

CITY COUNCIL AGENDA ITEM
CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Discussion of the 2018 Annual Traffic Report		
DEPARTMENT:	Public Works/Police		
PRESENTED BY:	Kendra Dedinsky, City Traffic Engineer Captain Mark Konoske, Shoreline Police		
ACTION:	<input type="checkbox"/> Ordinance	<input type="checkbox"/> Resolution	<input type="checkbox"/> Motion
	<input checked="" type="checkbox"/> Discussion	<input type="checkbox"/> Public Hearing	

PROBLEM/ISSUE STATEMENT:

Staff will present highlights from the 2018 Annual Traffic Report (Attachment A) at tonight's meeting. 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 High 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 and Operations 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, transit, and pedestrian and bicycle activity.

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 needs. Based on the data in this report, larger projects identified as a priority would be considered as part of the Annual 2021-2026 TIP and the 2021-2026 CIP process. Projects would be presented for Council consideration on an individual basis as part of those TIP and CIP processes. Enforcement emphasis and small projects would be implemented using existing resources. The 2020 CIP budget includes \$167,000 for the Traffic Safety Improvement Program.

RECOMMENDATION

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

Approved By: City Manager ***DT*** City Attorney ***MK***

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 2018 Annual Traffic Report is attached to this staff report as Attachment A. The report contains data including information on collisions, traffic speeds, traffic flow, transit use, and pedestrian and bicycle activity. Analysis of this data is then utilized to develop strategies and recommendations to reduce collisions and improve 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 3-4 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; and
- 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 solutions.

Key changes between the 2017 report and this year's report include:

- Expanded analysis of target zero contributing factors, specifically as they relate to intersections or pedestrians/bicyclists.
- Trendline increase or decrease context for the locations experiencing the most collisions to help staff to track progress on collision countermeasures and identify any new and noteworthy spikes in collisions at a specific location.
- Detailed Target Zero countermeasures and what Shoreline is doing to integrate key countermeasures into policies, plans and standards.

Recommendations included within the 2018 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 some engineering solutions. This program contains \$167,000 for 2020.

- Larger projects are funded separately through the CIP. These often include grant funding.
- The Traffic Services operating budget also supports some educational and minor operational upgrades, primarily related to pavement markings and signs.

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 needs. Based on the data in this report, larger projects identified as a priority would be considered as part of the Annual 2021-2026 TIP and the 2021-2026 CIP process. Projects would be presented for Council consideration on an individual basis as part of those TIP and CIP processes. Enforcement emphasis and small projects would be implemented using existing resources. The 2020 CIP budget includes \$167,000 for the Traffic Safety Improvement Program.

RECOMMENDATION

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

ATTACHMENTS

Attachment A – 2018 Annual Traffic Report



City of Shoreline
Annual Traffic Report
2018

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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

Statewide, serious and fatal injury collisions were following a steady decline from 2005 until 2014 when the pattern shifted to a markedly upward trend. Shoreline's rate of serious and fatal injury collisions has remained relatively flat despite population growth and an increase in collisions overall. Making progress toward reducing the number of serious collisions will require ongoing implementation of proven safety countermeasures consistent with Washington State's Target Zero Plan, particularly those that address pedestrian, bicyclist and intersection related collisions.

Pedestrian and Bicyclist collisions represent 50% of fatal and serious Injury collisions in Shoreline. With the trend of pedestrian collisions on the uptick, investing in nonmotorized safety treatments is an obvious area of opportunity for reducing the number of serious collisions. Bicycle collisions were the lowest in the 2010-2018 analysis period with only 4 in 2018. This may be in part due to the significant progress made over the past 3 years implementing designated bike lanes on multiple arterial streets. This is especially encouraging considering the rates of biking and walking are generally on the rise citywide (see *Pedestrian and Bicycle Count Summary*). Shoreline residents also took great strides toward improving the pedestrian environment in 2018, approving a sales tax increase to fund multiple priority sidewalks. As the population of Shoreline grows, and more people are biking and walking to new light rail stations and other destinations, the continued focus and investment in pedestrian and bicyclist safety improvements is critical.

Another key opportunity for reducing collisions is to focus on intersections; most collisions, including most injury collisions, occur at intersections. In the 2016-2018 dataset, there were a couple of noteworthy overlaps between intersection collisions and pedestrian collisions, as well as intersection collisions during hours of darkness. Specific to these, over the last two years responsive City policies, plans and standards have been completed setting a safer trajectory for the design of future private and public improvements at street intersections. These are discussed in more detail in the *Contributing Circumstance Collision Reduction Strategies* section of the report. Also notable is the fact that over 90% of injury collisions and an even greater proportion of pedestrian and bicyclist collisions occur on arterial streets (which account for only 27% of City roadway centerline miles); providing a great target for strategic improvements where high volumes of conflicting modes are mixing (see *Street Classification* section for additional context).

New this year, the collision location analysis provides some additional context for locations experiencing the most collisions; trendline increase or decrease context for 2014-2016, 2015-2017, and 2016-2018 analysis periods is now included to help staff to track progress on collision countermeasures and identify any new and noteworthy spikes in collisions at a specific location.

Data Sources

This report summarizes collision data trends based on data from 2010 through 2018, with emphasis on years 2016 through 2018. 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), phone reports, non-police investigated incidents, collisions under the threshold of \$1000, and other non-collision vehicle incident reports.

Collision data is obtained from the Washington State Department of Transportation (WSDOT). Data from WSDOT includes collisions investigated by other agencies such as Washington State Patrol. No citizen reports are included as WSDOT stopped providing this data to local jurisdictions as of January 1, 2009. The data contained in this report is based on reportable collisions only, as defined in the following section. For consistency, data reported within this report begins in 2010 which is the first available year for all data with geocoded locations, and excluding citizen reported collisions.

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 and pedestrian and bicycle data is from WSDOT's Bicycle and Pedestrian Documentation Project.

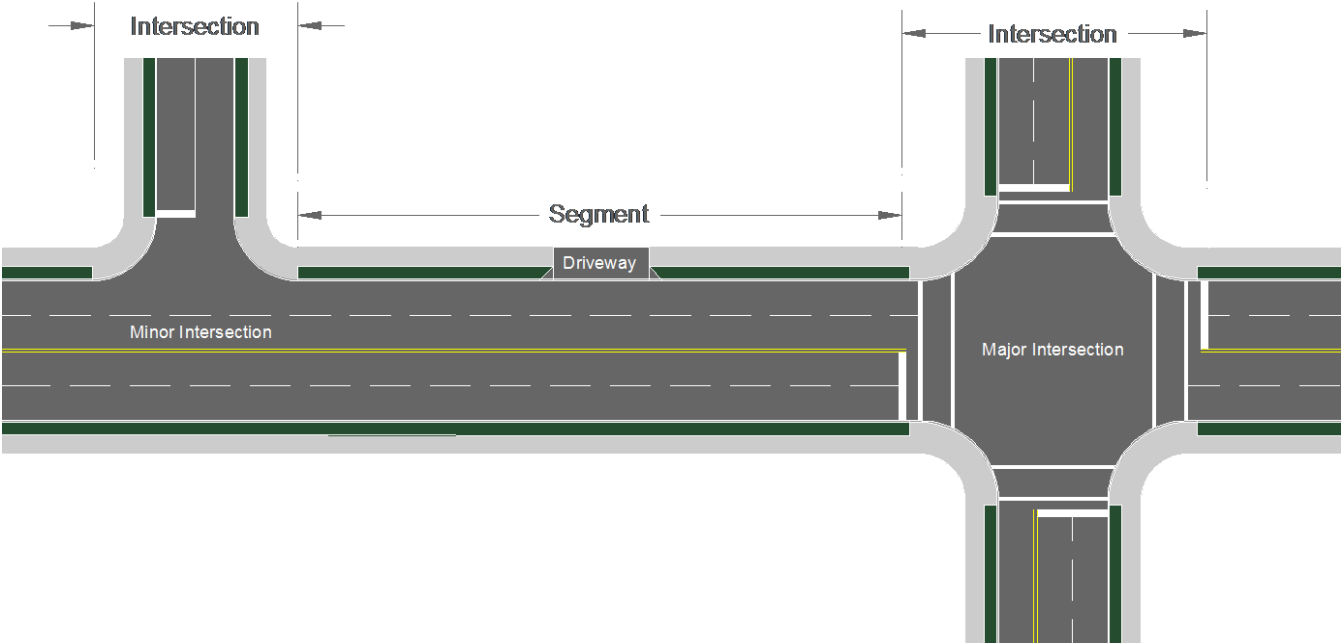
Population data was obtained from the United States Census Bureau.

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.
85 th Percentile Speed	The speed at which 85% of traffic is traveling at or below; a traffic engineering standard 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. http://www.targetzero.com/</p>

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



Collision Summary

The following sections summarize collision data from public streets within the City of Shoreline from 2010 through 2018 with a focus on 2016-2018 collision data.

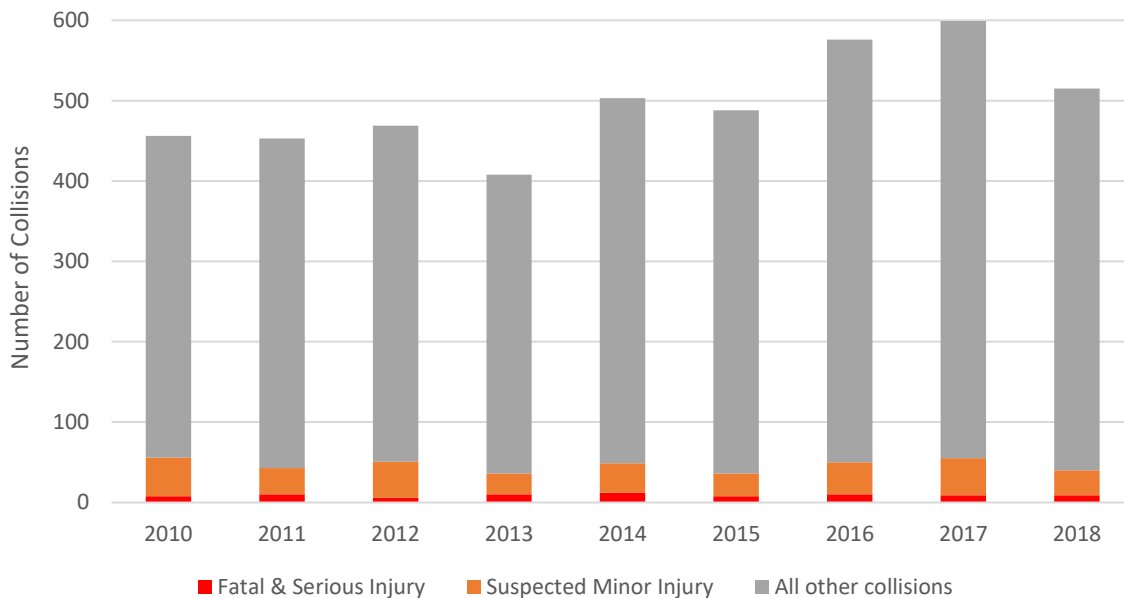
Total Collisions

There were 515 collisions reported on City of Shoreline streets in 2018. Below is a summary of collisions from 2010 through 2018.

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fatal	2	1	1	1	1	1	1	0	1
Suspected Serious Injury	6	9	5	9	11	7	9	9	8
Suspected Minor Injury	48	33	45	26	37	28	40	46	31
Possible Injury	103	111	108	104	121	126	140	136	105
No Apparent Injury	286	290	302	264	318	317	374	399	355
Unknown	11	9	8	4	15	9	12	9	15
Total	456	453	469	408	503	488	576	599	515

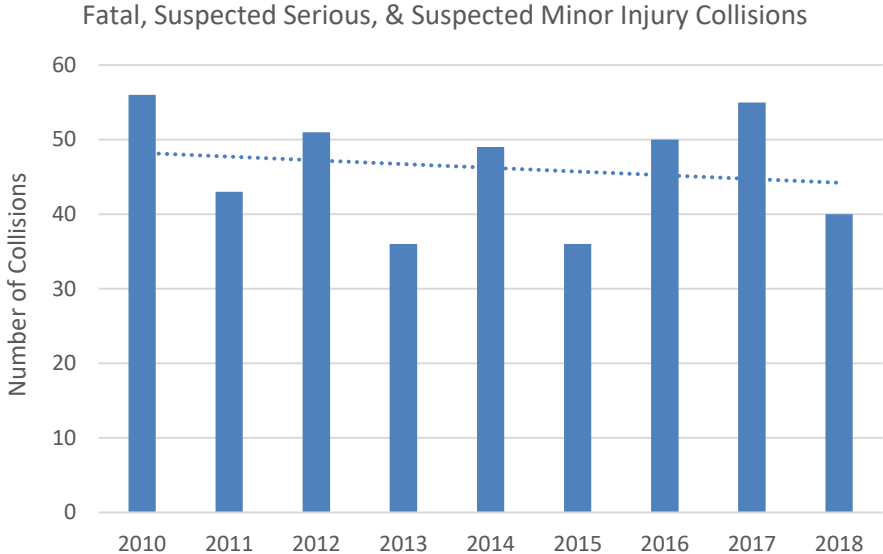
The total number of collisions in 2018 is down 14% from 2017 with the 9-year collision trend line resulting in an average increase of about 16 collisions per year. The number of Suspected Minor Injury, Suspected Serious Injury, and Fatal collisions is trending slightly downward, generally accounting for about 8% of total collisions in 2018. Suspected Serious and Fatal Injury collisions alone account for under 2%. The following *Injury Collisions* section provides more detailed analysis of injury collision trends.

Total & Injury Collisions by Year

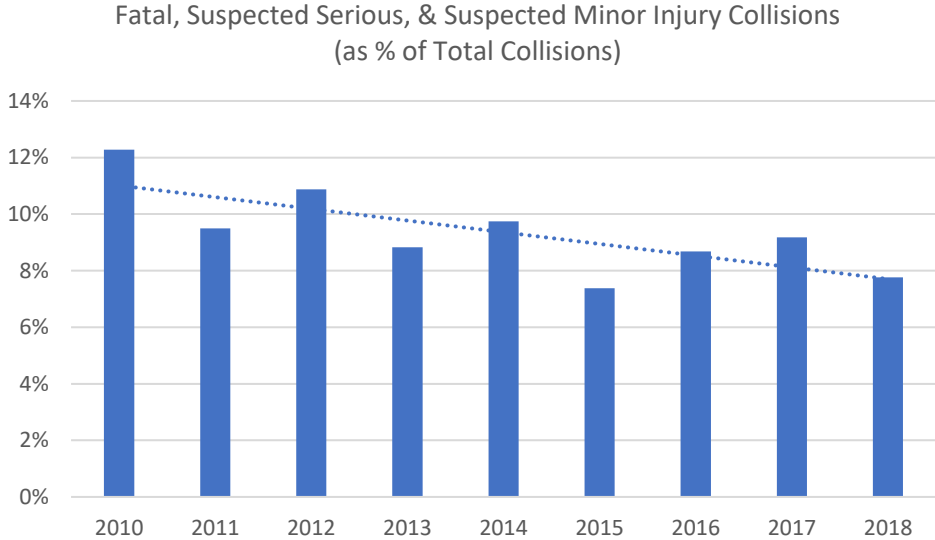


Injury Collisions

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 relatively flat, decreasing by .5 collisions per year on average.

