%	7.3%
Disregard Traffic Control	2	0.0%	2.1%
Drowsy Driver	1	0.0%	1.0%
Speed	0	0.0%	0.0%
Follow Too Closely	0	0.0%	0.0%

Motorcyclists			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**153**	3.2%	
Number of Vehicles			
Single	84	1.8%	54.9%
Multiple	69	1.5%	45.1%
Location			
Non-intersection	76	1.6%	49.7%
Intersection or related	53	1.1%	34.6%
Driveway or related	24	0.5%	15.7%
Severity			
Property Damage Only	25	0.5%	16.3%
Injury	88	1.9%	57.5%
Serious Injury	35	0.7%	22.9%
Fatal	5	0.1%	3.3%
Contributing Circumstance			
Other	57	1.2%	37.3%
Speed	26	0.5%	17.0%
ROW	21	0.4%	13.7%
Improper Maneuver	18	0.4%	11.8%
Distracted Driver	16	0.3%	10.5%
Impaired Driver	11	0.2%	7.2%
Disregard Traffic Control	2	0.0%	1.3%
Follow Too Closely	2	0.0%	1.3%
Drowsy Driver	0	0.0%	0.0%

Older Driver (age 70+)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**538**	11.4%	
Number of Vehicles			
Single	95	2.0%	17.7%
Multiple	443	9.4%	82.3%
Location			
Non-intersection	154	3.3%	28.6%
Intersection or related	258	5.5%	48.0%
Driveway or related	126	2.7%	23.4%
Severity			
Property Damage Only	320	6.8%	59.5%
Injury	196	4.1%	36.4%
Serious Injury	14	0.3%	2.6%
Fatal	8	0.2%	1.5%
Contributing Circumstance			
Distracted Driver	154	3.3%	28.6%
ROW	140	3.0%	26.0%
Other	95	2.0%	17.7%
Improper Maneuver	44	0.9%	8.2%
Speed	34	0.7%	6.3%
Disregard Traffic Control	25	0.5%	4.6%
Impaired Driver	16	0.3%	3.0%
Drowsy Driver	16	0.3%	3.0%
Follow Too Closely	14	0.3%	2.6%

Heavy Truck			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**106**	2.2%	
Number of Vehicles			
Single	16	0.3%	15.1%
Multiple	90	1.9%	84.9%
Location			
Non-intersection	44	0.9%	41.5%
Intersection or related	38	0.8%	35.8%
Driveway or related	24	0.5%	22.6%
Severity			
Property Damage Only	68	1.4%	64.2%
Injury	36	0.8%	34.0%
Serious Injury	1	0.0%	0.9%
Fatal	1	0.0%	0.9%
Contributing Circumstance			
Distracted Driver	43	0.9%	40.6%
Other	19	0.4%	17.9%
ROW	17	0.4%	16.0%
Improper Maneuver	13	0.3%	12.3%
Impaired Driver	5	0.1%	4.7%
Speed	4	0.1%	3.8%
Disregard Traffic Control	3	0.1%	2.8%
Drowsy Driver	1	0.0%	0.9%
Follow Too Closely	1	0.0%	0.9%

Drowsy Drivers			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**167**	3.5%	
Number of Vehicles			
Single	138	2.9%	82.6%
Multiple	29	0.6%	17.4%
	167		
Location			
Non-intersection	137	2.9%	82.0%
Intersection or related	30	0.6%	18.0%
Driveway or related	0	0.0%	0.0%
	167		
Severity			
Property Damage Only	84	1.8%	50.3%
Injury	75	1.6%	44.9%
Serious Injury	7	0.1%	4.2%
Fatal	1	0.0%	0.6%
	167		
Collision Type			
Lane Departure	140	3.0%	83.8%
Opposite Direction	16	0.3%	9.6%
Rear-end	10	0.2%	6.0%
Pedestrian/Bicycle	1	0.0%	0.6%
All other non-collision	0	0.0%	0.0%
Animal	0	0.0%	0.0%
Entering at angle	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%

Wildlife			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**106**	2.2%	
Location			
Non-intersection	102	2.2%	96.2%
Intersection or related	4	0.1%	3.8%
Driveway or related	0	0.0%	0.0%
Severity			
Property Damage Only	96	2.0%	90.6%
Injury	9	0.2%	8.5%
Serious Injury	1	0.0%	0.9%
Fatal	0	0.0%	0.0%
Contributing Circumstance			
Other	103	2.2%	97.2%
Distracted Driver	2	0.0%	1.9%
Speed	1	0.0%	0.9%
Improper Maneuver	0	0.0%	0.0%
Impaired Driver	0	0.0%	0.0%
Drowsy Driver	0	0.0%	0.0%
Disregard Traffic Control	0	0.0%	0.0%
ROW	0	0.0%	0.0%
Follow Too Closely	0	0.0%	0.0%

School Buses			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**18**	0.4%	
Location			
Non-intersection	6	0.1%	5.7%
Intersection or related	10	0.2%	9.4%
Driveway or related	2	0.0%	1.9%
Severity			
Property Damage Only	13	0.3%	12.3%
Injury	5	0.1%	4.7%
Serious Injury	0	0.0%	0.0%
Fatal	0	0.0%	0.0%
Contributing Circumstance			
ROW	6	0.1%	5.7%
Distracted Driver	5	0.1%	4.7%
Improper Maneuver	3	0.1%	2.8%
Other	3	0.1%	2.8%
Speed	1	0.0%	0.9%
Disregard Traffic Control	0	0.0%	0.0%
Drowsy Driver	0	0.0%	0.0%
Follow Too Closely	0	0.0%	0.0%
Impaired Driver	0	0.0%	0.0%

Total Collisions by Federal Function Classifications			
Federal Function Classification	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
(11)	68	1.4%	
(12)	1	0.0%	
(14) Urban Principal Arterial - Other	400	8.5%	
(16) Urban Minor Arterial	1359	28.7%	
(17) Urban Major Collector	944	20.0%	
(18) Urban Minor Collector	260	5.5%	
(19) Urban Local Access	566	12.0%	
(06) Rural Minor Arterial	148	3.1%	
(07) Rural Major Collector	689	14.6%	
(08) Rural Minor Collector	114	2.4%	
(09) Rural Local Access	182	3.8%	
Total Collisions	**4731**		

Urban Principal Arterial (14)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**400**	7.7%	
Severity			
Property Damage Only	256	4.9%	64.0%
Injury	138	2.7%	34.5%
Serious Injury	6	0.1%	1.5%
Fatal	0	0.0%	0.0%
Collision Type			
Rear-end	158	3.0%	39.5%
Entering at angle	102	2.0%	25.5%
Lane Departure	65	1.3%	16.3%
Opposite Direction	65	1.3%	16.3%
Pedestrian/Bicycle	9	0.2%	2.3%
Animal	1	0.0%	0.3%
All other non-collision	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
Total Collisions	**400**		

Urban Minor Arterial (16)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**1359**	26.1%	
Severity			
Property Damage Only	835	16.1%	61.4%
Injury	480	9.2%	35.3%
Serious Injury	32	0.6%	2.4%
Fatal	12	0.2%	0.9%
Collision Type			
Rear-end	422	8.1%	31.1%
Lane Departure	396	7.6%	29.1%
Entering at angle	310	6.0%	22.8%
Opposite Direction	168	3.2%	12.4%
Pedestrian/Bicycle	36	0.7%	2.6%
Animal	25	0.5%	1.8%
All other non-collision	2	0.0%	0.1%
Equipment Failure	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
Total Collisions	**1359**		

Urban Major Collector (17)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**944**		
Severity			
Property Damage Only	590	11.3%	62.5%
Injury	318	6.1%	33.7%
Serious Injury	31	0.6%	3.3%
Fatal	5		
	944		
Collision Type			
Lane Departure	355	6.8%	37.6%
Rear-end	279	5.4%	29.6%
Entering at angle	185	3.6%	19.6%
Opposite Direction	82	1.6%	8.7%
Pedestrian/Bicycle	22	0.4%	2.3%
Animal	17	0.3%	1.8%
All other non-collision	2	0.0%	0.2%
Equipment Failure	1	0.0%	0.1%
Person fell or jumped or was pushed from vehicle	1	0.0%	0.1%
Total Collisions	**944**		

Urban Minor Collector (18)			
	No. of collisions	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**260**		
Severity			
Property Damage Only	184	3.5%	70.8%
Injury	68	1.3%	26.2%
Serious Injury	8	0.2%	3.1%
Fatal	0	0.0%	0.0%
Collision Type			
Lane Departure	164	3.2%	63.1%
Entering at angle	48	0.9%	18.5%
Rear-end	26	0.5%	10.0%
Opposite Direction	17	0.3%	6.5%
Pedestrian/Bicycle	3	0.1%	1.2%
Animal	2	0.0%	0.8%
All other non-collision	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
Total Collisions	**260**		

Urban Local Access (19)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**566**		
Severity			
Property Damage Only	359	6.9%	63.4%
Injury	182	3.5%	32.2%
Serious Injury	24	0.5%	4.2%
Fatal	1		
Collision Type			
Lane Departure	343	6.6%	60.6%
Entering at angle	94	1.8%	16.6%
Rear-end	70	1.3%	12.4%
Opposite Direction	33	0.6%	5.8%
Pedestrian/Bicycle	14	0.3%	2.5%
Animal	10	0.2%	1.8%
Person fell or jumped or was pushed from vehicle	2	0.0%	0.4%
All other non-collision	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Total Collisions	**566**		

Rural Minor Arterial (06)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**148**		
Severity			
Property Damage Only	95	1.8%	64.2%
Injury	46	0.9%	31.1%
Serious Injury	6	0.1%	4.1%
Fatal	1		
Collision Type			
Lane Departure	85	1.6%	57.4%
Rear-end	26	0.5%	17.6%
Entering at angle	20	0.4%	13.5%
Animal	12	0.2%	8.1%
Opposite Direction	5	0.1%	3.4%
Pedestrian/Bicycle	0	0.0%	0.0%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
All other non-collision	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Total Collisions	**148**		

Rural Major Collector (07)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**689**		
Severity			
Property Damage Only	407	7.8%	59.1%
Injury	238	4.6%	34.5%
Serious Injury	27	0.5%	3.9%
Fatal	17	0.3%	2.5%
Collision Type			
Lane Departure	380	7.3%	55.2%
Rear-end	134	2.6%	19.4%
Entering at angle	65	1.3%	9.4%
Opposite Direction	61	1.2%	8.9%
Animal	36	0.7%	5.2%
Pedestrian/Bicycle	9	0.2%	1.3%
All other non-collision	4	0.1%	0.6%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Total Collisions	**689**		

Rural Minor Collector (08)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**114**		
Severity			
Property Damage Only	78	1.5%	68.4%
Injury	30	0.6%	26.3%
Serious Injury	6	0.1%	5.3%
Fatal	0	0.0%	0.0%
Collision Type			
Lane Departure	75	1.4%	65.8%
Rear-end	15	0.3%	13.2%
Entering at angle	10	0.2%	8.8%
Opposite Direction	8	0.2%	7.0%
Animal	3	0.1%	2.6%
All other non-collision	2	0.0%	1.8%
Pedestrian/Bicycle	1	0.0%	0.9%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Total Collisions	**114**		

Rural Local Access (09)			
Category	**No. of collisions**	**Percentage of Total**	**Percentage of Subgroup**
Total Collisions	**182**		
Severity			
Property Damage Only	109	2.1%	59.9%
Injury	67	1.3%	36.8%
Serious Injury	4	0.1%	2.2%
Fatal	2	0.0%	1.1%
Collision Type			
Lane Departure	124	2.4%	68.1%
Entering at angle	24	0.5%	13.2%
Opposite Direction	11	0.2%	6.0%
Rear-end	10	0.2%	5.5%
Animal	10	0.2%	5.5%
Pedestrian/Bicycle	2	0.0%	1.1%
All other non-collision	1	0.0%	0.5%
Person fell or jumped or was pushed from vehicle	0	0.0%	0.0%
Equipment Failure	0	0.0%	0.0%
Total Collisions	**182**		

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Appendix B – Systemic Analysis Methods

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Analysis Methods

The localized analysis for three location types (intersection, segment and driveway) involves a multi-step prioritization process.

Step (1): Identifies collision locations. A collision location is a site that experiences five or more collisions in the 5-year study period.

Step (2): Calculate collision rates for the identified locations and compare that rate to the collision rate for roadway of similar function classification. If the location has a calculated collision rate that is higher than the County average collision rate for similar roadways the location is scored.

Step (3): Score locations by ranking each location across a matrix of five different categories and assigning a matrix score. The five categories are:

1. **Collision Frequency** - the total number of collisions occurring at a given location.
2. **Collision Rate** - calculated using Equation 1 for intersections (see Section 3.1 of this report) and reported in accidents per million entering vehicles (APMEV). Collision rate is calculated using Equation 2 (see Sections 3.2 and 3.3 of this report) for segment and driveway locations reported in accidents per million vehicle miles (APMVM).

For example, an intersection location with 5000 entering ADT experiencing 12 collisions in a 5-year period would have a collision rate (R) of 1.32 APMEV.

$$R = \frac{Number\ of\ Collisions \times 1{,}000{,}000}{ADT \times years \times days}$$

$$R = \frac{12 \times 1{,}000{,}000}{5000 \times 5 \times 365} = 1.32\ APMEV$$

3. **Severity Index** - the average weighted severity for a given location with a range of 1 to 10. It is equal to the total weighted severity of all the collisions divided by the total number of collisions occurring at the location. For this study, injury collisions are weighted at five times greater than a PDO collision and fatal collisions are weight at ten times greater. The number of PDO collisions, the number of injury collisions multiplied by five, and the number of fatal collisions multiplied by ten are added. Then the sum is divided by the total number of collisions occurring at the location to determine the severity index.

For example, a location experiencing 6 collisions (3 PDO, 2 injury and 1 fatal) would have a SI of 3.83.

$$SI = \frac{(\#\ PDO \times 1) + (\#\ injury\ collisions \times 5) + (\#\ fatal\ collisions \times 10)}{Total\ number\ of\ collisions}$$

$$SI = \frac{(3 \times 1) + (2 \times 5) + (1 \times 10)}{6} = 3.83$$

4. **Equivalent Property Damage Only (EPDO)** - a method of representing injury and fatal collisions as a number of PDO collisions. For this study, injury collisions are weighted at five times greater than a PDO collision and fatal collisions are weight at ten times greater. The sum of the weight values is reported as the number of corresponding EPDO collisions. To calculate EPDO multiply the number of injury and fatal collisions by their weighted values and add the number of PDO collisions for a total number of EPDO collisions.

For example, the same location experiencing 6 collisions (3 PDO, 2 injury and 1 fatal) would have value of 23 EPDO.

$$EPDO = (\#\ PDO \times 1) + (\#\ injury\ collisions \times 5) + (\#\ fatal\ collisions \times 10)$$

$$EPDO = (3 \times 1) + (2 \times 5) + (1 \times 10) = 23$$

5. **Target Zero Priority Types** are collision types from the *Washington State Strategic Highway Plan 2016 – Target Zero* that were tracked for each location. The higher priority collision types were weighted more than lower priority types then summed for a total Target Zero score. Charts for Target Zero collision data can be found in Section 2 of this report.

   - Priority Level One items have a weighted value of two
   - Priority Level Two items have a weighted value of one

Locations are ranked for each of the five categories and the sum of the category ranks for each location result in a final matrix score. Within each category ties are represented by the same numeric score. The lower the matrix score for a location the higher its overall rank for safety mitigation consideration.

Intersection Analysis Methods

Collisions occurring at the intersection or within 250 feet of the intersection on all approaches are included for analysis. This distance is consistent with guidelines provided in the HSM and is illustrated in Figure B.1. The collision rate for all intersections experiencing five or more collisions during the study period are calculated.

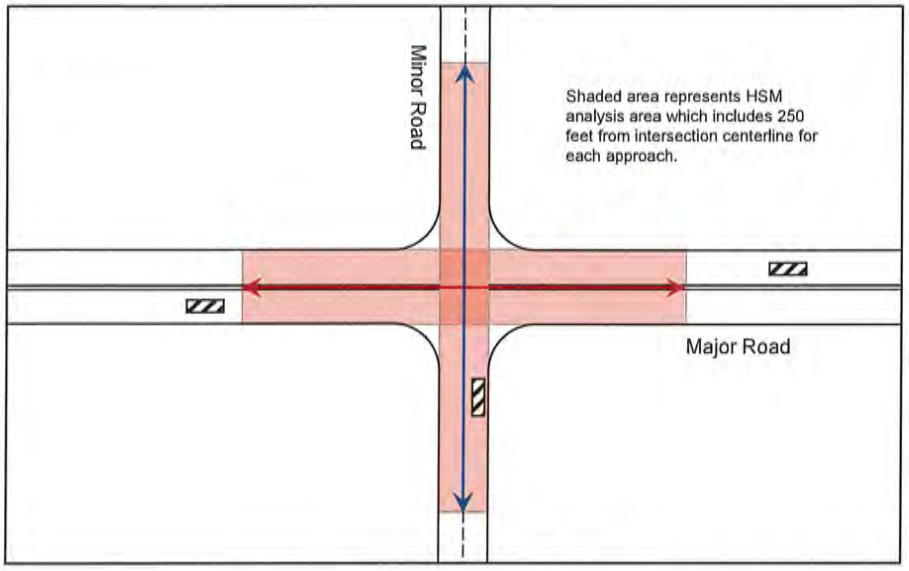

Figure B.1 – HSM Intersection Analysis Area

The collision rate is calculated for each collision intersection location using the formula in Equation 1. The federal function classification (FFC) for all roadways entering an intersection are used to assigned a combined FFC for each intersection (e.g. Arterial-Arterial, Arterial-Collector, Arterial-Local, etc.). The average collision rate for each collision intersection location is compared against the average rate for all intersection locations with a similar combined function classification. Locations with collision rates higher than the average warrant further consideration for possible safety mitigation.

For intersections, the collision rate is calculated using Equation 1:

$$R = \frac{A \times 1{,}000{,}000}{ADT \times Y \times 365} \qquad \textbf{(Equation 1)}$$

where

R = intersection collision rate, in (APMEV).

A = total number of collisions,

ADT = average daily traffic, in vehicles per day,

Y = number of years in the study period, and

365 = number of days in the average year

Collision intersection locations with a collision rate greater than the average are scored using a matrix of five categories. Within each matrix category ties are represented by the same numeric score. The lower the matrix score for a location the higher its overall rank for safety mitigation consideration. The complete matrix table and intersection location details are presented in **Error! Reference source not found.**.

Segment Analysis Methods

Segment locations are identified by finding clusters of five or more collisions within ±0.1 mile of each other excluding intersection related collisions. The collision rate for all segments experiencing five or more collisions during the study period are calculated. The collision rate is calculated for each collision segment location using the formula in Equation 2.

$$R_{seg} = \frac{A \times 1{,}000{,}000}{ADT \times L \times Y \times 365} \qquad \textbf{(Equation 2)}$$

where

R_{seg} = corridor collision rate, in (APMVM).

