

CITY COUNCIL AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE: Discussion of the 2020 Annual Traffic Report
DEPARTMENT: Public Works, Police
PRESENTED BY: Kendra Dedinsky, City Traffic Engineer
Captain Ryan Abbott, Shoreline Police
ACTION: ☐ Ordinance ☐ Resolution ☐ Motion
 ☒ Discussion ☐ Public Hearing

PROBLEM/ISSUE STATEMENT:

Tonight, staff will present highlights from the 2020 Annual Traffic Report (Attachment A). The purpose of this report and presentation is to:

- Share with Council the data and methodology that the Public Works and Police Departments use to identify and develop action plans to address collision trends and priority collision locations within the City;
- Discuss specific recommendations to address collision trends and locations with significant collision history, consistent with Washington State's Target Zero Strategic Highway Safety Plan, by implementing engineering improvements through Traffic Safety Improvement Program resources, targeted Police enforcement, education, and policy;
- Identify potential future capital projects to address high collision intersections or street segments. The Council is asked to consider these projects for potential incorporation into the annual Transportation Improvement Plan (TIP) and the Capital Improvement Program (CIP) process. Inclusion of the projects within the TIP establishes priorities for the pursuit of grant funding in future years;
- Update the Council on engineering, education and enforcement collision reduction countermeasures; and
- Provide an overview of other key traffic data, including volumes, speeds, and transit ridership.

Tonight, staff also seeks Council feedback on a potential collision reduction strategy for the high priority location at 10th Ave NE and NE 175th Street. This discussion is timely as it may be competitive for a grant opportunity in early 2022 but has not been discussed in detail with Council during prior traffic report updates or TIP processes.

RESOURCE/FINANCIAL IMPACT:

There are no direct additional financial or resource impacts at this time. The Public Works and Police Departments will continue to use existing staff for engineering and enforcement efforts. The 2021-2026 CIP budget for the Traffic Safety Improvement Program includes \$184,000 for 2022. High priority location strategies requiring larger-

scale projects than can be accommodated within existing budgets will be included for consideration during the 2023-2028 TIP process for consideration in the CIP.

RECOMMENDATION

No action is required at this time; this item is for discussion only.

Approved By: City Manager City Attorney

BACKGROUND

The purpose of the Annual Traffic Report is to provide Council with information and analysis of the data collected by the Shoreline Police Department and Shoreline Traffic Services staff. The report helps identify opportunities to improve the safety of our transportation system.

The results and recommendations contained in the Annual Traffic Report are utilized in the development of the annual Transportation Improvement Plan (TIP) and Capital Improvement Plan (CIP). This data is also used to identify and develop opportunities for grant funding.

The 2020 Annual Traffic Report (Attachment A) includes information on collisions, traffic speeds, traffic volumes, and transit ridership. Collision data reported is from 2011 through 2020, with a focus on 2018 through 2020 data. Other data reported is primarily from 2020, however some 2021 traffic volume data is also provided. Analysis of this data is used to develop strategies for reducing collisions and improving safety consistent with statewide Target Zero collision reduction strategies.

Target Zero is Washington State's Strategic Highway Safety Plan for zero Fatal and Serious Injury collisions. Its purpose is to:

- Set statewide priorities for all traffic safety partners over a three to four year period.
- Provide strategies to address each emphasis area and factor.
- Help guide federal and state project funding toward the highest priorities and most effective strategies.
- Monitor outcomes at a statewide level for each priority area.

DISCUSSION

The Traffic Services Section and Police Department work closely in developing the recommendations of the Annual Traffic Report, with the Police Department focusing on enforcement and education opportunities and Traffic Services focusing on education and engineering strategies.

Key changes between the 2019 report and this year's report include:

- Simplified collision trend monitoring at high collision locations.
- Roadway segment groupings into approximately ½ mile lengths for more consistent analysis of non-intersection collision locations.
- The Traffic Volume Flow Map is omitted as data collection was limited in 2020 due to pandemic and staffing impacts. Monthly tracking of volumes at 4 key locations is provided and shows COVID-19 impacts to City traffic volumes over the course of the year.

Recommendations included within the 2020 Annual Traffic Report are implemented through the following programs:

- Enforcement by the Police Department through current budget allocations.

- The CIP includes an annual program for Traffic Safety Improvements that can be used for implementing engineering solutions. This program provides \$184,000 in 2022.
- Larger projects require separate funding. Projects of high priority are presented in the TIP and may ultimately be funded in the CIP as resources become available. These projects are often eligible for and funded by grants.

Seeking Feedback

In developing the 2020 Annual Traffic Report, the high priority location of 10th Ave NE and NE 175th Street was identified for potential improvements based on the occurrence of a fatal collision in 2020 and other injury collisions over the last several years. In addition, three (3) other serious injury collisions have occurred on NE 175th Street between 5th Ave NE and 15th Ave NE in the 2016-2020 analysis period.

A 4-lane to 3-lane conversion (a proven safety countermeasure supported by the Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA)) on NE 175th Street between 5th Ave NE and 15th Ave NE would address turn related collisions along this stretch of roadway, allow for improved signal phasing at 10th Ave NE, reduce overall conflict points, and improve safety for pedestrians. This recommendation is new to the report this year and has not yet been added to the TIP.

Staff is seeking Council feedback on this potential collision reduction strategy as it relates to an upcoming grant opportunity. Applications for WSDOT's City Safety Program grant are due in early 2022. The structure and criteria of this grant closely aligns with the data and priorities in the Annual Traffic Report and the described project may compete well. Alternatively, Council may wish to wait until this concept has been discussed in more detail as part of the TIP process later in Q2 prior to pursuing a grant. The next opportunity for this grant will likely be in early 2024. Longer term, a roundabout may be an effective option for reducing collisions, however, would not likely be feasible as a City Safety grant project due to scope and cost. A project to reconfigure the roadway to 3 lanes in this section would not preclude the ability to implement a roundabout in the future.

COUNCIL GOAL(S) ADDRESSED

This item addresses the following City Council Goals:

- Goal 4: Promote and enhance the City's safe community and neighborhood programs and initiatives.

RESOURCE/FINANCIAL IMPACT

There are no direct additional financial or resource impacts at this time. The Public Works and Police Departments will continue to use existing staff for engineering and enforcement efforts. The 2021-2026 CIP budget for the Traffic Safety Improvement Program includes \$184,000 for 2022. High priority location strategies requiring larger-

scale projects than can be accommodated within existing budgets will be included for consideration during the 2023-2028 TIP process for consideration in the CIP.

RECOMMENDATION

No action is required at this time; this item is for discussion only.

ATTACHMENTS

Attachment A – 2020 Annual Traffic Report



City of Shoreline
Annual Traffic Report
2020

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Introduction

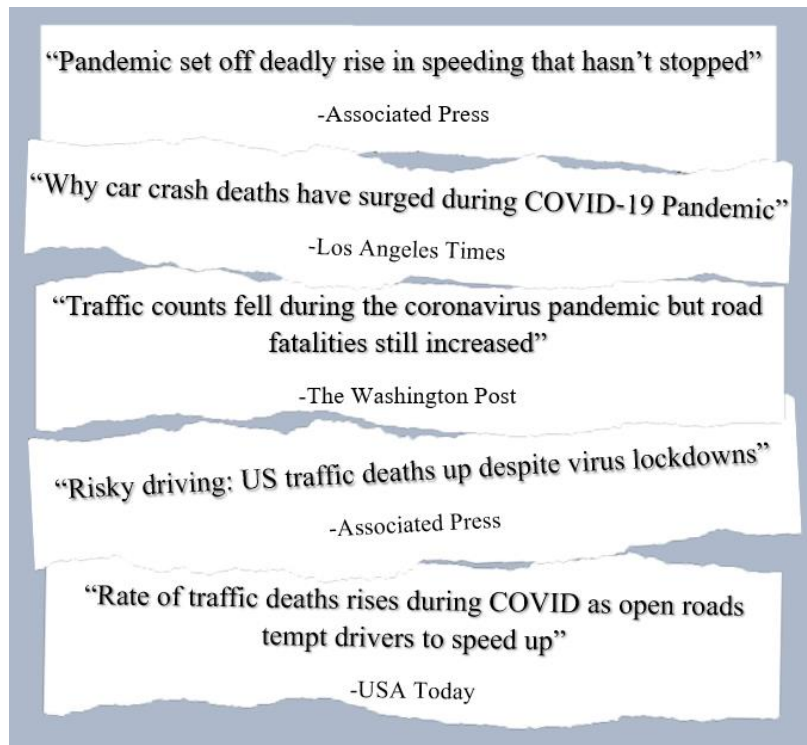
This report provides an annual review and analysis of data collected by City of Shoreline Traffic Services staff and Shoreline Police Department. It summarizes collision, speed, volume, transit, pedestrian, and bike data, highlighting noteworthy trends. The data in this report guides the City's prioritization of Traffic Services capital improvement project resources, identifies potential projects for the upcoming year's Transportation Improvement and Capital Improvement plans, supports pursuit of grant opportunities, and identifies target enforcement areas for the Shoreline Police Department.

Engineering, enforcement, education and policy related improvement strategies generated by this report strive to accomplish the goal set by Washington State's Target Zero Plan to achieve zero fatal and serious injury collisions by the year 2030. In addition, this report which specifically identifies safety improvement strategies, supports many goals set by Shoreline's Comprehensive Plan, as well as City Council Goal 5 - to promote and enhance the City's safe community and neighborhood programs and initiatives.

This report strives to provide clear and usable traffic safety and operations information for reference by staff, Council, residents, and businesses of Shoreline. To request additional information, please contact the Public Works Department, Traffic Services section or visit the Traffic Services webpage at <http://shorelinewa.gov/government/departments/public-works/traffic-services>.

Executive Summary

The COVID-19 pandemic affected all aspects of life in 2020 and transportation was no exception. With the implementation of the Governor's "Stay Home, Stay Healthy" policy, traffic volumes decreased dramatically statewide as did associated congestion in urban areas like King County. In Shoreline, traffic volumes dropped by more than 50% on some corridors, with the annual average 20% lower than 2019



volumes. Similarly, transit ridership dropped more than 60% at the low point in Spring. Given the fact that there were so many less people on the road, it was not surprising to see total collisions decrease significantly; down 34% compared to 2019, representing the lowest total for any year in Shoreline's 2010 through 2020 collision database.

While most agencies expected to see fatal collision trends follow suit, instead the opposite happened; Nationwide, Statewide and in our City, fatal collisions soared. According to the National Safety Council, there was a 24%

spike in US roadway death rates (fatal collisions per million vehicle miles traveled), resulting in the **highest fatal collision rate in 96 years**. While it is difficult to pin down any one causal factor, common themes seem to center around a significant increase in risky driving behavior. As regional congestion evaporated and enforcement agencies decreased contacts to limit the spread of COVID-19, driver speeds increased. Various public health studies have also shown a significant increase in alcohol and drug use during the pandemic, so an increase in impaired driving is thought to be a contributing factor in the high number of 2020 traffic deaths too.

It is difficult to predict what new transportation norms will look like moving forward both in terms of collision trends and travel patterns. With multiple major City capital improvement projects to build sidewalks, crossing improvements, roundabouts, and other proven safety countermeasures on the horizon, as well as the new Federal transportation funding package which will provide increased safety resources, there is hope of steering fatal and serious injury collisions back toward zero.

Data Sources

This report summarizes collision trends based on data from 2011 through 2020, with emphasis on years 2018 through 2020. Only collisions that occurred on City streets and are investigated by police officers are included in this report. Excluded are collisions on private property, locations outside of the City of Shoreline (i.e. N/NE 145th Street), collisions on I-5, phone reports, non-police investigated incidents, collisions under the threshold of \$1000 in damages, and other non-collision vehicle incident reports.

Collision data is obtained from the Washington State Department of Transportation (WSDOT) and includes collisions investigated by Shoreline Police Department or other enforcement agencies such as Washington State Patrol. The data contained in this report is based on reportable collisions only, as defined in the following section.

Traffic volume and speed data presented in this report was collected and analyzed by Shoreline Traffic Services staff or its consultants.

Transit data was provided by King County Metro.

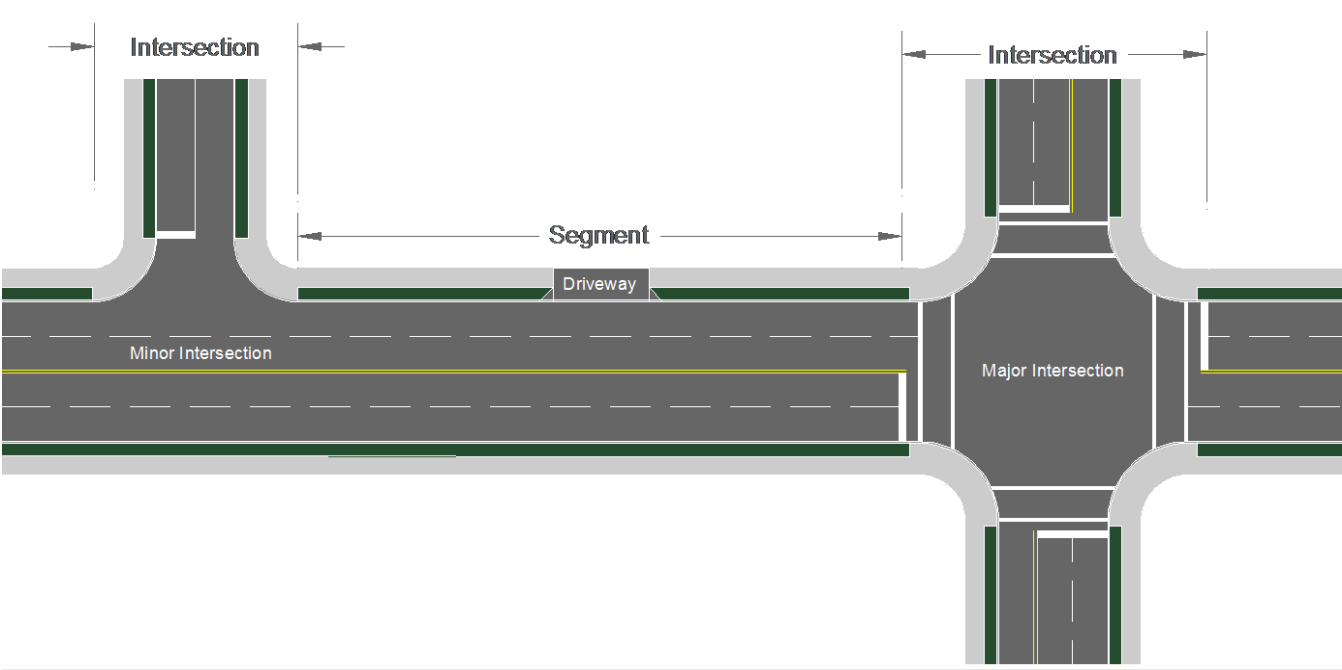
Population data was obtained from the United States Census Bureau.