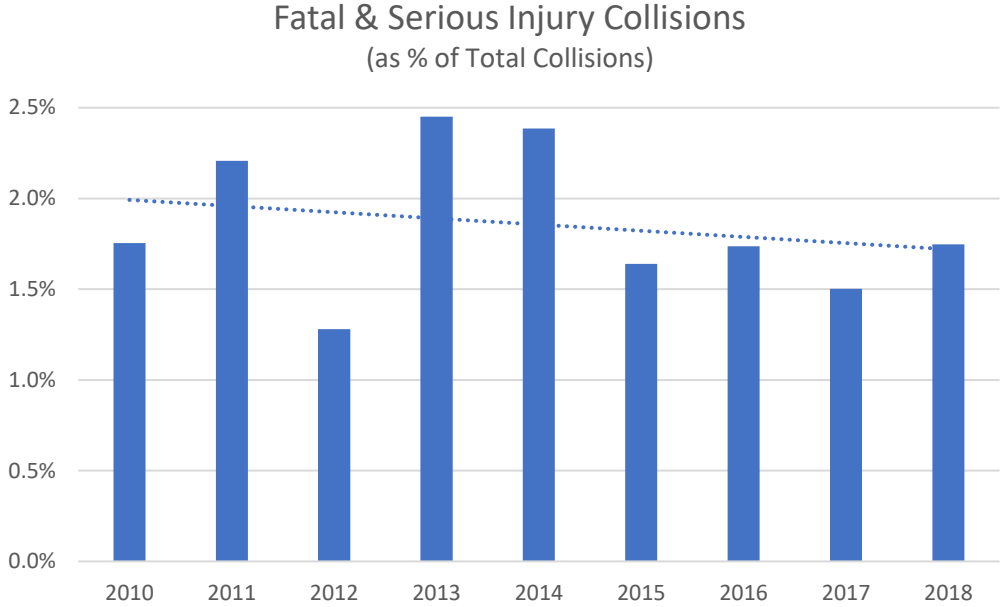


Following a slightly steeper decline is the injury collision rate as a percent of total collisions; although collisions in general are on the rise, the percent that result in injury continues to fall.



Suspected Serious & Fatal Injury Collisions

The next chart shows Suspected Serious & Fatal Injury collisions by year. The number of these collisions has remained relatively flat at an average of about 9 per year since 2010 even though the overall rate of collision is rising, comprising a slightly lower percentage of total collisions year by year.

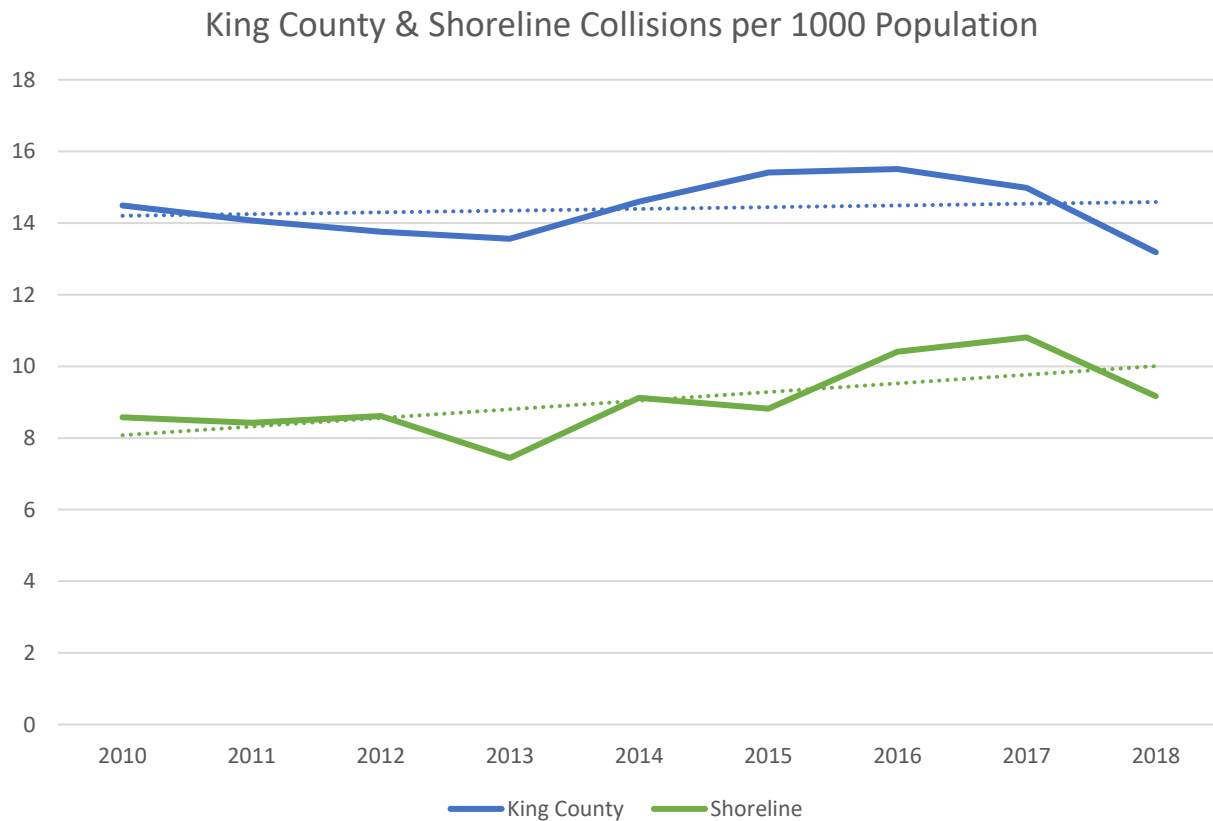


Regional Comparison

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

Total Collision Regional Comparison

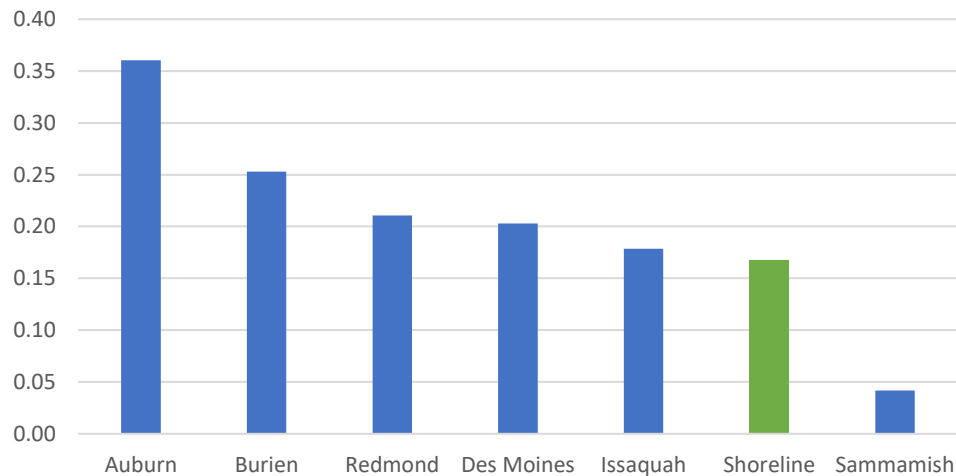
To better understand how the uptick in collisions in Shoreline relates to the broader region, a comparison to King County collision data was prepared. As shown in the chart below, the rate of total collisions in King County as compared to population estimates for each year has been rising slightly since 2010, though at a slightly slower rate compared to Shoreline. The King County data represented on this chart below excludes Shoreline population and collision data.



Suspected Serious & Fatal Injury Collision Regional Comparison

Data was also obtained for cities within a population range of 25,000 +/- of Shoreline within King County. The rates of Serious and Fatal Injury Collision per thousand population were compared for the 2016-2018 analysis period. As shown in the next chart, Shoreline’s rate of Fatal and Serious Injury Collisions is relatively low in comparison to King County cities of similar size.

Fatal & Serious Injury Collisions Per 1000 Population
(2016-2018 Average)



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

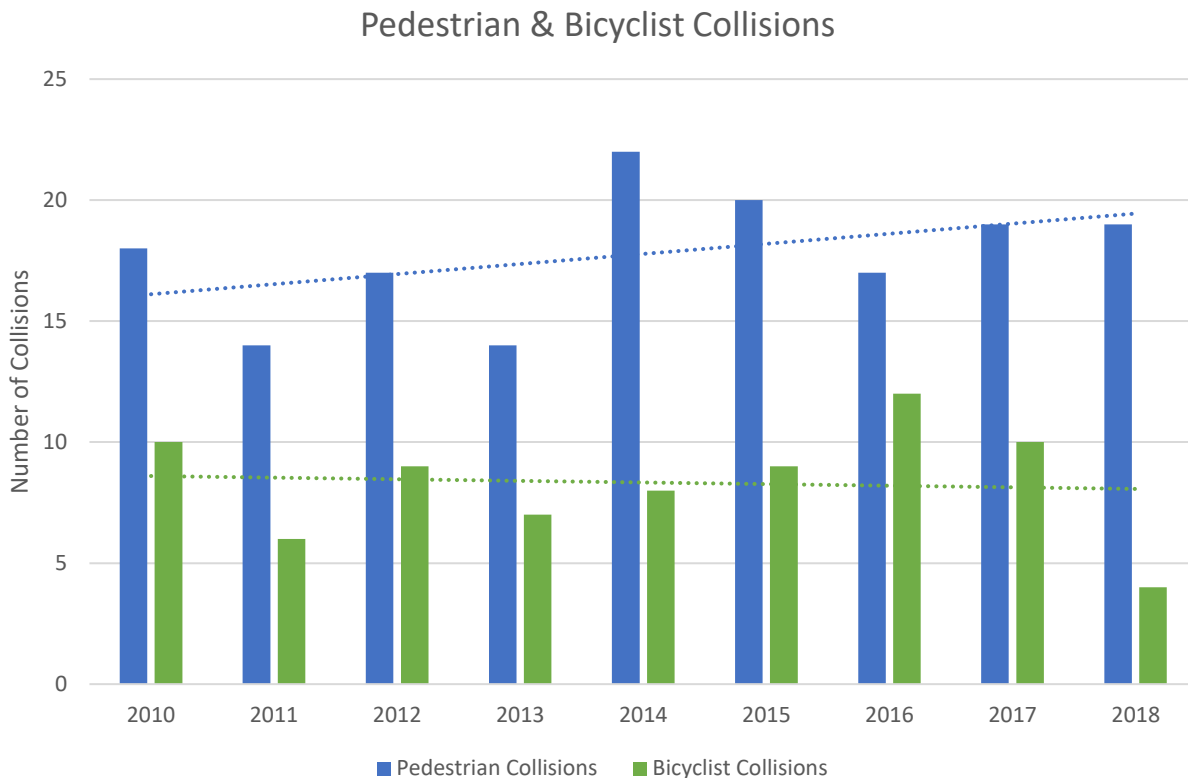
Below is a summary of societal costs for collisions in Shoreline from 2016 through 2018. The overall societal cost is down from 2017, generally due to less injury collisions.

	2016	2017	2018
Fatal	\$2,000,000	\$0	\$2,000,000
Suspected Serious Injury	\$9,000,000	\$9,000,000	\$8,000,000
Suspected Minor Injury	\$4,000,000	\$4,600,000	\$3,100,000
Possible Injury	\$9,800,000	\$9,520,000	\$7,350,000
No Apparent Injury	\$3,740,000	\$3,990,000	\$3,550,000
Total Societal Cost	\$28,540,000	\$27,110,000	\$24,000,000

In averaging the most recent three years, collisions where injury occurred (including Fatal, Suspected Serious and Suspected Minor Injury) represent half the societal cost but less than 8% of total collisions.

Pedestrian and Bicycle Collisions

Pedestrian versus motor vehicle collisions for 2018 remain level with 2017 numbers at 19, with a continued upward trend since 2010. The number of bicyclist versus motor vehicle collisions is down fairly significantly in comparison to 2017 numbers, setting a new declining trend. In 2018, pedestrian deaths in Washington State reached their highest number in more than 30 years with 109 total fatalities statewide. The primary motor vehicle contributing circumstance listed for pedestrian collisions has consistently been “Failure to Yield Right of Way to Pedestrian”. It is also worth noting that 68% of bicycle collisions between 2016-2018 occurred at locations without a dedicated bike facility (i.e. bike lane or trail). Additional information regarding pedestrian and bicycle collision locations is provided in the *Collision Location Analysis* section of the report, and in Appendices C & D. Additional analysis regarding pedestrian collisions and risk factors are discussed later in the *Target Zero Emphasis Priorities* section of this report.