A = total number collisions,

ADT = average daily traffic, in vehicles per day,

L = segment length, in miles,

Y = number of years in the study period, and

365 = number of days in the average year

The collision rate for all collision segment locations is compared against the average rate for all collision segment locations with a similar roadway function classification. Table 3.2 lists the calculated average collision rates for County roadways based on FFC. Locations with collision rates higher than the average warrant further consideration for possible safety mitigation.

Roadway FFC	Average Collision Rates
Principal Arterial (1)	3.39
Urban Arterial (2)	2.23
Urban Major Collector (3)	1.52
Urban Minor Collector (4)	4.22
Urban Local (5)	4.78
Rural Arterial (6)	2.99
Rural Major Collector (7)	2.48
Rural Minor Collector (8)	2.18
Rural Local (9)	2.68

Table B.1 – Average Collision Rates for All County Roadways by FFC

Collision segment locations with a collision rate greater than the average are scored using a matrix of five categories. Within each matrix category ties are represented by the same numeric score. The lower the matrix score for a location the higher its overall rank for safety mitigation consideration. The complete matrix table and intersection location details are presented in Appendix C.

Driveway Analysis Methods

Driveway locations are identified by finding clusters of five or more collisions within ±0.1 mile of each other including only driveway or driveway related collisions. The collision rate for all driveways experiencing five or more collisions during the study period are calculated.

The collision rate is calculated for each collision driveway location using the formula in Equation 3. The collision rate for each collision driveway location is compared against the average collision rate for roadways with a similar function classification. Locations with collision rates higher than the average warrant further consideration for possible safety mitigation.

$$R_{seg} = \frac{A \times 1{,}000{,}000}{ADT \times L \times Y \times 365} \qquad \textbf{(Equation 3)}$$

where

R_{seg} = corridor collision rate, in (APMVM).

A = total number collisions,

ADT = average daily traffic, in vehicles per day,

L = segment length, in miles,

Y = number of years in the study period, and

365 = number of days in the average year

Table 3.2 lists the calculated average collision rates for all County roadways by FFC. Collision driveway locations with a collision rate greater than the average are scored using a matrix of five categories. Within each matrix category ties are represented by the same numeric score. The lower the matrix score for a location the higher its overall rank for safety mitigation consideration. The complete matrix table and intersection location details are presented in Appendix C.

Appendix C – Safety Lists

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2017-2021 Intersection Safety List

														Category Rankings					
No.	Road Name	Crossroad Name	Ent ADT	PDO	PI	SI	FAT	Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Priority 1	Priority 2	Target Zero Index	Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero Index	Total Score
1	SIDNEY RD SW	PINE RD (SW)	6265	7	9	1	0	17	1.49	3.35	57	31	0	62	7	4	9	4	8	52
2	MYHRE RD (NW)	SILVERDALE WAY NW	24144	22	11	0	0	33	0.75	2.33	77	64	13	141	2	16	32	2	2	54
3	GREAVES WAY (NW)	CLEAR CRK RD NW	6577	6	6	0	0	12	1.00	3.00	36	25	2	52	14	7	11	10	12	54
4	KITSAP MALL BLVD NW	RANDALL WAY (NW)	16415	34	12	0	0	46	1.54	2.04	94	98	8	204	1	3	49	1	1	55
5	64TH ST (NW)	CENTRAL VALLEY RD NW	7240	4	5	1	0	10	0.76	3.40	34	20	4	44	19	14	5	12	17	67
6	BUCKLIN HILL RD (NW)	SILVERDALE WAY NW	27913	18	9	0	0	27	0.53	2.33	63	62	7	131	3	29	32	3	3	70
7	CENTRAL VALLEY RD NW	FAIRGROUNDS RD (NW)	12912	8	6	1	0	15	0.64	2.87	43	21	4	46	9	21	19	7	16	72
8	OLD FRONTIER RD NW	GREAVES WAY (NW)	10912	6	4	0	1	11	0.55	3.27	36	24	3	51	15	27	10	10	13	75
9	LAKEWAY BLVD (SE)	BETHEL BURLEY RD SE	8242	6	5	0	0	11	0.73	2.82	31	23	1	47	15	17	21	16	14	83
10	JACKSON AVE SE	LUND AVE (SE)	17654	13	6	0	0	19	0.59	2.26	43	35	5	75	6	24	41	7	6	84
11	RANDALL WAY (NW)	SILVERDALE WAY NW	23947	15	7	0	0	22	0.50	2.27	50	46	4	96	5	31	40	6	5	87
12	RIDGETOP BLVD NW/Kitsap Mall Blvd	SILVERDALE WAY NW	27169	19	7	0	0	26	0.52	2.08	54	56	3	115	4	30	48	5	4	91
13	PORT GAMBLE RD NE	LINCOLN RD (NE)	5567	2	4	2	0	8	0.79	4.00	32	15	1	31	28	12	2	14	36	92
14	SYLVAN WAY (NE)	PERRY AVE NE	11657	12	4	0	0	16	0.75	2.00	32	26	9	61	8	15	50	14	9	96
15	BETHEL RD SE	LIDER RD (SE)	12536	6	4	1	0	11	0.48	2.82	31	28	3	59	15	34	21	16	10	96
16	HANSBERRY ST NW	TRACYTON BEACH RD NW	7748	5	5	0	0	10	0.71	3.00	30	16	3	35	19	19	11	18	32	99
17	GUNDERSON RD (NE)	PORT GAMBLE RD NE	7134	12	3	0	0	15	1.15	1.80	27	25	6	56	9	5	56	20	11	101
18	SUNSET AVE NE	MC WILLIAMS RD (NE)	5637	5	4	0	0	9	0.87	2.78	25	21	0	42	24	9	23	25	21	102
19	MILE HILL DR (SE)	WOODS RD SE	13007	4	6	0	0	10	0.42	3.40	34	19	4	42	19	47	5	12	21	104
20	ARSENAL WAY (W)	NATIONAL AVE W	9389	9	3	1	0	13	0.76	2.23	29	20	2	42	12	13	42	19	21	107
21	OLD FRONTIER RD NW	ANDERSON HILL RD (NW)	21566	7	6	0	0	13	0.33	2.85	37	23	1	47	12	58	20	9	14	113
22	JACKSON AVE SE	SALMONBERRY RD (SE)	10993	11	3	0	0	14	0.70	1.86	26	31	3	65	11	20	55	22	7	115
23	FIRCREST DR SE	MADRONA DR SE (North)	2847	7	3	0	0	10	1.92	2.20	22	19	1	39	19	1	43	30	24	117
24	LIDER RD (SW)	SIDNEY RD SW	7382	8	3	0	0	11	0.82	2.09	23	21	1	43	15	10	47	28	19	119
25	WOODS RD (SE)	LONG LAKE RD SE	2866	7	2	0	0	9	1.72	1.89	17	19	5	43	24	2	53	38	19	136
26	OLYMPUS DR NE	SYLVAN WAY (NE)	3626	1	5	0	0	6	0.91	4.33	26	9	0	18	40	8	1	22	67	138
27	DICKEY RD NW	NEWBERRY HILL RD (NW)	10797	5	4	0	0	9	0.46	2.78	25	18	2	38	24	40	23	25	27	139
28	OLD MILITARY RD NE	FAIRGROUNDS RD (NE)	11513	6	4	0	0	10	0.48	2.60	26	14	2	30	19	37	26	22	38	142
29	ERLANDS POINT RD NW	CHICO WAY NW	9921	2	5	0	0	7	0.39	3.86	27	14	1	29	33	50	3	20	40	146
30	TRENTON AVE NE	SYLVAN WAY (NE)	3952	6	2	0	0	8	1.11	2.00	16	17	3	37	28	6	50	42	29	155
31	BYRON ST (NW)	SILVERDALE WAY NW	20453	4	4	0	0	8	0.21	3.00	24	18	2	38	28	68	11	27	27	161
32	MC WILLIAMS RD (NE)	PINE RD NE	10054	7	2	0	0	9	0.49	1.89	17	21	2	44	24	33	53	38	17	165
33	TRACYTON BLVD NW	FAIRGROUNDS RD (NW)	5774	4	1	1	0	6	0.57	2.33	14	19	1	39	40	26	32	47	24	169
34	STOTTLEMEYER RD NE	LINCOLN RD (NE)	4619	4	2	0	0	6	0.71	2.33	14	16	0	32	40	18	32	47	34	171
35	PINE RD NE	RIDDELL RD (NE)	9625	5	3	0	0	8	0.46	2.50	20	12	4	28	28	41	31	31	43	174
36	J M DICKENSON RD SW	LAKE FLORA RD (SW)	5520	4	2	0	0	6	0.60	2.33	14	17	0	34	40	23	32	47	33	175
37	ALMIRA DR NE	RIDDELL RD (NE)	6916	3	2	1	0	6	0.48	3.00	18	12	2	26	40	38	11	33	53	175
38	CALIFORNIA AVE SE	MILE HILL DR (SE)	8466	4	3	0	0	7	0.45	2.71	19	13	2	28	33	43	25	32	43	176
39	BETHEL BURLEY RD SE	MULLENIX RD (SE)	7680	3	2	1	0	6	0.43	3.00	18	13	1	27	40	46	11	33	48	178
40	FIRCREST DR SE	MILE HILL DR (SE)	17631	3	3	0	0	6	0.19	3.00	18	13	2	28	40	70	11	33	43	197
41	RIDGEPOINT DR NW (North)	RIDGETOP BLVD NW	5718	2	3	0	0	5	0.48	3.40	17	10	1	21	58	35	5	38	61	197
42	SAM CHRISTOPHERSON AVE W	BELFAIR VALLEY RD (W)	9425	3	3	0	0	6	0.35	3.00	18	10	0	20	40	52	11	33	63	199
43	DELANEY RD (NE)	HANSVILLE RD NE	10439	3	2	0	1	6	0.31	3.83	23	8	1	17	40	59	4	28	68	199
44	EGLON RD (NE)	HANSVILLE RD NE	8599	5	2	0	0	7	0.45	2.14	15	14	1	29	33	45	44	44	40	206
45	HOLLY RD (NW)	SEABECK-HOLLY RD NW	4748	3	2	0	0	5	0.58	2.60	13	13	1	27	58	25	26	53	48	210
46	TRIGGER AVE (NW)	OLD FRONTIER RD NW	14616	3	2	1	0	6	0.22	3.00	18	11	1	23	40	67	11	33	59	210
47	ALASKA AVE SE	MILE HILL DR (SE)	9107	4	1	1	0	6	0.36	2.33	14	14	0	28	40	51	32	47	43	213
48	CRESTVIEW CIR NW	SILVERDALE WAY NW	13945	6	2	0	0	8	0.31	2.00	16	15	0	30	28	60	50	42	38	218

2017-2021 Intersection Safety List

														Category Rankings					
No.	Road Name	Crossroad Name	Ent ADT	PDO	PI	SI	FAT	Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Priority 1	Priority 2	Target Zero Index	Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero Index	Total Score
49	VAN SKIVER RD (SE)	BETHEL RD SE	9883	2	3	0	0	5	0.28	3.40	17	11	2	24	58	64	5	38	56	221
50	BETHEL BURLEY RD SE	SPRUCE RD (SE)	5078	3	1	1	0	5	0.54	2.60	13	10	1	21	58	28	26	53	61	226
51	TAMARACK DR (SE)	JACKSON AVE SE	12069	4	2	0	0	6	0.27	2.33	14	14	0	28	40	65	32	47	43	227
52	BURLEY OLALLA RD (SE)	BETHEL BURLEY RD SE	5891	3	2	0	0	5	0.47	2.60	13	13	0	26	58	39	26	53	53	229
53	KITSAP MALL BLVD NW	POPLARS AVE NW	12296	5	2	0	0	7	0.31	2.14	15	13	1	27	33	61	44	44	48	230
54	HILLCREST ST NW	CENTRAL VALLEY RD NW	3430	4	1	0	0	5	0.80	1.80	9	13	1	27	58	11	56	61	48	234
55	ILLAHEE RD NE	BROWNSVILLE HWY NE	9206	7	0	0	0	7	0.42	1.00	7	19	1	39	33	48	68	68	24	241
56	SHERMAN HILL RD (NW)	VIKING WAY NW	12801	5	2	0	0	7	0.30	2.14	15	11	1	23	33	62	44	44	59	242
57	SHANNON DR (SW)	SIDNEY RD SW	4447	4	1	0	0	5	0.62	1.80	9	13	1	27	58	22	56	61	48	245
58	HILLSBORO DR NW	RIDGETOP BLVD NW	7930	3	2	0	0	5	0.35	2.60	13	12	1	25	58	54	26	53	55	246
59	NATIONAL AVE W	LOXIE EAGANS BLVD (W)	8575	7	0	0	0	7	0.45	1.00	7	16	0	32	33	44	68	68	34	247
60	SID UHINCK DR (NW)	RIDGETOP BLVD NW	17536	4	2	0	0	6	0.19	2.33	14	10	0	20	40	69	32	47	63	251
61	APEX AIRPORT RD (NW)	DICKEY RD NW	6702	4	1	0	0	5	0.41	1.80	9	18	1	37	58	49	56	61	29	253
62	CLOVER BLOSSOM LN NE	MC WILLIAMS RD (NE)	9804	5	1	0	0	6	0.34	1.67	10	15	1	31	40	56	64	57	36	253
63	FRONTIER PL NW	ANDERSON HILL RD (NW)	11364	5	0	1	0	6	0.29	1.67	10	17	2	36	40	63	64	57	31	255
64	KITTY HAWK DR NW	AUSTIN DR NW	7243	5	1	0	0	6	0.45	1.67	10	12	0	24	40	42	64	57	56	259
65	FIRCREST DR SE	MADRONA DR SE (South)	5722	4	1	0	0	5	0.48	1.80	9	12	0	24	58	36	56	61	56	267
66	CHESTER RD (E)	CALIFORNIA AVE E	5565	4	1	0	0	5	0.49	1.80	9	8	0	16	58	32	56	61	69	276
67	PHILLIPS RD SE	MULLENIX RD (SE)	9654	5	1	0	0	6	0.34	1.67	10	10	0	20	40	55	64	57	63	279
68	MARIGOLD DR NW	RIDGETOP BLVD NW	10987	4	1	0	0	5	0.25	1.80	9	14	1	29	58	66	56	61	40	281
69	BERRY LAKE RD (SW)	OLD CLIFTON RD (SW)	7855	4	1	0	0	5	0.35	1.80	9	9	1	19	58	53	56	61	66	294
70	CEDAR RD (SE)	BETHEL RD SE	9889	6	0	0	0	6	0.33	1.00	6	8	0	16	40	57	68	70	69	304