Definitions

| | |
|---|---|
| Reportable Collision | A collision which involves death, injury, or property damage in excess of \$1000 to the property of any one person. |
| Fatal Collision | Motor vehicle collision that results in fatal injuries to one or more persons. |
| Suspected Serious Injury Collision | Previously Serious Injury. A motor vehicle collision resulting in an injury assessed by the investigating officer as “any injury which prevents the injured person from walking, driving, or continuing normal activities at the time of the collision.” |
| Suspected Minor Injury Collision | Previously Evident Injury. A collision resulting in an injury assessed by the investigating officer as “any injury other than fatal or serious at the scene. Includes broken fingers or toes, abrasions, etc. Excludes limping, complaint of pain, nausea, momentary unconsciousness, etc.” |
| Possible Injury Collision | A collision resulting in an injury assessed by the investigating officer as “any injury reported to the officer or claimed by the individual as momentary unconsciousness, claim of injuries not evident, limping, complaint of pain, nausea, hysteria, etc.” |
| No Apparent Injury | Previously Property Damage Only. Motor vehicle collision in which there is no injury to any person, but only damage to a motor vehicle, or to other property, including injury to domestic animals. |

| | |
|---|--|
| Did Not Grant Right of Way | A contributing circumstance type which indicates that the driver failed to properly yield Right of Way; for example, a driver hitting a pedestrian in a crosswalk when the walk signal is on for the pedestrian movement. |
| High Collision Location | Locations with the highest number of reported collisions. |
| Collision Rate | For intersections, the number of collisions at an intersection divided by the average annual volume of vehicles entering the intersection. The resulting unit is collisions per million entering vehicles. For segments, the number of collisions along the segment divided by the length of the segment and the average annual volume of vehicles along the segment. The resulting unit is collisions per million vehicle miles. |
| 85th Percentile Speed | The speed at which 85% of traffic is traveling at or below; a common traffic engineering benchmark for measuring and evaluating traffic speeds. |
| Target Zero | <p>Target zero is Washington State's Strategic Highway Safety Plan for zero Fatal and Serious Injury collisions by the year 2030. This plan:</p> <ul style="list-style-type: none"> • Sets statewide priorities for all traffic safety partners over a 3-4 year period. • Provides various strategies to address each emphasis area and factor. • Helps guide federal and state project funding toward the highest priorities and most effective strategies. • Monitors outcomes at a statewide level for each priority area. <p>Collision mitigation strategies include education, enforcement, engineering, policy and emergency medical service-based efforts.</p> <p>http://www.targetzero.com/</p> |

For Collision Location analysis, intersections and segments are categorized as shown below.



Collision Summary

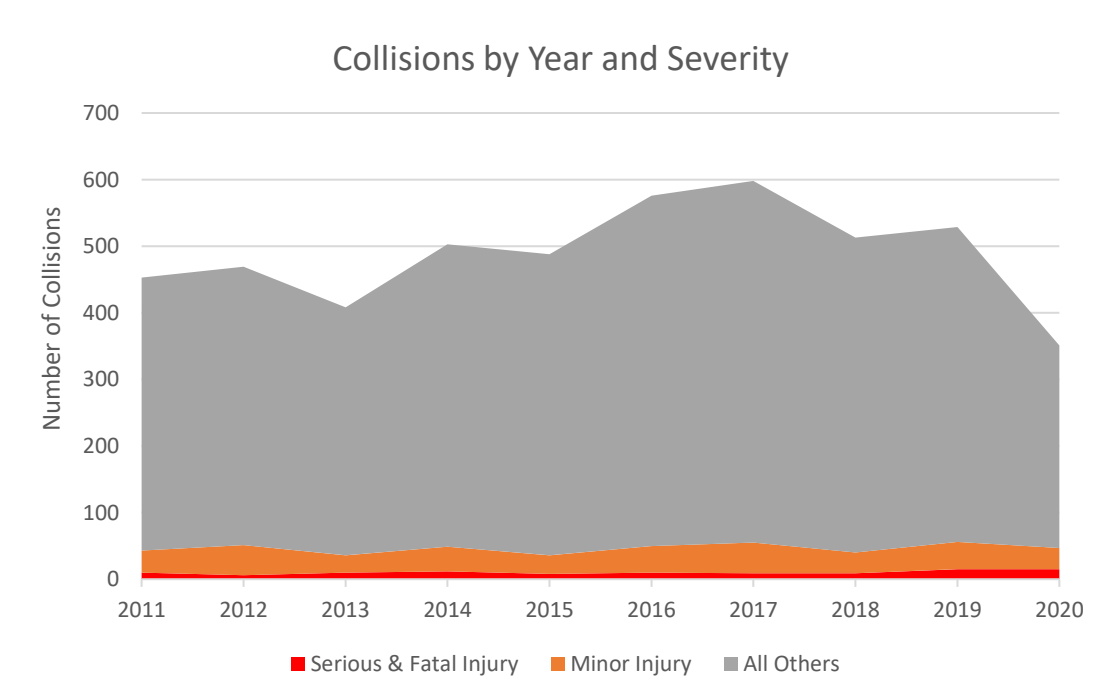
The following sections provide summaries and analysis for collisions reported on public streets within the City of Shoreline from 2011 through 2020, with a focus on 2018-2020 collision data.

Total Collisions

There were 351 collisions reported on City of Shoreline streets in 2020; the lowest number in the 10-year period. The following table is a summary of collisions by severity from 2011 through 2020.

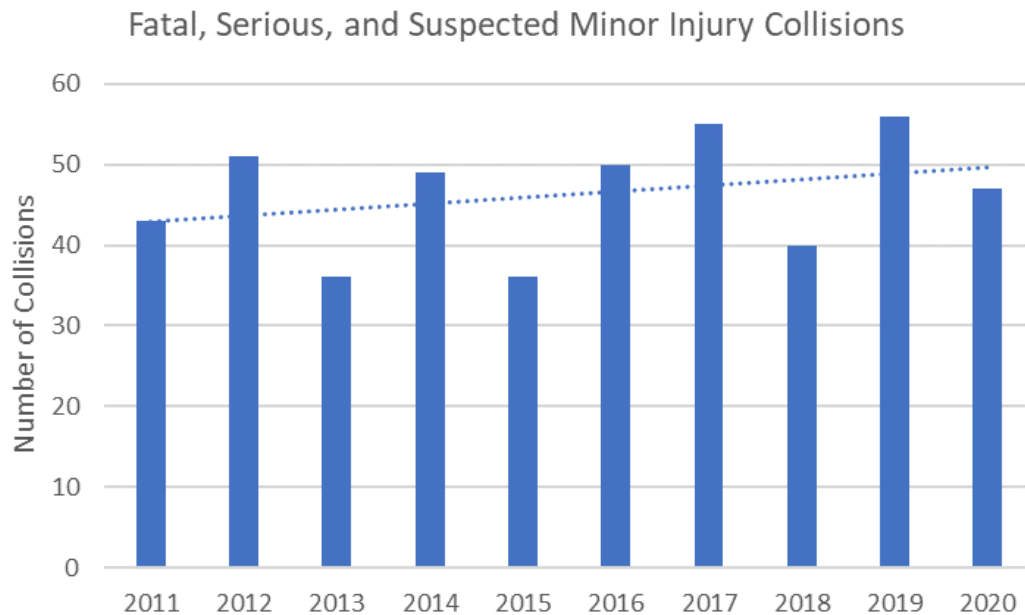
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|
| Fatality | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 3 |
| Suspected Serious Injury | 9 | 5 | 9 | 11 | 7 | 9 | 9 | 8 | 14 | 12 |
| Suspected Minor Injury | 33 | 45 | 26 | 37 | 28 | 40 | 46 | 31 | 41 | 32 |
| Possible Injury | 111 | 108 | 104 | 121 | 126 | 140 | 136 | 104 | 119 | 59 |
| No Apparent Injury | 290 | 302 | 264 | 318 | 317 | 374 | 398 | 354 | 346 | 239 |
| Unknown | 9 | 8 | 4 | 15 | 9 | 12 | 9 | 15 | 8 | 6 |
| Total | 453 | 469 | 408 | 503 | 488 | 576 | 598 | 513 | 529 | 351 |

The total number of collisions in 2020 is down approximately 34% from 2019. Due to this significant reduction, the overall trendline for the annual increase in collisions decreased from 13.5 collisions per year in 2019, to 2.4 per year in 2020. The number of Suspected Minor Injury, Suspected Serious Injury, and Fatal collisions decreased in 2020 to 47, down from a high of 56 in 2019. While Suspected Serious Injury collisions were down slightly from 2019 numbers, the number of fatalities reported in 2020 was concerning the highest in the 10-year period.

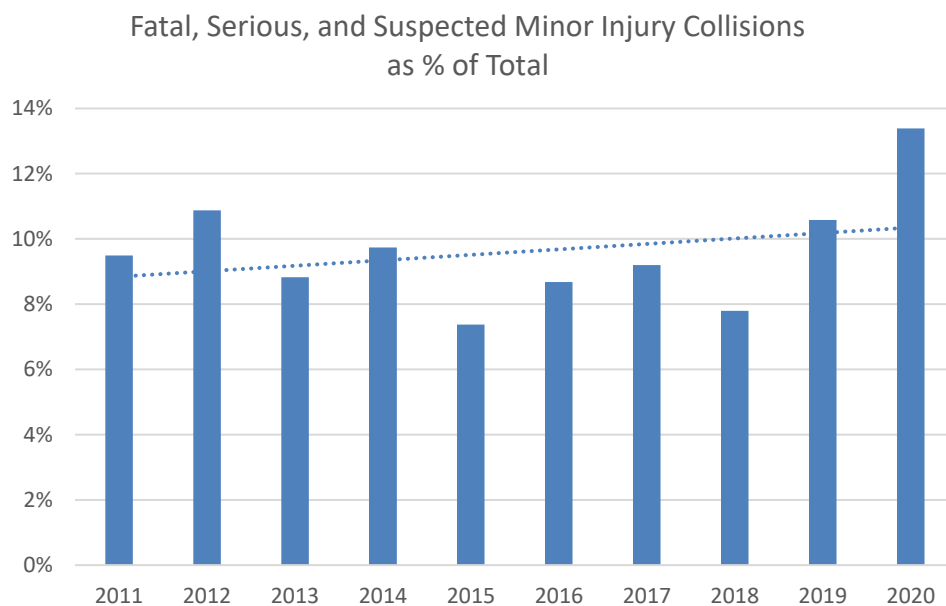


Injury Collisions

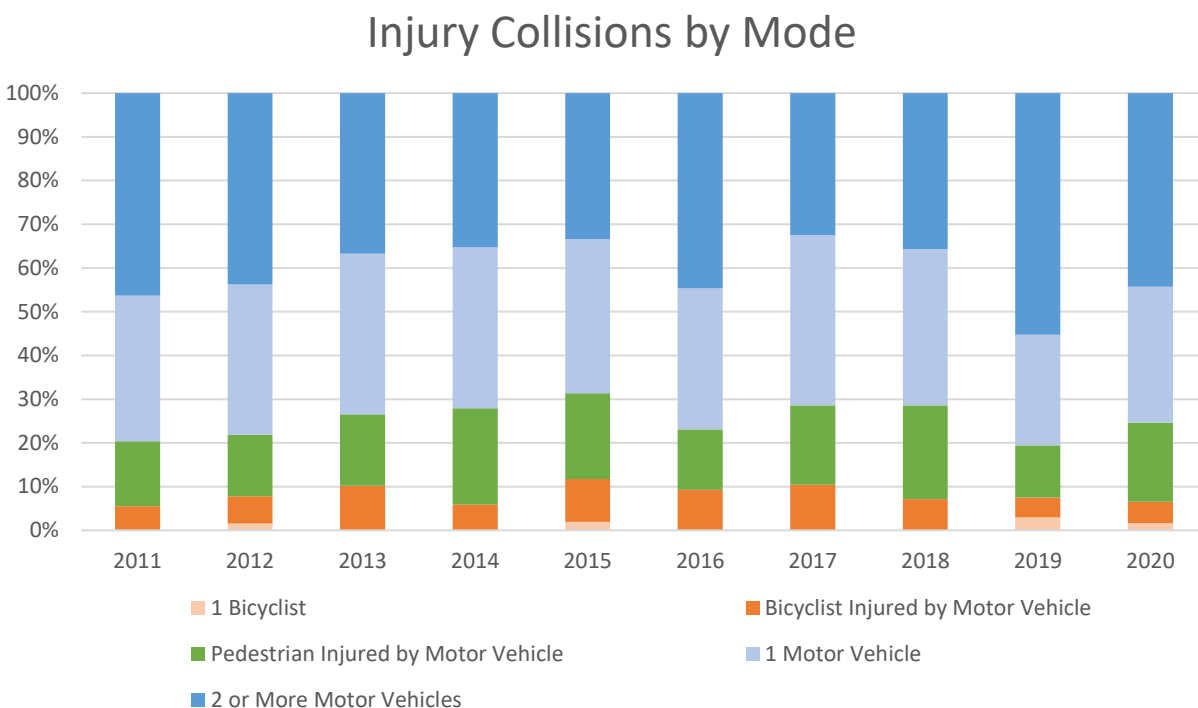
In this section, Fatal, Suspected Serious Injury, and Suspected Minor Injury collisions were analyzed, excluding Possible Injury collisions. As shown below, the trend for Injury Collisions is up, with the trend increasing at about 0.75 additional injury collisions per year.



The rate of injury collisions in comparison to total collisions struck a new increasing trend given the significant increase in injury collisions compared with the significant decrease in total collisions.



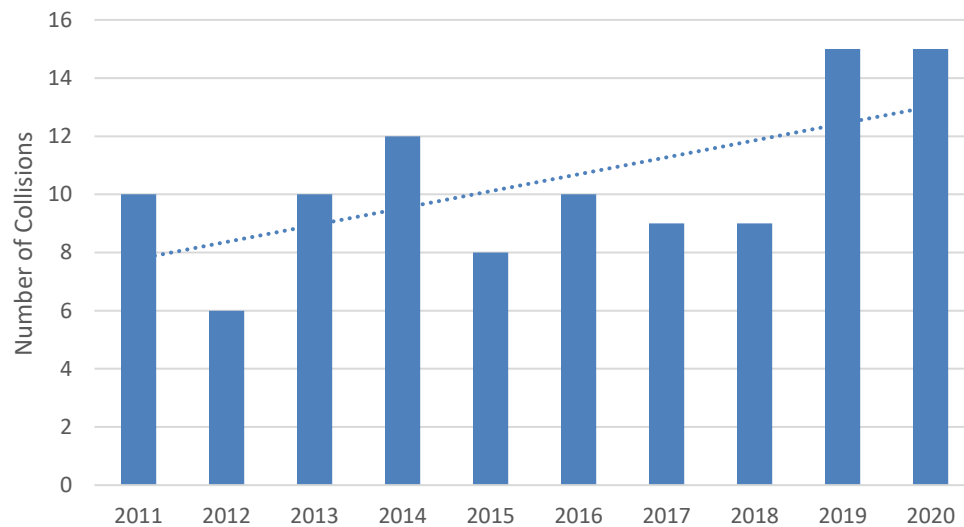
The following chart shows injury collisions by mode which includes collisions that involve just one driver in a single motor vehicle, pedestrians injured by a motor vehicle, bicyclists injured by a motor vehicle, bicyclists that crash (with no motor vehicles involved), and collisions involving 2 or more motor vehicles.



