



City of Shoreline
Annual Traffic Report
2013

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Introduction

The City of Shoreline Traffic Services section collects crash data for use in analyzing and evaluating traffic operations in our city. Such data is useful in many ways, including helping the Shoreline Police Department target areas for enforcement, to prioritize City resources, and to apply for grants to help finance capital improvement projects. This report contains some of that data, as well as general trend information about collisions and traffic volumes in Shoreline.

For additional information specific to locations within Shoreline, please contact our traffic services section or visit the Traffic Services webpage at www.shorelinewa.gov/traffic.

When reviewing crash statistics, the numbers by themselves mean very little. But when they lead to decisive action, they can help beat the odds of injury, death, and property damage. Take, for example, the Aurora Avenue N Corridor Project. The ability to document the safety potential of the proposal allowed the City to obtain grants to help fund the project, and City leadership supported directing resources for implementation. While not shown specifically in this report, the number of reported crashes in the corridor has dropped over 60% since the roadway changes between N 145th Street and N 192nd Street were implemented.

Data Sources

This report primarily summarizes data collected by the City of Shoreline Traffic Services section for the years 2011-2013. The information collected for this report includes only the collisions reported on city streets that are investigated by police officers. Excluded from the report are crashes on private property, on N/NE 145th Street (as this roadway is currently outside Shoreline’s jurisdiction), phone reports, non-police investigated incidents, collisions under the threshold of \$700, and other non-crash vehicle incident reports.

Collision statistics analyzed in this report only include police traffic collision reports from the Shoreline police department merged with data from the Washington State Department of Transportation (WASDOT) data office, which includes crashes investigated by other agencies. No citizen reports are included in this data, as WSDOT no longer provides this data to local jurisdictions as of January 1, 2009.

The data contained in this report are based on reportable crashes only, as defined below. Other definitions of various crash categories are also provided.

Definitions

Reportable Collision	A motor vehicle-related accident which involves death, injury, or property damage in excess of \$700.00 to the property of any one person. ¹
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¹ As of January 1, 2000, the accident-reporting threshold for property damage accidents shall be seven hundred dollars (WAC 446-85-010)

All Collisions	The total number of reportable motor vehicle crashes including fatal, injury or property damage.
Fatal Collision	Motor vehicle crash that results in fatal injuries to one or more persons.
Injury Collision	Motor vehicle crash that results in injuries, other than fatal, to one or more persons.
Property Damage Only Collision (PDO)	Motor vehicle crash 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.

Part I – Overview

Collision Summary

The City of Shoreline Traffic Services section recorded 421 reported collisions within the city for the year 2013. The table below provides this collision data by category and also provides prior year data for comparison. As can be seen, 2013 had the fewest number of total collisions in the past six years.

<u>Year</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
All Collisions	531	528	477	499	519	421
Property Damage	350	332	254	297	315	251
Injury Collisions	151	175	128	137	151	128
Number of Injuries	197	213	149	164	182	170
Fatal Collisions	0	1	2	1	1	1

Societal Costs/Economic Impacts

Traffic crashes have considerable impact not only on the people directly involved in the crash but also on the community as a whole. Below is the National Safety Council’s most recent (2011) analysis of motor vehicle crash costs in the United States.² The information provided includes estimates for the average economic cost per death (not each fatal crash), per injury (not each injury crash), and property damage crash. The economic cost estimates are a measure of the productivity lost and expenses incurred because of the crashes; they do not reflect what society is willing to pay to prevent a statistical fatality or injury.

- Death \$1,420,000
- Disabling Injury \$78,700
- Incapacitating Injury \$70,500
- Non-Incapacitating evident Injury \$22,700
- Possible Injury \$12,800
- Property Damage Crash (including non-disabling injuries) \$9,100

² Source: National Safety Council® Research & Statistics <http://www.nsc.org>, updated December, 2011.

The following comprehensive cost estimates include not only the economic cost components, but also a measure of the value of lost quality of life associated with the deaths and injuries. That is, what society is willing to pay to prevent them. The values of lost quality of life were obtained through empirical studies of what people actually pay to reduce their safety and health risks, such as through the purchase of air bags. These costs are on a per injured person basis.

- Death \$4,459,000
- Incapacitating injury \$225,100
- Non-incapacitating evident injury \$57,400
- Possible injury \$26,200
- No injury \$2,400

The following table summarizes the annual societal cost impacts for the total number of traffic collisions in the City of Shoreline.

Year	2011	2012	2013
Total Societal Costs	\$11,695,400	\$12,690,350	\$11,553,850
Property Damage Only	\$2,702,700	\$2,866,500	\$2,284,100
Injuries	\$7,572,700	\$8,403,850	\$7,849,750
Fatalities	\$1,420,000	\$1,420,000	\$1,420,000

Collision Rates

Collision rates are a measure of the number of crashes at a given location in relation to the volume of traffic at that location. This is calculated by dividing the number of crashes at an intersection by the volume of vehicles entering the intersection. Analysis of the crash rate at an intersection or on a section of road is one of the techniques used for identifying and prioritizing locations that may need improvement.

High Crash Locations

For the City of Shoreline, intersections with five or more crashes in a year, or a three year collision rate higher than 0.40, are reviewed for changes that may reduce the collision rate. Additional locations are also reviewed as time permits. These are sometimes referred to as “High Frequency Crash Locations” or “High Collision Locations” (HCL). When an intersection or section of roadway appears on the HCL list, it may be selected for corrective measures based on the crash rate and type of crash. For more information about HCLs in Shoreline, please see Part III of this report – High Crash Locations.

Collision Reduction Factors – The 3 E’s

Education: Education involves informing people about the ways in which they can help ease traffic problems. For example, reducing their speed or using travel alternatives such as bicycles. The City of Shoreline works to provide education about traffic issues through a number of programs such as the Neighborhood Traffic Action Plans (NTAP) and Neighborhood Traffic Safety Program (NTSP), as well as through newsletters, neighborhood meetings, and information on our website.

Enforcement: Collision reduction enforcement is provided by the Shoreline Police Department Traffic Division by focusing enforcement efforts on problem areas and HCLs to increase community awareness and compliance with traffic and speed limit laws.

Engineering: To achieve collision reduction through engineering, Traffic Services staff monitors and evaluates traffic and travel patterns within our travel network. Staff also designs, operates and manages facilities for all modes of transportation in order to provide for the safe and efficient movement of people, goods, and services.

Of these three categories, education may be the most effective in reducing crashes. When residents become aware of how and why crashes happen, they can then take the necessary steps towards addressing traffic problems that can lead to collisions.