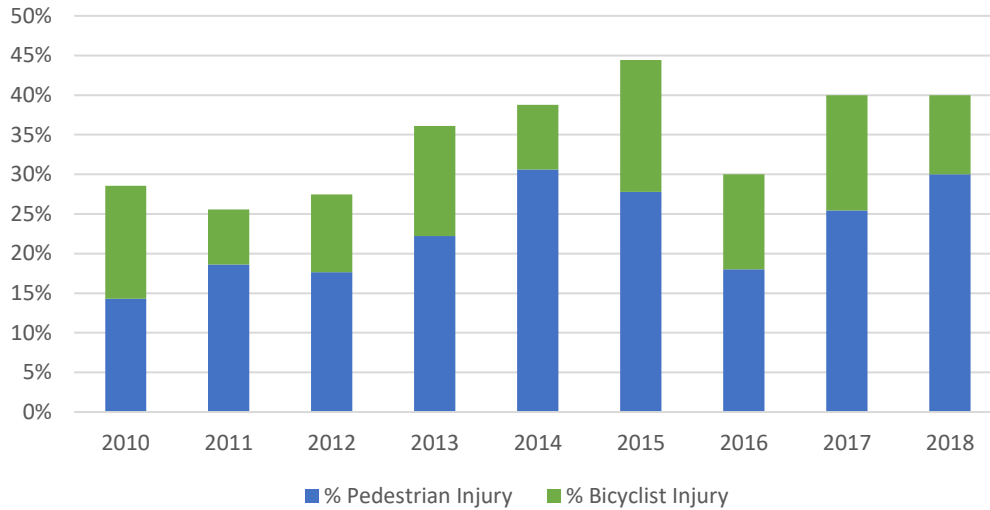


	Pedestrian Collisions	Bicyclist Collisions	Total Nonmotorized
2010	18	10	28
2011	14	6	20
2012	17	9	26
2013	14	7	21
2014	22	8	30
2015	20	9	29

2016	17	12	29
2017	19	10	29
2018	19	4	23

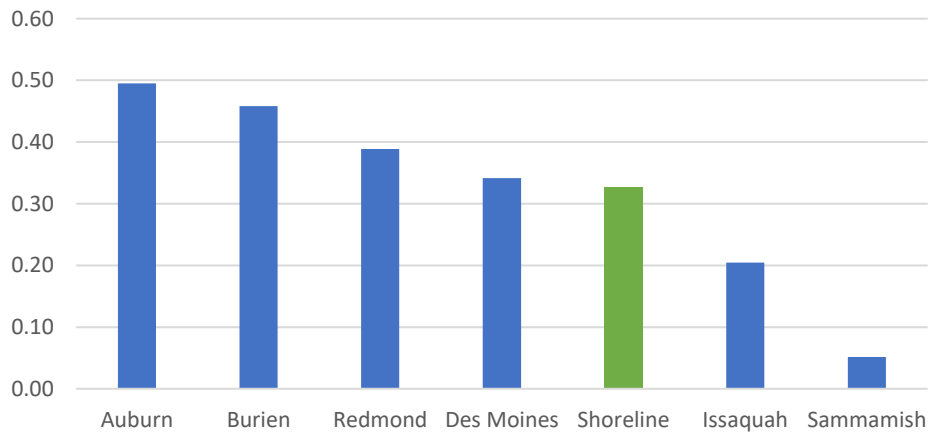
Together, pedestrian and bicyclist injury collisions (including minor injury) accounted for 40% of injury collisions in 2018; remaining level with 2017 proportions.

Ped & Bike Injury Collisions
(as % of Total Injury Collisions)



The rate of pedestrian collisions in Shoreline is relatively low in comparison to similarly sized cities (populations within +/- 25,000 of Shoreline) in King County as shown in the chart below.

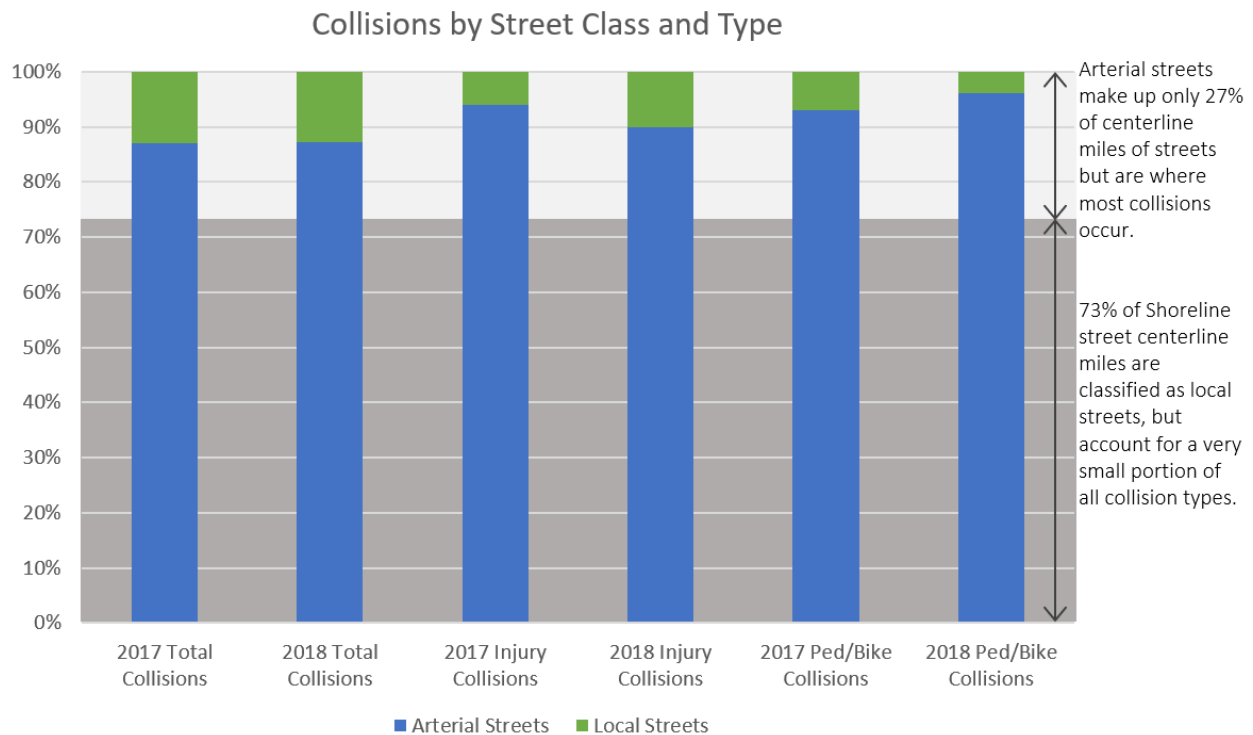
Pedestrian Collisions per 1000 Population
(2016-2018 Average)



Collisions by Street Classification

According to the Washington State Target Zero Update, almost all the (statewide) bicyclist fatal crashes (92%) and most pedestrian fatal crashes (85%) occurred on roads with a posted speed greater than 25 mph. In Shoreline, all local streets are 25 mph. In addition, they carry significantly less volume than arterial streets, representing less opportunity for collisions to occur.

Arterials in Shoreline account for only 27% of the total roadway centerline miles, however in evaluating 2017/2018 collision data nearly 90% of all collisions and greater than 90% of injury collisions occur on arterials. Even more notable is the occurrence of pedestrian or bicycle collisions on arterials 95% of the time.



The City’s Capital Improvement Plan (CIP) has continued annual funding for the Traffic Safety program, with an annual allocation of approximately \$160,000 per year. The majority of this funding is used for education, outreach and staff time on Neighborhood Traffic Safety Program (NTSP) efforts; a program responsive to resident concerns about speeding and cut through traffic on local streets. Over the past 5 years, dozens of local streets have been evaluated through this program, but very few have met thresholds for physical traffic calming devices based on various criteria including measured speeds, traffic volumes, collision history, proximity to parks/schools, and other factors. As such, most of the Traffic Safety CIP funding is used working with the neighborhoods on education-related traffic calming techniques and the staff time associated with these efforts which can leave residents seeking physical devices somewhat frustrated by the process.

Historically, any local street with enough resident interest has been able to utilize the NTSP program and traffic calming continues to be a high demand service. As a result of the high demand on the NTSP

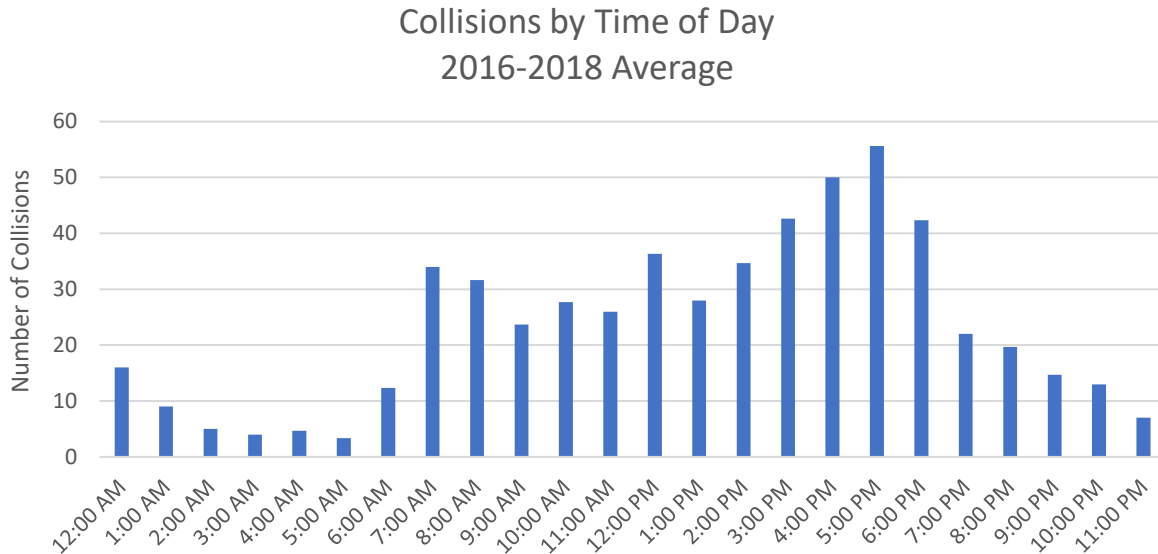
program, there is limited funding and staff resource available to follow up on data-driven collision mitigation actions identified by the Annual Traffic Report. Collision data and collision outcomes based on speed very clearly show that the most benefit can be realized by focusing primarily on higher speed and volume arterial roadways. Given this, the current allocation of City funding primarily to local streets represents a disparity in cost versus benefit, and an inequity to residents of arterials streets.

Responsive to these issues, potential changes to the NTSP program are currently being evaluated and will be discussed with Council in late 2019.

Other Collision Factors

Month and Time of Day

November is the month with the highest overall and injury collisions, consistent with the statewide trend. The fewest collisions occur in the month of August. Collisions in Shoreline most often occur during the PM peak hour of 5 to 6 PM. Injury collisions most often occurred during the PM peak as well.



Light

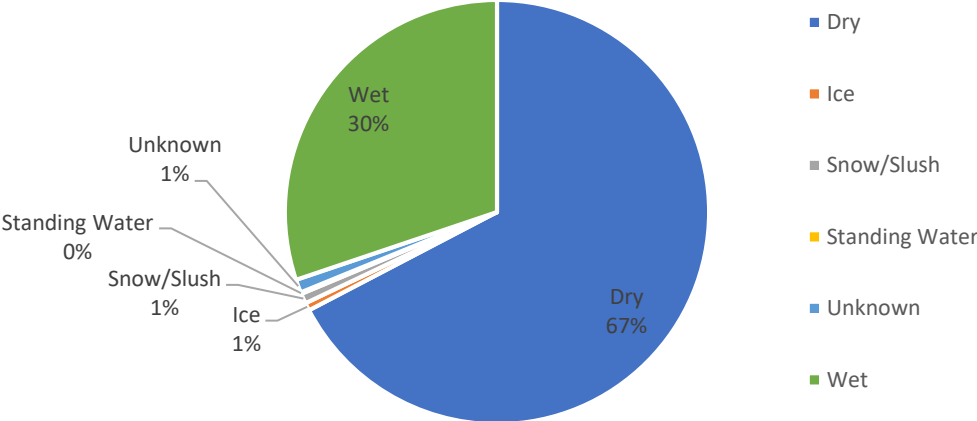
There are seven categories of light conditions. Most collisions occur during daylight hours. Injury collisions follow a similar trend. Last year’s analysis of 2015-2018 data showed that pedestrian collisions were occurring at a higher rate during hours of darkness with a 20% increase in collisions during hours of darkness in comparison to general collisions, however this year’s analysis show a less substantial difference of 9%. As discussed in the *Target Zero Emphasis Priorities* section, there is a noteworthy spike in Fatal and Serious Injury collisions, with 36% occurring during hours of darkness.

	2016-2018 Collisions	2016-2018 Injury Collisions	2016-2018 Pedestrian Collisions
Dark-No Street Lights	3%	2%	7%
Dark-Street Lights Off	1%	1%	0%
Dark-Street Lights On	21%	25%	27%
Dawn	2%	1%	4%
Daylight	69%	66%	56%
Dusk	3%	5%	5%
Unknown	1%	0%	0%

Surface Condition

There are four categories of surface conditions for pavement. From 2016-2018, 67% of collisions occur on dry pavement. Injury collisions follow a similar trend.

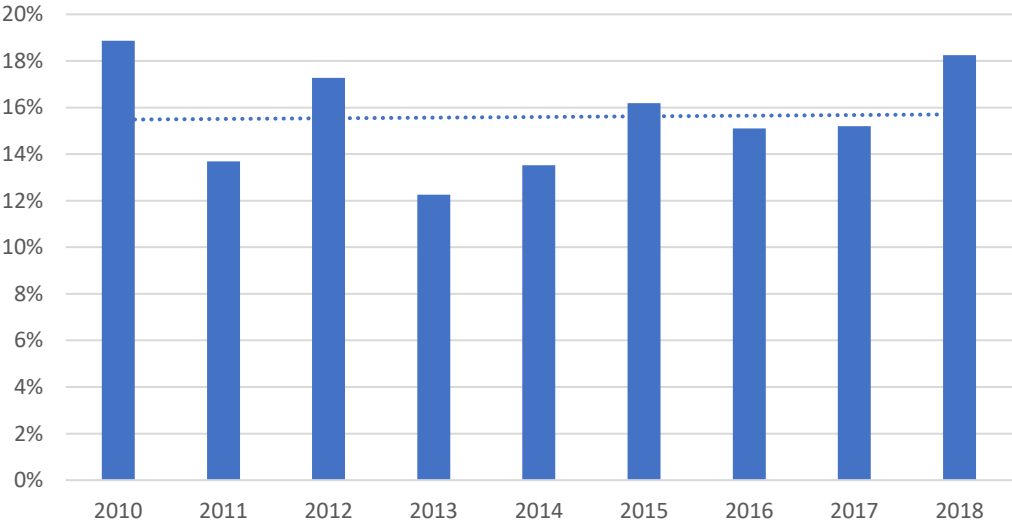
Collisions by Surface Condition (2016-2018)



Hit and Run

The number of reported hit and run collisions remains relatively stable, accounting for about 18% of collisions.