2017-2021 Segment Safety List

No.	Road No.	Road Name	BMP	EMP	Length	From	To	ADT	PDO	FI	SI	FAT	Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Priority 1	Priority 2	Target Zero Index	Category Rankings: Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero Index	Total Score
1	13770	DICKEY RD NW	0.502	0.607	0.105	at 90 DEGREE CORNER	100 ft. East of HOOT RIDGE LN NW	1765	4	6	0	0	10	29.57	3.40	34	18	2	38	8	1	3	2	6	20
2	25009	LAKE FLORA RD (SW)	5.035	5.185	0.150	201 ft. West of PILGRAM FIRS	0.11 mi. East of PILGRAM FIRS	2561	4	5	0	0	9	12.84	3.22	29	14	1	29	10	12	9	6	12	49
3	10609	BELFAIR VALLEY RD (W)	0.712	0.863	0.151	401 ft. South of MINARD RD W	354 ft. West of UNION RIVER BRIDGE	3920	7	4	0	0	11	10.18	2.45	27	22	3	47	3	15	28	7	2	55
4	55275	TRACYTON BLVD NW	0.993	1.041	0.048	0.15 mi. NW of SILVER BEACH DR NW	0.12 mi. East of DARLING RD NW	3490	2	4	0	0	6	19.63	3.67	22	13	0	26	24	6	1	13	16	60
5	56791	RIDGETOP BLVD NW	0.002	0.111	0.109	11 ft. East of SILVERDALE WAY NW	232 ft. West of BLAINE AVE NW	10894	6	5	0	0	11	5.08	2.82	31	14	2	30	3	38	14	4	10	69
6	55275	TRACYTON BLVD NW	1.947	2.142	0.195	502 ft. South of FAIRGROUNDS RD (NW)	0.10 mi. North of FAIRGROUNDS RD (NW)	7003	5	5	0	0	10	4.01	3.00	30	17	3	37	8	45	10	5	7	75
7	11709	SEABECK HIGHWAY NW	7.354	7.780	0.426	417 ft. West of LONEROCK LN NW	0.20 mi. West of END LITTLE BEEF BRIDGE	4956	8	3	1	0	12	3.11	2.75	33	21	1	43	2	57	15	3	3	80
8	57740	BUCKLIN HILL RD (NW)	1.040	1.140	0.100	48 ft. West of TRACYTON BLVD NW	16 ft. West of FREDRICKSON RD NW	5629	4	3	0	0	7	6.81	2.71	19	13	2	28	15	25	16	14	13	83
9	13549	ANDERSON HILL RD (NW)	3.341	3.639	0.298	100 ft. NW of STOLI LN NW	11 ft. East of BN RR OVERPASS	10839	14	6	0	0	20	3.39	2.20	44	33	5	71	1	57	35	1	1	90
10	15650	SHERMAN HEIGHTS RD (W)	0.406	0.695	0.289	0.10 mi. SW of QUARRY ST W	0.13 mi. NE of SHIPVIEW CT (W)	3423	8	3	0	0	11	8.10	2.09	23	21	0	42	3	12	40	11	4	90
11	59050	CENTRAL VALLEY RD NW	2.324	2.506	0.182	201 ft. North of WESTMONT LN (NW)	at BUCKLIN HILL RD (NW)	9768	7	4	0	0	11	3.39	2.45	27	18	1	32	3	53	28	2	7	98
12	56791	RIDGETOP BLVD NW	0.991	1.250	0.259	11 ft. NE of SR 303 ON/OFF RAMP	132 ft. SW of BOARDWALK PL NW	6729	7	4	0	0	11	3.46	2.45	27	16	2	34	3	51	28	7	9	98
13	50509	TRACYTON BEACH RD NW	0.201	0.564	0.363	100 ft. North of ESSEX ST NW	0.28 mi. SW of HERITAGE LN (NW)	3816	4	4	0	0	8	3.16	3.00	24	14	2	30	14	56	10	10	10	100
14	50915	ILLAHEE RD NE	2.743	2.810	0.067	148 ft. West of VARSITY LN NE	502 ft. West of VARSITY LN NE	2375	5	0	1	0	6	20.66	2.50	15	11	1	23	24	5	27	24	23	103
15	55275	TRACYTON BLVD NW	0.315	0.468	0.153	32 ft. South of HOLMBERG ST (NW)	148 ft. NW of NORA ST NW	5205	3	3	0	0	6	4.13	3.00	18	12	0	24	24	44	10	16	21	115
16	13549	ANDERSON HILL RD (NW)	0.884	0.990	0.106	317 ft. West of WADE RD (NW)	16 ft. East of BEGIN BRIDGE	4408	3	3	0	0	6	7.04	3.00	18	9	0	18	24	24	10	16	42	116
17	20509	GLENWOOD RD SW	2.765	2.961	0.196	79 ft. North of LAKE HELENA RD (SW)	0.10 mi. NE of WILLIAM HEIGHTS LN SW (PVT)	2883	2	3	0	0	5	4.85	3.40	17	11	1	23	34	40	3	19	23	119
18	33350	PHILLIPS RD SE	2.716	3.032	0.316	0.25 mi. South of BAKER RD (SE)	348 ft. North of BAKER RD (SE)	4278	3	4	0	0	7	2.84	3.29	23	11	1	23	15	62	8	11	23	119
19	74660	GUNDERSON RD (NE)	0.602	0.875	0.273	0.10 mi. before STORYBROOK LN NE	32 ft. West of ROVA RD (NE)	4691	4	3	0	0	7	3.00	2.71	19	13	0	26	15	60	16	14	16	121
20	42510	BEACH DR E	2.331	2.453	0.122	301 ft. North of WATAUGA BEACH DR E	201 ft. North of WYNN JONES RD E	920	3	2	0	0	5	24.41	2.60	13	10	0	20	34	3	18	33	34	122
21	54600	RIDDELL RD (NE)	2.048	2.165	0.117	11 ft. West of FOREST DR NE (N)	at PERRY AVE NE	4812	5	2	0	0	7	6.81	2.14	15	11	1	23	15	26	36	24	23	124
22	42050	HORSTMAN RD (SE)	0.368	0.497	0.129	21 ft. SW of ORCHARD LN (SE)	206 ft. NE of FOSS RD (SE)	1460	4	2	0	0	6	17.46	2.33	14	10	0	20	24	9	31	29	34	127
23	72509	BIG VALLEY RD NE	2.026	2.181	0.155	0.96 mi. NE of SAWDUST HILL RD (NE)	1.11 mi. NE of SAWDUST HILL RD (NE)	1842	2	3	0	0	5	9.60	3.40	17	7	0	14	34	18	3	19	54	128
24	15650	SHERMAN HEIGHTS RD (W)	0.081	0.167	0.086	48 ft. NE of BARTOLATZ RD W	502 ft. NE of BARTOLATZ RD W	3624	3	2	0	0	5	8.79	2.60	13	11	0	22	34	20	18	33	28	133
25	21109	SIDNEY RD SW	4.638	4.676	0.038	100 ft. North of LEGACY LN (SW)	301 ft. North of LEGACY LN (SW)	4277	3	2	0	0	5	16.86	2.60	13	9	1	19	34	10	18	33	40	135
26	21139	CARNEY LAKE RD SW	1.557	1.651	0.094	16 ft. West of 90 DEGREE CORNER	195 ft. North of GRACE ST (SW)	1556	6	1	0	0	7	26.22	1.57	11	11	1	23	15	2	55	44	23	139
27	44130	WOODS RD (SE)	0.341	0.608	0.267	100 ft. SW of BIG TIMBER PL SE	11 ft. SW of GARFIELD ST (SE)	1603	4	2	0	0	6	7.69	2.33	14	10	0	20	24	22	31	29	34	140
28	74200	VIKING WAY NW	1.135	1.275	0.140	238 ft. SE of NORDIC COVE LN (NW)	502 ft. NW of NORDIC COVE LN (NW)	11499	7	2	0	0	9	3.06	1.89	17	14	0	28	10	58	41	19	13	141
29	13549	ANDERSON HILL RD (NW)	4.185	4.248	0.063	301 ft. NW of BUCKLIN HILL RD (NW)	32 ft. SE of BUCKLIN HILL RD (NW)	2237	3	2	0	0	5	19.44	2.60	13	8	0	16	34	7	18	33	50	142
30	21709	BETHEL BURLEY RD SE	1.430	1.546	0.116	0.37 mi. South of OAK RD (SE)	0.25 mi. South of OAK RD (SE)	3717	3	1	1	0	5	6.95	3.60	18	6	0	12	34	29	2	16	62	143
31	55275	TRACYTON BLVD NW	1.149	1.460	0.311	48 ft. East of DARLING RD NW	449 ft. South of KINT DR (NW)	3766	8	1	0	0	9	4.21	1.44	13	19	1	39	10	41		33	5	89
32	30509	LONG LAKE RD SE	4.605	4.792	0.187	143 ft. NE of LAKEVIEW DR SE	0.21 mi. NE of LAKEVIEW DR SE	2065	6	1	0	0	7	9.93	1.57	11	13	0	26	15	17	55	44	16	147
33	40700	LUND AVE (SE)	0.653	0.739	0.086	127 ft. West of COMPASS LN SE	100 ft. West of JACKSON AVE SE	13416	5	2	0	0	7	3.32	2.14	15	11	2	24	15	54	36	24	21	150
34	54600	RIDDELL RD (NW)	0.185	0.246	0.061	58 ft. West of MAY ST NW	82 ft. East of HART ST NW	4475	4	1	0	0	5	10.04	1.80	9	13	0	26	34	16	42	48	16	156
35	11709	SEABECK HIGHWAY NW	2.212	2.312	0.100	502 ft. SE of CALAMITY LN NW	26 ft. NW of CALAMITY LN NW	5132	3	2	0	0	5	5.34	2.60	13	10	0	20	34	17	18	33	34	156
36	25009	LAKE FLORA RD (SW)	4.000	4.231	0.231	264 ft. West of MC CORMICK LAND CO.	100 ft. SW of SUNSHINE GLEN CT SW	2561	5	2	0	0	7	6.48	2.14	15	7	0	14	15	28	36	24	54	157
37	21107	BETHEL RD SE	0.879	0.955	0.076	100 ft. North of OREGON ST (SE)	502 ft. North of OREGON ST (SE)	9238	2	3	0	0	5	3.90	3.40	17	7	0	14	34	48	3	19	54	158
38	71910	FINN HILL RD (NW)	1.527	1.642	0.115	248 ft. SE of SR 3 OVERPASS	42 ft. NW of KARKAINEN LN (NW) PVT	11115	5	2	0	0	7	3.00	2.14	15	11	0	22	15	59	36	24	28	162
39	48300	CHESTER RD (E)	0.009	0.114	0.105	48 ft. NE of WOODS RD E	0.11 mi. NE of WOODS RD E	1140	4	1	0	0	5	22.89	1.80	9	10	0	20	34	4	42	48	34	162
40	50909	PERRY AVE NE	1.009	1.229	0.220	0.16 mi. South of ROBINSON RD NE	312 ft. North of ROBINSON RD NE	6138	8	1	0	0	9	3.66	1.44	13	14	0	28	10	50	57	33	13	163
41	13549	ANDERSON HILL RD (NW)	3.743	3.819	0.076	301 ft. West of OLD FRONTIER RD NW	79 ft. West of BEGIN SR 3 OVERPASS	10839	4	2	0	0	6	3.99	2.33	14	10	0	20	24	46	31	29	34	164
42	57810	OLD FRONTIER RD NW	1.637	1.760	0.123	512 ft. North of GUSTAFSON RD (NW)	at TRIGGER AVE (NW)	4582	4	2	0	0	6	5.83	2.33	14	8	0	16	24	33	31	29	50	167
43	74660	GUNDERSON RD (NE)	2.186	2.272	0.086	0.11 mi. West of MILLER BAY RD NE	148 ft. West of MILLER BAY RD NE	5017	3	2	0	0	5	6.35	2.60	13	7	0	14	34	30	18	33	54	169
44	13549	ANDERSON HILL RD (NW)	1.440	1.633	0.193	100 ft. West of VERISSIMO LN NW	48 ft. NE of LATHROP LN NW	4408	3	2	0	0	5	3.22	2.60	13	10	1	21	34	55	18	33	32	172
45	21109	SIDNEY RD SW	0.211	0.287	0.076	100 ft. SE of CLUB HOUSE CT (SE)	301 ft. NW of CLUB HOUSE CT (SE)	2872	4	1	0	0	5	12.55	1.80	9	9	0	18	34	13	42	48	42	179
46	19519	CHICO WAY NW	3.963	4.085	0.122	100 ft. North of NEWBERRY LN (NW)	at SILVERDALE WAY NW	5683	3	2	0	0	5	3.95	2.60	13	8	1	17	34	47	18	33	48	180
47	25009	LAKE FLORA RD (SW)	4.670	4.929	0.259	0.10 mi. East of TROPHY LAKE GOLF	48 ft. NE of CALVINWOOD RD SW	2561	3	2	0	0	5	4.13	2.60	13	7	0	14	34	43	18	33	54	182
48	10609	BELFAIR VALLEY RD (W)	1.325	1.465	0.140	201 ft. SW of WILKINSON RD W	0.10 mi. NE of WILKINSON RD W	4018	4	1	0	0	5	4.87	1.80	9	12	1	25	34	39	42	48	20	183
49	70400	HANSVILLE RD NE	1.669	1.783	0.114	301 ft. South of EVENING STAR LN (NE) PVT	301 ft. North of EVENING STAR LN (NE) PVT	10311	2	3	0	0	5	2.33	3.40	17	4	2	10	34	64	3	19	64	184
50	22409	OLD CLIFTON RD (SW)	1.464	1.600	0.136	0.11 mi. East of SUNNYSLOPE RD SW (END GAP)	0.25 mi. East of SUNNYSLOPE RD SW (END GAP)	2371	4	1	0	0	5	8.50	1.80	9	9	0	18	34	21	42	48	42	187
51	56791	RIDGETOP BLVD NW	3.029	3.140	0.111	79 ft. South of GALLERY ST (NW)	100 ft. SE of SILVERDALE WAY NW	4431	4	1	0	0	5	5.57	1.80	9	11	0	22	34	36	42	48	28	188
52	50509	TRACYTON BEACH RD NW	1.193	1.235	0.042	121 ft. SE of 31ST ST (NE)	26 ft. NW of ALTA DR (NW)	4487	5	0	0	0	5	14.54	1.00	5	11	0	22	34	11	59	59	28	191
53	33350	PHILLIPS RD SE	2.398	2.493	0.095	301 ft. South of BIELMEIER RD (SE)	201 ft. North of BIELMEIER RD (SE)	3758	4	1	0	0	5	7.67	1.80	9	8	0	16	34	23	42	48	50	197
54	43460	CONIFER PK DR (SE)	0.133	0.294	0.161	301 ft. West of BUCKINGHAM DR (SE)	201 ft. SW of FIRCREST DR SE	1927	4	1	0	0	5	8.83	1.80	9	7	0	14	34	19	42	48	54	197
55	30509	LONG LAKE RD SE	5.428	5.502	0.074	100 ft. SE of WOODS RD (SE)	491 ft. SE of WOODS RD (SE)	2065	5	0	0	0	5	17.93	1.00	5	9	1	19	34	8	59	59	40	200
56	21709	BETHEL BURLEY RD SE	1.146	1.301	0.155	502 ft. North of PINE RD (SE)	0.25 mi. North of PINE RD (SE)	3717	5	1	0	0	6	5.71	1.67	10	9	0	18	24	35	53	46	42	200
57	30519	OLALLA VALLEY RD SE	0.811	1.057	0.246	301 ft. SE of ORCHARD AVE SE	0.19 mi. NW of ORCHARD AVE SE	3920	4	1	0	0	5	5.80	1.80	9	9	0	18	34	34	42	48	42	200
58	13429	NEWBERRY HILL RD (NW)	2.749	2.815	0.066	248 ft. West of PROVOST RD NW	26 ft. West of US NAVY RR CROSSING	12056	5	1	0	0	6	4.13	1.67	10	8	1	17	24	42	53	46	48	213
59	21760	BURLEY OLALLA RD (SE)	1.698	1.906	0.208	100 ft. West of SHADY GLEN AVE SE	0.19 mi. East of SHADY GLEN AVE SE	2133	5	0	0	0	5	6.18	1.00	5	10	1	21	34	31	59	59	32	215
60	13549	ANDERSON HILL RD (NW)	0.325	0.500	0.175	201 ft. SW of TWIN BROOKS LN NW	0.13 mi. NW of FOXHALL LN (NW)	4083	4	1	0	0	5	3.83	1.80	9	9	0	18	34	40	42	48	42	215
61	30050	STEVENS RD SE	0.009	0.186	0.177	48 ft. North of 160TH ST (SE)	at CEDAR PARK RD SE	1359	5	0	0	0	5	11.39	1.00	5	7	0	14	34	14	59	59	54	220
62	70400	HANSVILLE RD NE	0.002	0.100	0.098	11 ft. North of SR 104	53 ft. South of MAIN ENT. TO ALBERTSONS	10104	4	1	0	0	5	2.77	1.80	9	7	1	15	34	63	42	48	53	240
63	86685	KINGSTON RD NE (S)	3.762	3.848	0.086	327 ft. NW of ARNESS CO. PARK	48 ft. SE of KINGSTON RD (NE W)	4888	5	0	0	0	5	6.52	1.00	5	6	0	12	34	27	59	59	62	241
64	15450	SAM CHRISTOPHERSON AVE W	0.006	0.198	0.192	32 ft. NW of SR 3	401 ft. South of BELFAIR VALLEY RD (W)	4939	5	0	0	0	5	2.89	1.00	5	6	2	14	34	61	59	59	54	267

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No.	Road No.	Road Name	BMP	EMP	Length	From	To	ADT	PDO	PI	SI	FAT	Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Priority 1	Priority 2	Target Zero Index	Category Rankings: Collision Frequency	Collision Rate	Severity Index	Equivalent PDO	Target Zero Index	Total Score
1	40700	LUND AVE (SE)	0.663	0.712	0.049	90 ft. East of AM/PM & 7-11	42 ft. East of JACKSON AVE SE	7842	9	6	0	0	15	21.39	2.60	39	11	2	24	4	3	7	4	4	22
2	42600	MILE HILL DR (SE)	2.096	2.222	0.126	79 ft. East of VILLAGE LN SE	100 ft. West of WARNER AVE SE	16521	6	10	0	0	16	4.21	3.50	56	11	6	28	3	15	2	2	3	25
3	19515	SILVERDALE WAY NW	1.112	1.215	0.103	42 ft. SW of POPLARS AVE NW	132 ft. NE of 2ND ENT. TO B.K.	15226	13	6	0	0	19	6.64	2.26	43	13	6	32	2	12	10	2	2	28
4	57740	BUCKLIN HILL RD (NW)	0.307	0.545	0.238	11 ft. East of BAY SHORE DR NW	48 ft. West of BLAINE AVE NW	17533	17	9	0	0	26	3.41	2.38	62	21	5	47	1	17	8	1	1	28
5	19519	CHICO WAY NW	1.146	1.188	0.042	74 ft. South of ERLANDS POINT RD NW	42 ft. North of HANK'S	10664	4	4	0	0	8	9.79	3.00	24	7	4	18	8	8	4	2	6	28
6	56140	MC WILLIAMS RD (NE)	0.933	0.955	0.022	at SAFEWAY ENTRANCE	116 ft. East of SAFEWAY ENTRANCE	5936	2	4	0	0	6	25.18	3.67	22	7	2	16	12	1	1	2	9	25
7	57730	RANDALL WAY (NW)	0.633	0.672	0.039	354 ft. West of KITSAP MALL BLVD NW	148 ft. West of KITSAP MALL BLVD NW	5064	6	3	0	0	9	24.97	2.33	21	8	2	18	6	2	9	2	6	25
8	56791	RIDGETOP BLVD NW	0.376	0.470	0.094	48 ft. East of MICKELBERRY RD NW	at BEST BUY	11073	10	3	0	0	13	6.84	1.92	25	6	6	18	5	11	12	1	6	35
9	56770	MICKELBERRY RD NW	0.616	0.652	0.036	at COSTCO ENT	190 ft. North of COSTCO ENT	6511	7	2	0	0	9	21.04	1.89	17	4	6	14	6	4	13	3	11	37
10	57810	OLD FRONTIER RD NW	0.008	0.025	0.017	42 ft. North of ANDERSON HILL RD (NW)	132 ft. North of ANDERSON HILL RD (NW)	8748	2	3	0	0	5	18.42	3.40	17	2	1	5	14	6	3	3	16	42
11	57730	RANDALL WAY (NW)	1.024	1.122	0.098	at MYHRE PL NW	148 ft. West of SILVERDALE WAY NW	8689	4	3	0	0	7	4.50	2.71	19	5	3	13	10	14	6	1	12	43
12	57720	MYHRE RD (NW)	0.185	0.287	0.102	32 ft. South of ENTERPRISE LN NW	201 ft. North of RIDGETOP BLVD NW	6651	3	3	0	0	6	4.85	3.00	18	6	0	12	12	13	4	1	13	43
13	57769	KITSAP MALL BLVD NW	0.080	0.113	0.033	at COMPLEX ENTRANCE	48 ft. East of POPLARS AVE NW	11351	8	0	0	0	8	11.70	1.00	8	10	1	21	8	7	16	4	5	40
14	56409	FAIRGROUNDS RD (NE)	1.952	1.971	0.019	201 ft. West of JOHN CARLSON RD (NE)	100 ft. West of JOHN CARLSON RD (NE)	7574	4	1	0	0	5	19.04	1.80	9	5	1	11	14	5	14	2	14	49
15	56770	MICKELBERRY RD NW	0.444	0.520	0.076	100 ft. South of RIDGETOP BLVD NW	301 ft. North of RIDGETOP BLVD NW	6511	5	2	0	0	7	7.75	2.14	15	1	2	4	10	10	11	1	17	49
16	57730	RANDALL WAY (NW)	0.500	0.557	0.057	502 ft. North of PLAZA RD (NW)	0.14 mi. West of KITSAP MALL BLVD NW	5064	4	1	0	0	5	9.49	1.80	9	5	1	11	14	9	14	1	14	52
17	57720	MYHRE RD (NW)	0.413	0.531	0.118	333 ft. North of PETMART ENT.	0.18 mi. North of PETMART ENT.	6651	5	0	0	0	5	3.49	1.00	5	6	3	15	14	16	16	1	10	57

Appendix D – 2023 Safety Mitigations

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Intersection Mitigation Tracker					
No	Road Name	Crossroad Name	Mitigation Source	Mitigation	Implemented
1	SIDNEY RD SW	PINE RD (SW)	2023 Roundtable	Vegetation management on SE corner.	
2	SILVERDALE WAY NW	MYHRE RD (NW)	2023 Roundtable	Stripe chicken tracks for WB left turn lane.	
9	BETHEL BURLEY RD SE	LAKEWAY BLVD (SE)	2023 Roundtable	Run channelization warrants.	
10	JACKSON AVE SE	LUND AVE (SE)	2023 Roundtable	Remove all FYA.	
14	PERRY AVE NE	SYLVAN WAY (NE)	2023 Roundtable	Install "Stop Ahead" pavement marking adjacent to NB "Stop Ahead"	
14	PERRY AVE NE	SYLVAN WAY (NE)	2023 Roundtable	Run signal warrants.	
15	BETHEL RD SE	LIDER RD (SE)	2023 Roundtable	Run channelization warrants.	
17	PORT GAMBLE RD NE	GUNDERSON RD (NE)	2023 Roundtable	Install 24/7 flasher on EB and WB intersection warning signs.	2023
23	FIRCREST DR SE	MADRONA DR (SE)	2023 Roundtable	Convert north intersection to AWSC.	
25	LONG LAKE RD SE	WOODS RD (SE)	2023 Roundtable	Sleeve NB intersection warning sign.	
27	DICKEY RD NW	NEWBERRY HILL RD (NW)	2023 Roundtable	Relocate street name signs on slip lane island to NE and SW corners	
30	TRENTON AVE NE	SYLVAN WAY (NE)	2023 Roundtable	Double and Sleeve SB and EB stop ahead warning signs.	
32	PINE RD NE	MC WILLIAMS RD (NE)	2023 Roundtable	Double and Sleeve WB intersection warning sign.	
33	TRACYTON BLVD NW	FAIRGROUNDS RD (NW)	2023 Roundtable	Double, Upsize, and Sleeve stop ahead warning sign.	
35	PINE RD NE	RIDDELL RD (NE)	2023 Roundtable	Install curve radii in thermoplastic on all corners.	
41	RIDGEPOINT DR NW	RIDGETOP BLVD NW	2023 Roundtable	Install EB stop bar.	
42	SAM CHRISTOPHERSON AVE W	BELFAIR VALLEY RD (W)	2023 Roundtable	Install EB intersection warning sign. Diamond EB 35 MPH sign E of Division	
47	ALASKA AVE SE	MILE HILL DR (SE)	2023 Roundtable	Relocate, Upsize, and Sleeve large arrow. Sleeve stop and stop ahead signs.	
50	BETHEL BURLEY RD SE	SPRUCE RD (SE)	2023 Roundtable	Install double arrow. Sleeve stop sign.	
50	BETHEL BURLEY RD SE	SPRUCE RD (SE)	2023 Roundtable	Install EB stop bar.	
55	ILLAHEE RD NE	BROWNSVILLE HWY NE	2023 Roundtable	Install double arrow. Sleeve stop sign.	
56	VIKING WAY NW	SHERMAN HILL RD (NW)	2023 Roundtable	Upsize and Sleeve SB intersection warning sign.	
61	DICKEY RD NW	APEX AIRPORT RD (NW)	2023 Roundtable	Replace large arrow with double arrow.	
65	FIRCREST DR SE	MADRONA DR (SE)	2023 Roundtable	Convert south intersection to AWSC.	
Location requires further analysis.					