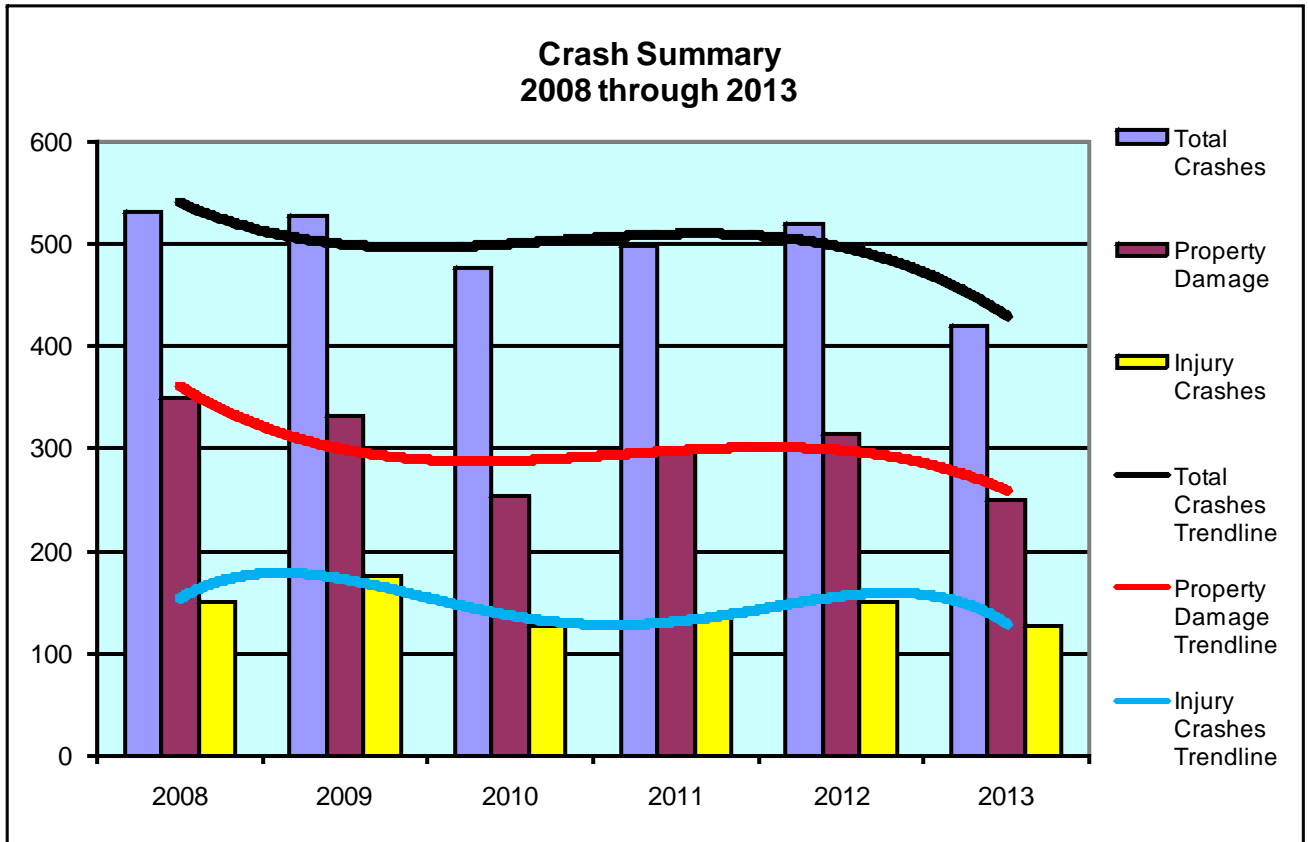
Although not always citizens' most favorite experience, enforcement is very effective and a very necessary factor in managing traffic safety. Without enforcement, people using Shoreline's streets and rights-of-way are often tempted to push the limit of the law, which puts other motorists and pedestrians at higher risk.

Engineering envelopes all the physical elements of the transportation system. These include roadway design items such as geometric design, sidewalks, curb locations, signage, striping and traffic signals. Properly designed these roadway and traffic control elements provide users with safe conditions and clear information on how to move safely through the City. Engineering aims to make all modes of travel (vehicles, pedestrians, bicycles and transit) safer, comfortable, convenient and efficient.

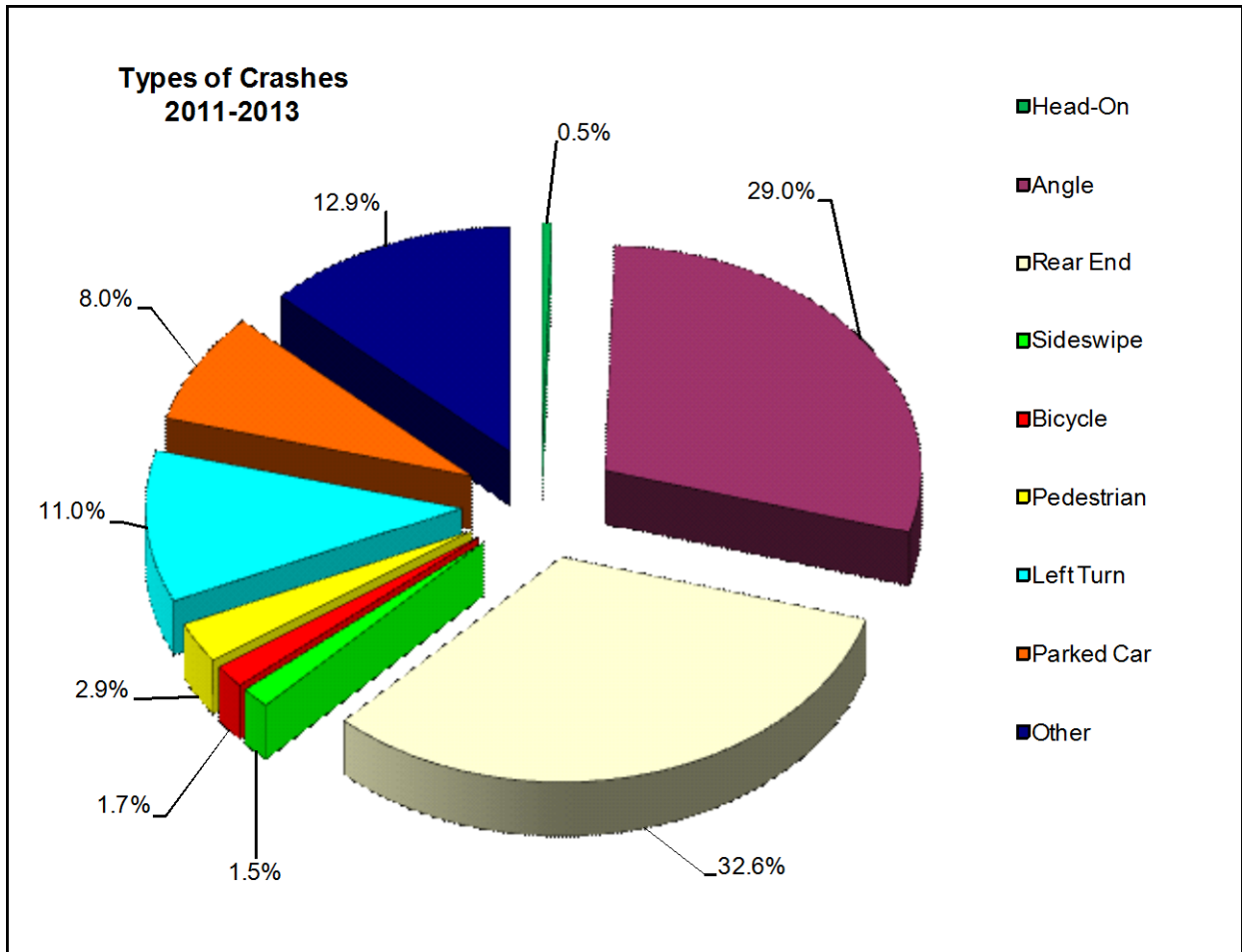
In summary, all three collision reduction factors are equally needed to support our transportation system. As well, drivers and street users are responsible for the safety of themselves and others.