Hit & Run Collisions (as % of Total Collisions)



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 Target Zero priorities consistent with the 2019 Target Zero Draft Plan Update, 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

The chart below represents the City's significant priority areas as they relate to statewide Target Zero priorities; displaying the percent each category accounts for Total, Injury, and Serious/Fatal collisions over a 3-year average, listed below in the order of highest percent contributing to Serious and Fatal Injury collisions. The first two categories; Intersections and Pedestrians & Bicyclists provide a target for focusing mitigation resources and are discussed more in the following sections. In addition, Distraction, Impairment, and Young Drivers 16-25 are discussed in more detail.

Target Zero Emphasis Priority	TZ Priority % of Total Collisions 2016-2018 Average	TZ Priority % of Serious, Fatal, & Minor Injury Collisions 2016-2018 Average	TZ Priority % of Serious & Fatal Injury Collisions 2016-2018 Average
Intersection	48%	54%	64%
Pedestrians & Bicyclists	5%	36%	50%
Young Drivers 16-25	33%	28%	25%
Distraction	33%	32%	21%
Older Drivers 70+	14%	19%	18%
Impairment	5%	9%	14%
Motorcyclists	1%	7%	14%
Lane Departure	18%	18%	11%
Speeding	7%	9%	11%
Unrestrained Occupant	1%	3%	7%
Heavy Truck	2%	3%	4%

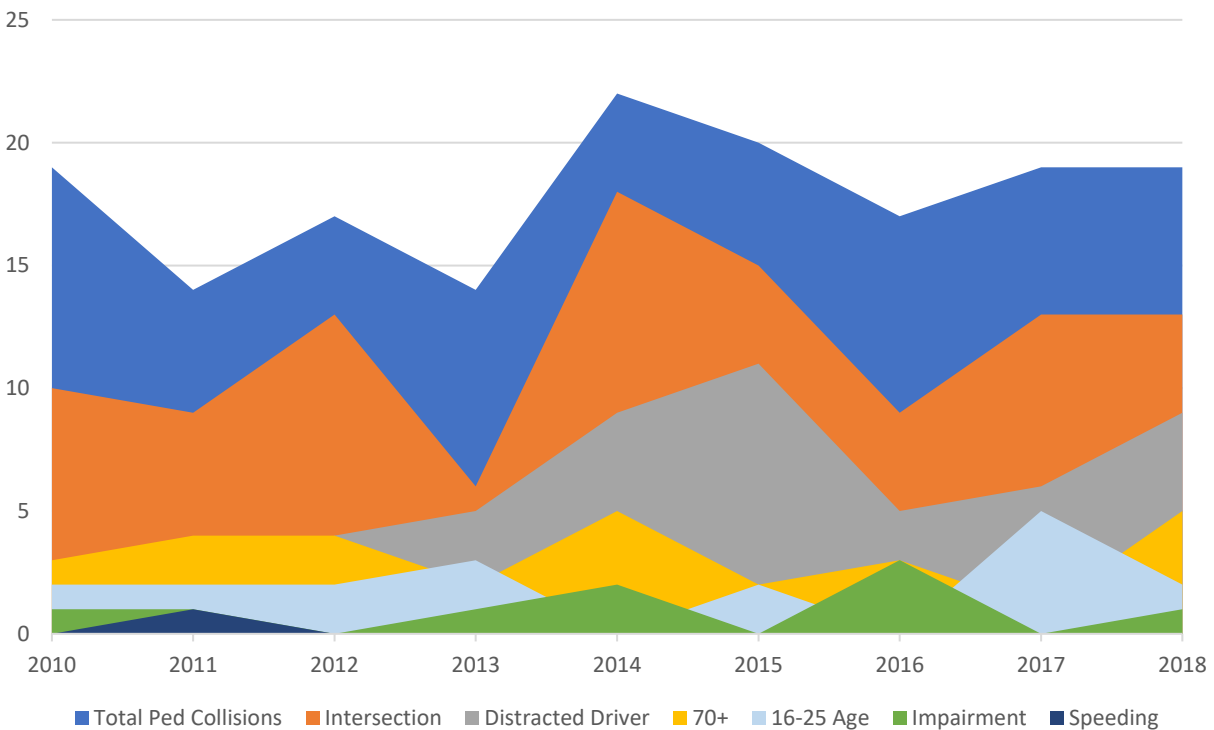
Intersections

2016 through 2018 collision analysis showed that 64% of Serious and Fatal collisions occurred at intersections. The State Target Zero Plan notes that more than one third of all intersection related Fatal or Serious Injury collisions happen at night, which is higher than typical hour of darkness collision rates (less than 20%). In Shoreline, this disparity is even larger, with 36% of 2016-2018 Fatal and Serious Injury collisions occurring during hours of darkness while only 25% of total collisions occur during hours of darkness. This represents an area for potential improvement, especially on a targeted, location-specific basis. More detailed information regarding intersection locations experiencing the highest number of collisions is provided in the Collision Location Analysis section.

Pedestrians & Bicyclists

General Pedestrian and Bicycle Collision trends were provided in an earlier section of this report. The analysis below provides more information regarding how pedestrian collisions overlap with other risk factors. As shown in the chart, the most common overlap is between pedestrian collisions at intersections, followed by distracted driving. Notably, speeding was only indicated as a factor in 1 collision out of a total of 161 in this 9-year period. Last, while drivers over 70 years in age represent only 14% of total collisions citywide, they accounted for 32% of pedestrian collisions in 2018, representing an opportunity for education-related collision reduction strategies.

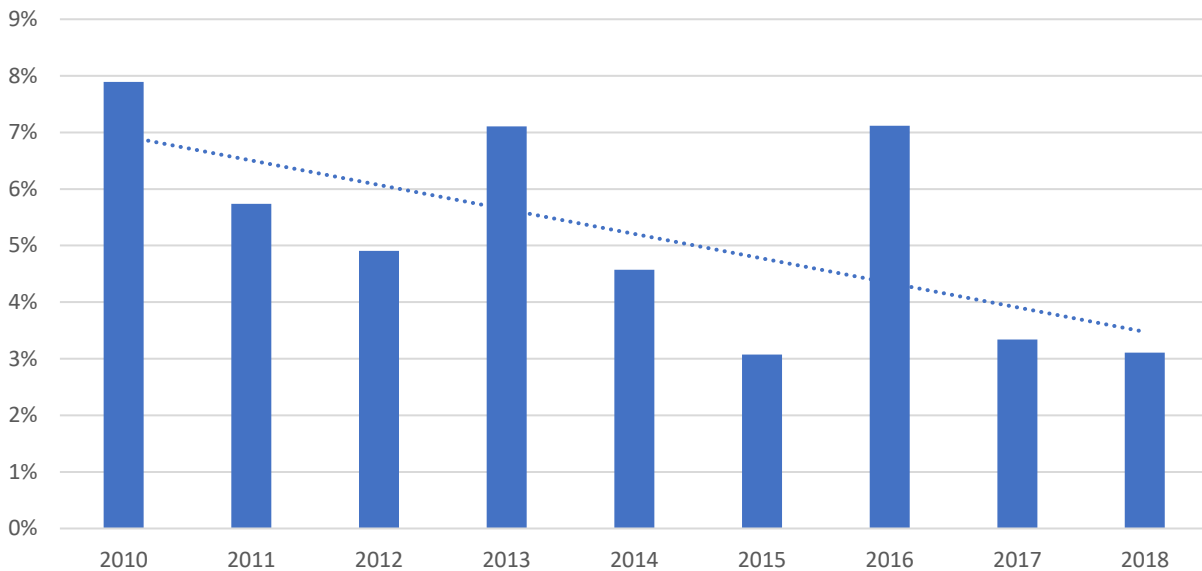
Risk Factors as Portion of Pedestrian Collisions by Year



Impairment

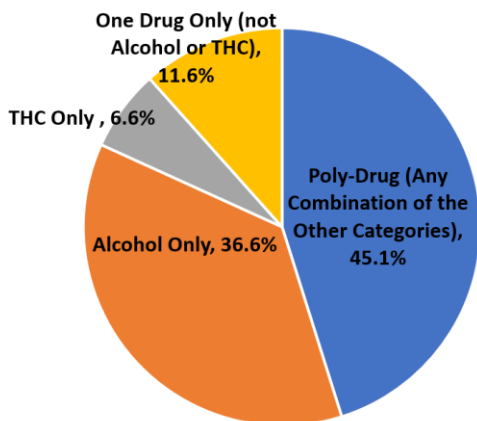
The percent of total collisions in Shoreline involving impairment continues to decline steadily, with 16 impairment related collisions in 2018. Continued efforts on educational and enforcement related tactics remain important to retain this trend. It is also important to note that impairment related crashes are thought to be underreported; according to the State Target Zero Plan, for Serious Injury crashes, law enforcement officers don't always interpret events as rising to the level of vehicular assault, a designation which allows for a blood draw.

Impairment Related Collisions
(as % of Total Collisions)



Statewide impairment related fatalities have risen by 26.2%, however serious injuries linked to impaired driving or walking have dropped 11%. The State Target Zero Plan Update states, "Poly-drug use – combining two or more drugs, or one or more drugs mixed with alcohol – is becoming more prevalent in fatal crashes. In Washington, the most common poly-drug in fatal crashes is alcohol combined with marijuana. During the last five years, poly-drug impaired drivers involved in fatal crashes have increased 15% per year."

Type of Impaired Driver Involved in Fatal Crashes
Washington State (2008 - 2017)



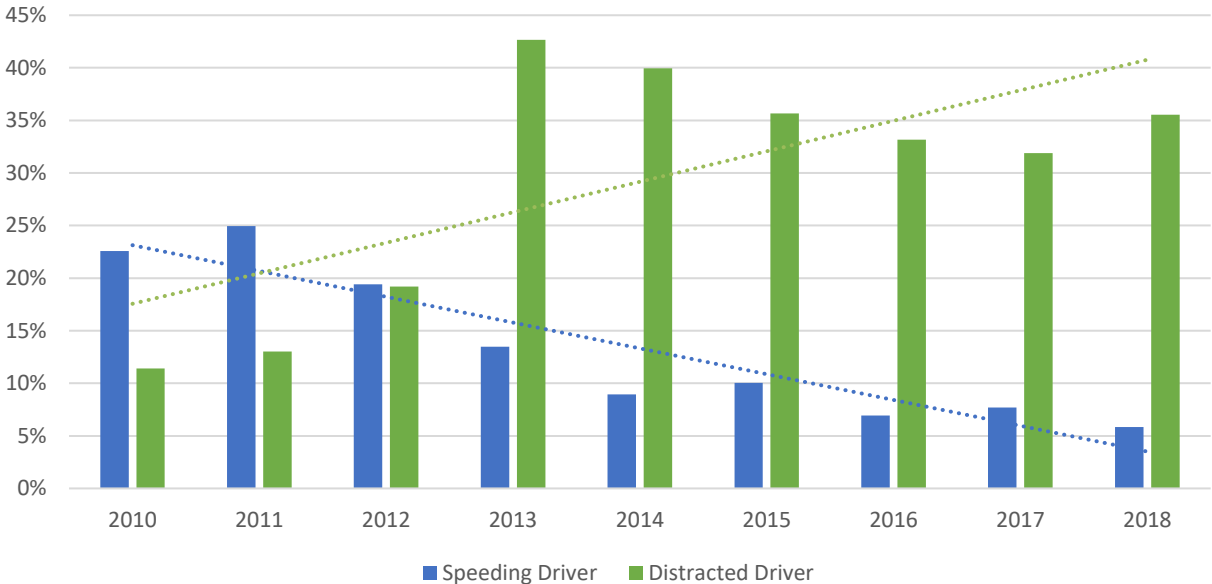
Source: Washington State Target Zero Plan - 2019 Draft Update

It should be noted that impairment data includes pedestrians and bicyclists who are impaired.

Distracted Driving

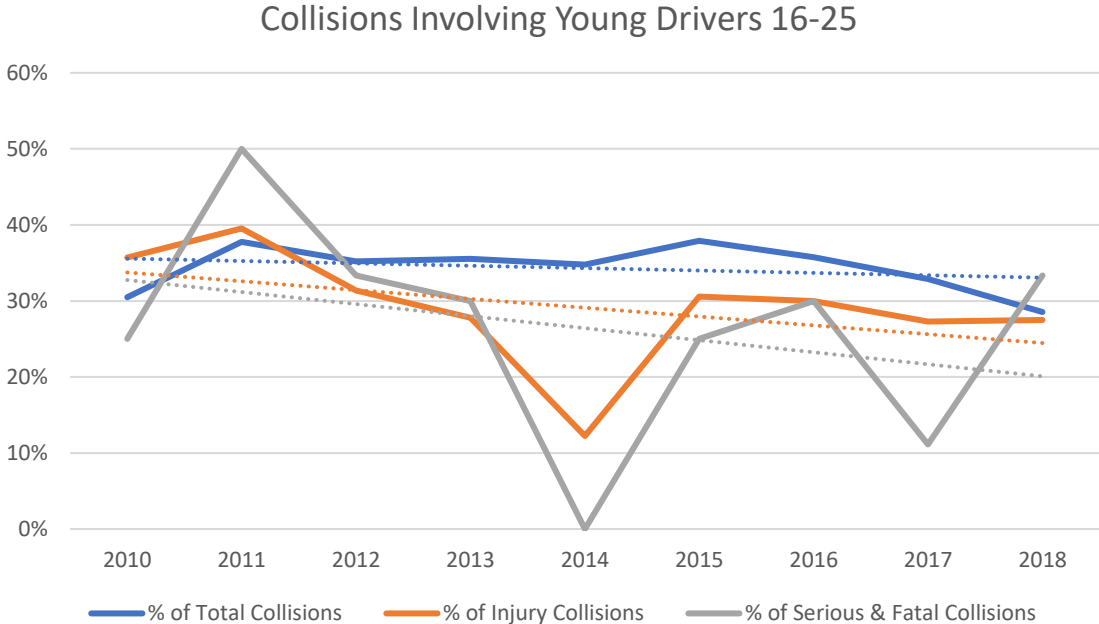
Shoreline’s distribution of distracted driving related collisions is 36% in 2018, an increase in comparison to the preceding 2 years. Statewide distracted driving accounts for 30% of Serious Injury and Fatal collisions. It is clear that distracted driving is deserving of ongoing education and enforcement emphases as one of the most significant factors in the occurrence and outcome of collisions. The chart below displays the trend of distracted driving related collisions versus speeding related collisions as emphasis enforcement efforts are generally conducted for both.

Distracted Driving & Speeding Related Collisions by Year
(as % of Total Collisions)



Young Drivers 16-25

The following chart displays that the proportion of all types of collisions involving younger drivers is typically on the decline, particularly for injury collisions. The occurrence of collisions involving Young Drivers 16-25 & Distraction is relatively similar to the overall Distraction trend with an average of 38% from 2016-2018.