Segment Mitigation Tracker						
No	Road Name	BMP	EMP	Mitigation Source	Mitigation	Implemented
1	DICKEY RD NW	0.50	0.61	2023 Roundtable	Sleeve curve warning signs, large arrows, and chevrons. Check reflectivity.	
4	TRACYTON BLVD NW	0.99	1.04	2023 Roundtable	Upsize and Sleeve NB turn warning sign and large arrow. Install 25 MPH speed advisory to large arrow.	
7	SEABECK HWY NW	7.35	7.78	2023 Roundtable	Install diamond on 35 MPH sign.	
8	BUCKLIN HILL RD NW	1.04	1.14	2023 Roundtable	Install "stop for ped" signs at Tracyton and Myhre.	
12	RIDGETOP BLV NW	0.99	1.25	2023 Roundtable	Post-RAB conversion speed study.	
18	PHILLIPS RD SE	2.72	3.03	2023 Roundtable	Relocate dead end sign on Baker Rd to south of new development.	
20	BEACH DR E	2.33	2.45	2023 Roundtable	Sleeve chevrons. Upsize and Sleeve turn warning sign.	
20	BEACH DR E	2.33	2.45	2023 Roundtable	Night review for lighting.	
21	RIDDELL RD (NE)	2.05	2.17	2023 Roundtable	Speed study at center of curve at Perry.	
23	BIG VALLEY RD NE	2.03	2.18	2023 Roundtable	Vegetation management on the whole segment.	
23	BIG VALLEY RD NE	2.03	2.18	2023 Roundtable	Ball bank for signage - ball banks at posted	2023
27	WOODS RD (SE)	0.34	0.61	2023 Roundtable	Ball bank for signage - ball banks at advisory	2023
34	RIDDELL RD (NE)	0.19	0.25	2023 Roundtable	Sleeve chevrons and turn warning signs.	
34	RIDDELL RD (NE)	0.19	0.25	2023 Roundtable	Vegetation management on May St in front of SB turn warning signs.	
39	CHESTER RD (E)	0.01	0.11	2023 Roundtable	Sleeve curve warning sign and chevrons.	
45	SIDNEY RD SW	0.21	0.29	2023 Roundtable	Ball bank for signage - ball banks at posted	2023
45	SIDNEY RD SW	0.21	0.29	2023 Roundtable	Night review for lighting channelization.	
47	LAKE FLORA RD (SW)	4.67	4.93	2023 Roundtable	Install 50 MPH speed limit signs east and west of golf course.	
53	PHILLIPS RD SE	2.4	2.49	2023 Roundtable	Align speed limit zone change to east of Bielmeier.	
54	CONIFER PARK DR (SE)	0.13	0.29	2023 Roundtable	Remove crosswalk at Buckingham when Conifer Park is repaved.	
Location requires further analysis.						

Appendix E – NHTSA & WSDOT Collision Statistics

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2017-2021 Kitsap County Data	Fatal/Serious Injury Crashes Only																		Total Crashes															
	All Roads		All Co		West Co		Kitsap County												All Roads		All Co		West Co		Kitsap County										
	2017-2021	%	2017-2021	%	2017-2021	%	2017-2021	%	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2017-2021	%	2017-2021	%	2017-2021	%	2017-2021	%	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Overall Numbers																																				
Total # of Collisions	13,051		2,916		2,116		194		50	36	42	33	33	32	30	39	26	34	538,366		69,198		52,240		5,049		987	859	1,020	1,110	1,073	1,051	1,029	921	897	968
# of Fatal Collisions	2,655	20.3%	696	23.8%	460	21.7%	38	19.6%	8	7	8	8	7	11	7	7	6	8	2,655	0.5%	696	1.0%	460	0.9%	38	0.8%	8	7	8	8	7	11	7	7	6	8
# of Serious Injury Collisions	10,396	79.7%	2,232	76.2%	1,656	78.3%	156	80.4%	42	29	34	25	26	21	23	32	20	26	10,396	1.9%	2,232	3.2%	1,656	3.2%	156	3.1%	42	29	34	25	26	21	23	32	20	26
# of Alcohol-Related Collisions	2,723	20.9%	591	20.3%	472	22.3%	49	25.3%	12	10	12	8	7	9	4	11	7	15	32,843	6.1%	5,640	8.2%	4,952	9.5%	580	11.5%	103	87	125	147	118	104	96	95	98	110
Total # of Fatalities	3,863		729		480		38		8	7	8	8	7	12	9	7	7	9	2,863		729		480		38		8	7	8	8	7	12	9	7	7	9
Total # of Injuries	17,568		3,745		2,690		253		76	37	57	39	44	35	34	66	34	43	212,646		30,100		22,886		2,454		482	364	537	521	550	528	525	479	496	481
By Collision Type																																				
Hit Fixed Object	3,636	27.9%	1,264	43.4%	896	42.3%	94	48.5%	21	24	20	18	11	14	16	22	11	18	105,661	19.6%	27,551	39.8%	19,137	36.6%	1,834	36.3%	381	345	355	382	371	391	378	320	327	335
Angle (Left Turn)	807	6.2%	137	4.7%	118	5.6%	23	11.9%	8	4	4	4	3	3	0	7	0	2	32,216	6.0%	3,329	4.8%	2,927	5.6%	296	5.9%	51	49	55	72	69	75	54	61	55	58
Angle (T)	1,569	12.0%	339	11.6%	239	11.3%	18	9.3%	6	2	4	0	6	3	2	2	2	3	95,050	17.7%	11,443	16.5%	9,323	17.8%	931	18.4%	199	149	182	187	214	181	192	172	159	164
Hit Pedestrian	2,198	16.8%	241	8.3%	200	9.5%	18	9.3%	9	3	1	4	1	4	4	2	2	6	9,369	1.7%	729	1.1%	639	1.2%	58	1.1%	17	10	10	13	8	11	11	8	5	14
Head On	684	5.2%	171	5.9%	136	6.4%	10	5.2%	1	0	3	3	3	3	1	1	1	1	3,164	0.6%	771	1.1%	599	1.1%	50	1.0%	10	8	15	9	8	7	8	4	5	5
Hit Cyclist	626	4.8%	71	2.4%	57	2.7%	7	3.6%	0	2	1	0	4	1	2	2	4	1	5,561	1.0%	451	0.7%	386	0.7%	43	0.9%	9	3	11	6	14	8	11	13	13	7
Overturn	858	6.6%	259	8.8%	193	9.1%	4	2.1%	1	0	1	1	1	2	1	0	3	0	9,028	1.7%	2,767	4.0%	1,367	2.6%	122	2.4%	28	20	16	25	33	25	19	19	24	28
Rearend	998	7.6%	133	4.5%	103	4.9%	3	1.5%	0	1	2	0	0	1	0	1	0	2	149,758	27.8%	10,357	15.0%	9,122	17.5%	966	19.1%	137	150	219	234	226	214	216	205	202	227
Sideswipe (Same Direction)	472	3.6%	70	2.4%	54	2.6%	2	1.0%	2	0	0	0	0	0	1	2	0	1	60,622	11.3%	3,559	5.1%	2,800	5.4%	285	5.6%	67	48	53	63	54	51	56	52	33	53
Hit Parked Car	233	1.8%	30	1.0%	24	1.1%	2	1.0%	0	0	2	0	0	0	0	0	0	0	29,410	5.5%	2,454	3.5%	1,987	3.8%	86	1.7%	16	19	21	16	14	20	18	9	14	11
Wildlife	93	0.7%	41	1.4%	24	1.1%	1	0.5%	1	0	0	0	0	1	0	0	0	0	10,094	1.9%	2,035	2.9%	1,142	2.2%	122	2.4%	15	17	36	37	17	17	16	14	16	21
Sideswipe (Opposite Direction)	253	1.9%	62	2.1%	45	2.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0	4,121	0.8%	1,144	1.7%	852	1.6%	61	1.2%	17	2	9	19	14	12	9	16	12	13
Other	607	4.7%	117	4.0%	87	4.1%	12	6.2%	1	0	4	3	4	0	3	0	3	0	24,117	4.5%	2,579	3.7%	1,950	3.7%	195	3.9%	40	39	38	47	31	39	41	28	32	32
By Roadway Surface																																				
Dry	9,840	75.4%	2,218	76.7%	1,537	72.6%	141	72.7%	34	22	36	24	25	25	23	30	17	23	367,154	68.2%	45,310	65.5%	33,424	64.0%	3,228	63.9%	617	527	703	725	656	658	676	561	615	612
Wet	2,659	20.4%	574	19.8%	526	24.9%	50	25.8%	16	14	5	8	7	6	6	6	8	10	135,100	25.1%	16,765	24.2%	15,426	29.5%	1,512	29.9%	314	277	245	338	338	331	320	321	253	298
Ice	218	1.7%	67	2.3%	26	1.2%	2	1.0%	0	0	1	1	0	0	1	2	0	0	14,413	2.7%	3,916	5.7%	1,785	3.4%	159	3.1%	25	27	27	32	48	42	18	26	7	22
Snow / Slush	163	1.2%	26	0.9%	9	0.4%	0	0.0%	0	0	0	0	0	1	0	0	0	0	14,984	2.8%	2,092	3.0%	922	1.8%	98	1.9%	20	15	36	8	19	11	4	6	9	24
Other	172	1.3%	43	1.5%	18	0.9%	1	0.5%	0	0	0	0	1	0	0	1	1	1	6,715	1.2%	1,115	1.6%	683	1.3%	52	1.0%	11	13	9	7	12	9	11	7	13	12
By Light Condition																																				
Daylight	6,971	53.4%	1,617	55.4%	1,167	55.2%	105	54.1%	27	21	20	17	20	21	17	26	12	14	353,637	65.7%	41,140	59.5%	31,500	60.3%	3,138	62.2%	597	523	656	692	670	642	656	584	559	609
Dark - No Street Lights	2,078	15.9%	823	28.1%	563	26.6%	50	25.8%	16	7	12	9	6	5	8	7	9	8	44,495	8.3%	14,487	20.9%	9,734	18.6%	918	18.2%	179	163	196	196	184	194	185	165	156	174
Dark - Street Lights On	3,128	24.0%	264	9.0%	241	11.4%	31	16.0%	6	7	7	7	4	4	0	5	2	8	106,274	19.7%	7,639	11.0%	6,891	13.2%	675	13.4%	129	114	117	160	155	159	130	132	130	138
Dusk	424	3.2%	108	3.7%	73	3.4%	5	2.6%	0	1	2	0	2	2	1	1	1	1	14,544	2.7%	2,121	3.1%	1,623	3.1%	146	2.9%	32	25	25	32	32	28	31	21	26	20
Dark - Street Lights Off	90	0.7%	22	0.8%	17	0.8%	2	1.0%	1	0	1	0	0	0	1	0	1	0	2,948	0.5%	507	0.7%	383	0.7%	24	0.5%	5	3	6	4	6	6	6	6	6	7
Dawn	240	1.8%	66	2.3%	34	1.6%	0	0.0%	0	0	0	0	0	0	3	0	1	1	10,152	1.9%	2,015	2.9%	1,279	2.4%	79	1.6%	13	13	15	22	16	14	15	9	9	10
Other	120	0.9%	35	1.1%	21	1.0%	1	0.5%	0	0	0	0	1	0	0	0	0	2	6,316	1.2%	1,289	1.9%	830	1.6%	69	1.4%	32	18	5	4	10	8	6	4	11	10
By Junction Relationship																																				
Non-Intersection (Not Related)	7,435	57.0%	1,969	68.9%	1,375	65.0%	117	60.3%	27	25	24	22	19	20	20	22	14	18	262,768	48.8%	37,652	54.4%	26,436	50.6%	2,316	45.9%	465	399	472	511	469	487	460	406	393	397
Intersection-Related	4,177	32.0%	899	31.5%	499	23.6%	52	26.8%	15	6	12	7	12	6	7	11	7	9	207,153	38.5%	22,463	32.5%	18,539	35.5%	1,852	36.7%	344	308	361	408	431	395	385	356	371	390
Driveway-Related	835	6.4%	176	6.0%	142	6.7%	19	9.8%	7	4	4	2	2	5	2	4	2	2	48,086	8.9%	6,352	9.2%	5,114	9.8%	703	13.9%	151	110	149	150	143	128	146	134	110	141
By Roadway Curvature																																				
Horizontal Curve	3,164	24.2%	1,048	35.7%	759	35.9%	78	40.2%	19	16	16	13	14	9	10	15	13	13	74,498	13.8%	16,500	23.8%	11,723	22.4%	1,159	23.0%	225	217	229	229	259	265	244	194	233	238
Straight & Level	6,874	52.7%	1,264	43.3%	890	42.1%	63	32.5%	14	11	13	11	14	11	9	11	5	8	324,037	60.2%	35,247	50.9%	27,016	51.7%	2,300	45.6%	488	385	450	509	468	431	464	422	352	402
Straight & Grade	1,954	15.0%	361	12.4%	289	13.7%	46	23.7%	15	8	11	7	5	7	11	12	7	12	84,505	15.7%	9,563	13.8%	7,488	14.3%	1,231	24.4%	217	216	283	275	240	263	264	235	247	276
Vertical Curve	416	3.2%	127	4.3%	93	4.4%	3	1.5%	0	0	2	1	0	3	0	0	1	0	12,266	2.3%	2,364	3.4%	1,836	3.5%	149	3.0%	25	21	28	41	34	39	25	34	30	28
Unknown	778	6.0%	173	5.9%	120	5.7%	4	2.1%	2	1	0	1	0	3	0	1	0	0	46,185	8.6%	6,271	9.1%	4,741	9.1%	243	4.8%	40	23	35	65	80	60	36	43	41	28