Part II – 2011 - 2013 Traffic Crash Data

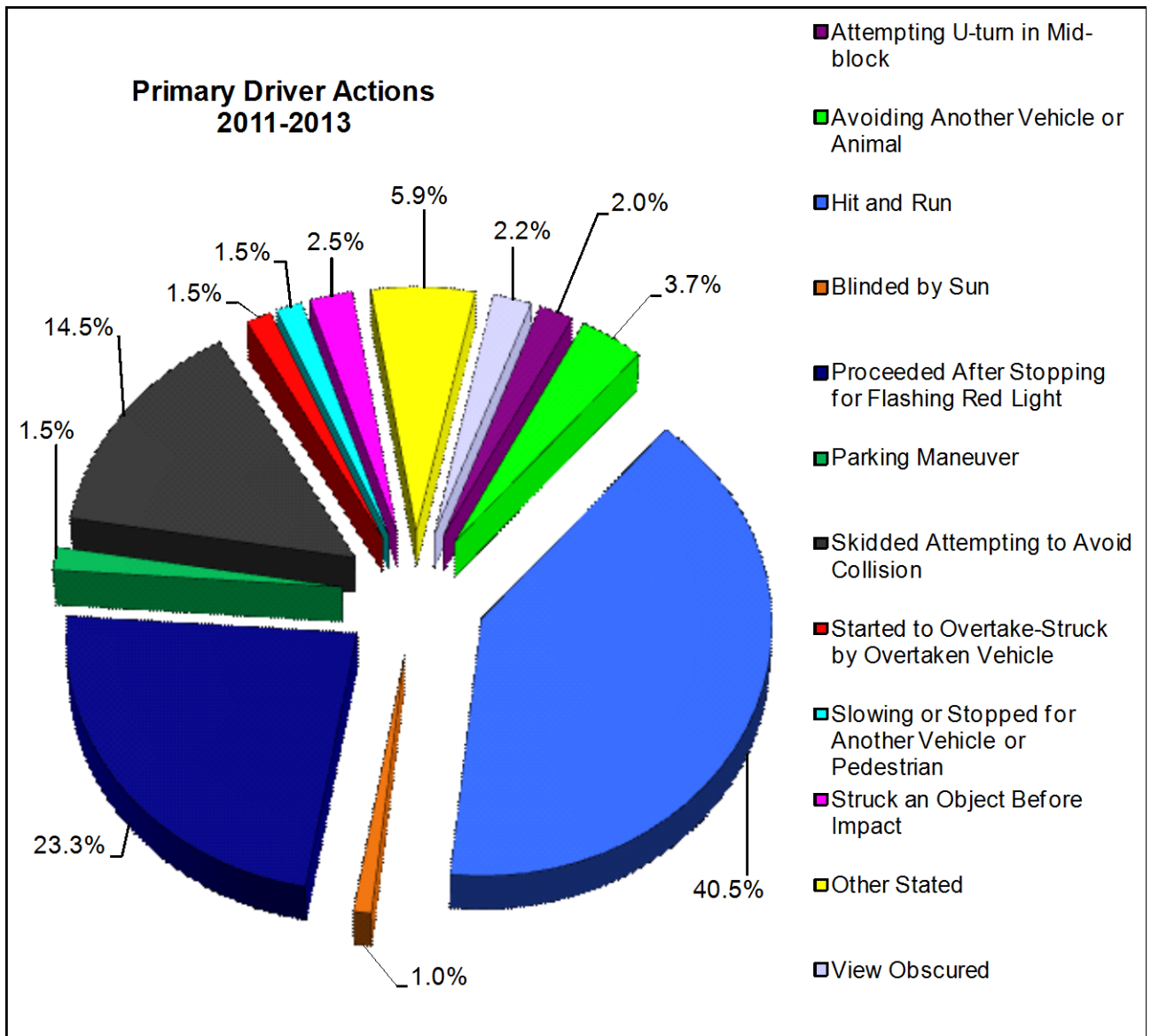
This section of the report provides a variety of information based on the crash data received from WSDOT. This information can be reviewed and analyzed to better understand contributors and/or identify trends associated with crashes.



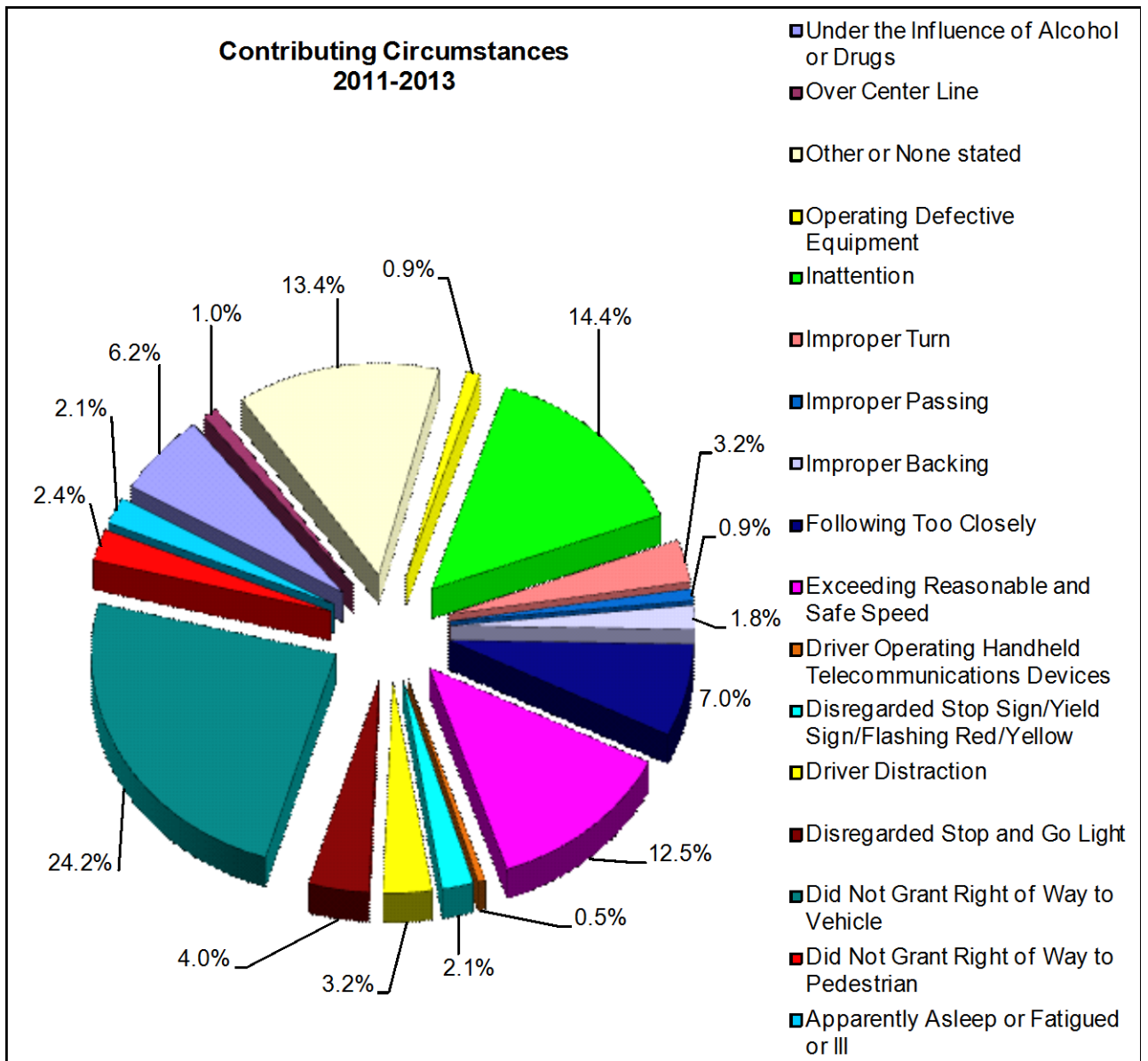
As can be seen in this table (and the Collision Summary Table on page 4 of this report), the trend lines highlight that the total crashes and injuries have been decreasing over the last four years with 2013 having the lowest number of crashes in the past six years. While the trend for property damage seems to closely follow the total crashes, the injury crashes appear to be more consistent and less correlated to the number of crashes.