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. In order to best target mitigations, locations with an average of 3 or more collisions per year (9 total in the 3-year period) have been highlighted for additional analysis below. Locations are ranked by total number of collisions rather than the number of injury collisions; since the total collision value provides significantly more data points and serves as a threshold for potential traffic control device changes, it serves as a better relative proxy for collision risk and potential mitigation. It is also important to note that the locations with the highest numbers of collisions also tend to have the highest number of injury collisions; no location with more 2 injury collisions in the 3-year period is excluded from these tables. New to the location tables this year are the trendline and associated trendline increase or decrease in collisions per year based on 3-year averages beginning in 2014. This information will help staff to track progress on collision countermeasures and identify any new and noteworthy spikes in collisions at a specific location. Trendlines in green represent that collisions are declining, red indicates collisions are increasing, and blue indicates that the trend is flat.

The following sections organize top collision locations as they relate to intersections, segments (sections of roadway between intersections), pedestrians, and bicyclists. Aurora Ave N collisions are also discussed in a separate section as there is specific location data for more detailed analysis. In addition to the following tables, Total, Injury (including Minor Injury), Serious & Fatal, Pedestrian, and Bicycle collisions are displayed on maps in Appendices A-E.





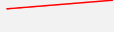
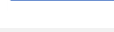










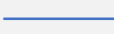
Aurora Ave N Collisions (2016-2018)

Given high traffic volumes and speeds on Aurora, the corridor continues to experience a significant portion of the City’s overall and injury collisions. A plot showing number of collisions and their location along the Aurora Corridor for 2015-2017, 2016-2018, and the number and location of pedestrian collisions for 2016-2018 is shown in Appendix H. The most prominent locations occur primarily at signalized locations, although one location at N 163rd St and one at N 198th St (where there are left/U-turn access points) show relatively high numbers of collisions. Upon review of 2016-2018 collision data for these two locations, it is evident that these collisions are primarily related to misuse of the bus lane. Most of the collisions involved a driver entering into the bus lane early and not turning at the next intersection (as regulated by signs) and instead traveling through to bypass queues. The conflict occurs primarily with opposite direction left/U-turn traffic.

Intersection Collision Locations (2016-2018)

The following table shows intersections with 9 or more collisions over the 3-year period, excluding locations on Aurora Ave N.

City of Shoreline Annual Traffic Report (2018)





	Location	2016-2018 Total Collisions	Increase or Reduction in Collisions Per Year ¹	Trendline ²	2016-2018 Injury Collisions
1	MERIDIAN AVE N & N 175TH ST	23	- 2		3
2	15TH AVE NE & BALLINGER WAY NE & NE 205TH ST	22	- 3.5		1
3	19TH AVE NE & BALLINGER WAY NE	21	- 4.5		4
4	3RD AVE NW & NW RCHMND BCH RD	21	- 2		2
5	10TH AVE NE & NE 175TH ST	17	+ 1		3
6	MIDVALE AVE N & N 175TH ST	14	0		2
7	MERIDIAN AVE N & N 185TH ST	13	- 1.5		2
8	FREMONT AVE N & N 200TH ST	12	+ 3		1
9	MERIDIAN AVE N & N 155TH ST	12	+ 1.5		0
10	WESTMINSTER WY N & N 155TH ST	12	0		0
11	15TH AVE NE & NE 155TH ST	11	- 2.5		1
12	15TH AVE NE & NE 175TH ST	10	- 3.5		1
13	5TH AVE NE & NE 155TH ST	10	+ 3.5		1
14	ASHWORTH AVE N & N 185TH ST	10	+ 2		0
15	FREMONT AVE N & N 172ND ST	10	+ 4		1
16	15TH AVE NE & NE 180TH ST	9	- 1.5		0
17	FREMONT AVE N & RICHMND BCH RD & N 185TH ST	9	0		0

¹ Based on trendline equation for 2014-2016, 2015-2017, & 2016-2018 collision data

² Represents 2014-2016, 2015-2017, & 2016-2018 collision data

Segment Collision Locations (2016-2018)

The following table shows roadway segments with 9 or more collisions from 2016-2018, Aurora locations excluded. No roadway segment in the City experienced more than 2 injury collisions over the 3-year analysis period.

	Location	2016-2018 Total Collisions	Increase/Reduction in Collisions Per Year¹	Trendline²	2016-2018 Injury Collisions
1	BALLINGER WAY NE from 19TH AVE NE to 15TH AVE NE	29	+ 0.5		2
2	15TH AVE NE from FOREST PRK DR NE to BALLINGER WAY NE	13	+ 3		1
3	NW RCHMND BCH RD from 3RD AVE NW to 8TH AVE NW	11	- 0.5		2
4	15TH AVE NE from NE 172ND ST to NE 175TH ST	10	+ 2		2

Pedestrian Collision Locations (2014-2018)

The following table shows locations with 3 or more pedestrian collisions from 2014-2018.

Location	2014-2018 Pedestrian Collisions
AURORA AVE N & N 160 TH ST	4
AURORA AVE N & N 192 ND ST	3

Bicyclist Collision Locations (2014-2018)

Only one location had more than 2 bicyclist collisions in the 5-year window as shown below.





Location	2014-2018 Bicyclist Collisions
MERIDIAN AVE N & N 185TH ST	3


Collision Reduction Strategies

The preceding *Collision Summary* provided analysis of collisions on Shoreline’s public streets, tracking overall and injury collision data from 2010 through 2018 and highlighting specific and significant contributing factors and locations. 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 are collisions involving intersections and collisions with pedestrians or bicyclists. Below are examples of how Shoreline is working toward priority and proven countermeasures recommended by Washington State’s Target Zero Plan associated with these top 2 risk factors.


	Key Countermeasures	What Shoreline is doing to work toward the countermeasure
Intersections	Roundabouts  <i>Install or convert intersections to roundabouts</i>	Consistent with State design policy, Shoreline will consider roundabouts for any large-scale intersection improvement project before considering a signalized alternative. As a result, the first roundabout will be coming to Shoreline near the 185 th Light Rail Station as part of the Sound Transit Lynwood Link project. Additional roundabouts are currently being considered for the intersection of Greenwood Ave N/N 160 th St/NW Innis Arden Way and for the I-5/145 th Interchange.
	Intersection visibility  <i>Install illumination at locations with nighttime crashes</i>  <i>Add back plates with retro-reflective borders to signals.</i>	<p>Shoreline recently completed a Street Light Master Plan to identify and prioritize installations. Priority is assigned to arterial roads and intersection locations, reserving 5/year for lighting at priority locations. More information about street lights is available online at: http://www.shorelinewa.gov/government/departments/public-works/traffic-services/street-lights/smp.</p> <p>The most recent Engineering Development Manual update included criteria for private development installation of pedestrian scale lighting in the Right of Way for the first time.</p> <p>Shoreline has already retrofitted all signal heads with retroreflective sheeting and uses preventative maintenance practices to relamp signal heads on a schedule to avoid burnout as much as possible.</p>
	Signal operations improvements  <i>Employ flashing yellow arrows at signals</i>	Shoreline has set a practice to review 12 signalized intersections annually. This includes a comprehensive review of safety conditions and signal timing. The Annual Traffic Report is also used to identify signalized locations for minor or major signal improvements.

 *Optimize traffic signal clearance intervals*


The City has converted 6 signals to flashing yellow arrow, with 3 implemented within the last 3 years. Additional flashing yellow arrow conversions will be implemented at Meridian/185th and Meridian/155th.

All signals have been adjusted for compliance with regulatory clearance intervals.


Design to reduce speeds

 *Revise design practices to emphasize context and target speed to reflect the needs of people walking and biking*

With recent Engineering Development Manual updates, Shoreline is better able to proactively design for lower speeds. Recent updates that target lower design speeds include reduced standard corner radii, and narrower standard lane widths. In addition, curb bulb outs will be the default where applicable to reduce pedestrian crossing distances (Standard Detail 314).

 *Invest roadway reconfigurations, roundabouts and other FHWA proven safety countermeasures*


As discussed in the intersections section, roundabouts will be considered for all intersection control revisions ahead of signalization, with one roundabout to be implemented within the next 4 years, and other locations being considered.

 *Implement traffic calming techniques*

4-lane to 3-lane roadway reconfigurations, such as the recent Richmond Beach Road Rechannelization Project, are proven countermeasures to lower speeds and improve collision outcomes. Another 4-lane to 3-lane conversion is planned for N 160th Street as part of Shoreline Place redevelopment.

The City’s Neighborhood Traffic Safety Program is another way the City works to reduce speeds through traffic calming techniques or by using education and enforcement techniques. The program is currently being evaluated for changes; see *Street Classification* section for additional context and the program website at: <http://www.shorelinewa.gov/government/departments/public-works/traffic-services/neighborhood-traffic-safety>

Speed limits

 *Revise design practices to emphasize context and target speed to reflect the needs of people walking and biking*

Staff will be conducting an arterial speed limit study update slated for 2020. The study will provide more context sensitive analysis in consideration of the pedestrian and bicyclist experience, consistent with recent engineering guideline updates. Subsequent recommendations from this study would come before Council for discussion and approval.

The Shoreline Police Department and Traffic Services continue to coordinate regularly to review speed differential and collision data to identify speed emphasis enforcement opportunities.

Improved crossings

Shoreline uses the Annual Traffic Report process to identify locations for potential pedestrian crossing improvements. In 2018, staff pursued

<ul style="list-style-type: none"> ✚ <i>Invest in and increase the use of rectangular rapid flashing beacons</i> 	<p>grant funding based on collision history analysis and was awarded \$2,516,500 to improve at least 12 crossings by 2022.</p>
<ul style="list-style-type: none"> ✚ <i>Invest in refuge islands, raised crossings, and shortening crossing distances with bicycle friendly curb extensions where crosswalk enhancements are needed</i> 	<p>As discussed in the intersection section, recent Engineering Development Manual updates include new standards for shortened crossings by using curb bulbs.</p> <p>The first raised crossing in Shoreline is currently planned adjacent to Shoreline Place on Westminster Way.</p>
<ul style="list-style-type: none"> ✚ <i>Improve sight distance and visibility at pedestrian and bicyclist crossings by clearing vegetation, extending crossing times, adding pedestrian/bicyclist leading intervals and/or adding pedestrian scale illumination</i> 	<p>With the establishment of a new City vegetation maintenance crew, significant maintenance of overgrown vegetation has begun and will continue efforts to significantly improve sight lines along the corridor.</p> <p>A grant application was submitted to fund new controllers to establish leading pedestrian intervals at locations with significant pedestrian collision history (Shoreline did not receive this grant award).</p> <p>As discussed previously, Engineering Development Manual updates include new thresholds for the installation of pedestrian scale lighting.</p>
<p>Separated infrastructure and complete networks</p>	<p>The City continues to work toward improving sidewalk and bike lane infrastructure. In 2018, after a robust planning process, voters approved a .2% increase in the sales and use tax to fund priority sidewalk projects citywide. More information about the Sidewalk Prioritization Plan can be found online at:</p>
<ul style="list-style-type: none"> ✚ <i>Invest in and construct separated pedestrian facilities, especially in urban areas and adjacent to schools, bus stops, and school walk areas</i> 	<p>http://www.shorelinewa.gov/government/projects-initiatives/sidewalks-prioritization-plan</p>

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 recommendations and improvements in decreasing the number of overall and injury collisions.

Referencing analysis from the Collision Summary section and drawing from specific strategies outlined in the Target Zero Plan, recommendations 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 added to the Transportation Improvement Plan (TIP) to identify potential project funding sources and to position the City for grant opportunities.

Aurora Ave N Corridor (2016-2018)

With the establishment of a new City vegetation maintenance crew, significant maintenance of overgrown vegetation has begun and will continue to significantly improve sight lines along the corridor. In addition, staff will continue to seek funding and strategies to address the 2 locations with significant pedestrian collision history. Shoreline Police will also continue bus lane enforcement efforts, specifically at 198th and 163rd. Last, educational signage or outreach will be explored to mitigate bus lane related collisions.

Intersection Collision Location Recommendations (2016-2018)

The table below provides mitigation strategies for intersections with the most collisions outside of the Aurora Corridor.

	Location	Potential Actions
1	MERIDIAN AVE N & N 175TH ST	Project design for the 175 th Corridor west of I-5 is currently underway. Intersection is an impact fee growth project.
2	15TH AVE NE & BALLINGER WAY NE & NE 205TH ST	Project described in the Transportation Improvement Plan; pursue grant opportunities.
3	19TH AVE NE & BALLINGER WAY NE	Following conversion to flashing yellow arrow in 2015, collisions are on the decline by 4.5 per year. Continue to monitor.
4	3RD AVE NW & NW RCHMND BCH RD	Richmond Beach Road Rechannelization project recently completed, including signal phase changes. Collision trend declining by 2 per year; continue to monitor.
5	10TH AVE NE & NE 175TH ST	Signal clearance intervals recently adjusted; continue to monitor.
6	MIDVALE AVE N & N 175TH ST	Evaluate left turn related collisions to determine if higher level of turn protection is warranted.
7	MERIDIAN AVE N & N 185TH ST	Future impact fee growth project. Sound Transit Lynnwood Link Light Rail mitigation to occur in the near future. Pursue improvement opportunities related to redevelopment. Collision trend declining slightly; continue to monitor.

8	FREMONT AVE N & N 200TH ST	This intersection continues to show a significant upward trend. Safety improvements to add flashing LED borders to stop signs are in motion and will be implemented by the end of the year.
9	MERIDIAN AVE N & N 155TH ST	This signal will be rebuilt as part of a capital project in the near future and will include signal phase changes and safety improvements.
10	WESTMINSTER WY N & N 155TH ST	This intersection is currently in design and will be reconstructed by grant and private funding associated with Shoreline Place redevelopment.
11	15TH AVE NE & NE 155TH ST	Collision rate is trending down by 2.5/year; continue to monitor.
12	15TH AVE NE & NE 175TH ST	Intersection improvements will be completed in 2019 to add an eastbound right turn pocket, allowing for improved signal efficiency and reducing queues at all approaches which tends to decrease rear end collisions. Continue to monitor following improvements.
13	5TH AVE NE & NE 155TH ST	Review collisions and other traffic data for potential phase changes.
14	ASHWORTH AVE N & N 185TH ST	Collect traffic data to determine if a higher level of intersection control or access management is warranted. Pedestrian activated rapid flashing beacons will be implemented by a grant project by end of 2021.
15	FREMONT AVE N & N 172ND ST	Improve intersection visibility and northbound stop alignment.
16	15TH AVE NE & NE 180TH ST	Collision trend is down; continue to monitor.
17	FREMONT AVE N & RICHMND BCH RD & N 185TH ST	There was no clear trend based on collision type, direction, or contributing factor. Collision trend is flat; continue to monitor. [Note: no collisions appear to be related to right turn on red movements – the sign prohibiting right turns on red for southbound traffic was removed in 2014, following a sight distance study]

Segment Collision Location Recommendations (2016-2018)

The highest priority segment locations outside of the Aurora Corridor and associated recommendations are shown below.