Suspected Serious & Fatal Injury Collisions

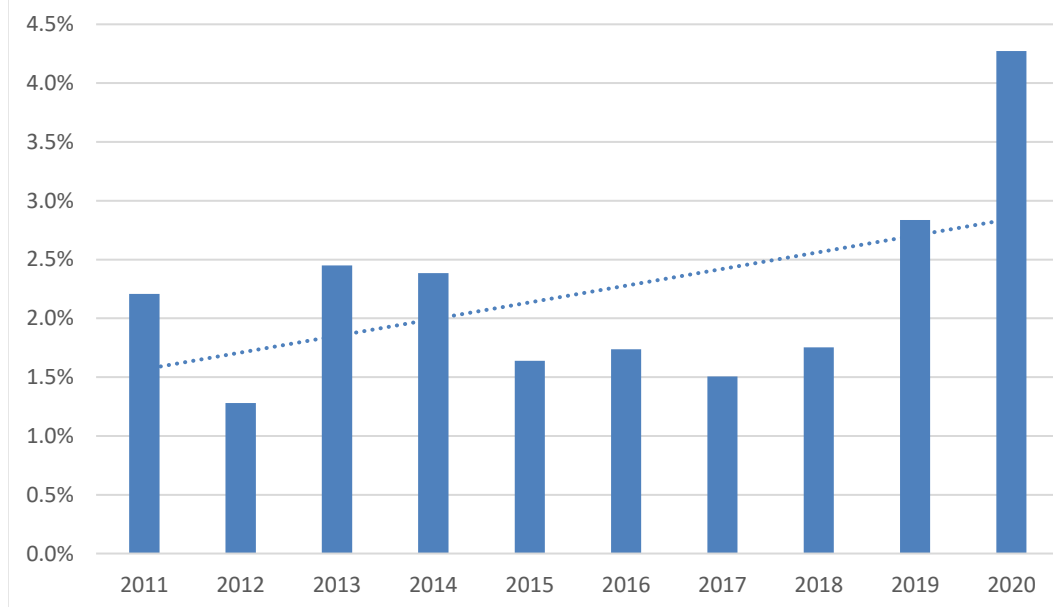
The following chart shows Fatal and Serious Injury Collisions by year which remain even with 2019 numbers; the highest 2 years in the analysis period. These 2020 numbers shift the trendline increase in Fatal and Serious Injury Collisions from .41 per year in 2019 to .58 per year in 2020. Additional details on contributing factors are provided in later sections.

Serious & Fatal Injury Collisions by Year



Provided for context is the proportion of Fatal and Serious Injury Collisions as part of the total number of collisions. With Serious and Fatal collisions remaining even with 2019, in conjunction with the lowest total number of collisions in the analysis period, the proportion of Serious and Fatal collisions is significantly higher for 2020.

Serious & Fatal Injury Collisions as % of Total

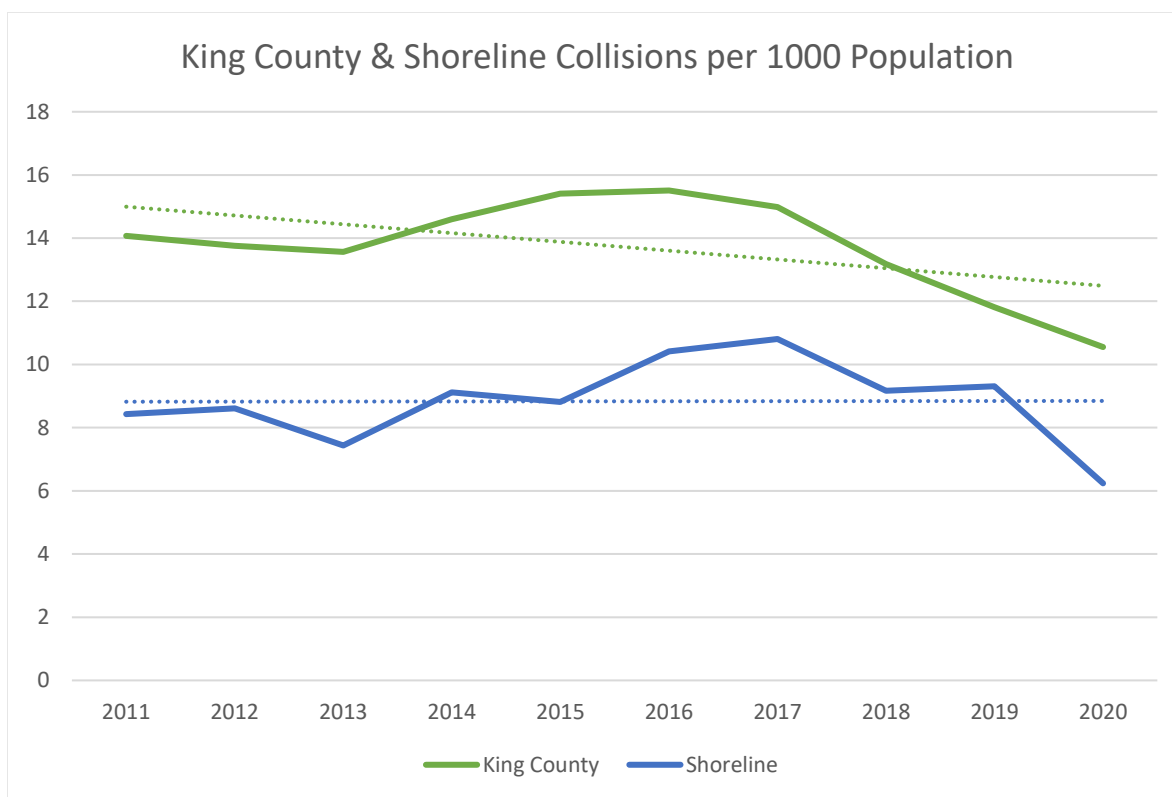


Regional Comparison

This section provides a comparison between King County collision data and cities comparable to Shoreline in population within King County.

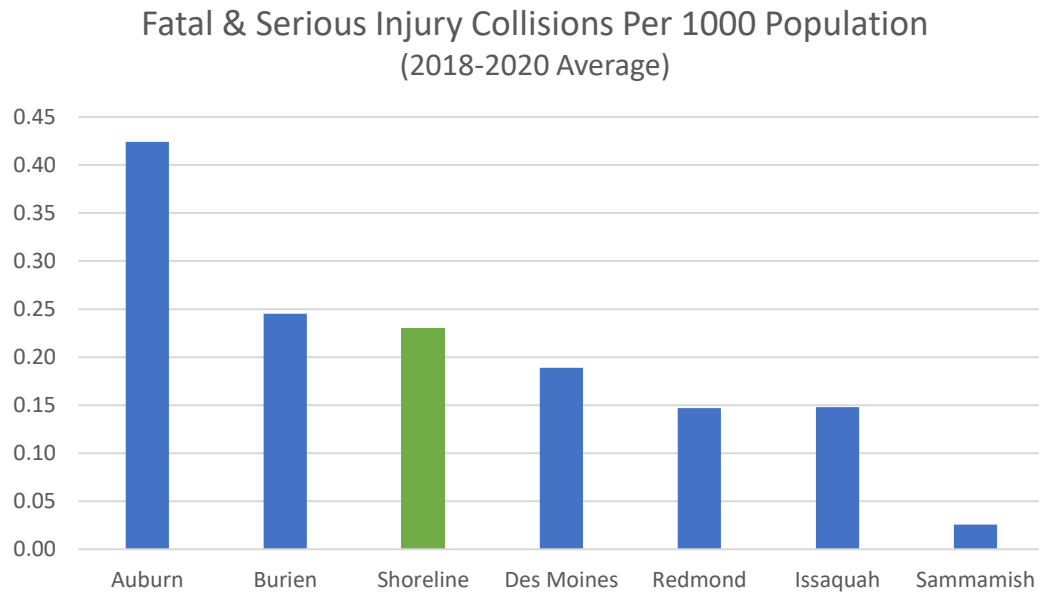
Total Collision Regional Comparison

To better understand how collision trends in Shoreline relate to the broader region, a comparison to King County collision data was prepared (omitting Shoreline collision and population data from the King County numbers). The trendline for collisions in King County continues to decrease, while Shoreline's is relatively flat. Overall however, Shoreline's collision per 1000 population rate remains lower than the King County rate by about 4 collisions per 1000 population in 2020.



Suspected Serious & Fatal Injury Collision Regional Comparison

Data was obtained for cities within a population range of 25,000 +/- of Shoreline within King County. The rates of Serious and Fatal Injury Collisions per thousand population were compared for the 2018-2020 analysis period. With a high number of Serious and Fatal collisions occurring in both 2019 and 2020, Shoreline's rank remains 3rd highest among the 6 comparable cities.



Societal Costs

Traffic collisions have considerable impact not only on the people directly involved in the collision but also on the community as a whole. Below is the Washington State Department of Transportation's assessment of motor vehicle collision costs by severity. The information provided includes estimates for the average economic cost per death, per injury, and per property damage collision. The economic cost estimates are a measure of the productivity lost and expenses incurred because of the collision; they do not reflect what society is willing to pay to prevent a statistical fatality or injury.

- Fatality \$2,000,000
- Suspected Serious Injury \$1,000,000
- Suspected Minor Injury \$100,000
- Possible Injury \$70,000
- No Apparent Injury \$10,000

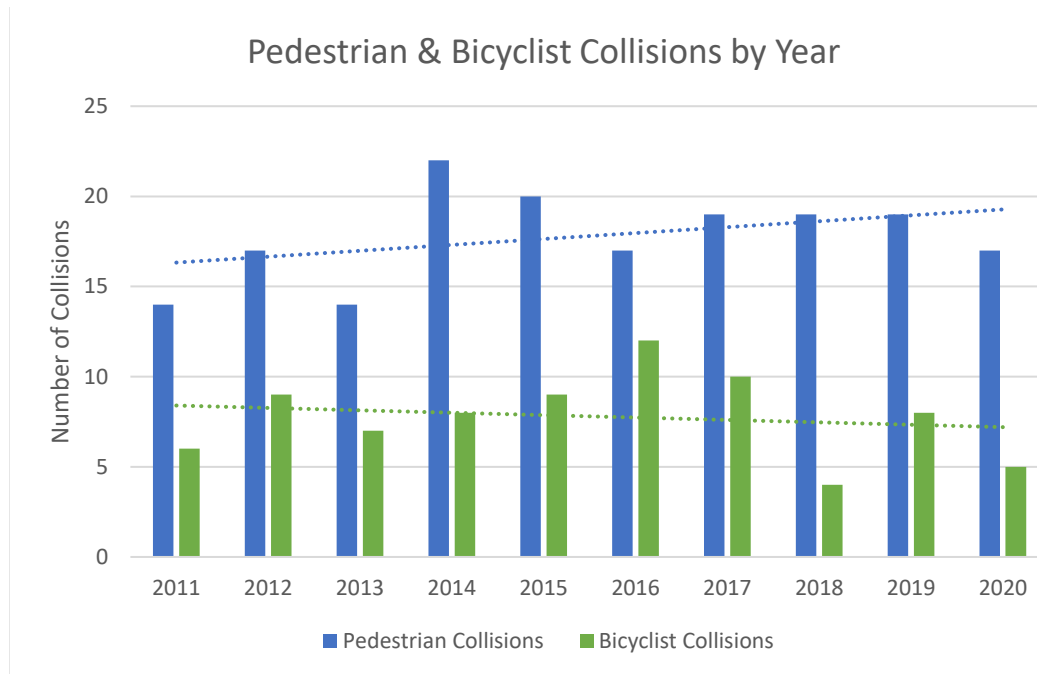
Source: WSDOT Traffic Safety Management Office

The following table is a summary of average societal costs for collisions in Shoreline from 2018 through 2020. The overall societal cost is up slightly from the 2017-2019 average, due to an increase in fatal collisions.

| 2018-2020 Average Annual Societal Cost | |
|--|--------------|
| Fatality | \$3,333,333 |
| Suspected Serious Injury | \$11,333,333 |
| Suspected Minor Injury | \$3,466,667 |
| Possible Injury | \$6,580,000 |
| No Apparent Injury | \$3,130,000 |
| Total | \$27,843,333 |

Pedestrian and Bicycle Collisions

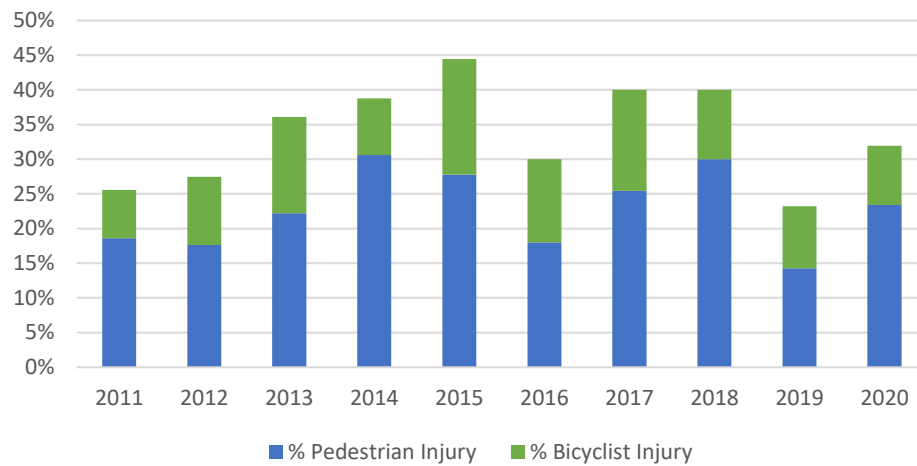
Pedestrian versus motor vehicle collisions decreased by 2 in 2020 compared with 2019, with a continued upward trend since 2011. In 2019, bicyclist collisions (alone or with motor-vehicle) set an encouraging new downward trend, which held in 2020. Additional information regarding pedestrian and bicycle collision locations is provided in the *Collision Location Analysis* section of the report, and in Appendices C & D.



| | Pedestrian Collisions | Bicyclist Collisions |
|------|-----------------------|----------------------|
| 2011 | 14 | 6 |
| 2012 | 17 | 9 |
| 2013 | 14 | 7 |
| 2014 | 22 | 8 |
| 2015 | 20 | 9 |
| 2016 | 17 | 12 |
| 2017 | 19 | 10 |
| 2018 | 19 | 4 |
| 2019 | 19 | 8 |
| 2020 | 17 | 5 |