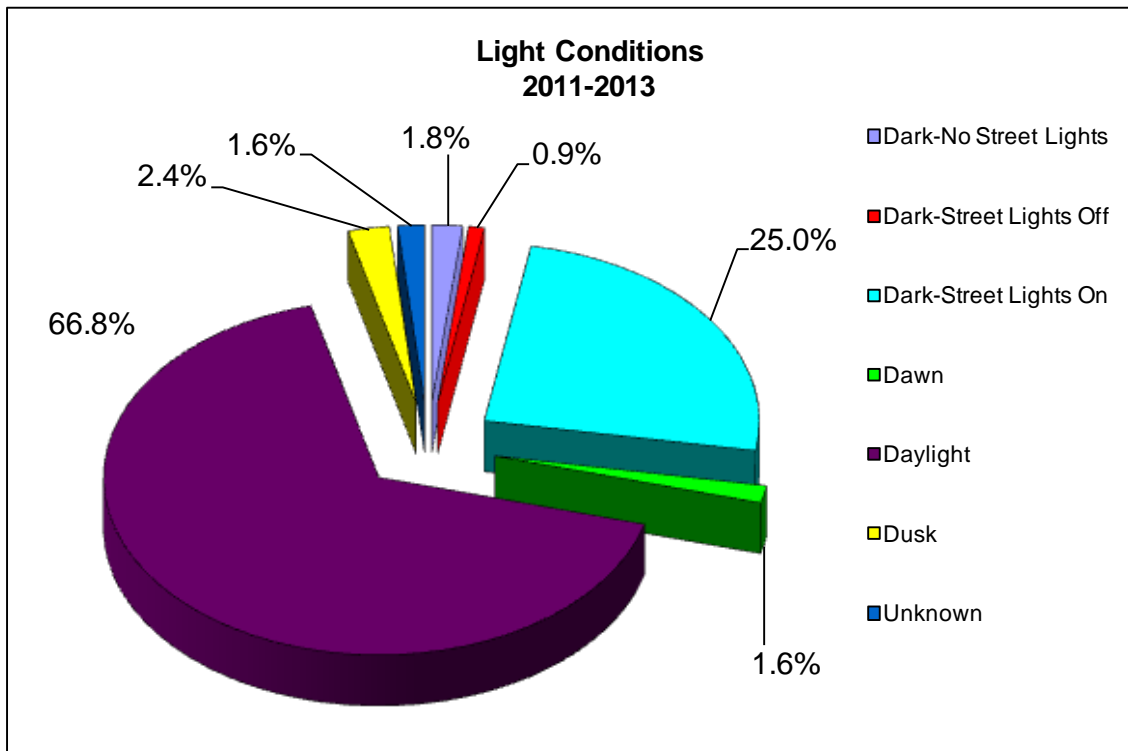
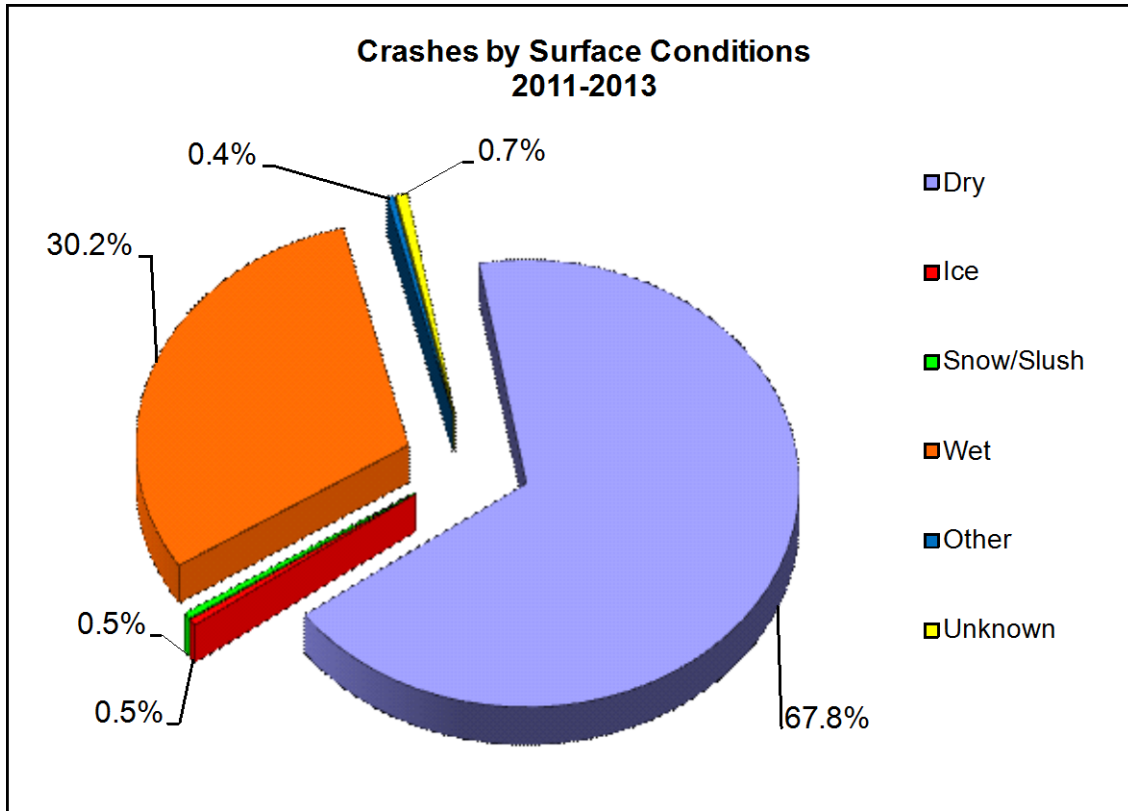
Rear-end and right-angle crashes make up around 62% of all reported collisions types on City streets. Crashes involving pedestrian or bicycles make up about 5% of all reported collision types.