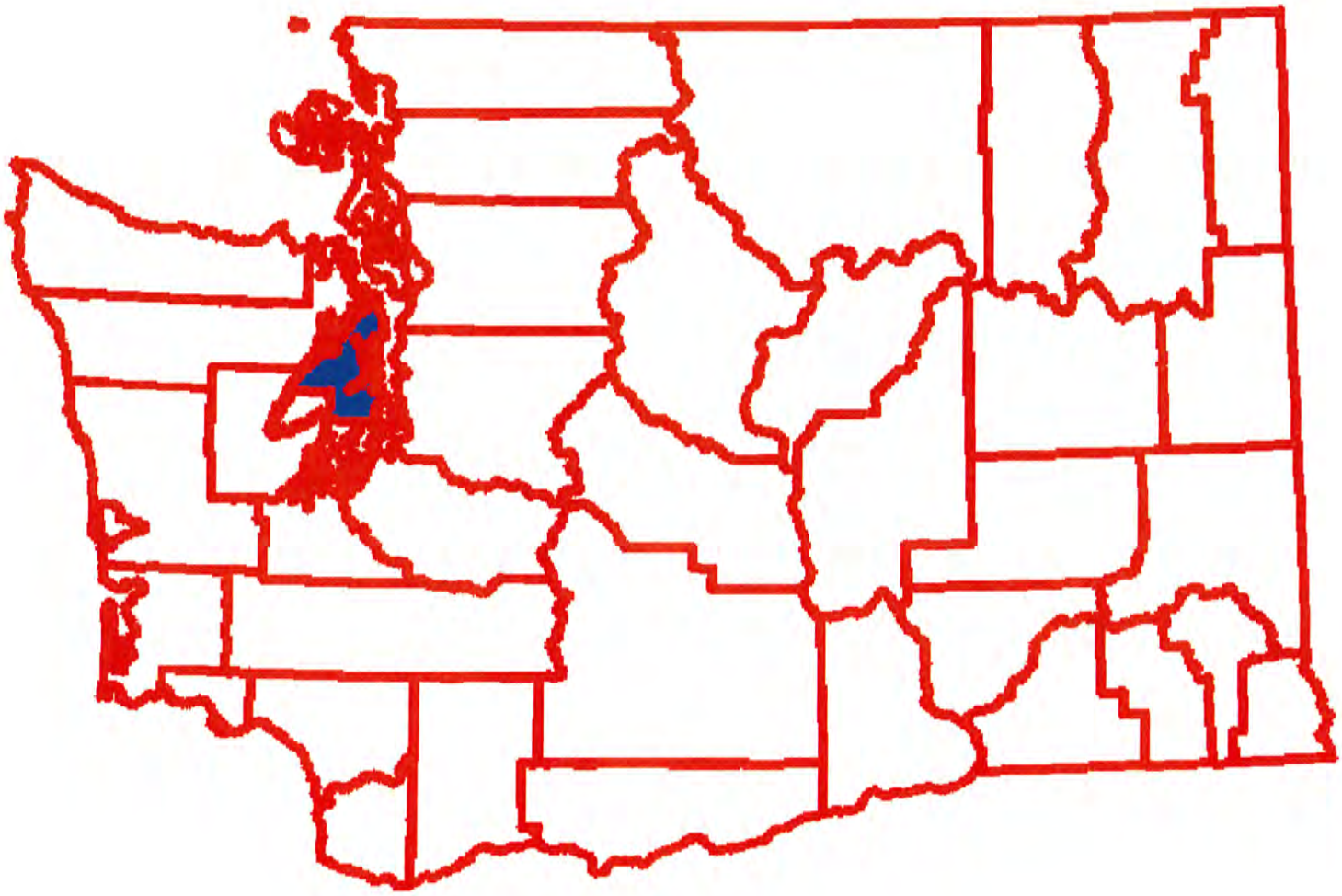
Hit Fixed Object Crashes Only - By Fixed Object Hit																																						
Tree / Stump (Stationary)	654	18.0%	292	23.4%	231	25.8%	22	23.4%	8	4	3	3	4	5	2	5	5	2	9,805	9.3%	3,227	11.7%	2,517	13.2%	244	13.3%	60	47	39	48	50	53	68	47	49	50
Earth Bank	319	8.8%	139	11.1%	89	9.9%	17	18.1%	7	4	0	3	3	0	2	2	0	1	6,453	6.1%	2,503	9.1%	1,390	7.3%	176	9.6%	43	33	21	41	38	32	30	23	34	34
Guardrail	338	9.3%	72	5.7%	55	6.1%	9	9.6%	1	1	3	1	3	1	0	1	1	0	9,230	8.7%	1,418	5.1%	962	5.0%	87	4.7%	16	18	19	19	15	17	13	11	14	12
Roadway Ditch	442	12.2%	208	16.6%	134	15.0%	8	8.5%	2	4	1	1	0	3	3	1	0	5	13,254	12.5%	5,559	20.2%	3,892	20.3%	405	22.1%	80	77	85	82	81	93	82	64	54	55
Utility Pole	268	7.4%	126	10.0%	102	11.4%	7	7.4%	1	2	3	1	0	0	4	5	1	3	7,271	6.9%	3,377	12.3%	2,607	13.6%	194	10.6%	28	29	47	53	37	40	41	40	42	39
Over Embankment	250	6.9%	91	7.3%	54	6.0%	7	7.4%	0	1	2	4	0	2	1	1	2	1	4,258	4.0%	1,742	6.3%	941	4.9%	118	6.4%	18	19	26	28	27	39	31	25	24	19
Mail Box	58	1.6%	30	2.4%	24	2.7%	4	4.3%	0	3	1	0	0	0	0	2	1	1	2,458	2.3%	1,244	4.5%	953	5.0%	92	5.0%	20	21	13	15	23	12	25	19	17	20
Linear Curb	120	3.3%	14	1.1%	14	1.6%	4	4.3%	0	2	1	1	0	0	0	0	0	0	3,025	2.9%	257	0.9%	208	1.1%	36	2.0%	10	7	6	4	9	4	4	2	5	1
Fence	181	5.0%	80	6.4%	55	6.1%	3	3.2%	0	1	1	1	0	2	1	3	0	0	8,168	7.7%	3,029	11.0%	2,005	10.5%	123	6.7%	27	29	25	24	18	27	15	22	20	30
Boulder (Stationary)	59	1.6%	31	2.5%	16	1.8%	3	3.2%	0	0	3	0	0	0	0	0	0	1	1,087	1.0%	428	1.6%	244	1.3%	22	1.2%	5	3	7	0	7	3	4	3	3	6
Wood Sign Post	64	1.8%	25	2.0%	22	2.5%	2	2.1%	0	0	1	0	1	1	0	0	0	0	2,427	2.3%	727	2.6%	576	3.0%	83	4.5%	19	15	15	12	22	12	15	14	18	17
Culvert	45	1.2%	20	1.6%	17	1.9%	2	2.1%	0	0	1	1	0	0	2	0	0	3	727	0.7%	416	1.5%	340	1.8%	47	2.6%	5	8	14	13	7	10	11	15	7	10
Metal Sign Post	101	2.8%	18	1.4%	13	1.5%	1	1.1%	1	0	0	0	0	0	1	1	0	0	4,779	4.5%	695	2.5%	513	2.7%	31	1.7%	7	9	4	3	8	5	6	3	6	4
Traffic Island	34	0.9%	3	0.2%	3	0.3%	1	1.1%	1	0	0	0	0	0	0	0	0	0	1,230	1.2%	100	0.4%	87	0.5%	21	1.1%	6	6	1	5	3	2	1	0	0	0
Garbage/Recycle Containers	3	0.1%	1	0.1%	1	0.1%	1	1.1%	0	1	0	0	0	0	0	0	0	0	124	0.1%	31	0.1%	28	0.1%	6	0.3%	4	1	1	0	0	0	0	0	0	0
Retaining Wall	74	2.0%	25	2.0%	18	2.0%	0	0.0%	0	0	0	0	0	0	0	1	0	0	1,640	1.6%	245	0.9%	183	1.0%	17	0.9%	4	3	5	5	0	6	5	10	7	6
Fallen Rock / Tree	7	0.2%	2	0.2%	2	0.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0	641	0.6%	143	0.5%	121	0.6%	17	0.9%	1	4	4	5	3	7	5	2	1	0
Fire Hydrant	13	0.4%	3	0.2%	3	0.3%	0	0.0%	0	0	0	0	0	0	0	0	0	0	1,012	1.0%	183	0.7%	152	0.8%	17	0.9%	7	2	2	0	6	1	4	6	2	3
Utility Box	24	0.7%	8	0.6%	3	0.3%	0	0.0%	0	0	0	0	0	0	0	0	0	0	901	0.9%	294	1.1%	218	1.1%	15	0.8%	5	1	6	3	0	7	3	2	3	3
Luminaire Pole	59	1.6%	2	0.2%	2	0.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0	3,447	3.3%	199	0.7%	170	0.9%	13	0.7%	3	2	2	2	4	3	4	0	7	3
Building	40	1.1%	6	0.5%	4	0.4%	0	0.0%	0	0	0	0	0	0	0	0	0	0	1,412	1.3%	169	0.6%	136	0.7%	9	0.5%	2	3	1	3	0	2	0	3	2	4
Falling Rock / Tree Fell on Vehicle	11	0.3%	6	0.5%	6	0.7%	0	0.0%	0	0	0	0	0	0	1	0	0	0	268	0.3%	73	0.3%	66	0.3%	8	0.4%	3	2	1	2	0	1	3	0	3	1
Concrete Barrier	194	5.3%	6	0.5%	3	0.3%	0	0.0%	0	0	0	0	0	0	0	0	0	0	9,747	9.2%	191	0.7%	126	0.7%	8	0.4%	3	3	2	0	0	2	2	0	2	0
Power Lines (Over Roadway)	1	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0	245	0.2%	77	0.3%	55	0.3%	4	0.2%	1	0	2	1	0	0	0	0	0	0
Trailer Parked	3	0.1%	3	0.2%	2	0.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0	205	0.2%	37	0.1%	26	0.1%	4	0.2%	3	0	1	0	0	0	0	0	0	0
Bridge Rail	48	1.3%	8	0.6%	4	0.4%	0	0.0%	0	0	0	0	0	0	0	0	0	0	2,609	2.5%	157	0.6%	79	0.4%	4	0.2%	1	0	2	0	1	0	0	1	0	0
Crash Cushions	24	0.7%	3	0.2%	1	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0	665	0.6%	20	0.1%	15	0.1%	3	0.2%	0	0	2	0	1	0	0	0	0	0
Into River / Lake	10	0.3%	5	0.4%	3	0.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0	288	0.3%	143	0.5%	64	0.3%	3	0.2%	0	0	1	2	0	1	1	1	0	3
Temporary Traffic Sign / Barricade	12	0.3%	2	0.2%	2	0.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0	423	0.4%	35	0.1%	27	0.1%	2	0.1%	0	1	0	1	0	0	1	0	0	0
Rock Bank	36	1.0%	7	0.6%	3	0.3%	0	0.0%	0	0	0	0	0	0	0	0	0	0	578	0.5%	126	0.5%	42	0.2%	2	0.1%	0	0	0	1	1	3	1	1	0	3
Guide Post	4	0.1%	1	0.1%	1	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0	213	0.2%	33	0.1%	17	0.1%	1	0.1%	0	0	0	1	0	0	1	1	0	0
Railway Crossing Gate	4	0.1%	0	0.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0	79	0.1%	9	0.0%	8	0.0%	1	0.1%	0	0	0	1	0	0	0	0	0	0
Other	40	1.1%	11	0.9%	9	1.0%	3	3.2%	0	1	0	2	0	0	0	0	1	0	2,373	2.2%	453	1.6%	271	1.4%	28	1.5%	3	4	2	9	10	10	3	3	8	10
By Functional Class																																						
Rural Major Collector	1,166	15.3%	648	32.3%	556	26.3%	44	22.7%	11	6	7	11	9	9	4	6	6	10	22,895	7.4%	16,343	23.6%	9,508	18.2%	698	13.8%	156	103	159	148	132	165	140	126	148	161
Urban Minor Arterial	739	8.9%	377	12.9%	350	16.5%	43	22.2%	20	1	5	10	7	10	12	15	7	8	29,048	9.4%	12,286	17.8%	11,259	21.6%	1,385	27.4%	339	87	170	399	390	383	353	336	286	290
Urban Major Collector	352	4.3%	313	10.7%	288	13.6%	36	18.6%	3	13	15	1	4	3	0	5	2	2	10,243	3.3%	8,973	13.0%	8,033	15.4%	952	18.9%	106	302	301	119	124	110	106	96	95	74
Urban Local Access	177	2.1%	175	6.0%	154	7.3%	25	12.9%	4	7	3	5	6	3	5	7	6	2	6,307	2.0%	6,233	9.0%	5,378	10.3%	570	11.3%	99	88	108	142	133	108	128	101	102	117
Rural Other Freeway/Expressway	357	4.3%	65	2.2%	57	2.7%	8	4.1%	1	3	4	0	0	1	0	0	0	0	9,329	3.0%	2,457	3.6%	2,109	4.0%	253	5.0%	10	112	94	17	20	9	17	5	0	0
Rural Local Access	459	5.6%	459	15.7%	233	11.0%	8	4.1%	1	2	0	1	4	0	3	2	1	3	9,061	2.9%	9,049	13.1%	4,617	8.8%	218	4.3%	28	62	30	45	53	47	50	39	52	49
Rural Minor Arterial	624	7.6%	132	4.5%	121	5.7%	8	4.1%	1	1	2	4	0	1	1	2	2	1	11,693	3.8%	2,254	3.3%	1,989	3.8%	155	3.1%	28	30	32	36	29	37	35	30	18	12
Urban Other Principal Arterial	1,562	18.9%	147	5.0%	137	6.5%	6	3.1%	2	0	0	1	3	2	0	1	0	6	70,363	22.7%	6,057	8.8%	5,485	10.5%	416	8.2%	112	0	21	137	146	146	153	153	141	174
Rural Minor Collector	255	3.1%	284	9.7%	150	7.1%	6	3.1%	3	2	1	0	0	2	5	1	1	1	4,495	1.4%	4,462	6.4%	2,506	4.8%	119	2.4%	29	10	20	22	38	28	38	30	44	52
Urban Other Freeway/Expressway	657	8.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0	36,054	11.6%	19	0.0%	15	0.0%	1	0.0%	0	1	0	0	0	0	0	0	0	0
By Contributing Circumstance																																						
Exceeding Safe / Stated Speed	3,319	20.4%	966	23.7%	681	25.6%	70	27.5%	20	12	14	14	10	10	11	13	10	17	86,684	13.9%	11,909	15.7%	8,016	13.9%	838	14.8%	174	167	170	147	180	179	177	163	204	213
Under Influence of Alcohol / Drugs	2,724	16.8%	606	14.9%	433	16.3%	46	18.0%	12	10	10	9	5	8	4	11	9	13	33,175	5.3%	5,705	7.5%	4,289	7.4%	511	9.0%	105	90	102	120	94	84	92	92	105	100
Failing to Yield	1,331	8.2%	237	5.8%	193	7.3%	32	12.5%	11	4	8	3	6	4	1	4	1	4	85,431	13.7%	7,868	10.4%	6,514	11.3%	810	14.3%	175	136	165	166	168	165	174	161	161	181

Inattention / Distraction	2,822	17.4%	700	18.8%	499	18.8%	31	12.2%	6	8	4	3	10	6	6	9	7	7
Over Centerline	335	2.1%	103	2.8%	79	3.0%	10	3.9%	0	0	5	2	3	4	1	2	3	5
Apparently Asleep / Fatigued	363	2.2%	105	2.8%	70	2.6%	8	3.1%	1	1	2	4	0	1	1	4	0	2
Disregard Traffic Signs / Signals	615	3.8%	135	3.6%	82	3.1%	5	2.0%	0	3	1	0	1	0	1	1	2	4
Operating Defective Equipment	338	2.1%	86	2.3%	54	2.0%	5	2.0%	2	0	1	2	0	0	0	0	2	0
On Wrong Side of Road	222	1.4%	58	1.6%	41	1.5%	4	1.6%	0	0	2	1	1	1	0	0	0	0
Failing to Yield to Ped / Cyclist	499	3.1%	36	1.0%	30	1.1%	4	1.6%	1	1	0	1	1	1	0	0	1	2
Operating Recklessly / Aggressively	342	2.1%	76	2.0%	56	2.1%	3	1.2%	1	2	0	0	0	0	0	0	0	0
Improper Turn	327	2.0%	45	1.2%	38	1.4%	2	0.8%	1	0	0	0	1	1	0	1	0	0
Improper Passing	308	1.9%	82	2.2%	63	2.4%	2	0.8%	1	0	0	0	1	1	2	1	0	0
Apparently Ill	157	1.0%	25	0.7%	18	0.7%	2	0.8%	0	1	1	0	0	0	0	1	0	1
Following Too Close	408	2.5%	40	1.1%	28	1.1%	1	0.4%	1	0	0	0	0	0	0	2	0	0
Improper Backing	28	0.2%	6	0.2%	4	0.2%	1	0.4%	0	0	1	0	0	0	2	0	0	1
Overcorrecting / Oversteering	200	1.2%	60	1.6%	32	1.2%	1	0.4%	1	0	0	0	0	0	0	0	0	0
Improper U-Turn	73	0.4%	5	0.1%	4	0.2%	0	0.0%	0	0	0	0	0	0	1	0	0	0
Lost in Thought / Daydreaming	25	0.2%	3	0.1%	1	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Headlight Violation	31	0.2%	6	0.2%	4	0.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Improper Signal	8	0.0%	1	0.0%	1	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Improper Parking Location	6	0.0%	2	0.1%	2	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Failing to Signal	10	0.1%	2	0.1%	2	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Disregard Flagger / Officer	9	0.1%	1	0.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Other	1,742	10.7%	319	8.0%	240	9.0%	28	11.0%	7	5	6	4	6	3	3	6	4	4
By Vehicle Type																		
Light Truck / SUV	8,601	41.3%	1,781	42.5%	1,309	42.4%	120	44.0%	34	20	29	16	21	19	16	13	8	18
Passenger Car	8,102	38.9%	1,515	36.2%	1,154	37.4%	108	39.6%	27	17	22	21	21	17	14	25	20	21
Motorcycle	2,504	12.0%	625	14.9%	488	15.8%	41	15.0%	8	7	12	6	8	7	3	11	2	2
Heavy Truck	979	4.7%	133	3.2%	67	2.2%	2	0.7%	1	0	1	0	0	0	1	2	1	0
School Bus	29	0.1%	7	0.2%	4	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	1
Bus	76	0.4%	5	0.1%	2	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Other	524	2.5%	123	2.9%	63	2.0%	2	0.7%	1	1	0	0	0	1	2	1	0	1
By Speed Limit																		
20 MPH	127	0.7%	17	0.5%	13	0.5%	2	0.8%	1	0	0	0	1	0	0	0	0	1
25 MPH	2,014	11.5%	258	7.0%	210	7.8%	41	15.8%	7	6	9	10	9	1	8	4	5	1
30 MPH	1,640	9.4%	99	2.7%	87	3.2%	23	8.9%	9	3	3	3	5	2	0	6	0	2
35 MPH	4,674	26.8%	1,373	37.5%	1,210	44.8%	82	31.7%	22	18	16	9	17	16	13	17	12	16
40 MPH	1,152	6.6%	367	10.0%	340	12.6%	39	15.1%	8	7	9	7	8	4	6	8	3	8
45 MPH	1,125	6.5%	444	12.1%	354	13.1%	57	22.0%	20	7	14	9	7	10	4	12	5	11
50 MPH	1,884	10.8%	919	25.1%	468	17.3%	15	5.8%	1	2	7	3	2	9	4	4	4	3
By Roadway Surface Type																		
Blacktop	17,390	83.4%	3,602	85.9%	2,706	87.6%	264	96.7%	68	44	60	42	50	44	36	52	31	40
Concrete	2,319	11.1%	212	5.1%	191	6.2%	1	0.4%	1	0	0	0	0	0	0	0	0	0
Brick/Wood Block	15	0.1%	2	0.0%	2	0.1%	1	0.4%	0	1	0	0	0	0	0	0	0	0
Gravel	150	0.7%	70	1.7%	14	0.5%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Dirt	107	0.5%	44	1.0%	4	0.1%	0	0.0%	0	0	0	0	0	0	0	0	0	0
Other	227	1.1%	167	4.0%	100	3.2%	1	0.4%	0	0	0	1	0	0	0	0	0	1
Unknown	636	3.1%	96	2.3%	73	2.4%	6	2.2%	2	0	4	0	0	0	0	0	0	11
By Contributing Circumstance (Ped Only)																		
Failing to Yield	436	26.4%	32	17.3%	27	18.4%	3	27.3%	2	0	1	0	0	1	0	0	1	2
Under Influence of Alcohol / Drugs	173	10.5%	21	11.4%	13	8.8%	3	27.3%	2	0	0	1	0	0	1	0	0	1