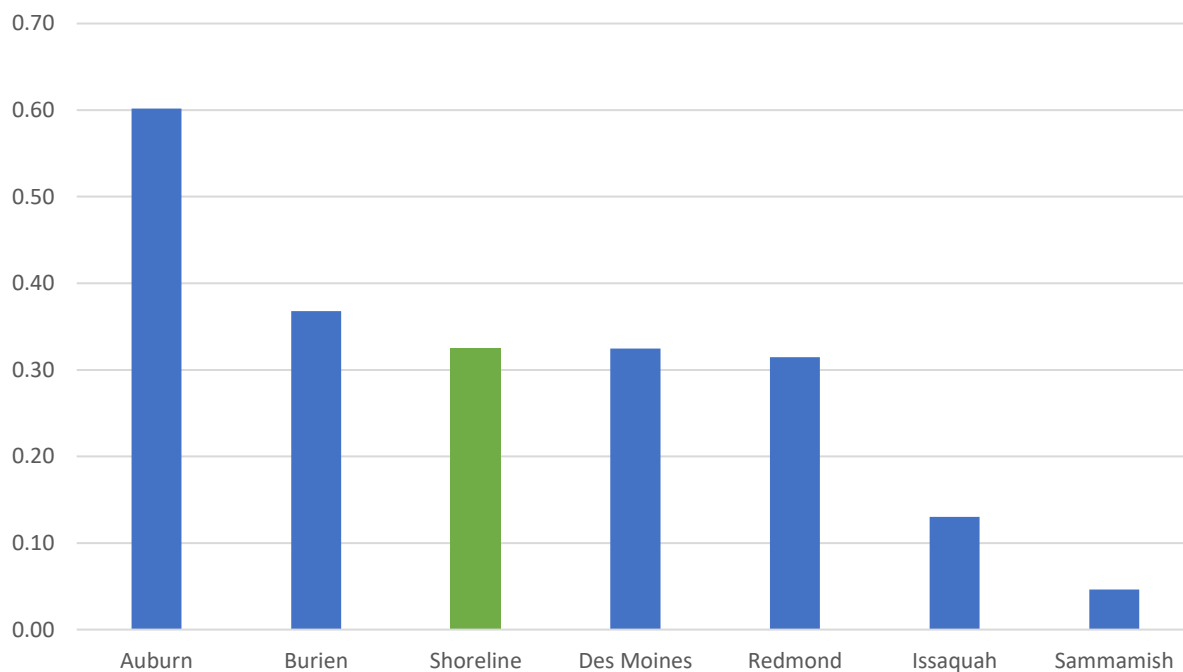
Pedestrian and bicyclist injury collisions accounted for a higher proportion of injury collisions than in 2019, and 2% lower than the prior 9-year average.

Pedestrian & Bicyclist Injury Collisions (as % of Total Injury Collisions)



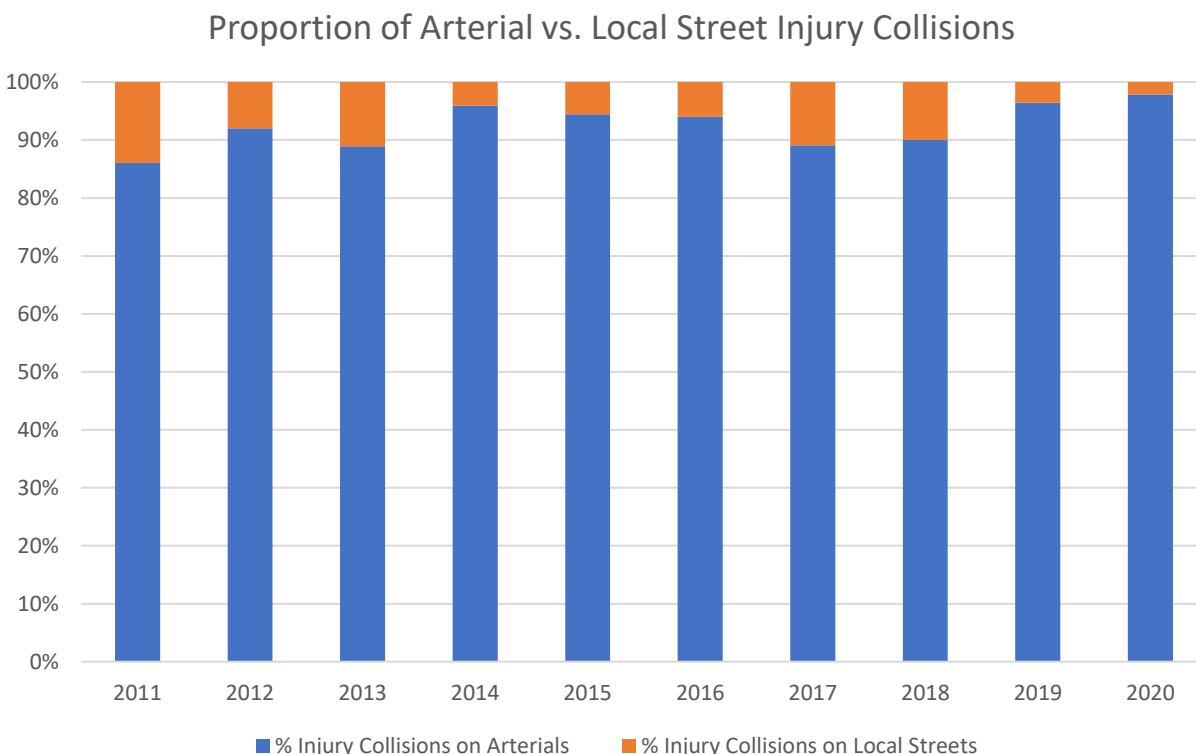
Shoreline's pedestrian collision rate per 1000 population remains 3rd highest out of the comparable cities in King County.

Pedestrian Collisions Per 1000 Population (2018-2020 Average)



Collisions by Street Classification

In Shoreline, all local streets are 25 mph and carry significantly less traffic volume than arterial streets, representing less opportunity for collisions to occur, and generally less severe outcomes when they do. In 2020, injury collisions occurred on arterials 98% of the time, even though arterials comprise only 27% of roadway centerline miles. No serious or fatal collisions occurred on local streets in 2020.

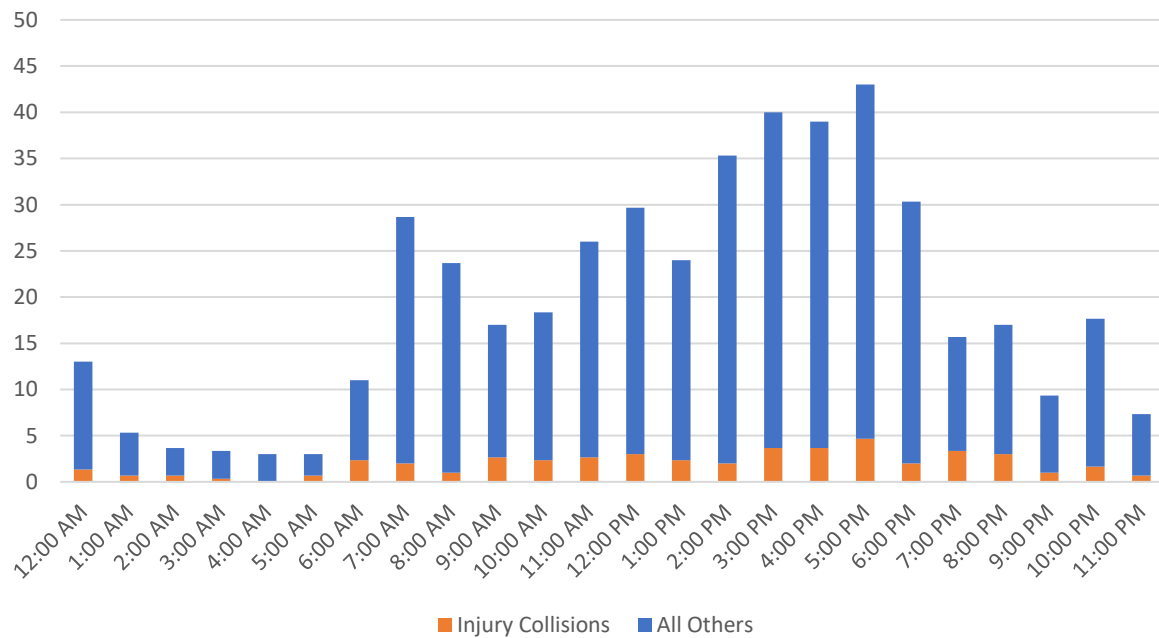


Other Collision Factors

Month and Time of Day

November is typically the month with the highest overall and injury collisions and Shoreline streets experience the fewest collisions in the month of August. In 2020, the lowest number of collisions occurred in April, and the highest number of collisions occurred in February, likely due to the pandemic. There was not a significantly different trend in collision time for 2020; most occur during the PM peak hour of 5 PM, including most injury collisions.

Average Annual Collisions by Time of Day (2018-2020)

**Light**

Most collisions occur during daylight hours as shown in the following table. Notably, a significant portion of Serious and Fatal Injury collisions occurred during dark or dusk lighting conditions in the 2018-2020 analysis period.

| | 2018-2020 All Collisions | 2018-2020 Injury Collisions | 2018-2020 Pedestrian Collisions | 2018-2020 Serious & Fatal Collisions |
|---------------|-----------------------------|--------------------------------|------------------------------------|---|
| Dark/Dusk | 29% | 35% | 35% | 46% |
| Daylight/Dawn | 70% | 64% | 65% | 51% |
| Unknown | 1% | 1% | 0% | 3% |

Collision Contributing Circumstances

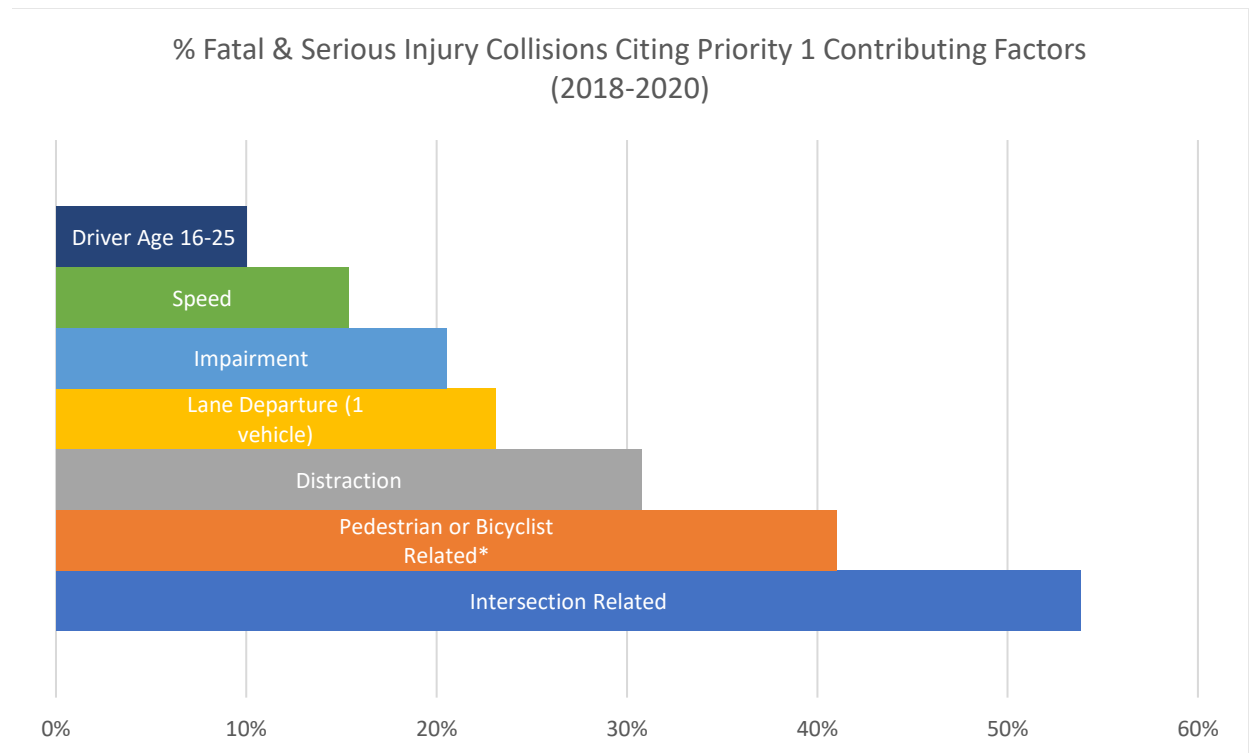
This section examines factors influencing a collision such as behavior, crash type and road user focusing on priorities identified by the Washington State Target Zero Plan.

Target Zero Emphasis Priorities

Washington State's Target Zero Plan sets statewide traffic safety priorities based upon the most frequently cited contributing factors in statewide Serious and Fatal Injury collisions. The following table represents behavior, crash type and road user priorities consistent with the State Target Zero Plan, with 1 being the highest priority.

| Emphasis Areas | Priority |
|--------------------------|----------|
| Impairment | 1 |
| Distraction | 1 |
| Speeding | 1 |
| Lane Departure | 1 |
| Intersection | 1 |
| Young Drivers 16-25 | 1 |
| Unrestrained Occupants | 2 |
| Pedestrians & Bicyclists | 2 |
| Motorcyclists | 2 |
| Older Drivers 70+ | 2 |
| Heavy Truck | 2 |

In Shoreline, the Target Zero priorities represented most within serious and fatal injury collision data continue to be intersections and those involving pedestrians or bicyclists.