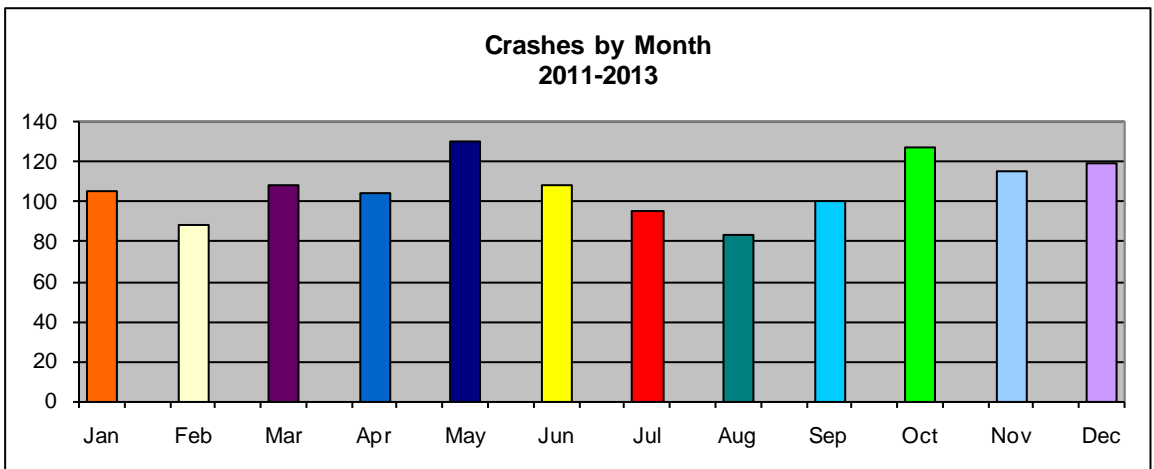
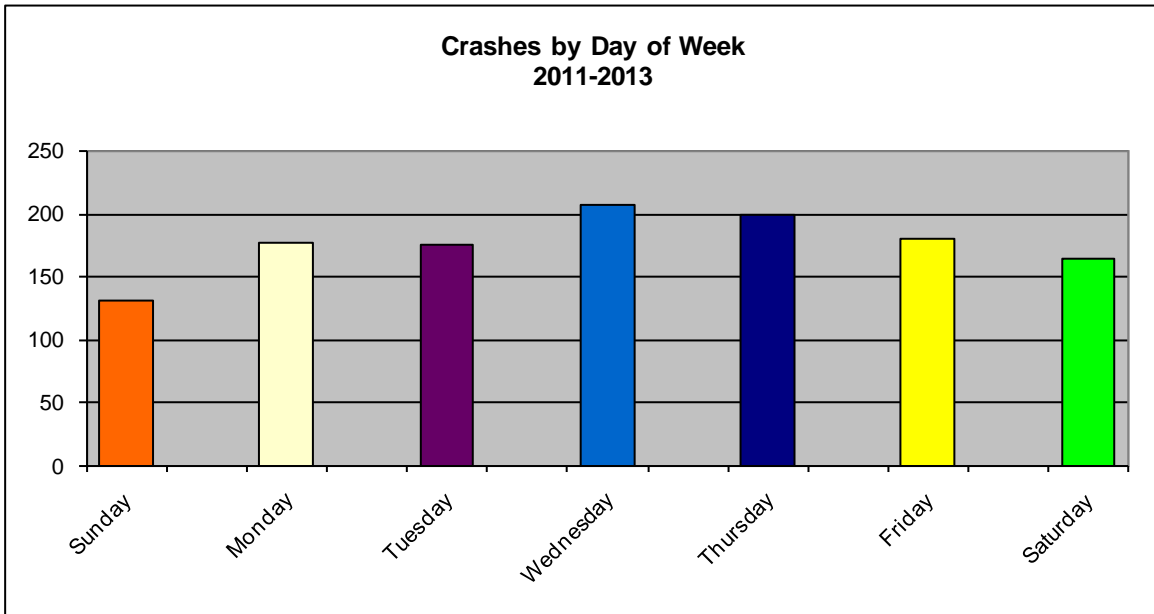
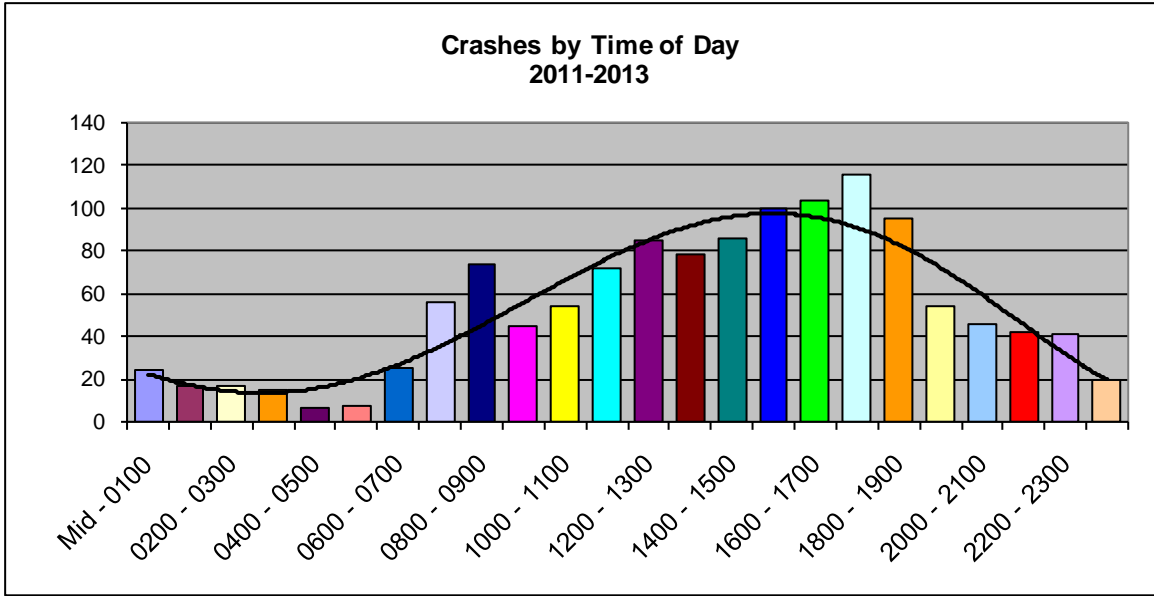
This information can help identify contributing factors in crashes. It is interesting to note that Hit and Run crashes make up over 40% of all reported collisions, which includes hitting parked cars. The other item of significance is that almost a quarter of the accidents occur at after stopping for a flashing red light.