Inattention / Distraction	151,742	24.4%	20,683	27.3%	16,224	28.1%	1,569	27.8%	150	136	371	445	467	438	416	364	375	304
Over Centerline	3,223	0.5%	823	1.1%	611	1.1%	55	1.0%	0	0	18	22	15	22	22	27	44	108
Apparently Asleep / Fatigued	12,385	2.0%	2,623	3.5%	1,879	3.3%	189	3.3%	31	30	41	44	43	44	52	31	33	36
Disregard Traffic Signs / Signals	21,261	3.4%	2,247	3.0%	1,763	3.0%	162	2.9%	27	32	31	33	39	36	29	27	47	54
Operating Defective Equipment	11,733	1.9%	1,915	2.5%	1,352	2.3%	113	2.0%	30	22	20	17	24	27	22	31	39	29
On Wrong Side of Road	1,905	0.3%	433	0.6%	303	0.5%	33	0.6%	1	0	13	9	10	10	3	0	0	1
Failing to Yield to Ped / Cyclist	4,257	0.7%	229	0.3%	205	0.4%	21	0.4%	6	4	6	1	4	2	3	1	6	7
Operating Recklessly / Aggressively	2,840	0.5%	488	0.6%	358	0.6%	29	0.5%	13	16	0	0	0	0	0	0	0	0
Improper Turn	23,755	3.8%	2,033	2.7%	1,707	3.0%	121	2.1%	40	23	13	19	26	27	21	19	12	29
Improper Passing	6,963	1.1%	1,249	1.6%	914	1.6%	89	1.6%	29	15	16	15	14	12	10	15	6	16
Apparently Ill	2,597	0.4%	484	0.6%	395	0.7%	42	0.7%	4	15	11	6	6	8	12	7	7	12
Following Too Close	84,524	13.6%	4,909	6.5%	4,029	7.0%	226	4.0%	45	57	45	42	37	49	51	45	43	70
Improper Backing	6,267	1.0%	670	0.9%	472	0.8%	58	1.0%	7	18	9	14	10	13	16	12	14	24
Overcorrecting / Oversteering	3,769	0.6%	950	1.3%	604	1.0%	40	0.7%	24	16	0	0	0	0	0	0	0	0
Improper U-Turn	3,391	0.5%	469	0.6%	395	0.7%	35	0.6%	11	6	5	5	8	11	9	3	2	7
Lost in Thought / Daydreaming	1,783	0.3%	306	0.4%	239	0.4%	28	0.5%	10	18	0	0	0	0	0	0	0	0
Headlight Violation	434	0.1%	78	0.1%	60	0.1%	8	0.1%	3	0	1	3	1	0	0	0	1	1
Improper Signal	635	0.1%	57	0.1%	41	0.1%	7	0.1%	3	0	2	0	2	0	0	0	1	1
Improper Parking Location	409	0.1%	77	0.1%	49	0.1%	3	0.1%	1	2	0	0	0	0	2	0	2	0
Failing to Signal	530	0.1%	100	0.1%	65	0.1%	3	0.1%	1	0	2	0	0	0	0	0	0	4
Disregard Flagger / Officer	185	0.0%	27	0.0%	18	0.0%	2	0.0%	0	2	0	0	0	0	0	0	0	0
Other	72,570	11.7%	9,480	12.5%	7,305	12.6%	655	11.6%	129	115	141	160	110	121	126	103	85	76
By Vehicle Type																		
Light Truck / SUV	451,970	45.1%	52,604	48.1%	40,351	47.0%	3,987	48.5%	808	666	819	852	842	795	712	652	610	686
Passenger Car	473,709	47.3%	48,765	44.6%	39,746	46.3%	3,876	47.1%	705	642	773	896	860	842	875	808	789	835
Motorcycle	9,975	1.0%	1,998	1.8%	1,549	1.8%	154	1.9%	25	26	35	33	35	29	28	34	28	33
Heavy Truck	35,419	3.5%	2,933	2.7%	1,925	2.2%	122	1.5%	19	18	32	30	23	16	23	16	15	15
School Bus	1,632	0.2%	322	0.3%	235	0.3%	21	0.3%	7	1	5	5	3	5	9	5	6	7
Bus	3,281	0.3%	150	0.1%	132	0.2%	13	0.2%	1	3	2	4	3	4	4	5	4	4
Other	25,805	2.6%	2,670	2.4%	1,923	2.2%	51	0.6%	16	10	12	6	7	18	16	16	12	9
By Speed Limit																		
20 MPH	8,745	1.1%	497	0.5%	317	0.4%	41	0.5%	12	6	3	6	14	9	2	1	4	9
25 MPH	123,759	15.7%	9,677	10.6%	8,009	11.3%	1,163	14.9%	197	197	248	256	265	197	234	189	201	226
30 MPH	100,667	12.8%	4,077	4.5%	3,475	4.9%	1,593	20.4%	313	249	311	339	381	338	378	360	323	340
35 MPH	217,561	27.6%	39,966	44.0%	34,882	49.2%	2,685	34.4%	520	446	522	652	545	564	540	484	485	508
40 MPH	47,026	6.0%	9,470	10.4%	8,520	12.0%	931	11.9%	195	170	211	180	175	169	183	133	123	160
45 MPH	36,345	4.6%	8,886	9.8%	7,374	10.4%	1,117	14.3%	227	185	234	243	228	244	179	212	182	212
50 MPH	38,877	4.9%	15,617	17.2%	8,175	11.5%	265	3.4%	45	52	60	47	61	79	59	60	45	27
By Roadway Surface Type																		
Blacktop	808,054	80.7%	93,697	85.6%	73,950	86.1%	7,842	95.4%	1,474	1,296	1,606	1,755	1,711	1,612	1,612	1,488	1,421	1,519
Concrete	142,634	14.2%	6,099	5.6%	5,585	6.5%	160	1.9%	59	27	26	29	19	29	19	15	7	18
Brick/Wood Block	955	0.1%	115	0.1%	94	0.1%	15	0.2%	5	5	2	1	2	3	0	1	3	2
Gravel	3,375	0.3%	1,628	1.5%	401	0.5%	22	0.3%	5	6	1	5	5	3	2	7	0	2
Dirt	1,367	0.1%	567	0.5%	87	0.1%	8	0.1%	3	2	0	2	1	1	1	2	1	2
Other	5,094	0.5%	3,250	3.0%	2,390	2.8%	18	0.2%	1	2	1	2	12	26	7	2	2	2
Unknown	40,379	4.0%	4,102	3.7%	3,372	3.9%	159	1.9%	34	28	42	32	23	35	26	21	30	68
By Contributing Circumstance (Ped Only)																		
Failing to Yield	1,090	23.3%	72	16.1%	61	16.3%	9	25.0%	4	1	2	1	1	1	1	2	1	2
Under Influence of Alcohol / Drugs	419	9.0%	37	8.3%	25	6.7%	3	8.3%	2	0	0	1	0	1	1	1	0	1

Inattention / Distraction	297	18.0%	48	23.9%	39	26.5%	2	18.2%	0	0	0	2	0	1	0	0	1	1	1,072	22.9%	126	28.3%	106	28.3%	8	22.2%	0	2	0	4	2	1	0	3	2	3
On Wrong Side of Road	33	2.0%	9	4.9%	7	4.8%	1	9.1%	0	1	0	0	0	0	0	0	0	0	102	2.2%	31	7.0%	24	6.4%	3	8.3%	0	2	0	1	0	0	0	0	0	1
Failure to Use Crosswalk	176	10.7%	18	9.7%	17	11.6%	0	0.0%	0	0	0	0	0	0	0	0	0	0	532	11.4%	53	11.9%	51	13.6%	1	2.8%	0	0	1	0	0	0	0	0	0	0
Disregard Traffic Signs / Signals	63	3.8%	1	0.5%	1	0.7%	0	0.0%	0	0	0	0	0	0	0	0	0	0	212	4.5%	7	1.6%	6	1.6%	1	2.8%	0	0	1	0	0	1	1	0	0	1
Other	427	25.9%	45	24.3%	35	23.8%	2	18.2%	1	0	1	0	0	2	1	3	0	3	1,096	23.5%	101	22.6%	86	23.0%	11	30.6%	2	3	4	0	2	4	1	4	1	5
By Facility Used (Ped Only)																																				
Roadway	1,202	47.8%	167	59.8%	131	57.2%	10	50.0%	6	1	1	2	0	3	2	3	1	5	3,262	31.0%	414	48.3%	350	47.2%	31	46.3%	9	5	6	8	3	6	4	7	2	7
Marked Crosswalk	706	28.1%	38	13.6%	35	15.3%	5	25.0%	3	0	0	1	1	0	1	0	0	2	4,563	43.3%	188	21.9%	176	23.7%	13	19.4%	4	1	3	2	3	3	5	1	3	5
Shoulder	143	5.7%	39	14.0%	32	14.0%	3	15.0%	0	2	0	1	0	0	0	0	2	1	456	4.3%	112	13.1%	94	12.7%	13	19.4%	2	4	4	2	1	2	2	1	2	3
Unmarked Crosswalk	141	5.6%	15	5.4%	13	5.7%	0	0.0%	0	0	0	0	0	0	0	0	0	0	773	7.3%	56	6.5%	50	6.7%	3	4.5%	1	0	0	1	1	0	1	0	0	2
Sidewalk	138	5.5%	7	2.5%	6	2.6%	0	0.0%	0	0	0	0	0	1	0	0	0	0	743	7.1%	26	3.0%	25	3.4%	2	3.0%	0	0	1	1	0	1	0	0	0	0
Other	166	6.6%	14	5.0%	11	4.8%	2	10.0%	1	0	1	0	0	0	1	0	0	0	627	6.0%	58	6.8%	44	5.9%	5	7.5%	2	1	1	1	0	0	1	0	0	0
By Contributing Circumstance (Bike Only)																																				
Inattention / Distraction	83	18.7%	10	19.6%	8	18.6%	0	0.0%	0	0	0	0	0	0	0	1	0	1	719	22.0%	69	25.6%	61	25.6%	6	23.1%	0	0	1	1	4	2	2	3	1	1
Operating Defective Equipment	15	3.4%	1	2.0%	1	2.3%	0	0.0%	0	0	0	0	0	0	0	0	0	0	91	2.8%	6	2.2%	6	2.5%	4	15.4%	1	0	2	0	1	0	0	0	0	1
Failing to Yield	116	26.1%	8	15.7%	6	14.0%	0	0.0%	0	0	0	0	0	0	0	1	1	0	803	24.6%	53	19.6%	49	20.6%	3	11.5%	0	0	1	1	1	1	1	2	4	1
On Wrong Side of Road	17	3.8%	6	11.8%	5	11.6%	0	0.0%	0	0	0	0	0	0	0	0	0	0	239	7.3%	29	10.7%	23	9.7%	3	11.5%	1	0	0	1	1	1	0	0	0	0
Disregard Traffic Signs / Signals	57	12.8%	4	7.8%	2	4.7%	0	0.0%	0	0	0	0	0	0	0	0	0	0	354	10.8%	20	7.4%	16	6.7%	3	11.5%	0	0	2	1	0	1	2	1	0	1
Over Centerline	1	0.2%	1	2.0%	1	2.3%	0	0.0%	0	0	0	0	0	1	1	0	0	0	8	0.2%	4	1.5%	3	1.3%	1	3.8%	0	0	1	0	0	1	1	0	0	0
Improper U-Turn	3	0.7%	1	2.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0	10	0.3%	3	1.1%	2	0.8%	1	3.8%	0	0	0	0	1	0	0	0	0	0
Headlight Violation	10	2.3%	2	3.9%	2	4.7%	0	0.0%	0	0	0	0	0	0	0	0	0	0	66	2.0%	6	2.2%	6	2.5%	1	3.8%	1	0	0	0	0	0	0	0	0	0
Other	65	14.6%	9	17.6%	9	20.9%	2	100.0%	0	0	1	0	1	0	0	0	1	0	510	15.6%	45	16.7%	39	16.4%	4	15.4%	1	0	1	1	1	0	0	2	1	0
By Facility Used (Bike Only)																																				
Shoulder	61	9.5%	17	23.3%	13	22.4%	4	57.1%	0	2	0	0	2	0	0	0	1	1	384	6.8%	89	19.4%	67	17.1%	16	36.4%	4	2	1	0	9	2	1	1	2	4
Roadway	321	50.3%	47	64.4%	37	63.8%	3	42.9%	0	0	1	0	2	1	2	2	3	0	2,134	38.0%	242	52.8%	206	52.6%	19	43.2%	4	0	8	3	4	4	9	10	7	2
Sidewalk	42	6.5%	2	2.7%	2	3.4%	0	0.0%	0	0	0	0	0	0	0	0	0	0	757	13.5%	33	7.2%	31	7.9%	3	6.8%	0	0	1	1	1	1	0	2	0	0
Unmarked Crosswalk	17	2.6%	0	0.0%	0	0.0%	0	0.0%	0	0	0	0	0	0	0	0	0	0	185	3.3%	10	2.2%	9	2.3%	2	4.5%	1	0	1	0	0	0	0	0	2	1
Marked Crosswalk	87	13.6%	2	2.7%	2	3.4%	0	0.0%	0	0	0	0	0	0	0	0	0	0	986	17.6%	32	7.0%	30	7.7%	1	2.3%	0	0	0	1	0	1	1	0	1	0
Designated Bike Route	97	15.1%	3	4.1%	3	5.2%	0	0.0%	0	0	0	0	0	0	0	0	0	0	975	17.4%	37	8.1%	35	8.9%	1	2.3%	0	1	0	0	0	0	0	0	0	0
Other	14	2.2%	2	2.7%	1	1.7%	0	0.0%	0	0	0	0	0	0	0	0	0	0	164	2.9%	14	3.1%	13	3.3%	2	4.5%	0	0	1	1	0	0	0	0	2	0

Traffic Safety Facts
Kitsap County, Washington
2017-2021



This Report Contains Data From the Following Sources:
Fatality Data - NCSA Fatality Analysis Reporting System (FARS): 2017-2020 Final File and 2021 Annual Report File (ARF)
Population Data - U.S. Bureau of the Census

Fatalities by Person/Crash Type

Fatality Type	Fatalities					Fatalities Per 100,000 Population				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Total Fatalities (All Crashes)*	17	18	12	11	17	6.38	6.68	4.41	3.99	6.20
(1) Alcohol-Impaired Driving (BAC=.08+) Fatalities	3	4	5	5	6	1.13	1.48	1.84	1.81	2.19
(2) Single Vehicle Crash Fatalities	11	13	4	5	12	4.13	4.82	1.47	1.81	4.37
(3) Large Truck Involved Crash Fatalities	1	1	1	0	0	0.38	0.37	0.37	0.00	0.00
(4) Speeding Involved Crash Fatalities	5	7	6	4	6	1.88	2.60	2.20	1.45	2.19
(5) Rollover Involved Crash Fatalities	3	3	2	1	5	1.13	1.11	0.73	0.36	1.82
(6) Roadway Departure Involved Crash Fatalities	10	13	7	6	8	3.75	4.82	2.57	2.18	2.92
(7) Intersection (or Intersection Related) Crash Fatalities	4	2	4	4	4	1.50	0.74	1.47	1.45	1.46
Passenger Car Occupant Fatalities	6	7	4	4	3	2.25	2.60	1.47	1.45	1.09
Light Truck Occupant Fatalities	5	4	3	1	6	1.88	1.48	1.10	0.36	2.19
Motorcyclist Fatalities	2	1	4	4	2	0.75	0.37	1.47	1.45	0.73
Pedestrian Fatalities	2	5	1	1	6	0.75	1.85	0.37	0.36	2.19
Bicyclist (or Other Cyclist) Fatalities	1	0	0	1	0	0.38	0.00	0.00	0.36	0.00

(1) Crash Involved at Least One Driver or Motorcycle Rider With a BAC of .08 or Above
(2) Crash Involved Only One Vehicle In Transport
(3) Crash Involved at Least One Large Truck
(4) Crash Involved at Least One Vehicle Speeding
(5) Crash Involved at Least One Vehicle that Rolled Over
(6) Crash Involved at Least One Vehicle that Departed the Roadway (FHWA Definition)
(7) Crash Occured Within an Intersection or Within the Approach to an Intersection
*A Fatality Can Be in More Than One Category. Therefore Sum of the Individual Cells Will Not Equal the Total Due to Double Counting

Passenger Vehicle Occupant Fatalities by Restraint Use

Restraint Use	Fatalities					Fatalities Per 100,000 Population				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Restrained	7	5	4	2	6	2.63	1.85	1.47	0.73	2.19
Unrestrained	4	4	1	1	1	1.50	1.48	0.37	0.36	0.36
Unknown Restraint Use	0	2	2	2	2	0.00	0.74	0.73	0.73	0.73
Total	11	11	7	5	9	4.13	4.08	2.57	1.81	3.28

Motorcyclist Fatalities by Helmet Use

Helmet Use	Fatalities					Fatalities Per 100,000 Population				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Helmet Used	2	1	4	4	2	0.75	0.37	1.47	1.45	0.73
No Helmet Used	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Unknown Helmet Use	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Total	2	1	4	4	2	0.75	0.37	1.47	1.45	0.73

Fatalities by Person Type and Race/Hispanic Origin

Person Type by Race/Hispanic Origin		2017	2018	2019	2020
Occupants (All Vehicle Types)	Hispanic	1	2	0	0
	White Non-Hispanic	10	10	11	7
	Black, Non-Hispanic	1	0	0	0
	American Indian, Non-Hispanic/Unknown	0	1	0	1
	Multiple Races, Non-Hispanic/Unknown	0	0	0	1
	Unknown Race and Unknown Hispanic	1	0	0	0
	Total	13	13	11	9
Non-Occupants (Pedestrians, Pedalcyclists and Other/Unknown Non-Occupants)					
	Hispanic	1	0	0	1
	White Non-Hispanic	3	5	1	1
	Black, Non-Hispanic	0	0	0	0
	American Indian, Non-Hispanic/Unknown	0	0	0	0
	Multiple Races, Non-Hispanic/Unknown	0	0	0	0
	Unknown Race and Unknown Hispanic	0	0	0	0
	Total	4	5	1	2
Total					
	Hispanic	2	2	0	1
	White Non-Hispanic	13	15	12	8
	Black, Non-Hispanic	1	0	0	0
	American Indian, Non-Hispanic/Unknown	0	1	0	1
	Multiple Races, Non-Hispanic/Unknown	0	0	0	1
	Unknown Race and Unknown Hispanic	1	0	0	0
	Total	17	18	12	11

2021 Race/Hispanic Origin Data is Not Yet Complete

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Traffic Safety Facts for Washington : 2017-2021

Fatalities (All Crashes)

County Name	Fatalities					Fatalities Per 100,000 Population				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Adams County	10	7	7	5	6	51.09	35.64	35.07	24.27	29.10
Asotin County	1	2	0	0	0	4.42	8.81	0.00	0.00	0.00
Benton County	15	15	11	13	19	7.57	7.46	5.39	6.27	9.05
Chelan County	2	10	5	8	7	2.62	13.05	6.49	10.10	8.79
Clallam County	12	3	2	11	10	15.84	3.91	2.58	14.23	12.79
Clark County	28	33	27	40	36	5.89	6.84	5.52	7.92	7.04
Columbia County	0	2	1	0	0	0.00	49.32	24.86	0.00	0.00
Cowlitz County	12	11	17	7	15	11.24	10.12	15.40	6.31	13.45
Douglas County	1	1	2	6	4	2.38	2.35	4.62	13.95	9.15
Ferry County	2	2	2	2	4	26.36	26.11	26.06	27.86	55.00
Franklin County	10	7	8	5	9	10.89	7.45	8.38	5.15	9.16
Garfield County	2	0	2	0	2	89.93	0.00	88.26	0.00	85.25
Grant County	16	22	11	19	22	16.80	22.80	11.23	19.12	21.93
Grays Harbor County	10	5	11	6	14	13.79	6.78	14.66	7.91	18.22
Island County	5	2	8	7	6	6.00	2.37	9.37	8.05	6.86
Jefferson County	2	8	7	3	4	6.40	25.11	21.64	9.08	11.90
King County	111	115	107	110	137	5.03	5.16	4.76	4.84	6.08
Kitsap County	17	18	12	11	17	6.38	6.68	4.41	3.99	6.20
Kittitas County	12	9	8	8	3	25.99	19.01	16.72	17.94	6.59
Klickitat County	3	2	8	5	0	13.79	9.05	35.66	21.95	0.00
Lewis County	14	5	14	12	8	17.89	6.29	17.37	14.55	9.48
Lincoln County	3	4	3	0	3	28.34	37.36	27.43	0.00	26.71
Mason County	6	4	10	15	10	9.41	6.10	14.94	22.72	14.79
Okanogan County	11	10	10	5	6	26.31	23.78	23.58	11.87	14.07
Pacific County	0	0	6	1	1	0.00	0.00	26.65	4.26	4.18
Pend Oreille County	2	4	2	2	3	14.97	29.45	14.57	14.83	21.60
Pierce County	56	57	66	73	98	6.36	6.37	7.29	7.91	10.59
San Juan County	0	1	1	0	3	0.00	5.89	5.76	0.00	16.17