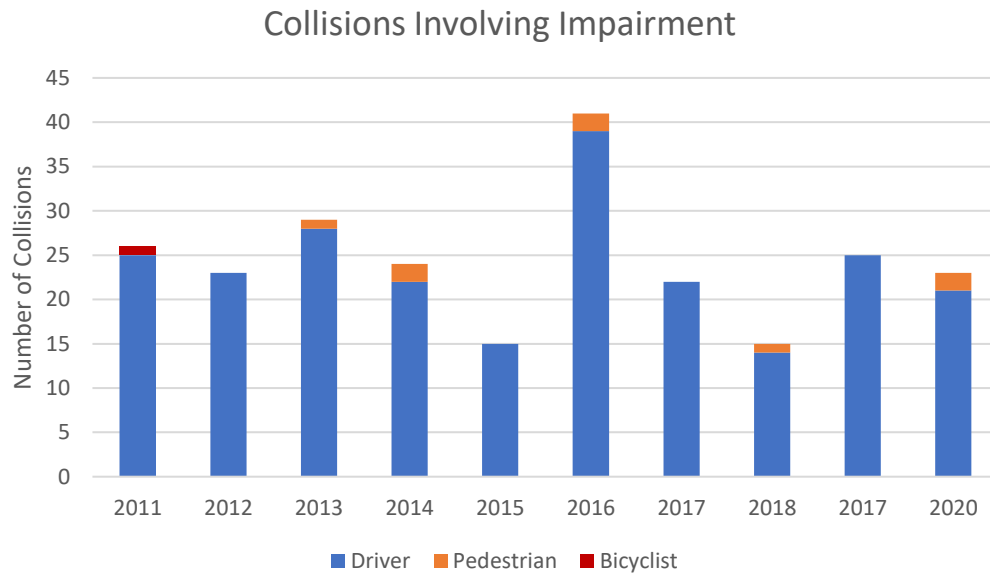


**Pedestrian or Bicyclist related collisions are a Priority 2 statewide, however represent a Priority 1 in urban/suburban cities.*

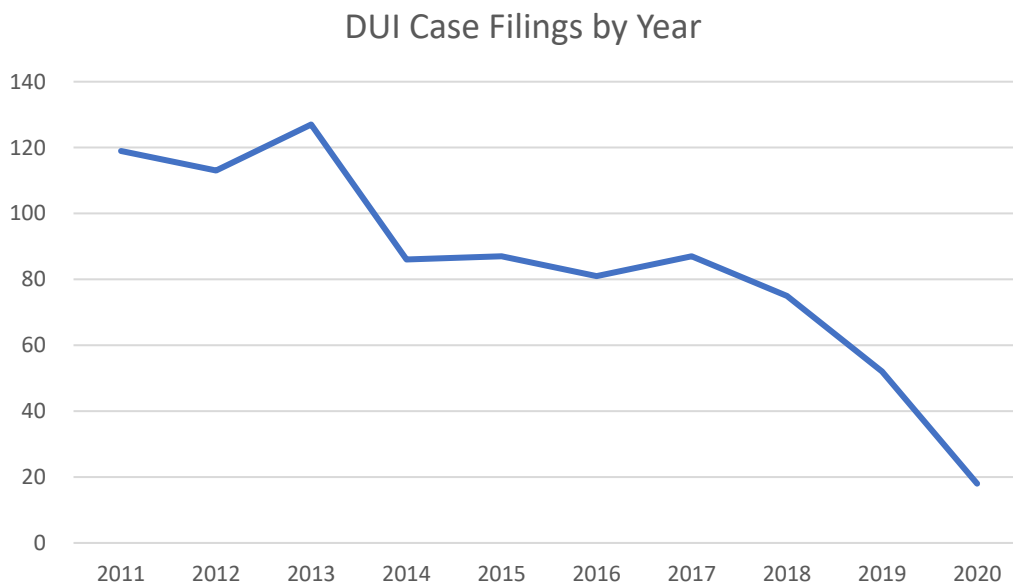
Impairment

In 2020, there were 23 collisions in Shoreline involving impairment; down slightly from 2019. It is important to note that impairment related crashes are thought to be underreported; according to the

State Target Zero Plan, some collisions are not interpreted as rising to the level of vehicular assault - a designation which allows for a blood draw.

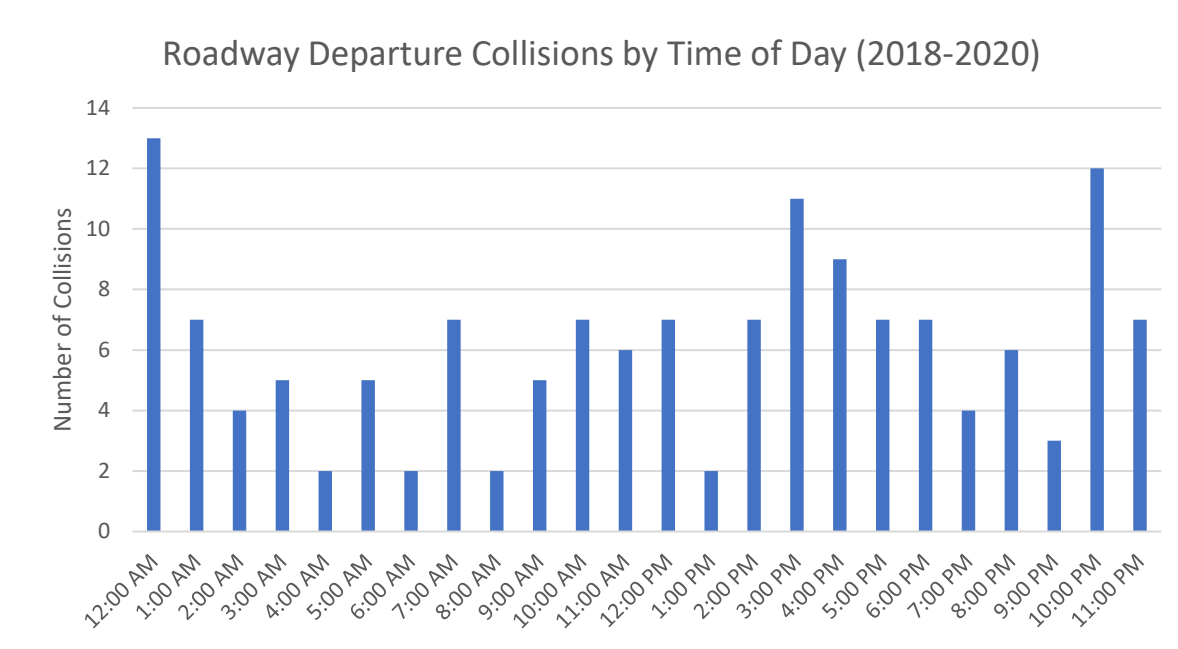


Impairment related case filings dropped relatively significantly in 2020, likely due to a number of factors including fewer contacts to limit COVID-19 transmission, significantly fewer drivers being on the road, and enforcement staff shortages.



Roadway Departures

One notable association with roadway departure collisions is time of day. As shown in the following chart, a high number of roadway departure collisions occur in the late night and early morning hours compared to overall collision time trends.

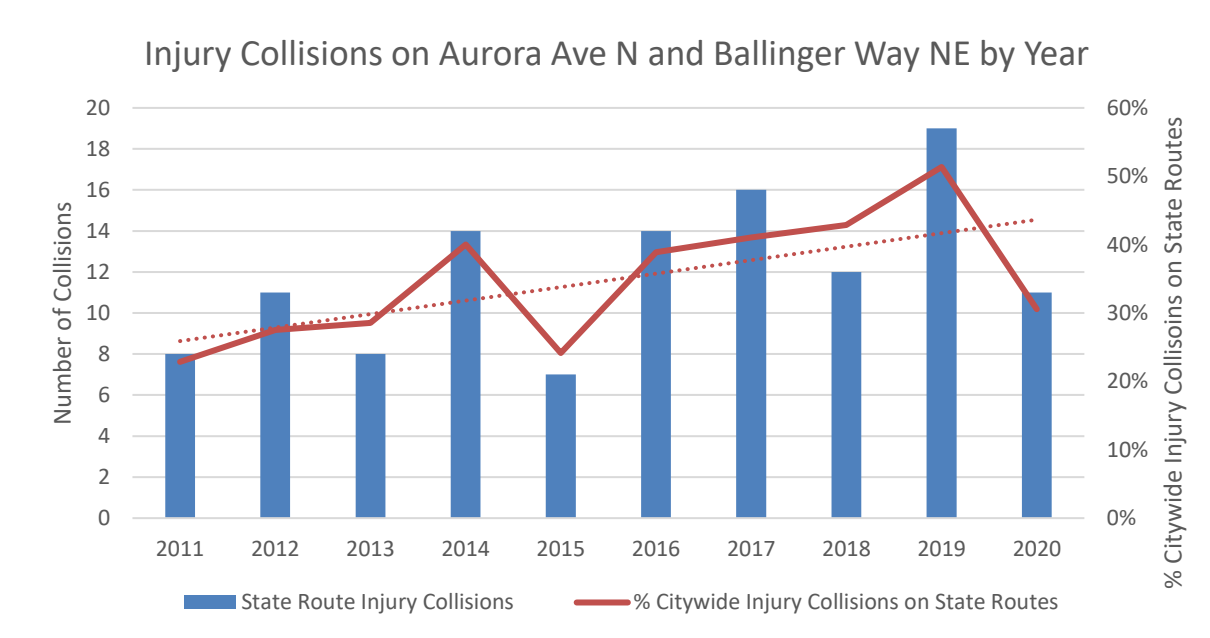


Collision Location Analysis

This section provides location-based analysis of collisions. There is no specific industry standard as to what number of collisions or collision rate is considered “high” for a location. Engineering guidelines do provide some thresholds for potential traffic control device revisions such as stop sign installation or signal phase changes based on the presence of 3 correctable collisions in 12-month period or 5 correctable collisions in a 24-month period. To best inform collision reduction strategies, intersections with an average of 3 or more collisions per year (9 total in the 3-year period) have been highlighted for additional analysis. Highest Injury Collision locations correlate to locations with highest total collisions; no more than 3 injury collisions for the 3-year period occurred at any one intersection location. A different approach was taken this year for evaluating non-intersection collisions. Instead of evaluating every segment between intersections (which can vary considerably in length), an attempt was made to normalize segment lengths into approximately ½ mile lengths. Additionally, collision trend indicators at locations are simplified with a red, yellow green status this year; with red indicating an increase in collisions, yellow indicating no change, and green indicating a reduction in collisions. In addition to the following tables, Citywide Total, Injury, Pedestrian, and Bicycle collisions are displayed on maps in Appendices A-D.

State Route Collisions

For the last several years, collisions along the state routes of Aurora Ave N and Ballinger Way NE have accounted for a growing proportion of injury collisions Citywide. This number dropped considerably in 2020, however collisions on State Routes still account for a large portion of the City’s injury collisions.



The following table shows intersections along Aurora Ave N or Ballinger Way NE with 9 or more collisions in the 3-year period, as well as a summary of collisions at non-intersection locations along these State Routes.

| Location | 2018-2020 Total Collisions | 2018-2020 Injury Collisions | Total Collisions Change from 2017-2019 | Injury Collisions Change from 2017-2019 |
|--------------------------------|----------------------------|-----------------------------|--|---|
| AURORA AVE N & N 155TH ST | 20 | 3 | ● | ● |
| AURORA AVE N & N 200TH ST | 16 | 3 | ● | ● |
| AURORA AVE N & N 175TH ST | 16 | 1 | ● | ● |
| AURORA AVE N & N 185TH ST | 13 | 3 | ● | ● |
| AURORA AVE N & N 160TH ST | 13 | 1 | ● | ● |
| AURORA AVE N & N 198TH ST | 12 | 2 | ● | ● |
| AURORA SEGMENTS (145TH-205TH) | 194 | 14 | ● | ● |
| BALLINGER WAY NE & 15TH AVE NE | 25 | 0 | ● | ● |
| BALLINGER WAY NE & 19TH AVE NE | 12 | 2 | ● | ● |
| BALLINGER SEGMENTS (15TH-25TH) | 34 | 4 | ● | ● |

City Street Intersection Collision Locations (2018-2020)

The following table shows non-State Route locations with 9 or more collisions in the 3-year period.

| Location | 2018-2020 Total Collisions | 2018-2020 Injury Collisions | Total Collisions Change from 2017-2019 | Injury Collisions Change from 2017-2019 |
|---------------------------------------|----------------------------|-----------------------------|--|---|
| MIDVALE AVE N & N 175TH ST | 15 | 0 | ● | ● |
| MERIDIAN AVE N & N 175TH ST | 13 | 1 | ● | ● |
| 15TH AVE NE & NE 175TH ST | 12 | 1 | ● | ● |
| 10TH AVE NE & NE 175TH ST | 11 | 2 | ● | ● |
| MERIDIAN AVE N & N 185TH ST | 11 | 0 | ● | ● |
| 3RD AVE NW & NW RCHMND BCH RD | 10 | 2 | ● | ● |
| DAYTON AVE N & N 160TH ST | 10 | 0 | ● | ● |
| 19TH AVE NE & NE 205TH ST | 9 | 1 | ● | ● |
| 5TH AVE NE & 7TH AVE NE & NE 185TH ST | 9 | 0 | ● | ● |

Corridor Collision Locations (2018-2020)

Non-State Route corridors experiencing the most collisions along segments are shown in the following table. Intersection collisions along these corridors are also provided for context, and for considering mitigation strategies associated with the overall corridor trend. Trends are not displayed as the formatting for non-intersection collision analysis changed this year.

| Location | 2018-2020 Non-Intersection Collisions | 2018-2020 Intersection Collisions | 2018-2020 Corridor Total |
|--|---------------------------------------|-----------------------------------|--------------------------|
| 15TH AVE NE (NE 196TH-BALLINGER WAY NE) | 19 | 31 | 50 |
| 19TH AVE NE (15TH AVE NE TO NE 205TH ST) | 16 | 26 | 42 |
| 15TH AVE NE (NE 145TH ST TO NE 155TH ST) | 16 | 19 | 35 |

Pedestrian Collision Locations (2016-2020)

The following table shows locations with 3 or more pedestrian collisions in the 5-year period.

| Location | 2016-2020 Ped Collisions | Change from 2015-2019 |
|----------------------------|--------------------------|---|
| AURORA AVE N & N 192ND ST | 5 |  |
| AURORA AVE N & N 160TH ST | 4 |  |
| 20TH AVE NW & NW 195TH ST | 3 |  |
| AURORA AVE N & N 185TH ST | 3 |  |
| MIDVALE AVE N & N 185TH ST | 3 |  |
| AURORA AVE N (195TH-205TH) | 3 |  |

Bicyclist Collision Locations (2016-2020)

The following table shows locations with 3 or more bicyclist collisions in the 5-year period.

| Location | 2016-2020 Ped Collisions | Change from 2015-2019 |
|-----------------------------|--------------------------|---|
| MERIDIAN AVE N & N 185TH ST | 4 |  |

Collision Reduction Strategies

The preceding *Collision Summary* section provided analysis of collisions on Shoreline’s public streets, tracking overall and injury collision data from 2011 through 2020 and highlighting specific and significant contributing factors, locations, and trends. The following *Collision Reduction Strategies* section describes the City’s ongoing efforts and recommended future actions for reducing collisions.

Contributing Circumstance Collision Reduction Strategies

The City of Shoreline strives to reduce overall, injury, and fatality collisions on its roadways consistent with the Washington State Strategic Highway Safety Plan’s Target Zero Plan. The top two injury collision risk-factors in Shoreline continue to be collisions at intersections and collisions with pedestrians or bicyclists. A few of the important measures the City is taking toward improving road safety are highlighted in the following table.

| | |
|---|--|
| <i>Designing streets for injury reduction</i> | Multiple revisions were made to the Engineering Development Manual in recent years; key revisions include intersection bulb outs, narrower lane widths, and reduced curb radii. Multiple projects currently or soon to be in design – including new sidewalk projects – will build intersections that are safer for drivers and for pedestrians, using the built environment to limit speeds and decrease pedestrian exposure. |
| <i>Lowering speeds</i> | In December 2021, Council adopted an ordinance to reduce speeds on 6 corridors in Shoreline based on the latest research and associated speed limit setting tool from the National Cooperative Highway Research Program. Implementation will occur in June 2022. Staff recommends studying the remaining 35 MPH corridors, and 40 MPH State Routes that were not a part of this initial effort in 2023. |
| <i>Increased street and pedestrian lighting</i> | The City continues to install approximately 10 new streetlights per year as budgeted. In addition, Engineering Development Manual updates are now resulting in developer-installed pedestrian lighting improvements in some locations. |
| <i>Driver education</i> | The City continues to support driver education efforts including radar speed feedback signs, yard signs, and intersection flags. |
| <i>Enforcement</i> | Shoreline Police will continue enforcement and driver education efforts related to speeding, impairment, distraction, seat belt use and school safety. |
| <i>Pursuing grants</i> | Staff will pursue City Safety Program grant funding aligned with the Annual Traffic Report contributing factor priorities and high collision locations. Grant funding availability has increased as a result of the Federal transportation funding package. |

Location-Based Collision Reduction Strategies

Shoreline Police and Public Works staff work together to review the identified highest collision locations each year. This data-driven approach to collision reduction facilitates strategic and systematic

prioritization of limited City resources. The top locations were prioritized based on number of collisions, with consideration of injury collisions. The goal in prioritizing locations with significant collision history is to maximize the benefit of safety improvements to decrease the number of overall and injury collisions.