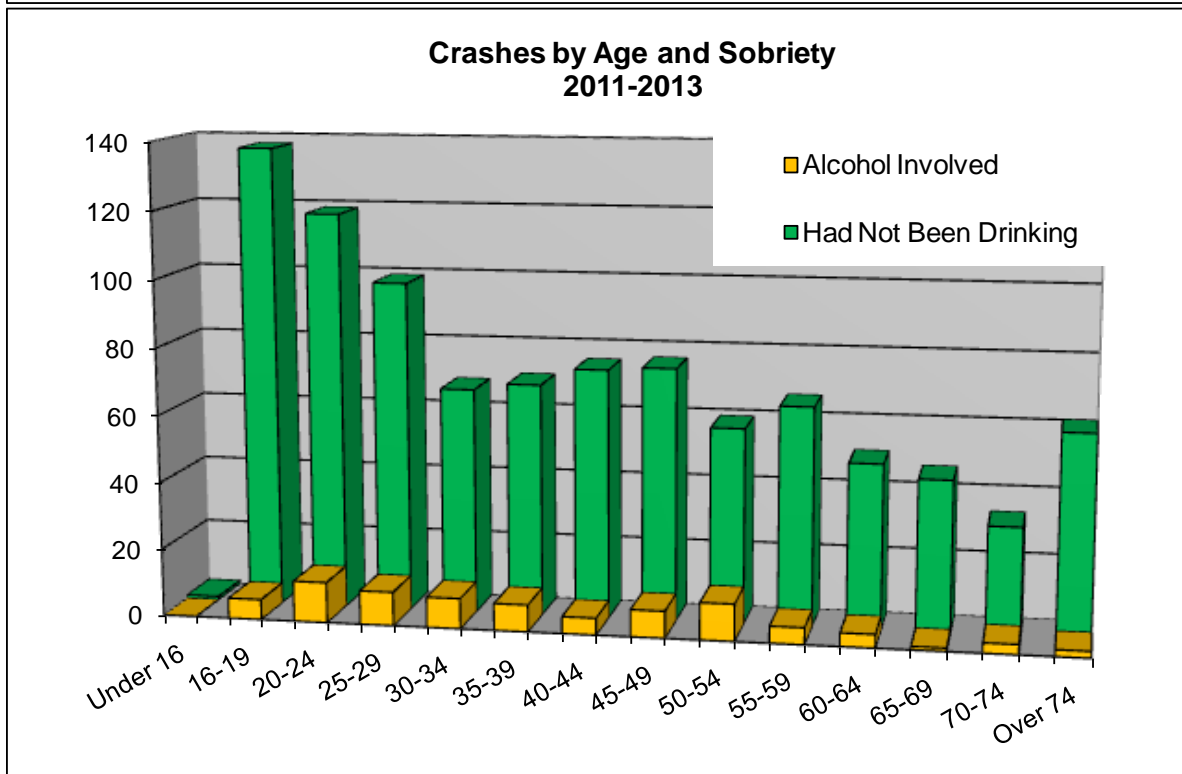
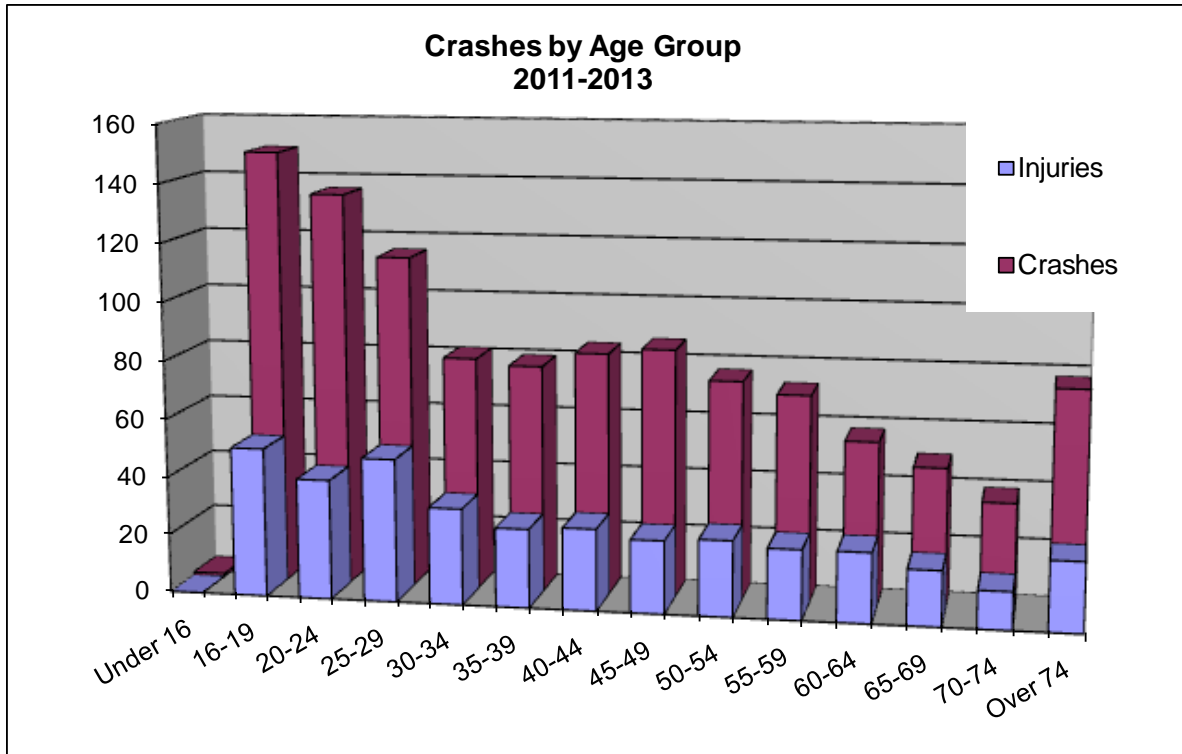


The top two contributing circumstances for crashes in Shoreline are “did not grant right-of-way”, and “inattention”. Combined, they make up almost forty percent of all reported crashes.



Approximately two-thirds of reported crashes occur in the daylight on dry pavement.





In most cases, crashes are specific to the location, but this type of information can be utilized to target educational or enforcement activities. For example, the above chart indicates most accidents occur by drivers between the ages of 16 and 19. This information can be used to target education opportunities to these teen drivers.

Part III – High Crash Locations

To identify HCLs in Shoreline, the following data (2011 through 2013) has been analyzed by location, both intersections and street segments, and has been sorted by number of crashes and the collision rate (per million entering vehicles per year). This HCL data is then reviewed to identify specific cause or contributing factors to the crash and opportunities to improve safety through engineering, education or enforcement activities.