Location	Potential Actions
BALLINGER WAY NE from 19TH AVE NE to 15TH AVE NE	Project described in the Transportation Improvement Plan; pursue grant opportunities.
15TH AVE NE from FOREST PRK DR NE to BALLINGER WAY NE	Many of the collisions were related to conflicts of drivers entering from a driveway, and a significant number were related to parking maneuvers. Some parking restrictions were implemented in 2018 to improve sight lines and safety; continue to monitor.
NW RICHMND BCH RD from 3RD AVE NW to 8TH AVE NW	Changes recently implemented through the Richmond Beach Rechannelization Project. Additional grant funding was awarded to the City to implement a midblock pedestrian crossing and supplemental safety treatments in this segment by 2021.

15TH AVE NE from NE 172ND ST to NE 175TH ST Improvements to be implemented in 2019 at the intersection of 175th/15th Ave NE are likely to reduce intersection related queuing which is expected to reduce collisions.

Pedestrian Collision Recommendations (2014-2018)

The table below provides collision reduction strategies for locations with 3 or more pedestrian collisions.

Location	Potential Actions
AURORA AVE N & N 160 TH ST	A grant application was submitted to convert controllers on Aurora Ave N in order to implement "leading pedestrian interval" phasing however the City was not awarded the funding. Continue to explore opportunities to implement leading pedestrian interval phasing.
AURORA AVE N & N 192 ND ST	A grant application was submitted to convert controllers on Aurora Ave N in order to implement "leading pedestrian interval" phasing however the City was not awarded the funding. Continue to explore opportunities to implement leading pedestrian interval phasing.

Bicyclist Collision Recommendations (2014-2018)

The table below shows locations with 3 or more bicyclist collisions in a five-year period and associated recommendations.

Location	Potential Actions
MERIDIAN AVE N & N 185TH ST	The 185 th Corridor Strategy will be considering this intersection; work with the project team to address bike safety within project recommendations and use recommendations to inform improvements related to redevelopment.

Completed Transportation Safety Efforts

In addition to the ongoing efforts described in the *Contributing Circumstance Collision Reduction Strategies* section, below are some of the transportation safety improvements implemented in 2018.

Public Works

The Richmond Beach Road Rechannelization project was the primary traffic safety effort supported by Traffic Services in 2018. The first review of project outcomes, discussed with Council on June 10th, showed that some speed reduction has resulted. It is too soon to gauge safety outcomes, but additional follow up reports will be completed and posted to the project website at:

<http://www.shorelinewa.gov/government/projects-initiatives/richmond-beach-road-rechannelization>

Another large effort in 2018, Traffic Services staff pursued 4 grants and was awarded \$3,091,640 to implement multiple traffic safety responsive projects including:

- ✚ Meridian Ave N Safety Improvements from N 155th Street to N 175th St which will include crossing improvements and new bike facilities.
- ✚ Citywide midblock crossings, pedestrian activated flashing beacons, and radar signs installation
- ✚ Ridgcrest Elementary School Safe Routes to School Project which will include curb bulb outs for a pedestrian crossing a new school speed zone flashing beacon signs.
- ✚ Echo Lake Elementary school speed zone flashing beacon signs and pedestrian activated flashing beacon crossing.

Responsive to recommended actions from prior years' Annual Traffic Reports:

- ✚ High visibility crosswalk markings were added to all driveway crossings of the Interurban Trail.
- ✚ Work has started on replacing stop signs at Fremont and 200th with signs that have lighted LED borders for increased conspicuity.
- ✚ Clearance intervals at 10th Ave NE and NE 175th Street were adjusted in December.

Shoreline Police Department

Summary statistics for Shoreline Police Department are provided in the table below.

Year	Citations (traffic unit/total)	Arrest	Warning	Other
2018	4,219/5,263	466	2,461	715
2017	3,540/5,453	510	2,321	1,928
2016	2,157/3,520	625	3,969	1,575
2015	2,533/5,108	709	3,812	1,487
2014	1,874/3,659	675	2,897	1,459

Washington Traffic Safety Commission (WTSC) Grants

WTSC funds multiple grant related emphasis efforts in conjunction with Target Zero enforcement strategies. In addition, patrol officers were sent to training which educates officers on the involuntary signs/symptoms of an individual on a drug, how to determine impairment, and investigation steps.

Statistics for the WTSC Directed Patrol Grant, focusing on seat belt violations and distracted driving are as follows:

- ✚ 457 contacts
- ✚ 359 violations cited (primarily distracted driving and bus lane violations)
- ✚ 129 warnings provided

Dedicated weekend DUI emphasis statistics are as follows:

- ✚ 57 contacts
- ✚ 23 citations
- ✚ 5 DUI arrests
- ✚ 1 felony arrest
- ✚ 1 misdemeanor warrant arrest

St. Patrick's Day emphasis statistics are shown below. Participants for efforts in Shoreline included Lake Forest Park Police Department, Washington State Patrol, and Cannabis Liquor Control Board. Liquor control visited all cannabis shops and contacted bars in the community.

- ✚ 93 contacts
- ✚ 24 citations
- ✚ 4 DUI's
- ✚ 1 DWLS-3
- ✚ 1 Reckless Driving

Bus Lane Emphasis Patrols

In 2018, Shoreline Police conducted frequent patrols of bus lane use at Aurora/N 163rd St and at Aurora/N 198th St. Over the last year 522 bus lane related citations have been issued.

Parking Enforcement & Abandon Vehicles

Shoreline Police Department and the City's Customer Response Team (CRT) created a new system to better streamline the abandon vehicle process. Now all abandon reports are received via Coplogic and 911 calls are processed first through CRT. Those that remain unresolved are assigned to the Police Department.

Year	Traffic Complaints to Shoreline PD	Abandon Vehicle / Impounds
2018	549	211/25
2017	72	335 / 34
2016	72	322 / 54
2015	197	172 / 41

2014	286	196 / 48
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The traffic unit responded to a high volume of parking related complaints in 2018. As shown in the table below, parking related citations increased significantly in comparison to 2017. Specific parking zone related enforcement areas included 15th Ave NE, neighborhoods surrounding Shoreline Community College, and 12th Ave NE north of NE 175th Street.

Year	Parking Tickets Issued
2018	985
2017	528

School Education

In May of 2018 a presentation to the senior class of Shorecrest High School on Distracted Driving and Impaired Driving was given by Shoreline PD and partnering with the addiction specialist of the school.

In summer of 2019 Shoreline PD (Sargent Volpe) and Seattle PD (Officer Hubbard) will be creating a course for Shorecrest High School with a focus on new drivers. The course will address the impact of cannabis and alcohol on driving, including the effects of both substances when combined (poly drug use). Sargent Volpe is a former Drug Recognition Expert Instructor and Officer Hubbard is the state leading Drug Recognition Expert on this top and trains throughout the state.

Deputy Bates will continue outreach to Shoreline Community College with impaired driving education and presentations in partnership with the Shoreline Traffic Unit. This includes a question and answer portion and hands on demonstrations with “DUI goggles”.

Child Restraint Inspection.

Deputy Obstler continues providing the community with child restraint inspections and installations performing 24 seat checks in 2018.

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.

Appendix F is the Traffic Speed Differential Map which shows the difference between the measured 85th percentile speed and the posted speed limit. Shoreline Police will use this data, as well as a mid-year update to it, to target streets with measured speeding problems.

In addition, Traffic Services will continue to rotate radar speed trailers and radar speed carts to help with the driver education component of speed reduction on problem corridors.

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 10-14 mph Over Posted Limit
NW 175 th Street from 10 th Ave NW to 14 th Ave NW
6 th Ave NW from NW 175 th St to NW 180 th St
Carlyle Hal Rd N/3 rd Ave NW from NW 175 th to Dayton Ave N
15 th Ave NE from NE 175 th St to NE 180 th St
5 th Ave NE from NE 195 th St to NE 205 th St

Traffic Volume Summary

Traffic volume data is regularly collected at eight (8) locations in the City. They are:

- ✚ Aurora Ave N south of N 175th St
- ✚ Meridian Ave N south of N 175th St
- ✚ NW Richmond Beach Rd east of 3rd Ave NW
- ✚ 5th Ave NE south of NE 175th St
- ✚ 15th Ave NE south of NE 172nd St
- ✚ 25th Ave NE south of NE 171st St
- ✚ NE 175th St west of 5th Ave NE
- ✚ NW 175th St west of 3rd Ave NW

Below is a summary of data collected at these locations. As shown in the table, average weekday daily traffic volumes are down slightly from 2017 by 0.97%. AM peak volumes are up by 0.29% and the PM peak volumes are down by 2.14%. The Puget Sound Region gained another 36,500 people in the last year, a 1.69% growth from 2017-2018. (Source: U.S. Census Bureau, Washington State Office of Financial Management)

	2014	2015	2016	2017	2018	5 Year Average
AM Peak Aggregate AAWDT	6169	6399	6528	6632	6,651	6,476
PM Peak Aggregate AAWDT	7722	8033	8197	8380	8,201	8,107
Daily Aggregate AAWDT	96972	99719	101426	102546	101,548	100,442

See Appendix G for the 2018 Traffic Flow Map which shows average daily weekday traffic volumes on additional City of Shoreline Streets.

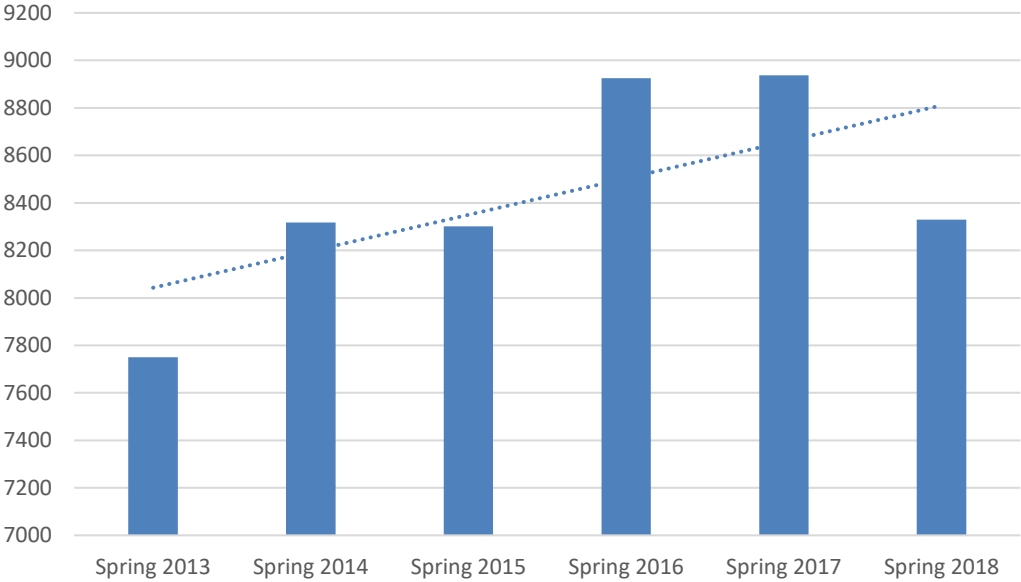
Transit Summary

King County Metro ridership in Shoreline is down significantly for Spring 2018. The trendline remains on a positive trajectory, although the significant drop is consistent with nationwide transit ridership trends which are declining. This is thought to be in part due to competing private ride-hail services.

	Average Daily Transit Boardings in Shoreline	% Change
Spring 2018	8329	-6.8%
Spring 2017	8937	0.13%
Spring 2016	8925	7.5%
Spring 2015	8301	-0.2%
Spring 2014	8318	7.3%
Spring 2013	7750	-

**King County Metro data only*

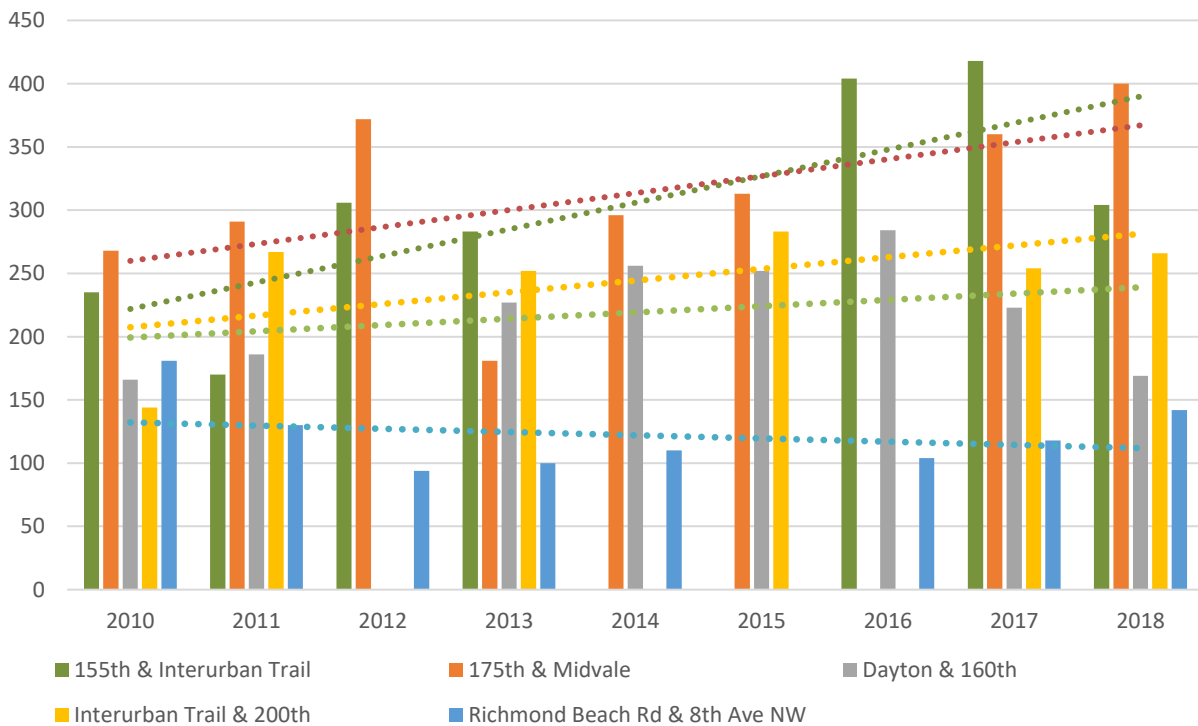
Average Daily Transit Boardings in Shoreline



Pedestrian and Bicycle Count Summary

The Washington State Bicycle and Pedestrian Documentation Project collects bicycle and pedestrian data in cities throughout the State. It occurs annually in early fall. Pedestrian and bicyclist counts have been collected in Shoreline since 2010 for the locations shown in the chart below. The chart summarizes 2 hours for both the AM and PM peak (4 hours total) for pedestrian and bicyclist counts at these locations. Data is collected in fall each year so weather can be an influencing factor. The overall trend of nonmotorized activity is on the rise for most locations, with the highest activity on record at 175th and Midvale.