Referencing analysis from the Collision Summary section and drawing from specific strategies outlined in the State's Target Zero Plan, strategies were developed to address identified collision patterns. In some cases, greater resource than currently available is needed to address a location's need. These locations are considered for addition to the Transportation Improvement Plan (TIP) to identify potential project funding sources and to position the City for grant opportunities.

State Route Collision Strategies

| Location | Collision Reduction Strategy |
|--------------------------------|---|
| AURORA AVE N & N 155TH ST | Collisions are down from 2017-2019 and injury collisions equal; continue to monitor. |
| AURORA AVE N & N 200TH ST | Although collisions were up considerably for 2020, the collision types and directions are quite varied and make it difficult to pinpoint any one solution. Continue to monitor. |
| AURORA AVE N & N 175TH ST | Collisions are down from 2017-2019; continue to monitor. |
| AURORA AVE N & N 185TH ST | Leading Pedestrian Interval signal phasing is currently being implemented and is anticipated to be complete by end of January 2022. Collisions down from 2017-2019. |
| AURORA AVE N & N 160TH ST | Leading Pedestrian Interval signal phasing is currently being implemented and is anticipated to be complete by end of January 2022. Collisions down from 2017-2019. |
| AURORA AVE N & N 198TH ST | New warning signs were installed relatively recently and collisions are down from 2017-2019; continue to monitor. |
| AURORA SEGMENTS (145TH-205TH) | Potentially evaluate speed limit reductions in 2023 or 2024. |
| BALLINGER WAY NE & 15TH AVE NE | Explore potential signal timing and/or spot safety improvements with WSDOT. A larger-scale project for the corridor is described within the Transportation Improvement Plan. |
| BALLINGER WAY NE & 19TH AVE NE | A larger-scale project for the corridor is described within the Transportation Improvement Plan. |
| BALLINGER SEGMENTS (15TH-25TH) | A larger-scale project for the corridor is described within the Transportation Improvement Plan. Potentially evaluate speed limit reductions in 2023 or 2024. |

City Street Intersection Strategies

| Location | Collision Reduction Strategy |
|-----------------------------|---|
| MIDVALE AVE N & N 175TH ST | Leading Pedestrian Interval signal phasing is currently being implemented and is anticipated to be complete by end of January 2022. |
| MERIDIAN AVE N & N 175TH ST | Project currently in design – see project webpage for details. |
| 15TH AVE NE & NE 175TH ST | A spot improvement project to install centerline curb for the northernmost driveway on the south leg of the intersection will |

| | |
|------------------------------|---|
| | eliminate some conflicts within the intersection area. This project was planned for 2021 contracting prices were higher than available budget. Staff will pursue this project again in 2022. |
| 10TH AVE NE & NE 175TH ST | In the near term, consider reconfiguring roadway to 3 lanes (from 5 th Ave NE to 15 th Ave NE) to provide dedicated left turn lane space to address turn related collisions and reduce conflict points. Longer-term, replacing the signal with a roundabout may be an effective strategy to mitigate collisions. Will be discussed as part of 2023-2028 Transportation Improvement Plan. Continue to monitor. |
| MERIDIAN AVE N & N 185TH ST | Address collisions with bicyclists, possibly by enhancing markings and signage through the intersection. This location is also a City Growth Project. |
| 3RD AVE NW & RCHMND BCH RD | Collisions continue to decline sharply following rechannelization project improvements. Continue to monitor. |
| DAYTON AVE N & N 160TH ST | Collisions were primarily related to left turn movements – review for protected left turn phasing. |
| 19TH AVE NE & NE 205TH ST | Signal phasing safety improvements were made relatively recently – continue to monitor. |
| 5TH/7TH AVE NE & NE 185TH ST | Active construction zone. Sound Transit implementing signalized intersection by 2024. |

Corridor Collision Strategies

| | |
|--|---|
| 15TH AVE NE (NE 196TH-BALLINGER WAY NE) | A significant portion of non-intersection collisions are related to drivers hitting parked cars – install white edge lines for better delineation of traveled way in 2022. |
| 19TH AVE NE (15TH AVE NE TO NE 205TH ST) | Explore opportunities for the Traffic Safety Program to partner with the sidewalk project planned for 2024 on implementation of spot safety treatments such as crossing improvements, curb bulbs, lighting or other features. |
| 15TH AVE NE (NE 145TH ST TO NE 155TH ST) | The Sound Transit 3 project will be making improvements to the intersection of 15 th Ave NE & NE 145 th Street – continue to monitor. |

Pedestrian Collision Strategies

| Location | Collision Reduction Strategy |
|---------------------------|---|
| AURORA AVE N & N 192ND ST | Leading Pedestrian Interval signal phasing is currently being implemented and is anticipated to be complete by end of January 2022. |
| AURORA AVE N & N 160TH ST | Leading Pedestrian Interval signal phasing is currently being implemented and is anticipated to be complete by end of January 2022. |

| | |
|-----------------------------|---|
| 20TH AVE NW & NW 195TH ST | Street lighting improvements are planned for 2022. In addition, some improvements to the corners of the south leg of the intersection will be explored with the upcoming sidewalk project planned for 2022. |
| AURORA AVE N & N 185TH ST | Leading Pedestrian Interval signal phasing is currently being implemented and is anticipated to be complete by end of January 2022. |
| MIDVALE AVE N & N 185TH ST | Install Leading Pedestrian Interval signal phasing by early 2023. |
| AURORA AVE N (195TH -205TH) | Explore outreach and education strategies with adjacent businesses and transit agencies. |

Bicyclist Collision Strategies

| Location | Collision Reduction Strategy |
|-----------------------------|--|
| MERIDIAN AVE N & N 185TH ST | Long term, the Meridian Ave N/N 185th Street growth project will address bike improvements through the intersection. Consider green bike lane treatment through the intersection in the near term. |

Completed Transportation Safety Efforts

In addition to the ongoing efforts described in the *Contributing Circumstance Collision Reduction Strategies* section, the following sections describe recently completed transportation safety efforts.

Public Works

Some notable and recent Traffic Safety Program improvements are highlighted in the following table.

| | |
|--|---|
| <i>Speed limits</i> | An ordinance to reduce speeds on 6 arterials in Shoreline was passed in December and will go into effect in June 2022. |
| <i>Leading Pedestrian Interval phasing</i> | Leading Pedestrian Interval signal phasing to address pedestrian collision locations is currently being implemented and is anticipated to be complete by the end of January 2022. |
| <i>Spot signage improvements</i> | Custom warning and regulatory signs were installed at high collision locations on Aurora Ave N at N 160 th Street and at N 198 th Street. Collisions are down significantly at both locations, though this is likely due in part to reduced traffic and associated queuing on the corridor. |
| | <i>Stay Out of Areas of Racing</i> signs were also installed on multiple corridors associated with the adoption of Ordinance 927. |

Additional completed Capital Improvement Plan efforts are summarized online at:

<https://www.shorelinewa.gov/government/projects-initiatives/completed-projects>

Shoreline Police Department

Typical enforcement emphases and outreach was not carried out in 2020 due to the pandemic and staffing shortages however one notable safety effort is described below.

New SMC Chapter 10.22 - Street Racing

In mid-2021 Shoreline Police and the City Attorney crafted an ordinance to help combat street racing events in the City. See the staff report linked below for additional details.

<http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2021/staffreport071921-8b.pdf>

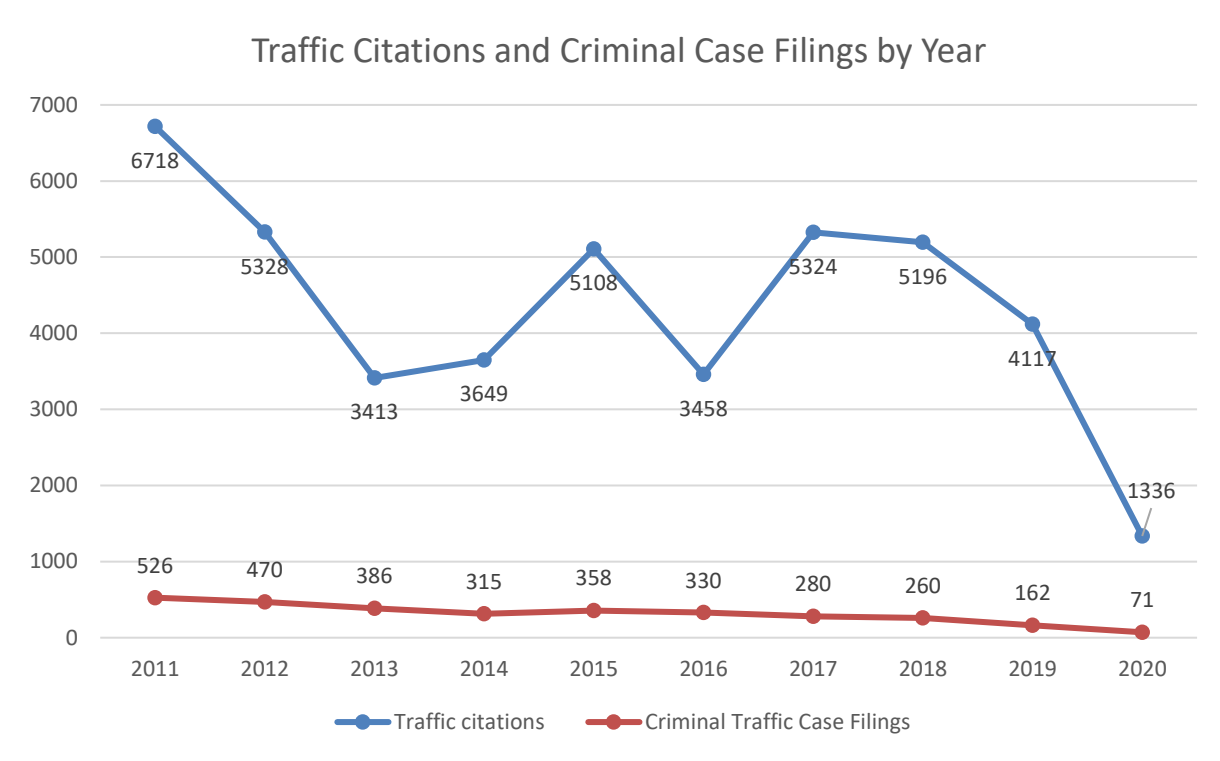
Enforcement Summary

The following section summarizes Shoreline Police Department traffic enforcement activities.

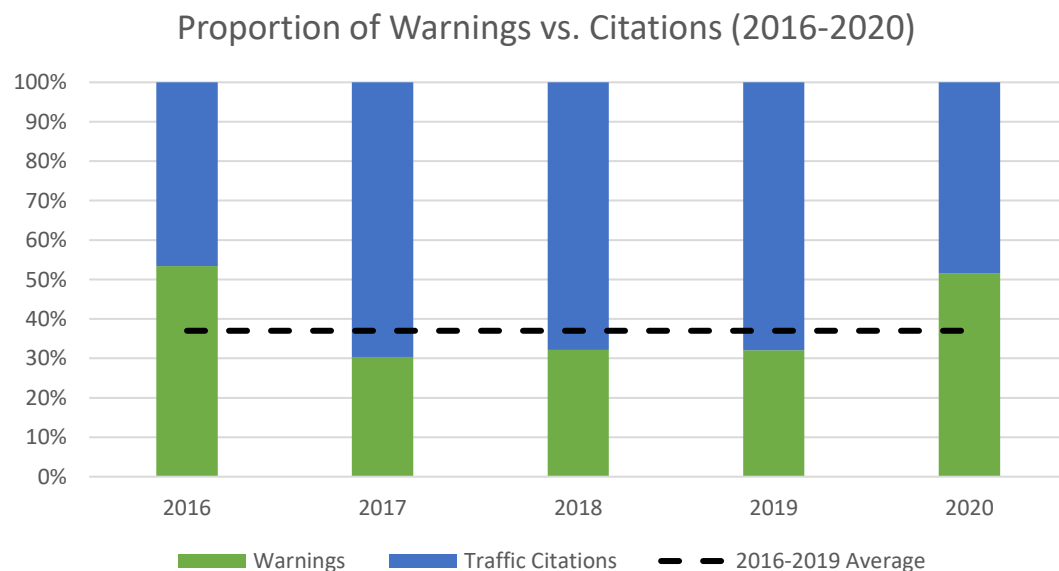
Traffic Citations

The following chart summarizes traffic citations and criminal traffic case filings for the past 10 years. Traffic Citation numbers include general moving violations, DUI, criminal traffic offenses, and parking violations. Traffic citations and criminal case filings dropped relatively significantly in 2020, likely due to

a number of factors including fewer contacts to limit COVID-19 transmission, significantly fewer drivers being on the road, and enforcement staff shortages.



The proportion of warnings versus citations in 2020 was 52%, higher than the average of the 4 years prior (37%) as shown in the following chart.



Parking Enforcement & Abandoned Vehicles

The following table provides statistics on abandon vehicle incidents, impounds, and parking citations for the last 5 years.

| Year | Abandoned Vehicle / Impounds | Parking Citations |
|------|------------------------------|-------------------|
| 2020 | 649/55 | 555 |
| 2019 | 456/52 | 1,110 |
| 2018 | 211/25 | 985 |
| 2017 | 335 / 34 | 528 |
| 2016 | 322 / 54 | 182 |

Traffic Speed Summary

The City of Shoreline Traffic Services and Police departments have been working together to identify and target speed enforcement. Speed data is collected throughout the year and compared to the posted speed limit in order to identify streets where speeding is a problem. Shoreline Police use this data to guide speed emphasis patrols and Traffic Services use it to inform driver education efforts, such as radar speed feedback cart placement.

Appendix F is the Traffic Speed Differential Map which shows the difference between the measured 85th percentile speed and the posted speed limit. In 2020, due to pandemic and staffing impacts, less data was collected than usual so in some cases, data collected prior to 2020 is used to populate differential speeds for some streets on the map. In addition, there was no significant change in 85th percentile speeds on the streets for which new data was collected, resulting in a map that looks the same as 2019.