High Crash Intersection Locations - Sorted by Rate

Location - Sorted by Rate	signal	# of Crashes	# of Injuries	# of Fatal	Crash Rate	Injury Rate
Ashworth Ave N & N 192nd St		6	3	0	1.23	0.61
25th Ave NE & NE 155th St		5	2	0	0.91	0.37
19th Ave NE & NE 205th St	y	6	4	0	0.77	0.52
5th Ave NE & 145th St I-5 Rp		6	0	0	0.76	0.00
3rd Ave NW & NW Richmond Bch Rd	y	16	6	0	0.71	0.27
Linden Ave N & N 185th St	y	10	5	0	0.58	0.29
Westminster Wy N & N 155th St	y	8	2	0	0.43	0.11
Meridian Ave N & N 200th St	y	6	3	0	0.42	0.21
5th Ave NE & NE 155th St	y	7	7	0	0.41	0.41
Meridian Ave N & N 155th St	y	7	3	0	0.38	0.16
Meridian Ave N & N 185th St	y	9	3	0	0.37	0.12
5th Ave NE & NE 175th St	y	9	6	0	0.37	0.24
15th Ave NE & NE 168th St		6	6	0	0.32	0.32
10th Ave NE & NE 175th St	y	5	4	0	0.28	0.22
15th Ave NE & NE 180th St	y	5	3	0	0.26	0.16
8th Ave NE & NE 175th St		5	1	0	0.25	0.05
8th Ave NW & NW Richmond Bch Rd	y	6	3	0	0.24	0.12
Meridian Ave N & N 175th St	y	9	1	0	0.22	0.02
Aurora Ave N & N 200th St	y	9	5	0	0.21	0.12
Aurora Vill MI N & N 205th St	y	5	1	0	0.20	0.04
Westminster Wy N & Dayton Ave N	y	5	2	0	0.19	0.07
15th Ave NE & NE 175th St	y	5	3	1	0.19	0.11
25th Ave NE & Ballinger Way NE	y	5	0	0	0.19	0.00
19th Ave NE & Ballinger Way NE	y	5	2	0	0.17	0.07

High Crash Intersection Locations - Sorted by Number of Crashes

Location - Sorted by Number of Crashes	signal	# of Crashes	# of Injuries	# of Fatal	Crash Rate	Injury Rate
3rd Ave NW & NW Richmond Bch Rd	y	16	6	0	0.71	0.27
Linden Ave N & N 185th St	y	10	5	0	0.58	0.29
Meridian Ave N & N 185th St	y	9	3	0	0.37	0.12
5th Ave NE & NE 175th St	y	9	6	0	0.37	0.24
Meridian Ave N & N 175th St	y	9	1	0	0.22	0.02
Aurora Ave N & N 200th St	y	9	5	0	0.21	0.12
Aurora Ave N & N 155th St	y	9	2	0	0.16	0.04
Westminster Wy N & N 155th St	y	8	2	0	0.43	0.11
5th Ave NE & NE 155th St	y	7	7	0	0.41	0.41
Meridian Ave N & N 155th St	y	7	3	0	0.38	0.16
Ashworth Ave N & N 192nd St		6	3	0	1.23	0.61
19th Ave NE & NE 205th St	y	6	4	0	0.77	0.52
5th Ave NE & 145th St I-5 Rp		6	0	0	0.76	0.00
Meridian Ave N & N 200th St	y	6	3	0	0.42	0.21
15th Ave NE & NE 168th St		6	6	0	0.32	0.32
8th Ave NW & NW Richmond Bch Rd	y	6	3	0	0.24	0.12
Aurora Ave N & N 192nd St	y	6	4	0	0.16	0.11
Aurora Ave N & N 163rd St		6	3	0	0.14	0.07
Aurora Ave N & N 175th St	y	6	0	0	0.10	0.00
25th Ave NE & NE 155th St		5	2	0	0.91	0.37
10th Ave NE & NE 175th St	y	5	4	0	0.28	0.22
15th Ave NE & NE 180th St	y	5	3	0	0.26	0.16
8th Ave NE & NE 175th St		5	1	0	0.25	0.05
Aurora Vill MI N & N 205th St	y	5	1	0	0.20	0.04

High Accident Roadway Segments - Sorted by Rate

	<u>Location</u>	<u># of Crashes</u>	<u># of Injuries</u>	<u># of Fatal</u>	<u>Crash Rate</u>	<u>Injury Rate</u>	<u>volume</u>	<u>length</u>
1	N 152nd St from Aurora Ave N to Stone Ln N	5	2	0	24.21	9.68	1,500	664
2	N 185th St from Meridian Ave N to Meridian Ct N	6	2	0	20.07	6.69	10,600	136
3	Greenwood Ave N from N 145th St to Westminster Wy N	9	1	0	13.53	1.50	20,300	158
4	Aurora Ave N from Westminster Wy N to N 160th St	8	8	0	11.74	11.74	38,191	86
5	NW Innis Arden Way from 6th Ave NW to 9th Ave NW	7	3	0	11.37	4.87	2,000	1,484
6	N 155th St from Aurora Ave N to Midvale Ave N	10	2	0	10.91	2.18	13,000	340
7	Aurora Ave N from N 199th St to N 200th St	18	5	0	8.35	2.32	31,232	333
8	15th Ave NE from NE 145th St to NE 146th St	8	2	0	7.69	1.92	15,100	332
9	25th Ave NE from NE 153rd St to NE 155th St	5	2	0	7.62	3.05	4,800	659
10	15th Ave NE from NE 169th St to NE 170th St	7	7	0	6.73	6.73	15,100	332
11	N 175th St from Corliss Ave N to 175th St Ramp Sb	10	0	0	6.29	0.00	26,700	287
12	NE 175th St from 12th Ave NE to 15th Ave NE	10	2	0	5.32	1.06	13,960	649
13	Aurora Ave N from N 184th St to N 185th St	9	2	0	5.26	1.17	38,191	216
14	Aurora Ave N from N 195th St to Firlands Way N	8	1	0	5.19	0.65	31,232	238
15	Ballinger Way NE from 19th Ave NE to NE 205th St	30	17	0	4.31	2.44	20,600	1,630
16	N 185th St from Linden Ave N to Aurora Ave N	8	3	0	4.27	1.60	13,600	665
17	Aurora Ave N from N 198th St to N 199th St	9	1	0	4.25	0.47	31,232	327
18	Aurora Ave N from N 185th St to N 192nd St	19	4	0	4.15	0.87	31,232	707
19	Aurora Ave N from N 160th St to N 163rd St	21	8	0	4.02	1.53	38,191	660
20	N 175th St from Meridian Ave N to Corliss Ave N	19	4	0	3.86	0.81	26,700	888
21	15th Ave NE from NE 172nd St to NE 175th St	7	5	0	3.36	2.40	15,100	665
22	Aurora Ave N from Firlands Way N to N 198th St	9	5	0	3.21	1.78	31,232	433
23	NW Richmond Beach Rd from 3rd Ave NW to 8th Ave NW	14	4	1	3.20	0.91	15,897	1,327
24	NE 175th St from 8th Ave NE to 10th Ave NE	6	2	0	3.18	1.06	13,960	651
25	15th Ave NE from Forest Prk Dr NE to NE 205th St	11	4	0	2.91	1.06	15,100	1,208