(Continued)

Traffic Safety Facts for Washington : 2017-2021

Fatalities (All Crashes)

County Name	Fatalities					Fatalities Per 100,000 Population				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
Skagit County	11	20	16	18	13	8.74	15.66	12.39	13.86	9.95
Skamania County	2	4	1	6	3	16.93	33.56	8.27	49.86	24.65
Snohomish County	42	42	40	48	36	5.23	5.16	4.86	5.79	4.32
Spokane County	41	35	29	52	57	8.11	6.82	5.55	9.62	10.44
Stevens County	4	8	4	4	6	8.95	17.66	8.73	8.59	12.65
Thurston County	19	26	22	19	24	6.78	9.10	7.60	6.42	8.05
Wahkiakum County	0	2	0	0	0	0.00	46.05	0.00	0.00	0.00
Walla Walla County	2	5	4	1	4	3.30	8.23	6.55	1.60	6.38
Whatcom County	24	13	15	8	18	10.84	5.78	6.56	3.52	7.87
Whitman County	8	3	4	2	4	16.16	6.02	7.98	4.19	8.36
Yakima County	47	22	35	42	58	18.81	8.78	13.91	16.37	22.65

Appendix F – Sidney Rd & Pine Rd Preliminary Design

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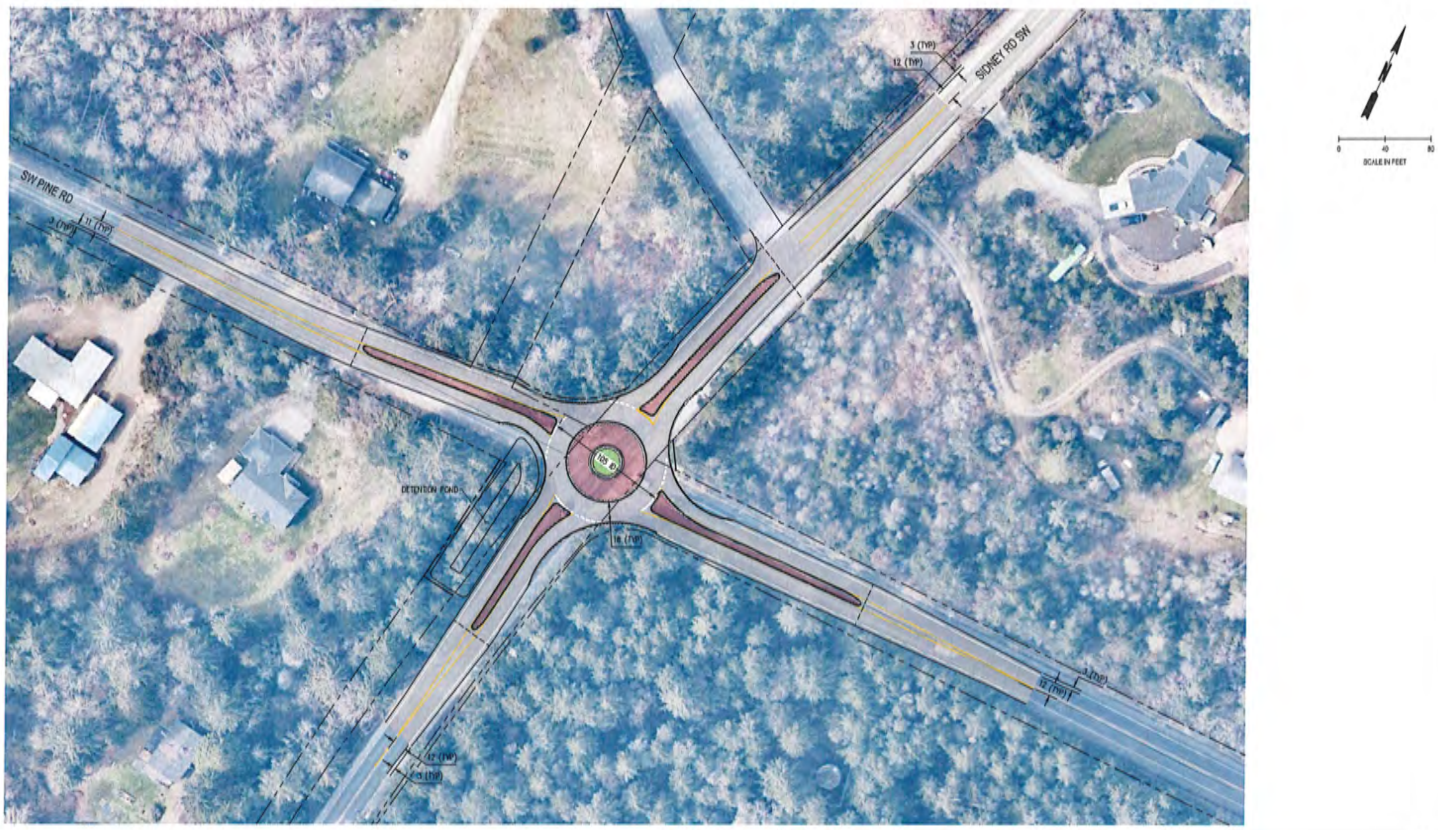

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
P: 360.352.1465
SCJALLIANCE.COM

MARCH, 2023

KITSAP COUNTY

SIDNEY RD SW AND SW PINE RD ROUNDABOUT - CONCEPTUAL DESIGN

EX-01

01

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Appendix G – Rhythm Engineering: Code Green

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Quotation / Offer

This Quotation constitutes an offer by Rhythm to enter into a purchase contract. Client's acceptance of the unaltered terms of this offer, signified by Client's signature affixed to this offer, shall create a binding contract between Rhythm and Client. As is the case with any contract, neither party may modify the terms of this contract except by a writing signed by both Rhythm and Client. Unless signed by both Rhythm and Client, a writing or other document prepared or delivered after the creation of this contract shall be of no force or effect. The General Conditions are an integral part of Rhythm's Quotation / Offer.

Agency & Project

Kitsap County, WA

Silverdale code|GREEN 4in1 Cyclops

Quote Addressed To

Christine DeGeus

USA

Quote Information

Company Address 14019 W 95th St
Lenexa, KS, Kansas 66215
USA

Prepared By Martin Carter

Phone (503) 713-8838

Email martin@rhythmtraffic.com

Created Date 9/15/2023

Opportunity Number 016487

Addresses

Invoice Address 8600 Imperial Way SW,
Bremerton, WA
98312

Quote Line Items

Product	Product Description	Quantity	Sales Price	Total Price
Cabinet Interfacing and cabling - AI GPU	Supply necessary cables and PoE injector for proper cabinet/controller integration.	21.00	$2,500.00	$52,500.00
code|GREEN Data Controller Kit Assembly	Data Controller Processing Unit with DIN Rail Rotation Bracket and 4 VDC Power Supply.	1.00	$3,240.00	$3,240.00
code|GREEN with 2 x 360 Cameras System (4in1)	Two 360-degree cameras for detection and data collection, AI processor, TMC data module, ATSPM data module, Timing Plan generation software, and mounting hardware.	21.00	$20,200.00	$424,200.00
Shipping & Handling	FOB Lenexa	21.00	$162.00	$3,402.00

Subtotal	$483,342.00
Total Price	$483,342.00
Grand Total	$483,342.00

General Conditions

Rhythm Engineering will be responsible for the following tasks:

1. Supply materials per the approved Quotation and subsequent Purchase Order.
2. Provide specifications for materials to be supplied by Client: wires, connectors, and specialized installation tools as well as camera mounting hardware if needed.
3. Once VPN access is provided, provide remote support to Client during the installation process.
4. Provide remote training (unless on-site training is specified and paid for) for Client traffic engineering staff in the system parameters configuration, maintenance and operation of code|GREEN, and Timing Plan Generation.
5. Consult remotely with Client traffic engineering staff to define the operating parameters for initial system operation, such as allowed movements, desired progression routes, travel times, phasing, amber times, all-red times, pedestrian walk and flashing don't walk times, traffic counts, traffic patterns, and any unique requirements that the Client may want to allow for during certain time of day scenarios, etc.
6. Provide camera placement guidance and documentation.
7. Perform remote configuration and calibration of the provided camera and software.

Client will be responsible for the following tasks:

1. Attend External Kickoff meeting to establish the timeline and expectations of the project. Maintain communication and provide any updates or changes to the established timeline to Rhythm Engineering.
2. Attend remote technical/installation meeting to establish installation requirements of the project if not previously done on other Rhythm Engineering technology deployments. Review any questions related to installation and hardware.
3. Reserve and provide Rhythm Engineering with Internet Protocol (IP) Addresses for each intersection's equipment.
4. Verify that all components are accounted for within 30 days of receiving from Rhythm Engineering. If anything is missing notify Rhythm Engineering immediately.
5. Supply shielded/outdoor-rated Category 6, direct burial, shielded, 4x twisted pair, 23 AWG solid copper, or better Ethernet Cable and wires, connectors, and specialized installation tools as well as mounting hardware (if applicable) per Rhythm Engineering specifications. Suitable brands include Belden 7953A or Primus Cable C6CMXE-5365BK or similar. Must use shielded RJ45 connectors suitable for larger diameter cable with 23 AWG wires. Cut-sheets to be provided by Rhythm Engineering upon request.
6. Verify the length of Ethernet cable runs for cameras. Cables that run greater than 100 meters, require additional repeaters and injectors. The repeaters and injectors can be procured from Rhythm Engineering or from other vendors. If procured from other vendors, the materials must be approved by Rhythm Engineering that they meet required specifications
7. Perform field installation work consisting of: pulling & terminating the required shielded/outdoor-rated Category 6, direct burial, shielded, 4x twisted pair, 23 AWG solid copper from the controller cabinet to the Rhythm Engineering pre-approved mounting locations, installation of camera mounting hardware, mounting of the cameras, connecting wires to cameras per Rhythm Engineering specifications and training, camera aiming, zooming and focusing. All necessary mounting hardware will be provided with the exception of any banding or cable for attaching to the signal pole.
8. Perform traffic cabinet installation work consisting of: installing on site, the equipment panel, mounting and connecting the AI processor to the Ethernet switch and the provided cabinet integration equipment.
9. Ensure that remote network connectivity and VPN access is established for the entire code|GREEN system hardware permitting Rhythm Engineering to provide remote assistance and minimum requirements for system functionality.
10. Client or installation contractor shall not connect Rhythm cabinet or camera equipment to power prior to receiving authorization from Rhythm Engineering. All Cat 6 Ethernet cables must be tested using a Fluke (or equivalent) tester prior to connecting cameras to POE. All warranties will be rendered null and void otherwise.
11. Return to site as needed during system integration to adjust cameras or troubleshoot any cabling or other issues arising from incomplete installation.
12. Provide an Ethernet network with TCP/IP connectivity between all traffic signals within the project limits.
13. Provide traffic engineering information per intersection including, but not limited to: traffic counts, traffic pattern by time of day, phasing, allowed and prohibited movements, current timing plans, amber times, all-red times, pedestrian walk and flashing don't walk times.
14. Establish Simple Mail Transfer Protocol (SMTP) and Network Time Protocol (NTP) server connection, as well as access to the intersections via a Virtual Private Network (VPN) connection or other remote connectivity for support and monitoring purposes during the warranty/support period.

RHYTHM ENGINEERING

Project Deployment Terms

Important: The Client shall provide fully functional, remote network access (like secure Virtual Private Network) to the intersection devices prior to installing Rhythm camera and hardware. The warranty and support agreement shall be rendered null and void if installation of Rhythm equipment begins prior to granting Rhythm functional remote network access to its devices.

Cabinet hardware & detection camera installation may be completed by agency staff and/or a hired contractor. Rhythm Engineering provides installation guides and remote guidance. If Client requires an installation contractor, a detailed installation quote shall be developed by that contractor. Development of the detailed installation quote shall require additional information about the corridor including a cabinet inspection and site survey.

Shielded/outdoor-rated Category 6, direct burial, shielded, 4x twisted pair, 23 AWG solid copper is required for camera power and data transfer. Cables must meet Rhythm Engineering specification.

Each network cable run must be under 100 meters (300 feet). If the run exceeds 100 meters, Ethernet repeaters (approved by Rhythm Engineering or procured from Rhythm Engineering) shall be used. The Client/Contractor shall be responsible for the need for Ethernet repeaters.

1.Silverdale Way NW (#19515) MP 0.525 & NW Byron Street (#14100) MP 0.000

2.Silverdale Way NW (#19515) MP 0.708 & NW Anderson Hill Road (#13549) MP 4.4933

3.Silverdale Way NW (#19515) MP 1.020 & NW Bucklin Hill Road (#57740) MP 0.250

4.Silverdale Way NW (#19515) MP 1.327 & Kitsap Mall Blvd NW (#57769) MP 0.000/Ridgetop Blvd NW (#56791) MP 3.159.250

5.Silverdale Way NW (#19515) MP 1.450 & East Side Mall Entrance/Plaza Entrance

6.Silverdale Way NW (#19515) MP 1.760 & NW Myhre Road (#57720) MP 0.998

7.Silverdale Way NW (#19515) MP 1.878 & NW Randall Way (#57730) MP 1.150

8.NW Bucklin Hill Road (#57740) MP0.000 & NW Anderson Hill Road (#13549) MP 4.242

9.NW Bucklin Hill Road (#57740) MP 0.110 & Silverdale Plaza Entrance

10.NW Bucklin Hill Road (#57740) MP 0.183 & NW Randall Way (#57740) MP 0.000

11.NW Bucklin Hill Road (#57740) MP 0.799 & Mickelberry Road NW (#56770) MP 0.213

12.NW Bucklin Hill Road (#57740) MP 1.049 & Tracyton Blvd NW (#55275) MP 3.360

13.NW Myhre Road (#57720) MP 0.249 & Ridgetop Blvd NW (#56791) MP 0.620

14.NW Myhre Road (#57720) & Lowes Entrance

15.Mickelberry Road NW (#56770) MP 0.463 & Ridgetop Blvd NW (#56791) MP 0.367

16.Mickelberry Road NW (#56770) MP 0.835 & NW Myhre Road (#57720) MP 0.831

17.Kitsap Mall Blvd NW (#57769) MP 0.050 & NW Plaza Road (#57735) MP 0.124

18.Kitsap Mall Blvd NW (#57769) MP 0.444 & NW Randall Way (#57730) MP 0.700

19.NW Randall Way (#57730) MP 0.860 & North Point/North Mall Entrance

20.Provost Road NW (#19801) MP 2.670 & NW Anderson Hill Road (#13549) MP 3.800

21.Clear Creek Road NW (#57770) MP 0.000 & NW Greaves Way (#57768) MP 0.634

RHYTHM ENGINEERING

Payment Terms

1. Quote does not include additional fees in the event Rhythm serves as a primary contractor.
2. Any required bonding or licensing fees are not included in quote.
3. All taxes are the responsibility of client. FOB Point: Lenexa, KS
4. Software license is granted for the first year (12 months) and the term shall begin on the date of installation. Renewal fee is $250 per intersection for every subsequent year after the first year. With respect to any renewal or extension fee payable to Rhythm by Client, in the event Rhythm does not receive such renewal or extension fee within 30 days of its due date, without notice or any further action by Rhythm, Rhythm may terminate provision of the service, right or product to which the fee applies.
5. Payment is due within 30 days of the invoice date. Client understands that Rhythm depends on Client prompt payment in the conduct of Rhythm's business. In particular, Client's failure to pay timely the amounts owed to Rhythm jeopardizes Rhythm's ability to pay its employees, suppliers, and other creditors and may result in an impairment of Rhythm's credit standing and status with sureties and lenders. Because the damages Rhythm may sustain as a result of Client's late payment are difficult, if not impossible, to calculate, Client agrees that if Rhythm has not received payment within 30 days of invoicing, Client shall pay to Rhythm as liquidated damages an amount equal to 5% of the unpaid amounts. Client and Rhythm agree that the amount of liquidated damages is a reasonable estimate of Rhythm's damages, which are otherwise difficult to calculate. If payment exceeds 60 days past the invoice date (30 days past due), additional finance charges shall be applied at an interest rate of 18% APR. Finance charges are computed against the unpaid invoice balance, plus any liquidated damages and/or fees.
6. Client agrees that the laws of the State of Kansas apply to this Contract and all actions arising out of it. Client further agrees that this Contract is made in Kansas and Client subjects itself to the exclusive jurisdiction of federal or state court presiding over cases originating in Johnson County, Kansas and further agrees that venue is properly placed in a federal or state court presiding over cases originating in Johnson County, Kansas.
7. Invoices are generated upon shipment of material.
8. Client agrees that in the event either Rhythm or Client must initiate litigation or other enforcement proceeding the prevailing party in such litigation or other proceeding shall be entitled to recover its attorneys' fees and associated costs from the other party.
9. Rhythm acknowledges that Client may be in contractual privity regarding the services and materials encompassed by this Contract with a contractor or a governmental agency. Irrespective of the terms of Client's contract with a contractor or a government agency, the terms of this Contract supersede such other Contract. In the event of a conflict between this Contract and Client's contract with a contractor or governmental agency, the terms of this Contract shall control. Client is, therefore, responsible for reconciling the terms of this Contract with other contracts which bind Client. Except to the extent it expressly agrees, Rhythm does not agree to be bound by the payment terms of Client's other contracts which relate to Rhythm's materials and services.
10. To the extent its rights as a third-party beneficiary do not conflict with its rights under this Contract, Rhythm shall be a third-party beneficiary with regards to the payment provisions of Client's contract with a third-party responsibility for paying Client the funds payable to Rhythm.
11. Time is of the essence of this Contract, in particular with regard to the due date of payment.
12. Rhythm shall have the right to determine the method of payment of its invoices.
13. While Rhythm does not acknowledge that Client may reduce, or offset against, amounts due for Rhythm's materials and services, Client nonetheless agrees it will not withhold payment from Rhythm and all amounts are due without reduction or offset. In the event a dispute arises over Rhythm's billings, Client and Rhythm will resolve the dispute in accordance with this Contract and Client will not unilaterally act to enforce whatever it thinks its rights are by withholding payment.
14. Client represents to Rhythm that the signatory to this Quotation/Offer has been duly authorized by the client to sign this document on behalf of the client.