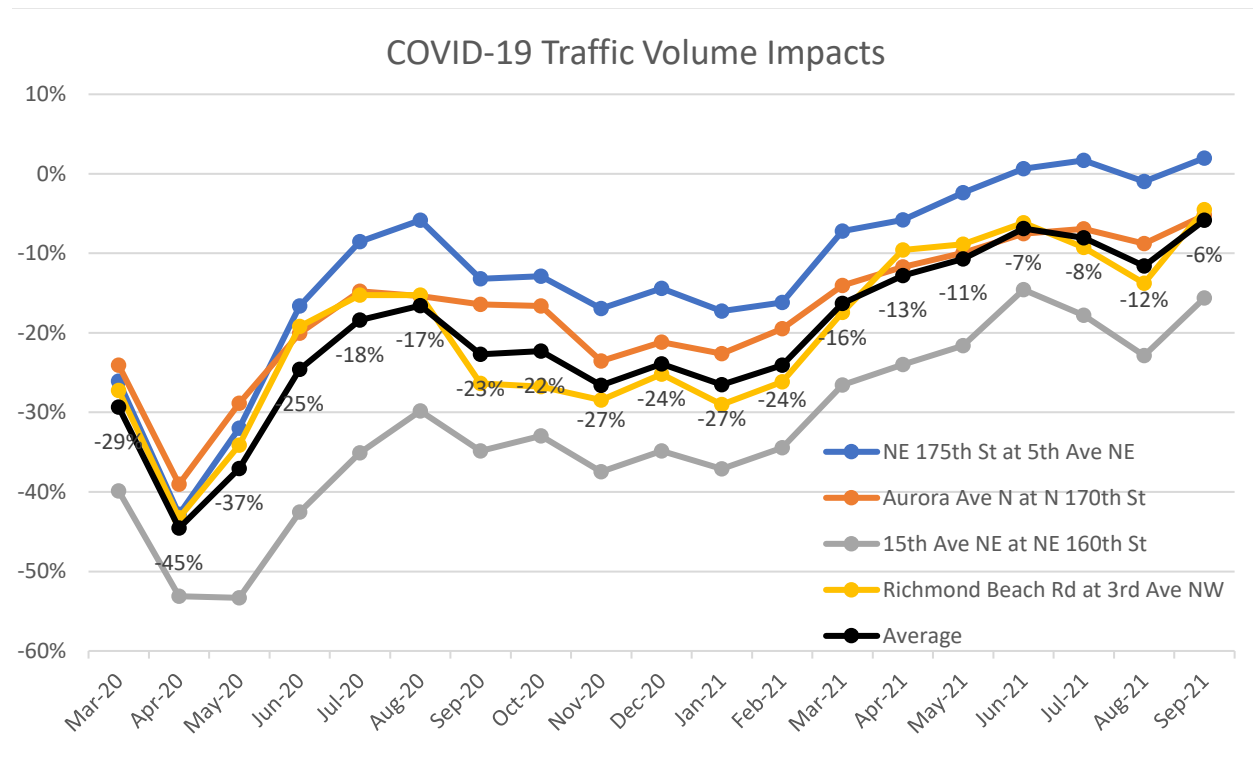
The street segments shown in the table below represent the locations with the highest difference between posted and measured travel speeds.

Streets with Differential Speed 8 mph or More Over Posted Limit

| |
|---|
| 20 th Ave NW from NW 195 th St to NW 205 th St |
| N 200 th Street from Aurora Ave N to Meridian Ave N |
| Midvale Ave N from N 175 th St to N 185 th St |
| Forest Park Dr NE from 15 th Ave NE to 19 th Ave NE |
| NE Perkins Way from 10 th Ave NE to 15 th Ave NE |
| NW 175 th Street from 10 th Ave NW to 14 th Ave NW |
| 6 th Ave NW from NW 175 th Street to NW 180 th St |
| Carlyle Hall Rd from Dayton Ave N to N 175 th St |
| 15 th Ave NE from NE 175 th St to NE 180 th St |
| NE 165 th St from 5 th Ave NE to 15 th Ave NE |
| Dayton Ave N from N 165 th St to St. Luke Pl N |
| N 165 th St from Dayton Ave N to Aurora Ave N |
| 5 th Ave N from NE 145 th St to NE 155 th St |

Traffic Volume Summary

In a typical year, traffic volume data is regularly collected at 8 locations throughout the City. In 2020, due to COVID-19 impacts to traffic volumes and associated operational changes for staff, collection did not occur at the same frequency. Instead, permanent traffic volume recorders at 4 locations were used to gauge changes in traffic patterns. As shown in the following chart, traffic volumes in the City hit a low in April 2020 following Statewide COVID-19 policy implementation with a 45% reduction compared to 2019 traffic volumes. This chart also includes data into Fall 2021 which shows volumes rising though still generally lower than pre-pandemic levels.

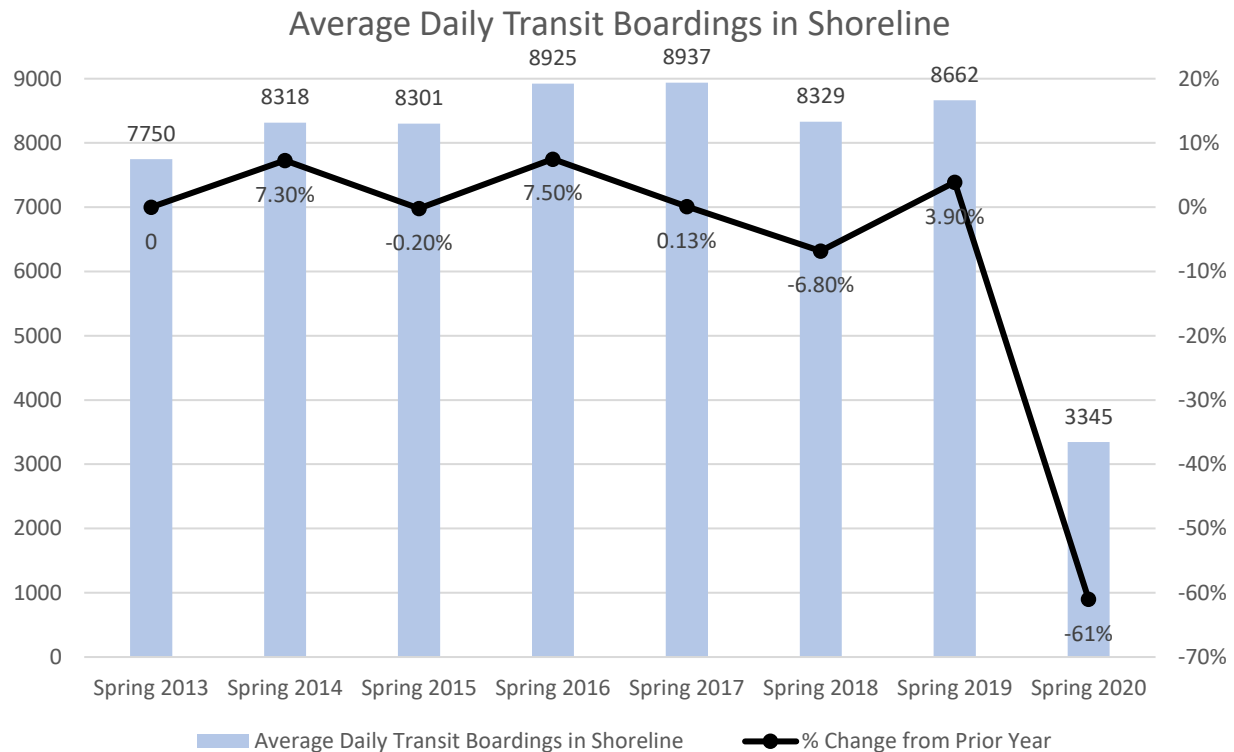


Statewide, traffic volumes on highways followed a similar trend, with the state reporting a 63% decrease at the low point, a 15% reduction in December 2020, and a 9% reduction in March 2021 compared with baseline volumes (*source: wsdot.wa.gov/publications/fulltext/graynotebook/gray-notebook-Dec20.pdf*). WSDOT has created a robust data dashboard for tracking COVID-19 impacts to travel statewide which is available to the public online at:

<https://www.wsdot.wa.gov/about/covid-19-transportation-report/>

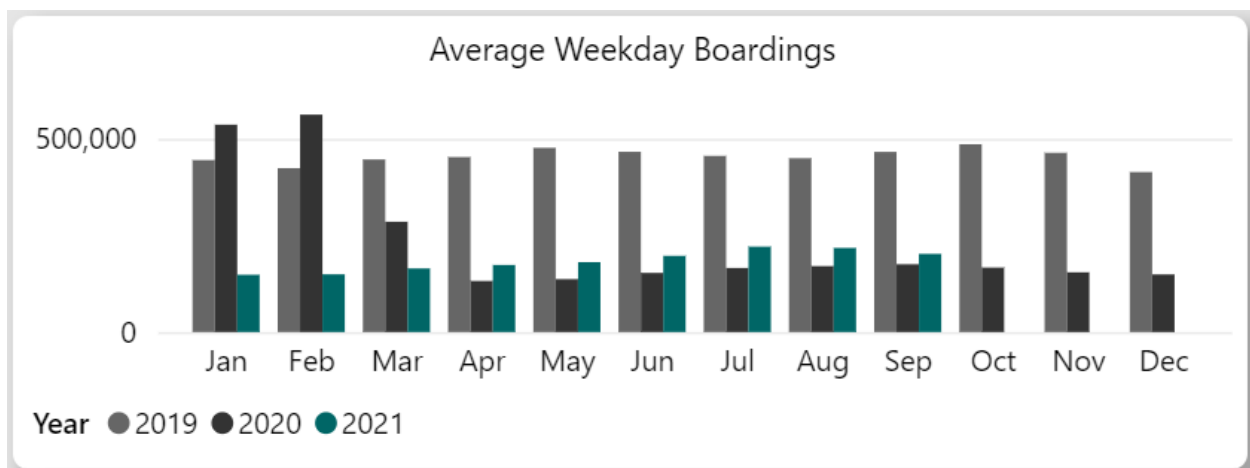
Transit Summary

King County Metro ridership fell drastically in 2020 as a result of the pandemic as shown in the following chart.



**King County Metro data only*

Partial data for 2021 indicates that ridership is slightly higher in 2021, however is still significantly lower than pre-pandemic levels as shown in the chart below.



(Source: King County Metro Rider Dashboard)

Appendix

Appendix A – 2018-2020 Total Collisions Map

Appendix B – 2018-2020 Injury Collisions Map

Appendix C – 2016-2020 Pedestrian Collisions Map

Appendix D – 2016-2020 Bicyclist Collisions Map

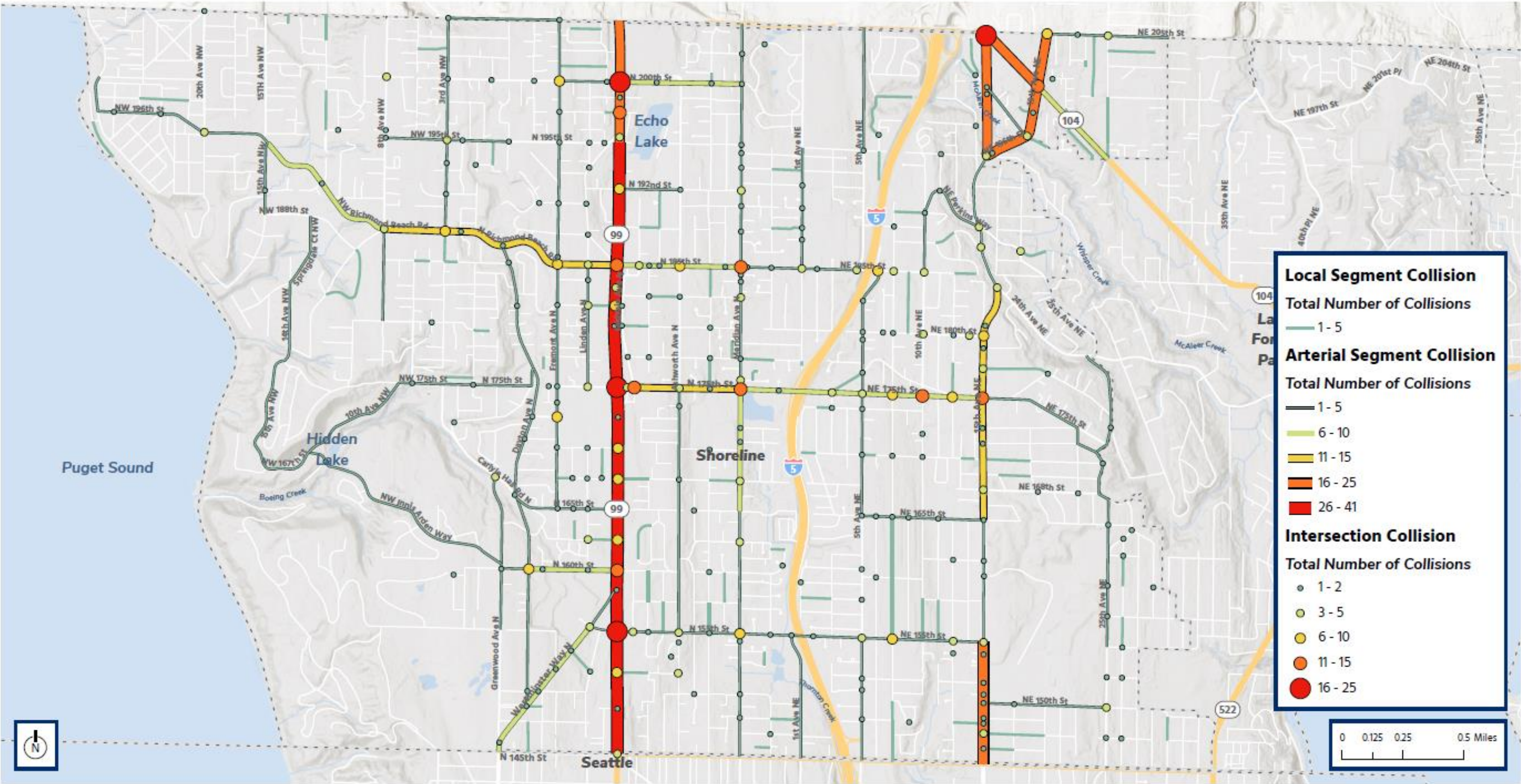
Appendix E – 2016-2020 Fatal & Serious Injury Collisions Map