Pedestrian & Bicycle Counts by Year and Location



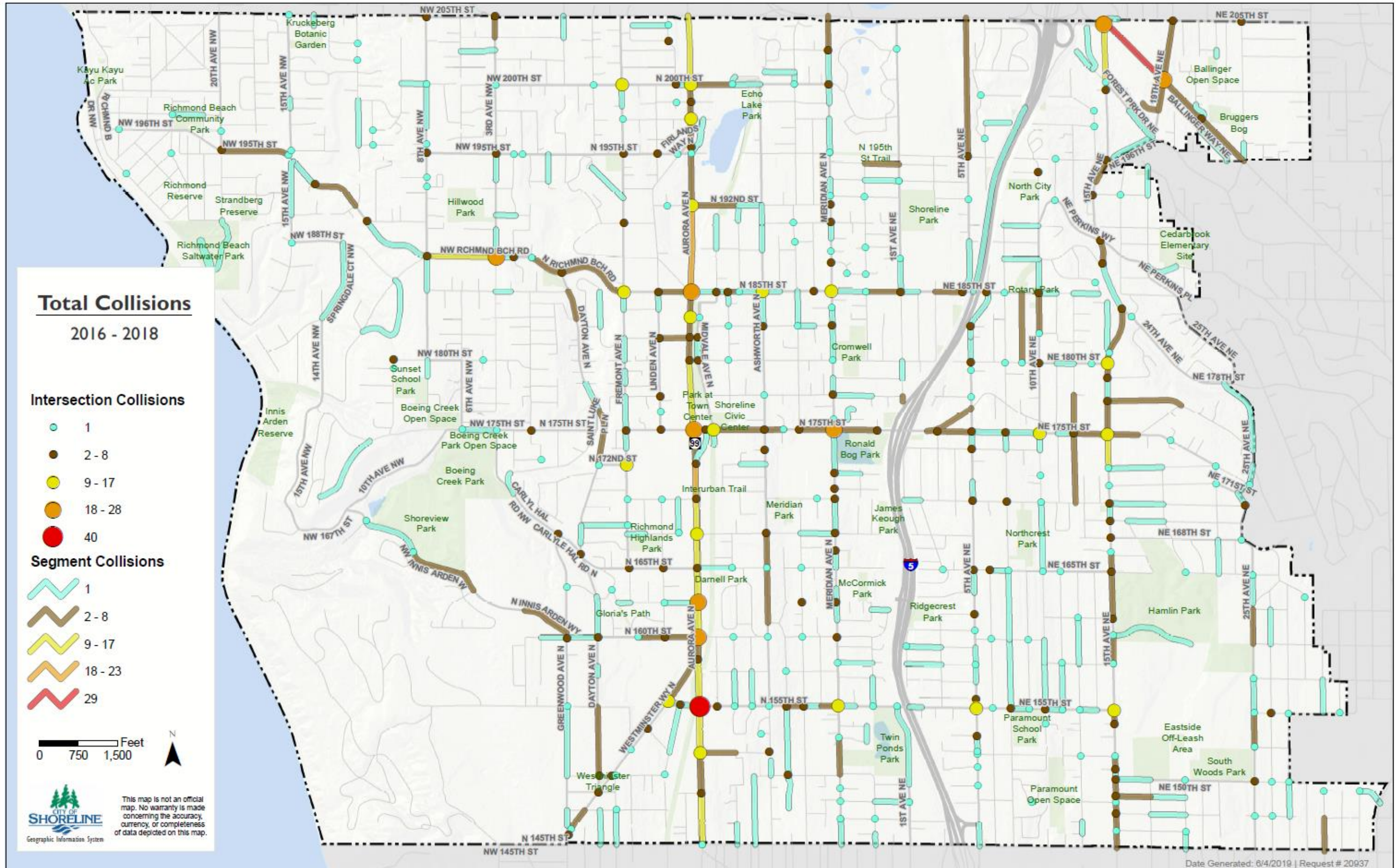
**Some years omitted due to incomplete data*

More information about the Washington State Bicycle and Pedestrian Documentation Project can be found online at: <http://www.wsdot.wa.gov/bike/Count.htm>

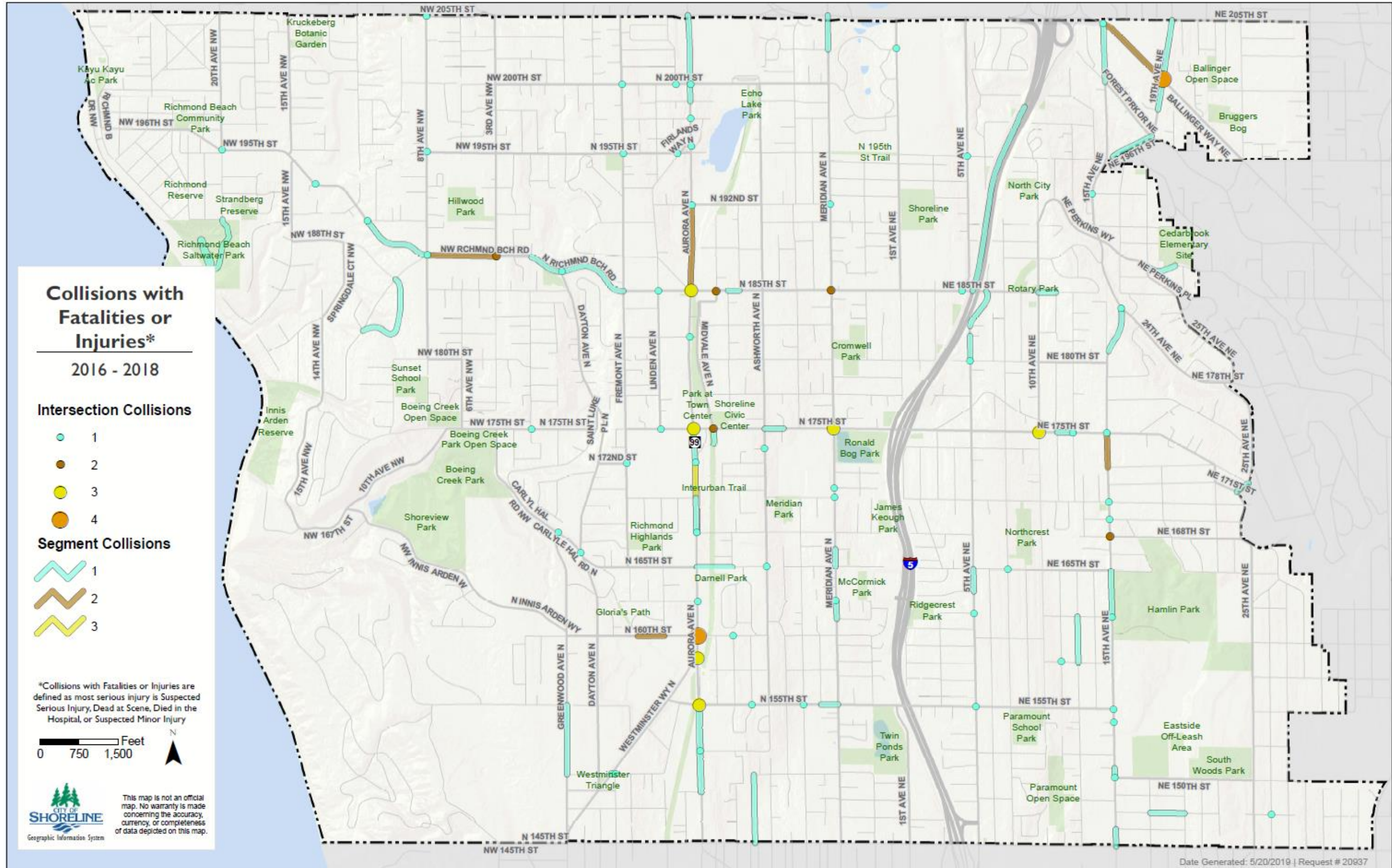
Appendix

- Appendix A – 2016-2018 Total Collisions Map
- Appendix B – 2016-2018 Injury Collisions Map
- Appendix C – 2014-2018 Pedestrian Collisions Map
- Appendix D – 2014-2018 Bicyclist Collisions Map
- Appendix E – 2014-2018 Fatal and Serious Injury Collisions Map
- Appendix F – 2018 Traffic Flow Map
- Appendix G – 2018 Speed Differential Map
- Appendix H – 2016-2018 Aurora Ave N Collisions Chart

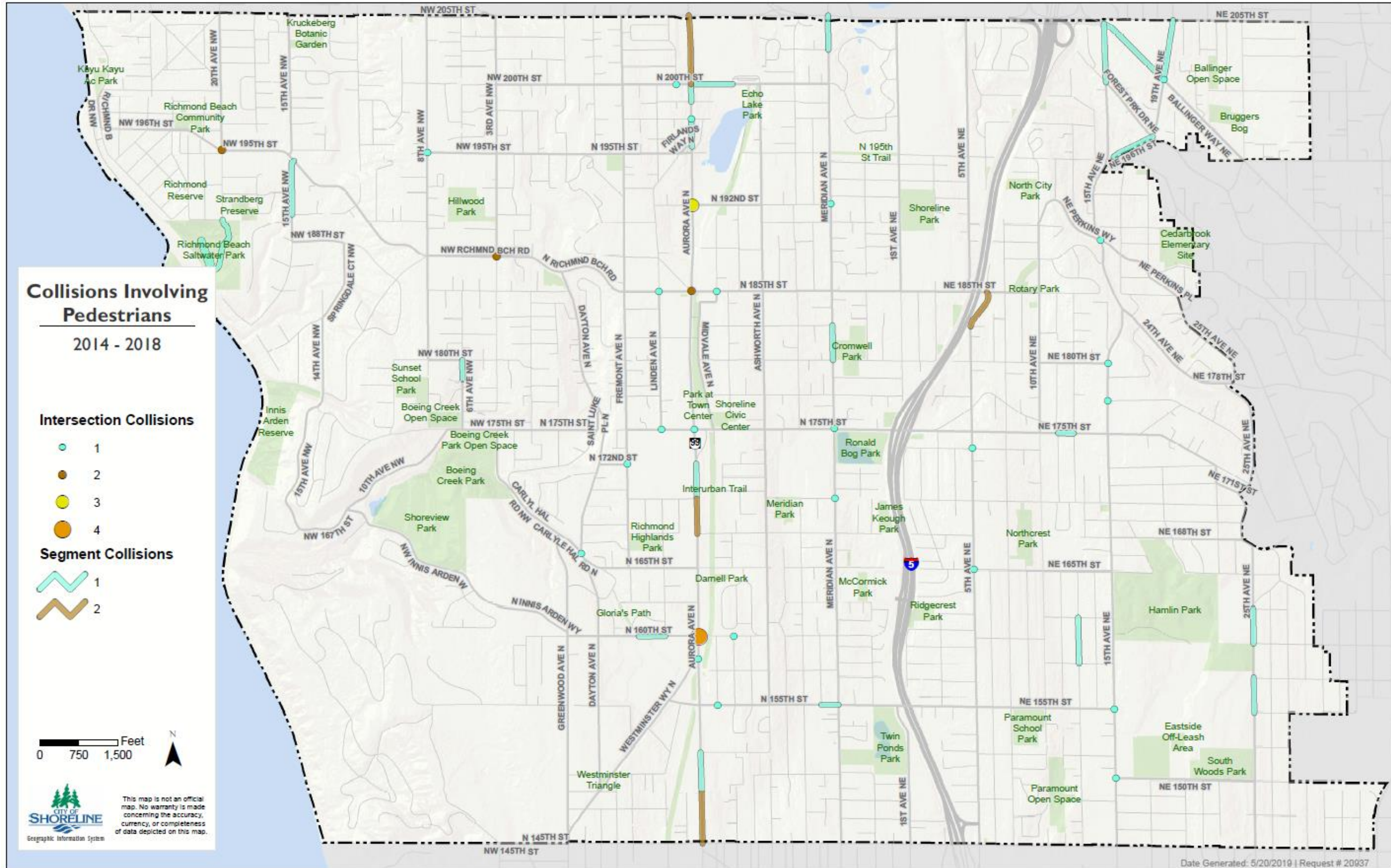
Appendix A - 2016-2018 Total Collisions Map