Please Sign Here

_____

CLIENT (*Signature)*

_____

(Printed name)

RHYTHM ENGINEERING

_____

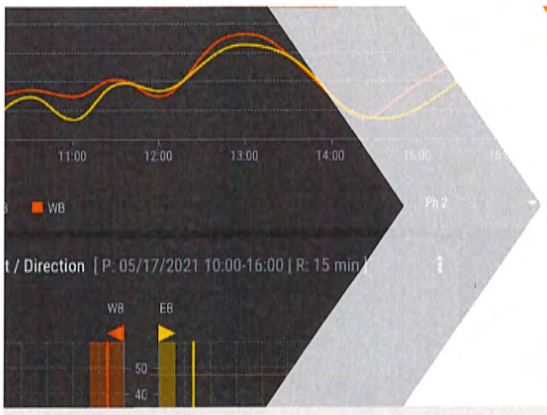
(Printed title)

_____

(Date)

RHYTHM ENGINEERING

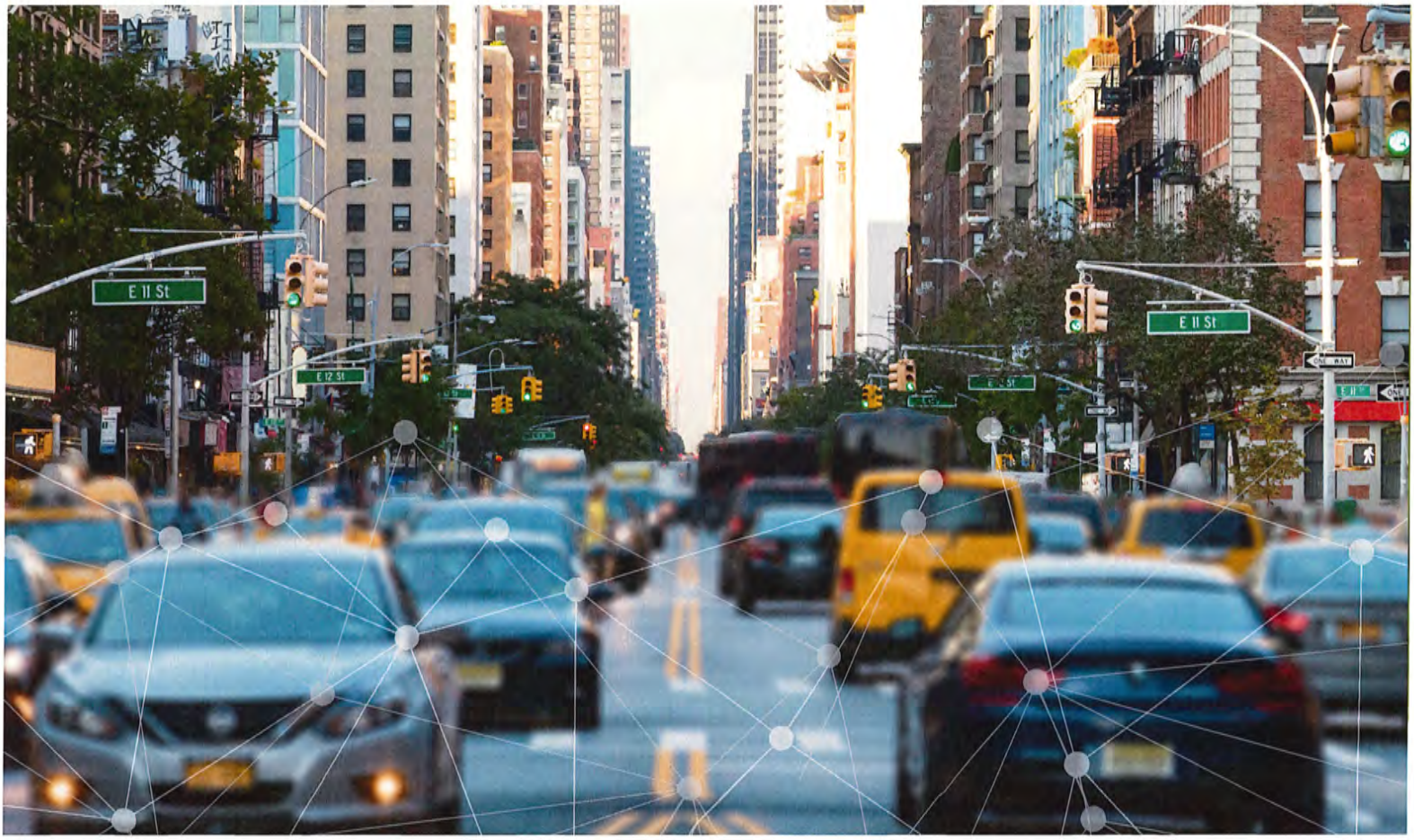
code|GREEN



DATA MODULE
BROCHURE

v1.0/March 2022

rhythmtraffic.com/codegreen



OVERVIEW

code|GREEN is a four-in-one innovative vehicle recognition system powered by Artificial Intelligence. This comprehensive solution delivers traffic detection, data collection, signal timing and intersection control. **code|GREEN** uses ***Convolution Neural Networks*** and ***Deep Learning*** algorithms to recognize vehicles and to track their trajectories. The same error-proof technology is used in autonomous vehicle operations. Rhythm Engineering is introducing the same technology to manage traffic signals. The panomorphic **code|GREEN** camera ensures 360-degree scene capturing for full intersection control. This modernized detection process is not affected by shadows, glare, or artifacts that make existing detection methods less accurate.

WHY CODE|GREEN CONTRIBUTES TO YOUR SUCCESS?

code|GREEN helps traffic professionals manage intersection operations efficiently and humanely. The **code|GREEN Data Analytics System** comprises two modules: ATSPM and TMC Data tabs. Each of the data modules is a powerful tool that delivers insights into the traffic patterns in your jurisdiction. That knowledge arms the traffic professionals with decision-making capabilities, which are especially valuable when it comes to protecting human lives. By using the **code|GREEN** statistics, the traffic professionals can understand where, how many and what issues or bottlenecks need addressing with prompt adjustments of the timing plans or improvements in the infrastructure.

ATSPM MODULE

The **ATSPM Data Reporting Module** delivers a real-time picture of the traffic situation and traffic history, enhanced with road user category classification.

INSIGHTS AT YOUR FINGERTIPS

The ATSPM metrics are available in both individual reports and a dashboard arrangement. They use industry standard denominations which makes the interpretation easy and intuitive. A comprehensive list of ATSPM vehicle measures includes the following metrics:

TMC

- TMC Overview
- Vehicle Count

Arrivals

- Arrivals on Red/Green
- Purdue Coordination Diagram
- Purdue Phase Termination
- Purdue Split Failure

Delay

- Average Delay
- Total Delay
- LOS per Intersection

Volume/Flow

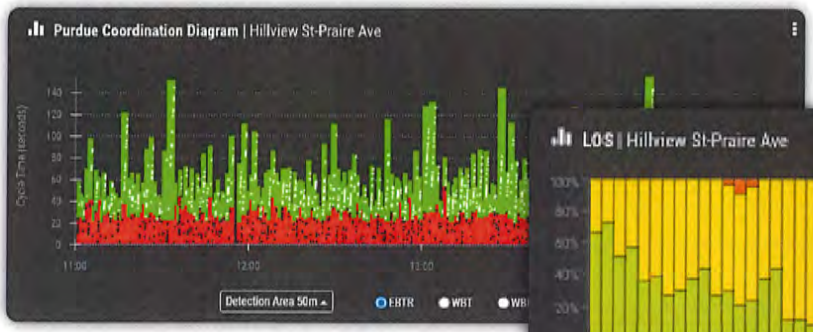
- Volume per Approach/Phase
- Peak Hour Factor per Approach
- Peak Hour Factor per Phase
- Flow Rate per Approach
- Flow Rate per Phase

Density

- Occupancy % per Phase
- Left-turn Gap Analysis

Speed

- Average Speed per Phase



Purdue Coordination Diagram Chart

Level of Service Chart

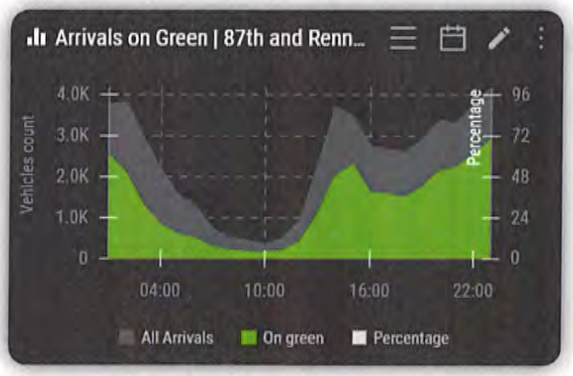
24/7/365 DATA REPORTING

The **code|GREEN GPU processor** uses Convolutional Neural Networks and a deep learning algorithm to collect and process visual data. The data is computed, analyzed, and tabulated into a set of industry standard ATSPM measures. These include traffic and intersection level performance reports and visual charts that provide various level of insights: per lane, per phase, and per approach.

The **code|GREEN camera** provides stop bar monitoring and 24/7/365 turning movement counts. These are visualized into bespoke diagrams in the TMC Data tab.

IDENTIFY PROBLEMATIC ASPECTS

You never have to worry about the accuracy of your vehicle recognition system. You will no longer fear constant false calls. You can focus on other things knowing that the technology that powers autonomous vehicles is powering your vehicle recognition system that controls your intersection.



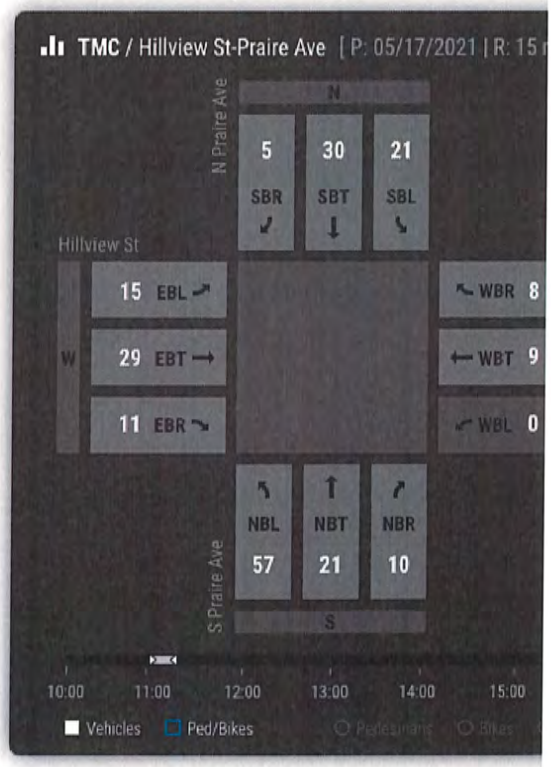
Arrivals on Green Chart

BENEFITS

- Traffic insights at your fingertips
- Saturation flow rate analysis
- Stop bar and apex monitoring
- Congestion and incidents early identification
- Use to enable Infrastructure-level, real-time alerts
- Support road network strategic evaluations and budget allocation
- Conduct safety audits with real data

TURNING MOVEMENT COUNTS MODULE

The **code|GREEN TMC tab** is a logical extension of the ATSPM Data module. The same CNN algorithm that provides ATSPM reports on vehicular activity is employed to collect actual turning movement counts and not lane-by-lane counts. This is accomplished by tracking each vehicle, via its movement vector, through the entry to and apex of intersection.



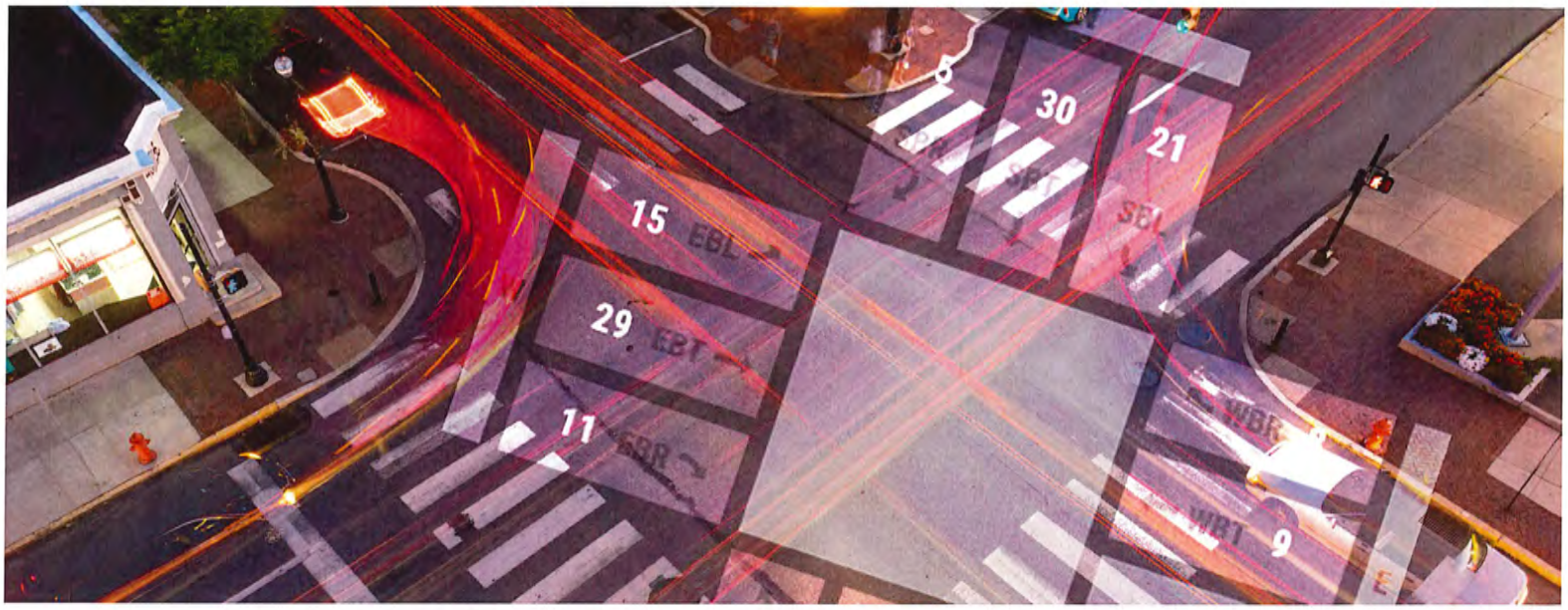
Vehicular TMC Counts Chart

24/7/365 UNINTERRUPTED COUNTS

With the use of one camera detector, the turning movement counts are collected every day, 24/7/365, in 15-minute intervals. There is no need to choose the "viable" days or to follow the traditional model of collecting counts on Tuesday, Wednesday and Thursday as this limitation is no longer there. You can perpetuate the data collection process over as many times a day as needed, every day!

CREDIBLE DATA

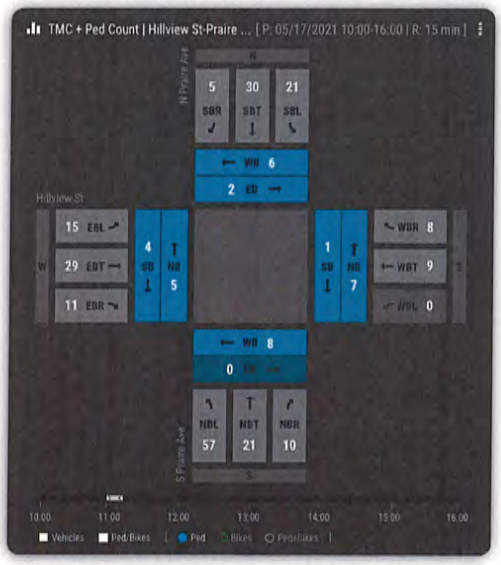
The TMC statistics are time-stamped, clearly tabulated, and exportable into an Excel and .PDF file format, compatible with all traffic management center data platforms.



ENHANCED INTERSECTION CONTROL

The findings will easily show which movement is experiencing challenges. Therefore, these insights can be used for saturation and congestion assessment. Subsequently, the intersection management routines can be improved by changing cycle splits, extending or shrinking phase durations, re-scheduling of timing plans, and taking other optimization actions.

Among other vehicle-specific charts, an all-encompassing chart is available, detailing counts for vehicles, pedestrians and bicycles. This model provides a holistic view of the intersection activity.



Vehicular and Ped/Bike Counts Consolidated Chart

BENEFITS

- Multiple TMC reports
- All day, every-day, every minute snaps
- Instant intersection control
- Traffic congestion and bottlenecks exposed
- Clarity on capacity considerations
- Identifying risk factors and locations

Code|GREEN DATA PROCESSOR

The AI Processor is the brain of the **code|GREEN** vehicle detection and data collection system. It is powered by a Neural Networks algorithm, already in use by leading-edge technology companies. The phenomenal data recognition accuracy is the result of training the algorithm with billions of image samples. ATSPM and TMC data processing can be taken a step further as the AI processor is capable of inputting subsequent detector calls for desired phases into the controller. This does not interfere with vehicle pre-emption and can factor in pedestrian/bike operations.

Rhythm AI Processor

COMPATIBLE DESIGN

The processor is housed in a smart, cut-down size enclosure. It fits in any cabinet and can be mounted horizontally, vertically, or sitting in a rack. The processing unit is compatible with all major makes and models of traffic controllers and cabinets manufactured recently. It is easy to connect to a standard Ethernet powered network through an RJ45 connector cable.

EASY CONFIGURATION

The processing unit runs a GPU (graphical processing unit) motherboard and is modular in design. It supports on-site configuration using a USB keyboard and VGA monitor, or remote configuration over an IP Network. The Processor supports on-site backup to/restore from a USB Memory Stick for rapid replacement.

CONTROLLER COMMUNICATIONS

The code|GREEN detection and data solution can interface with the local signal controller (for all phase call and hold requests) through a variety of connection methods e.g., SDLC module, Intercept module, detector cards, Fusion module etc. It allows a more dynamic control of traffic signals and automated deployment of timing plans.

FUTURE-PROOF AND UPGRADABLE

The processor allows integration of another innovative Rhythm product - the Cyclops Ped/Bike Detection and Data Collection solution. The combination of **code|GREEN** and Cyclops allows optimal signal timing and corridor synchronization, and guarantees efficient serving of all road users. With code|GREEN you can also improve your efforts with maintaining a safe and pollution-free urban environment.

RHYTHM® ENGINEERING

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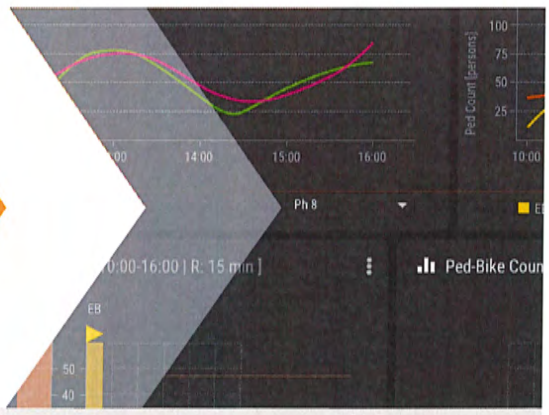
We trust that the information here is helpful and if you have any further questions or require further support please don't hesitate to reach out to us at:

info@rhythmtraffic.com

913.674.9846

rhythmtraffic.com/contact



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