Appendix F – 2020 Speed Differential Map

Appendix A - 2018-2020 Total Collisions Map

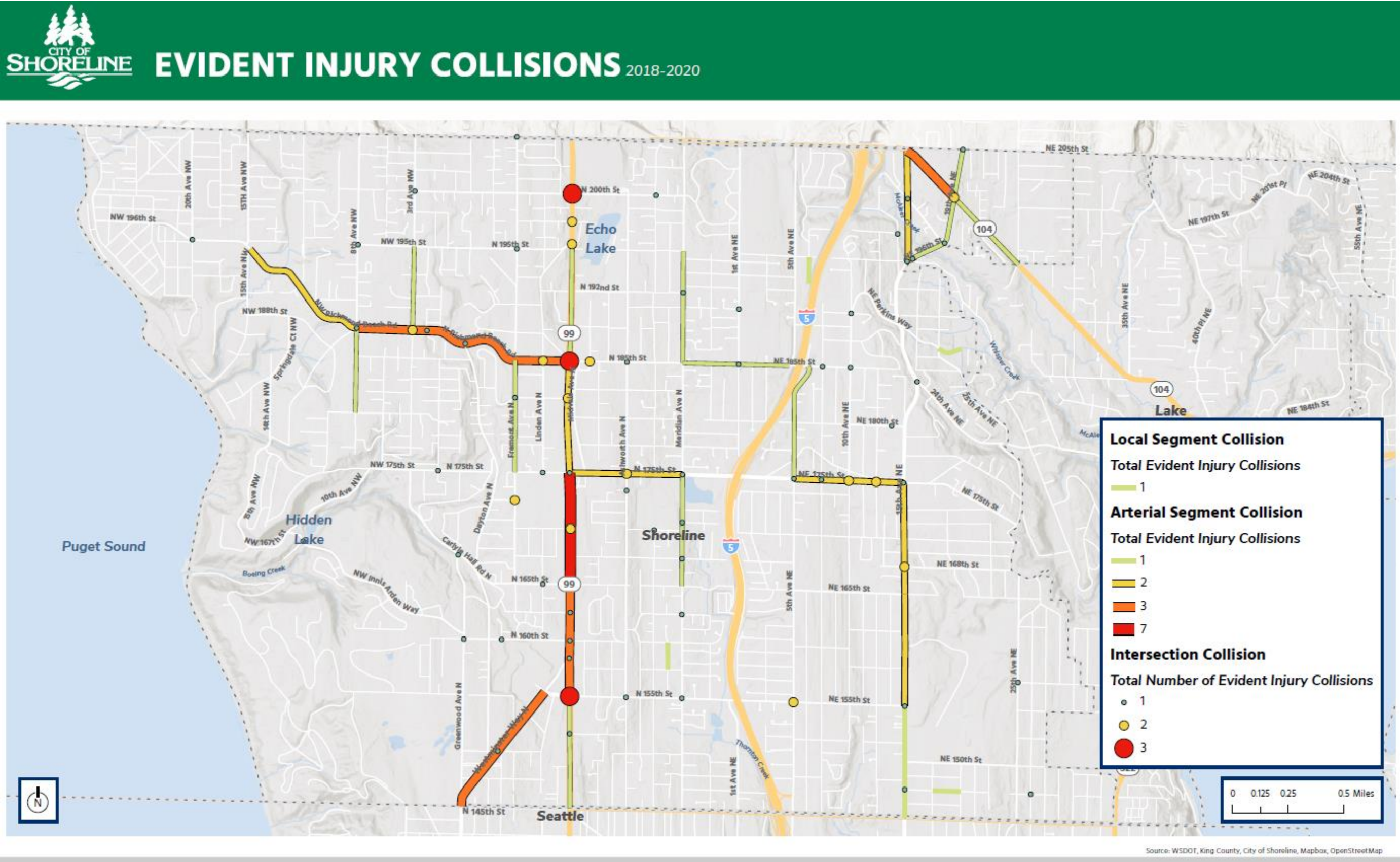


COLLISIONS 2018-2020

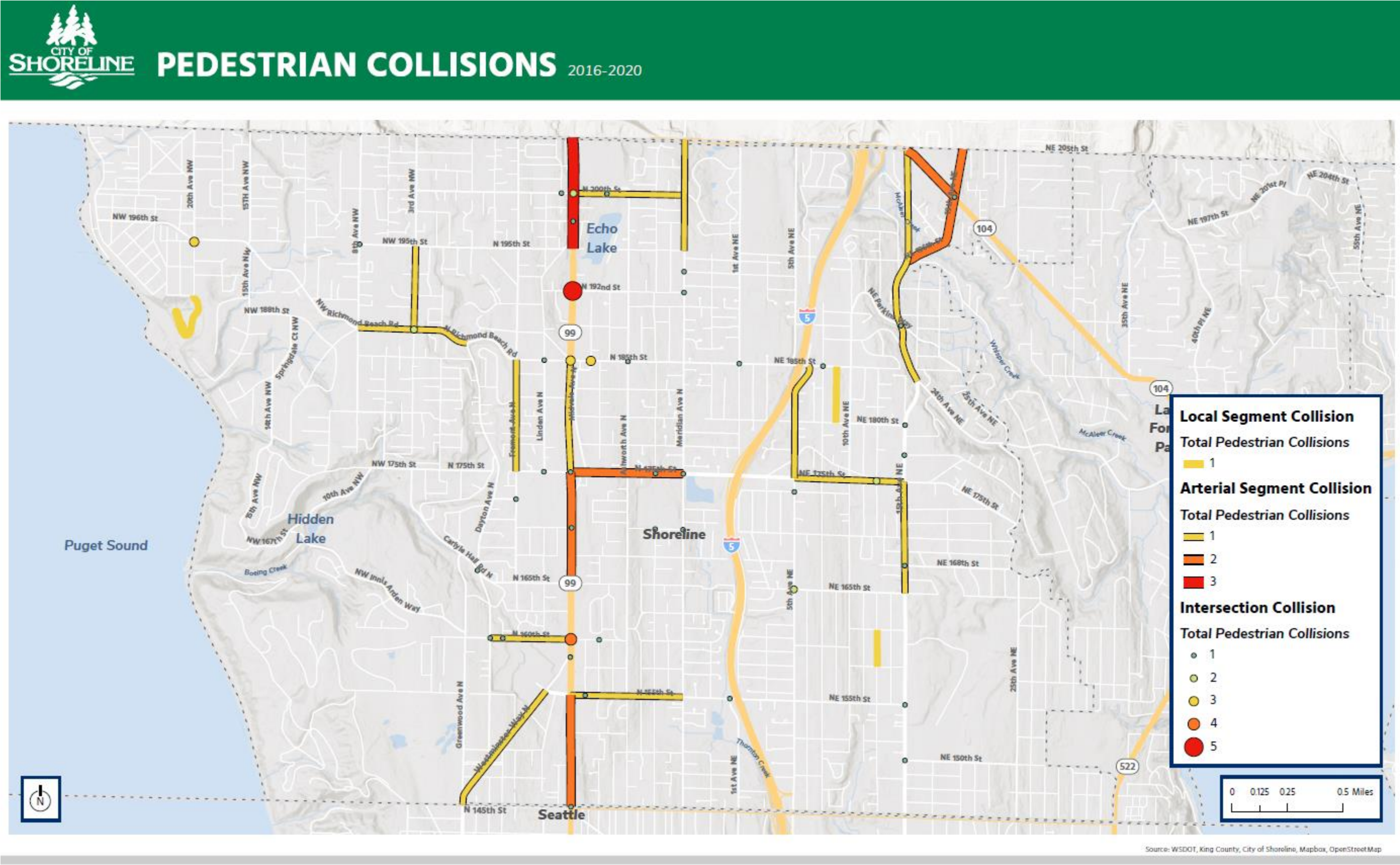


Source: WSDOT, King County, City of Shoreline, Mapbox, OpenStreetMap

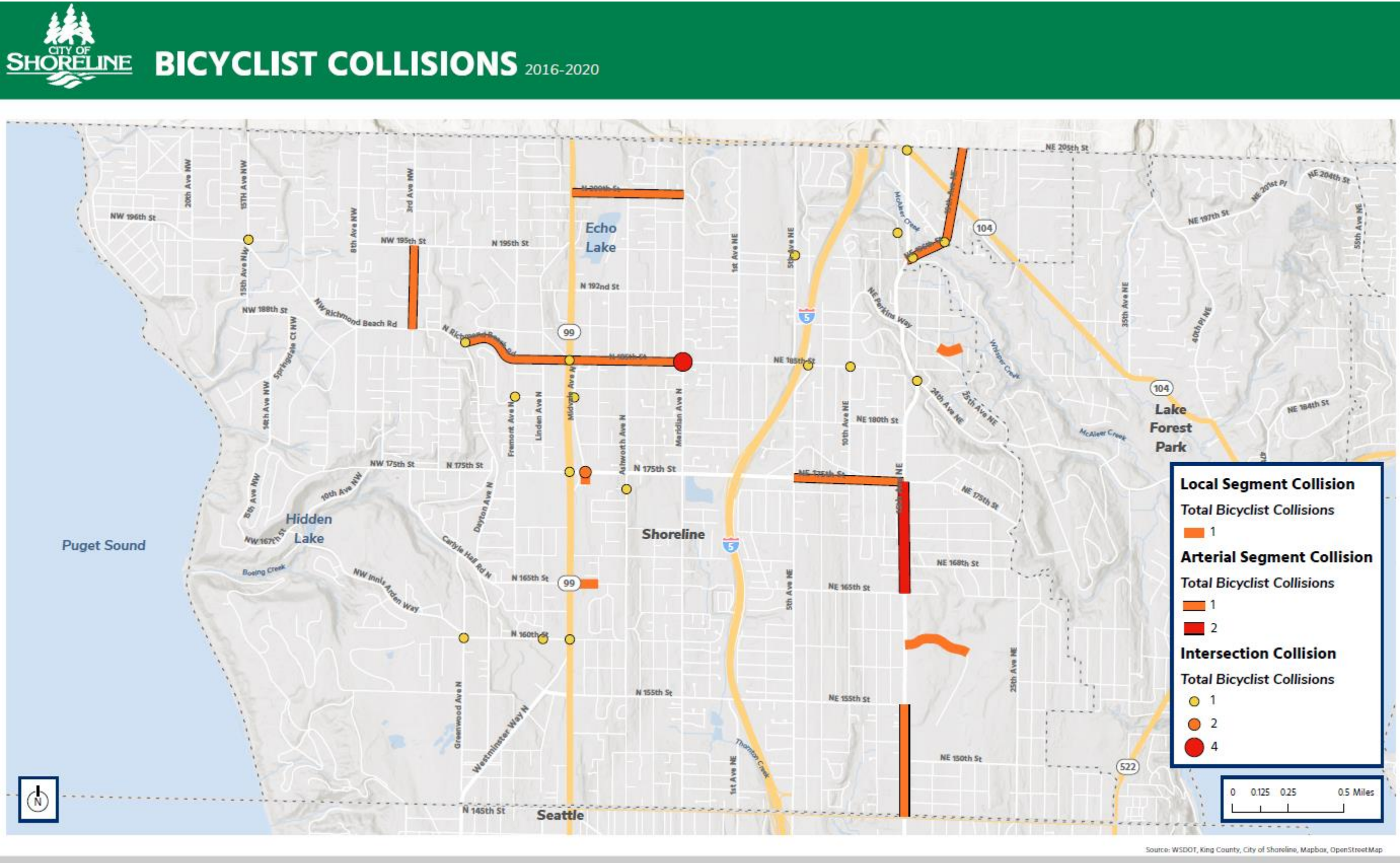
Appendix B – 2018-2020 Injury Collisions Map



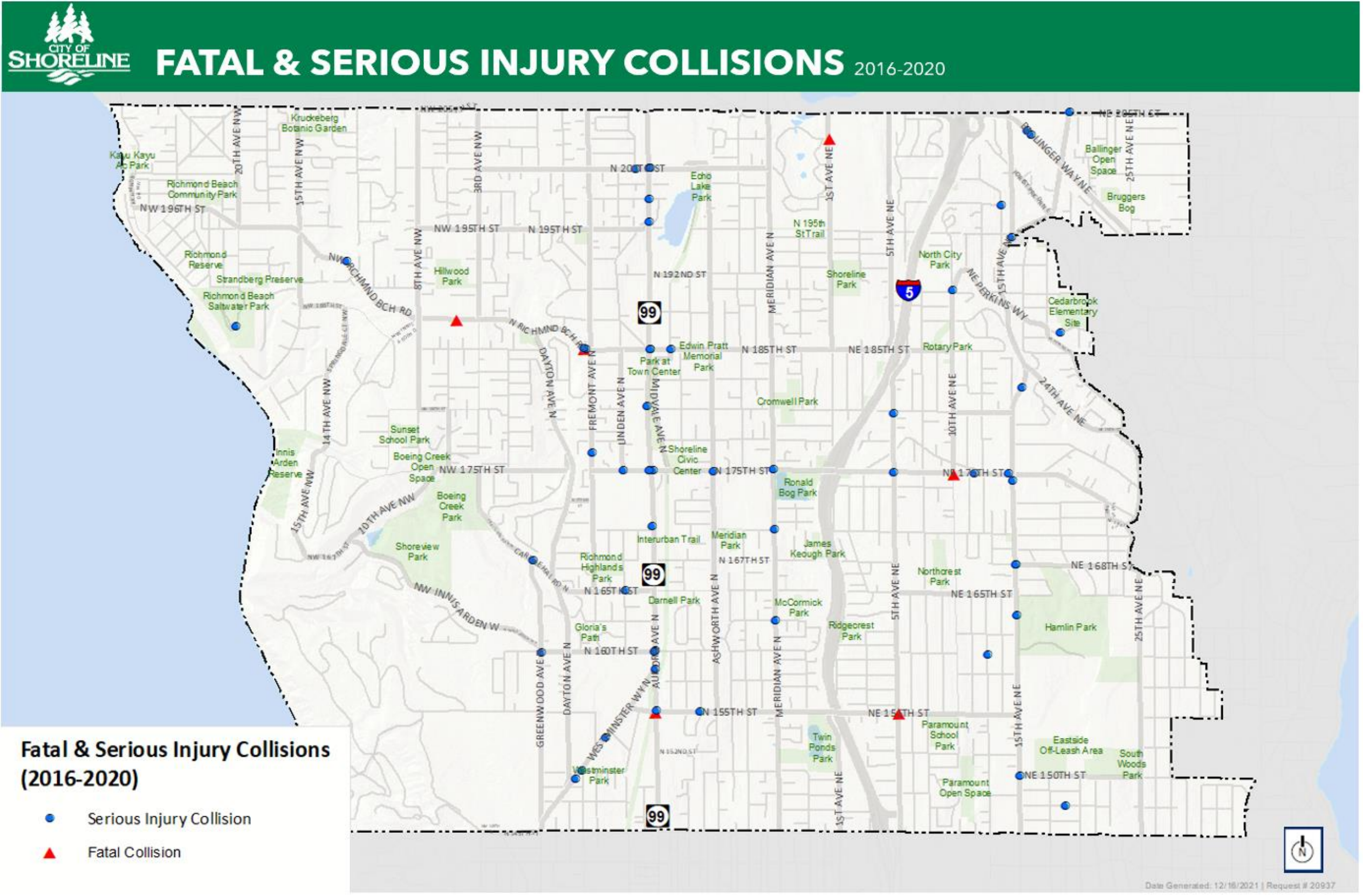
Appendix C – 2016-2020 Pedestrian Collisions Map



Appendix D – 2016-2020 Bicyclist Collisions Map



Appendix E - 2016-2020 Fatal and Serious Injury Collisions Map



Appendix F - 2020 Speed Differential Map