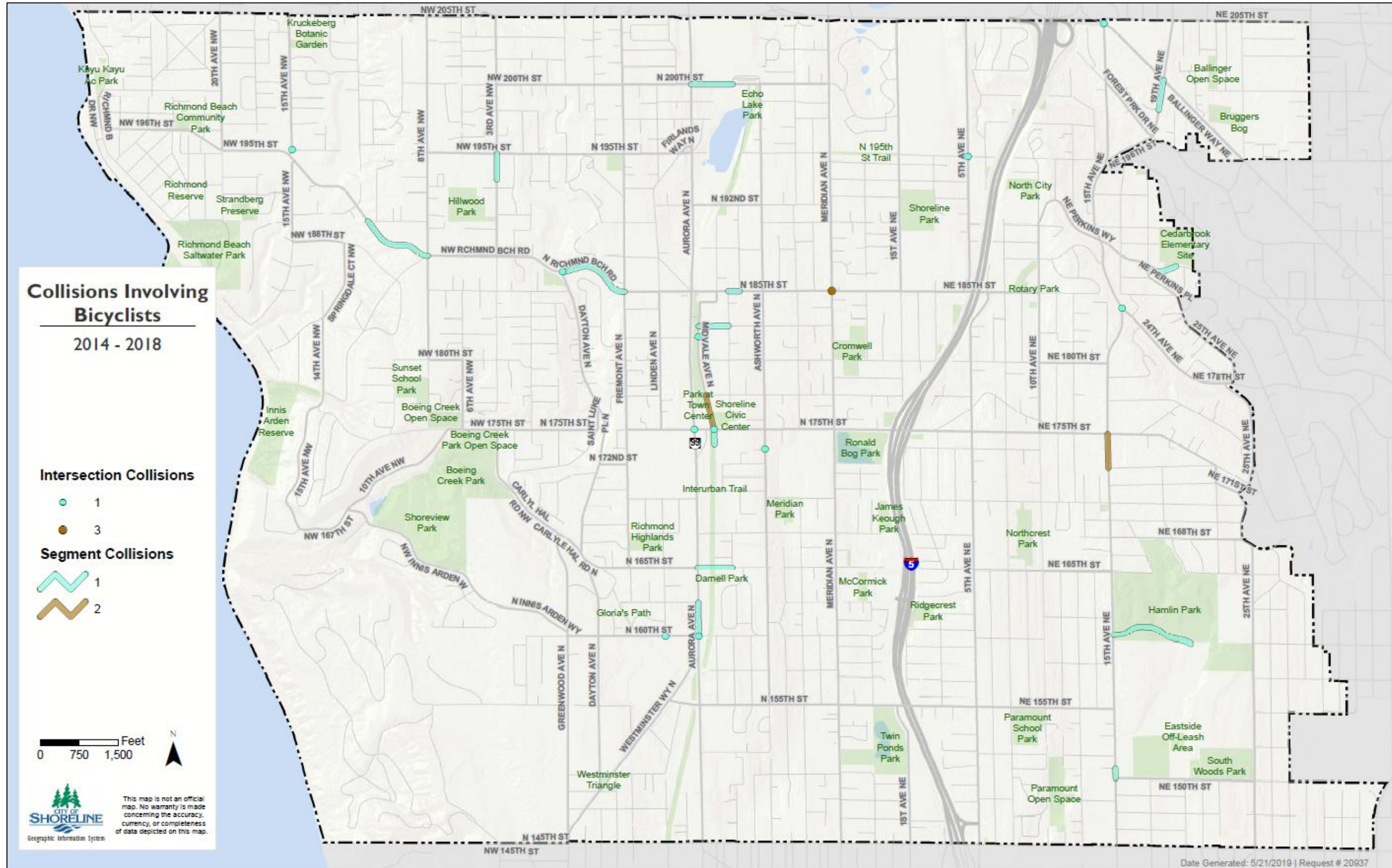
Appendix B - 2016-2018 Injury Collisions Map



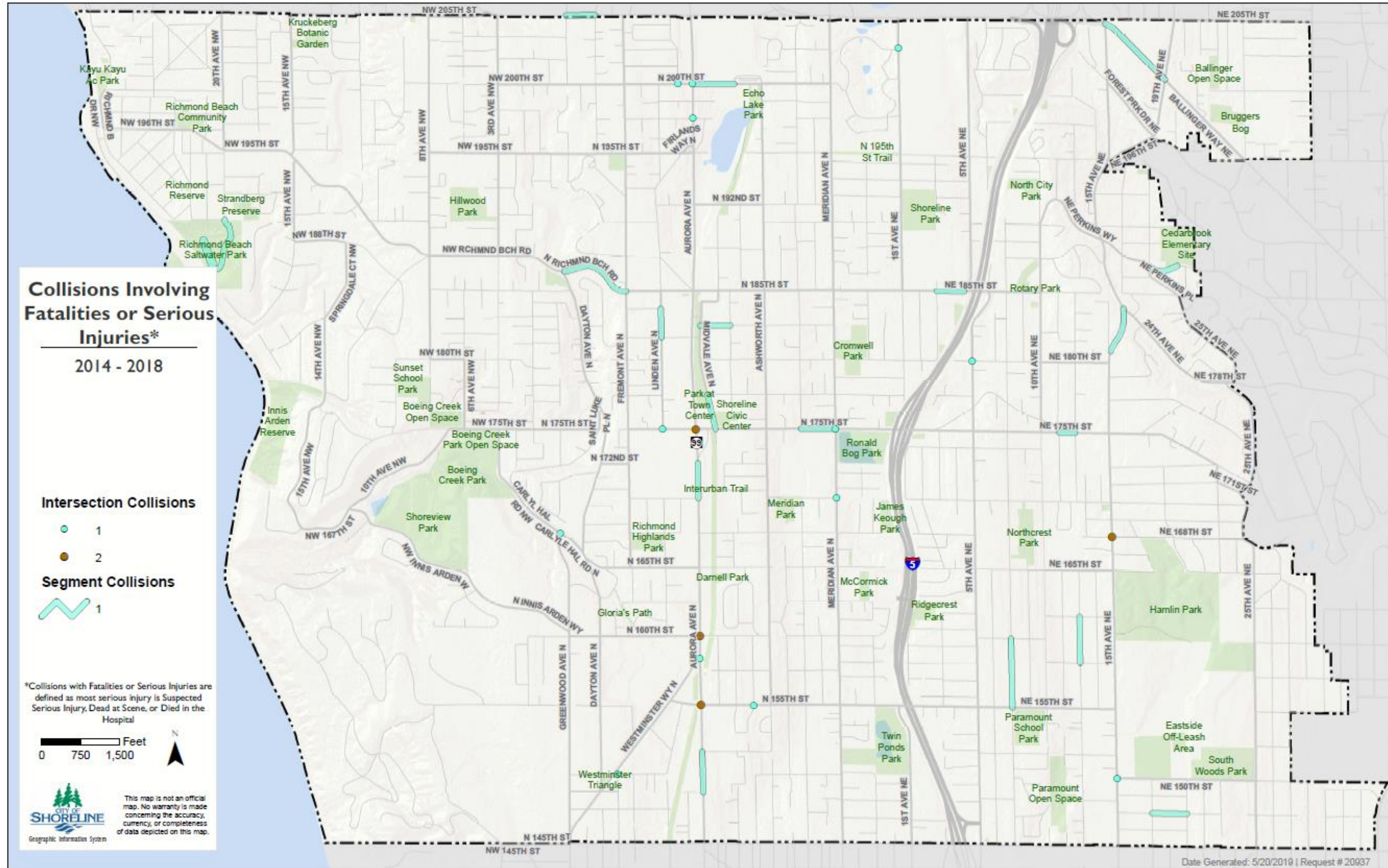
Appendix C - 2014-2018 Pedestrian Collisions Map



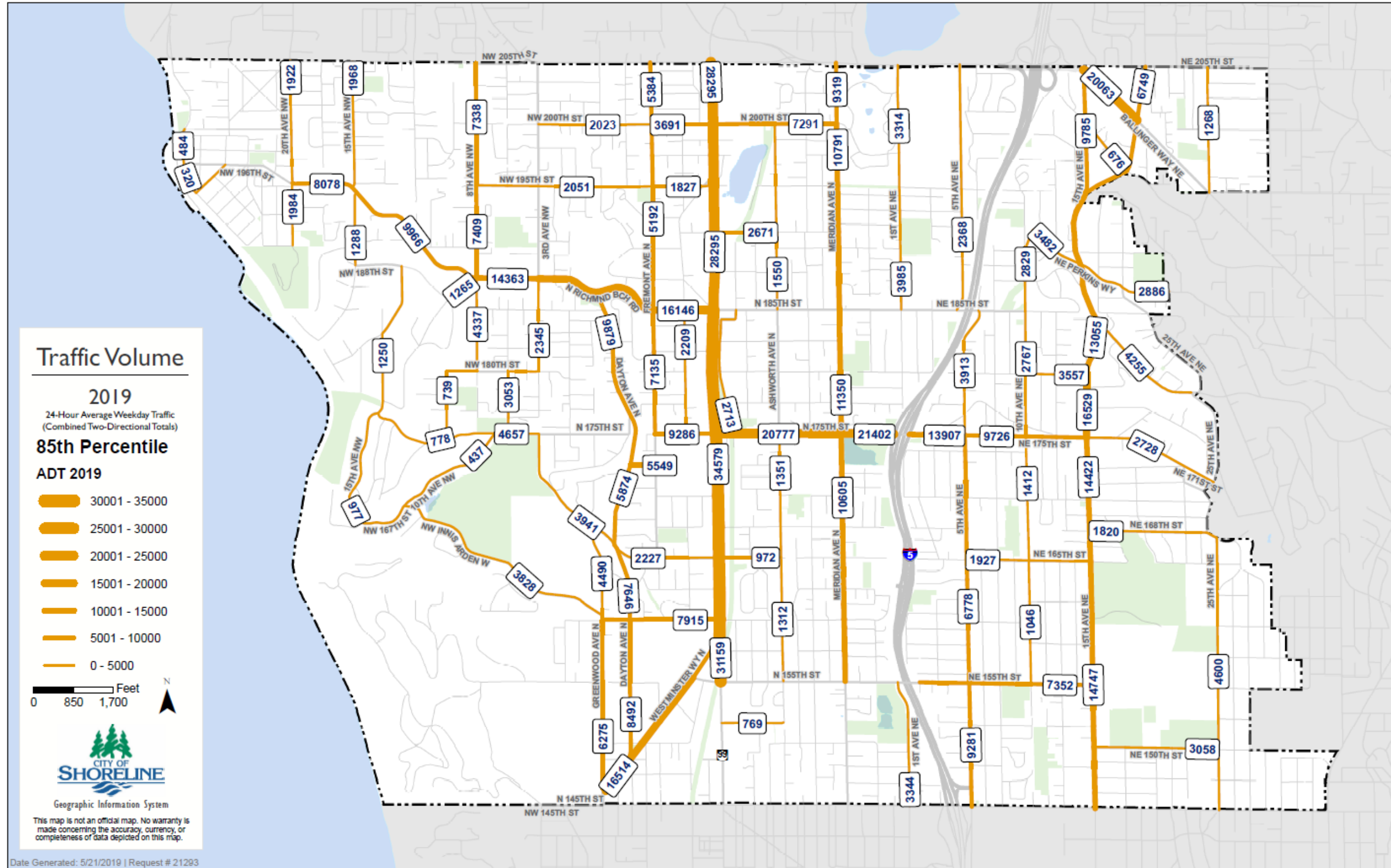
Appendix D - 2014-2018 Bicyclist Collisions Map



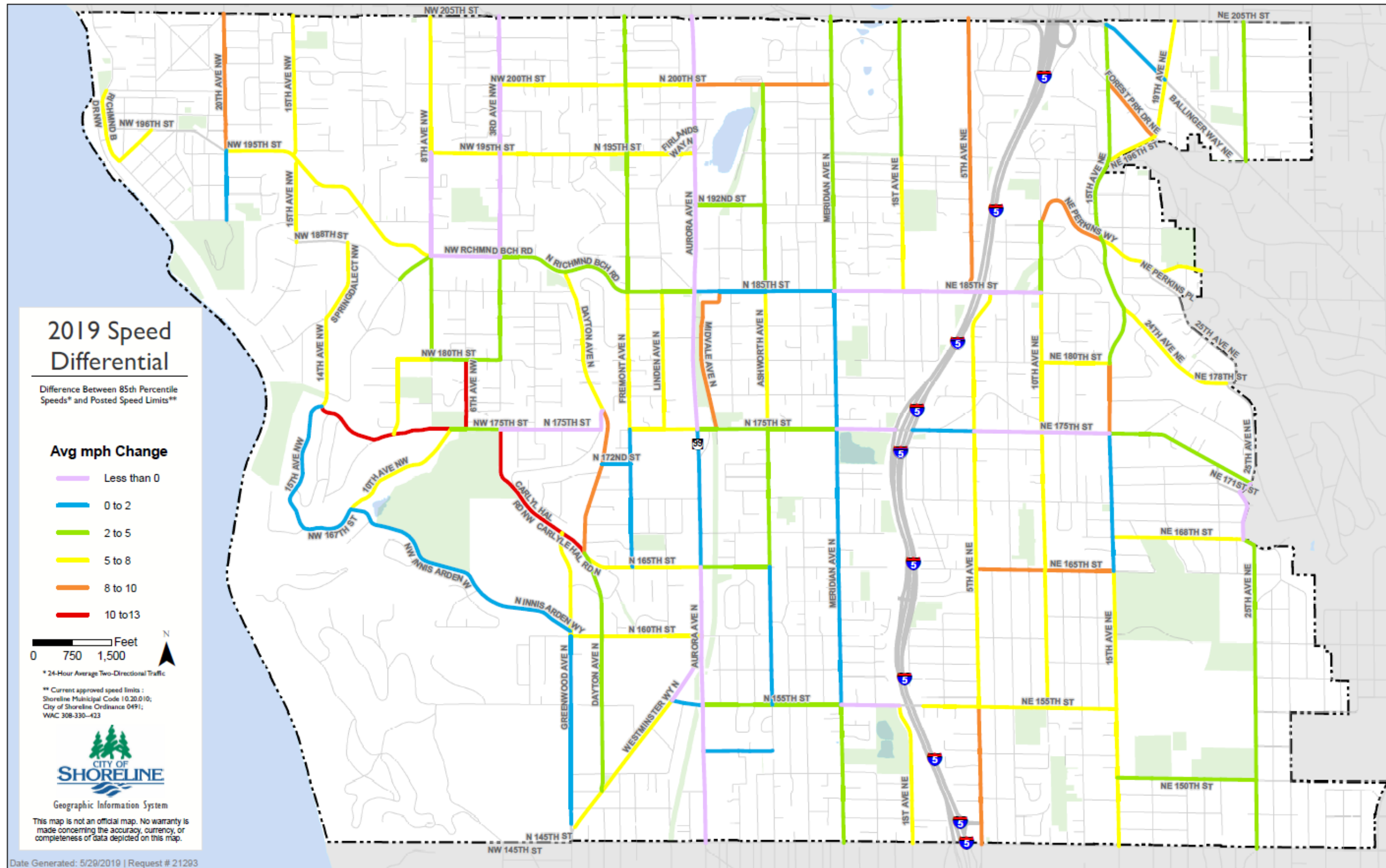
Appendix E - 2014-2018 Fatal and Serious Injury Collisions Map



Appendix F - 2018 Traffic Flow Map



Appendix G - 2018 Speed Differential Map



Appendix H - Aurora Ave N Collisions

Aurora Ave N Corridor Collisions by Milepost

2015-2017 versus 2016-2018 Collisions