High Accident Roadway Segments - Sorted by Number of Crashes

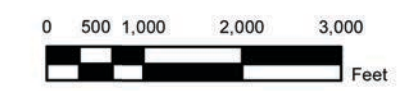
	Location	# of Crashes	# of Injuries	# of Fatal	Crash Rate	Injury Rate	volume	length
1	Ballinger Way NE from 19th Ave NE to NE 205th St	30	17	0	4.31	2.44	20,600	1,630
2	Aurora Ave N from N 160th St to N 163rd St	21	8	0	4.02	1.53	38,191	660
3	Aurora Ave N from N 152nd St to N 155th St	20	8	0	2.81	1.12	38,191	898
4	Aurora Ave N from N 185th St to N 192nd St	19	4	0	4.15	0.87	31,232	707
5	N 175th St from Meridian Ave N to Corliss Ave N	19	4	0	3.86	0.81	26,700	888
6	Aurora Ave N from N 200th St to N 205th St	19	4	0	2.14	0.45	32,500	1,320
7	Aurora Ave N from N 175th St to Ronald PI N	19	9	0	2.08	0.98	38,191	1,156
8	Aurora Ave N from N 199th St to N 200th St	18	5	0	8.35	2.32	31,232	333
9	NW Richmond Beach Rd from 3rd Ave NW to 8th Ave NW	14	4	1	3.20	0.91	15,897	1,327
10	Aurora Ave N from N 167th St to N 170th St	14	10	0	2.66	1.90	38,191	665
11	Aurora Ave N from N 149th St to N 152nd St	13	1	0	2.11	0.16	38,191	779
12	Aurora Ave N from N 192nd St to N 195th St	12	4	0	1.88	0.63	31,232	987
13	Aurora Ave N from N 145th St to N 149th St	12	0	0	1.54	0.00	38,191	982
14	15th Ave NE from Forest Prk Dr NE to NE 205th St	11	4	0	2.91	1.06	15,100	1,208
15	Aurora Ave N from N 170th St to Ronald PI N	11	5	0	1.64	0.75	38,191	845
16	Aurora Ave N from N 155th St to Westminster Wy N	11	8	0	1.38	1.01	38,191	1,003
17	N 155th St from Aurora Ave N to Midvale Ave N	10	2	0	10.91	2.18	13,000	340
18	N 175th St from Corliss Ave N to 175th St Ramp Sb	10	0	0	6.29	0.00	26,700	287
19	NE 175th St from 12th Ave NE to 15th Ave NE	10	2	0	5.32	1.06	13,960	649
20	Aurora Ave N from Ronald PI N to N 175th St	10	7	0	2.88	2.02	38,191	438
21	Greenwood Ave N from N 145th St to Westminster Wy N	9	1	0	13.53	1.50	20,300	158
22	Aurora Ave N from N 184th St to N 185th St	9	2	0	5.26	1.17	38,191	216
23	Aurora Ave N from N 198th St to N 199th St	9	1	0	4.25	0.47	31,232	327
24	Aurora Ave N from Firlands Way N to N 198th St	9	5	0	3.21	1.78	31,232	433
25	Aurora Ave N from N 163rd St to N 165th St	9	1	0	1.72	0.19	38,191	660

City of Shoreline Traffic Flow Map 2013

24-Hour Average Weekday Traffic
(Combined Two-Directional Totals)

Legend

-  35,001 to 40,000
-  30,001 to 35,000
-  25,001 to 30,000
-  20,001 to 25,000
-  15,001 to 20,000
-  10,001 to 15,000
-  5,001 to 10,000
-  0 to 5,000

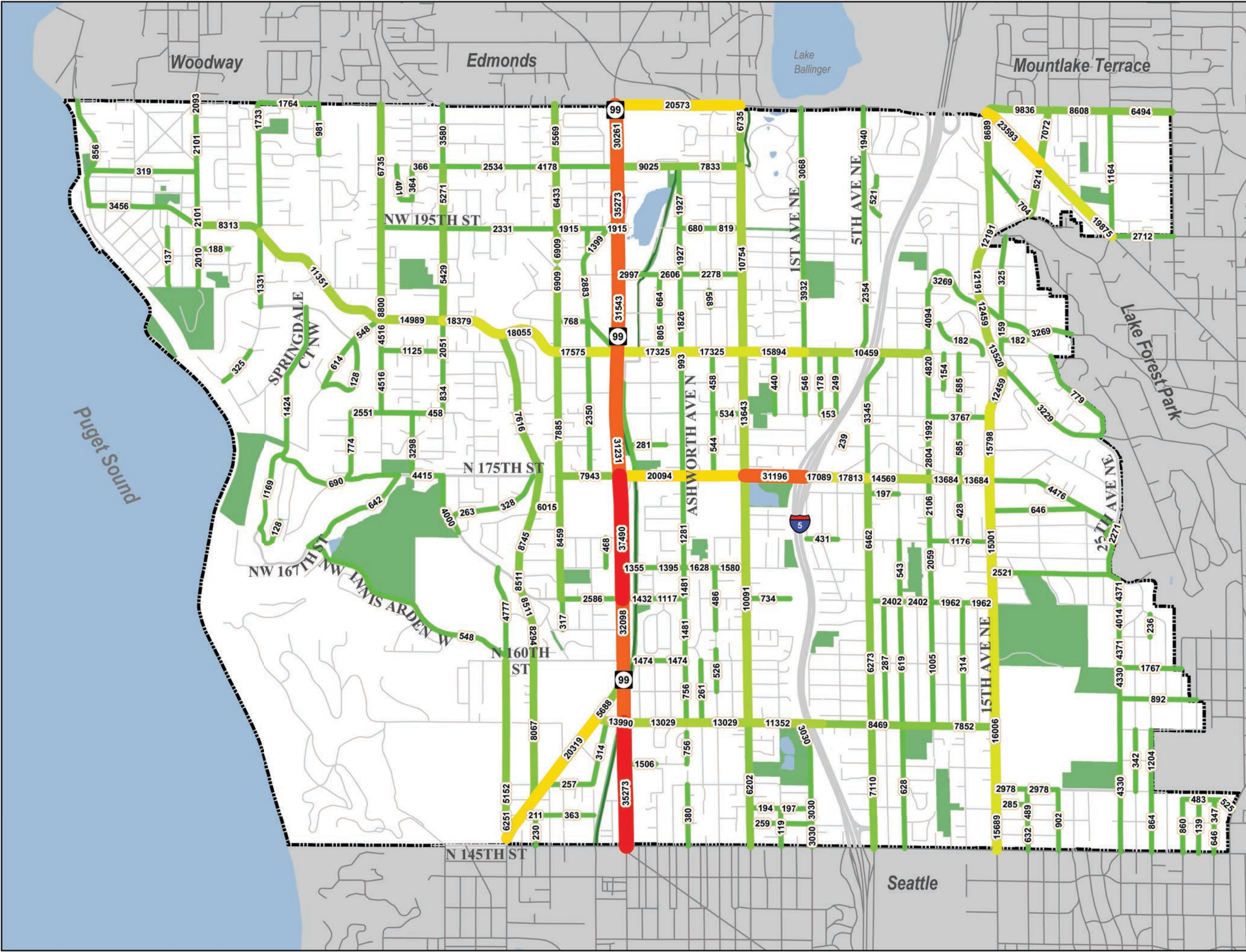


1 inch = 1,953 feet



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Map Data: Through December 2013
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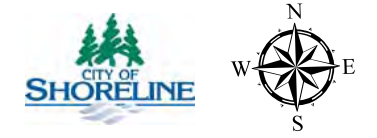
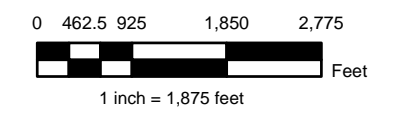
Geographic Information System

Attachment B2 City of Shoreline Traffic Speed Map 2013

Difference Between
85th Percentile Speeds* and
Posted Speed Limit**

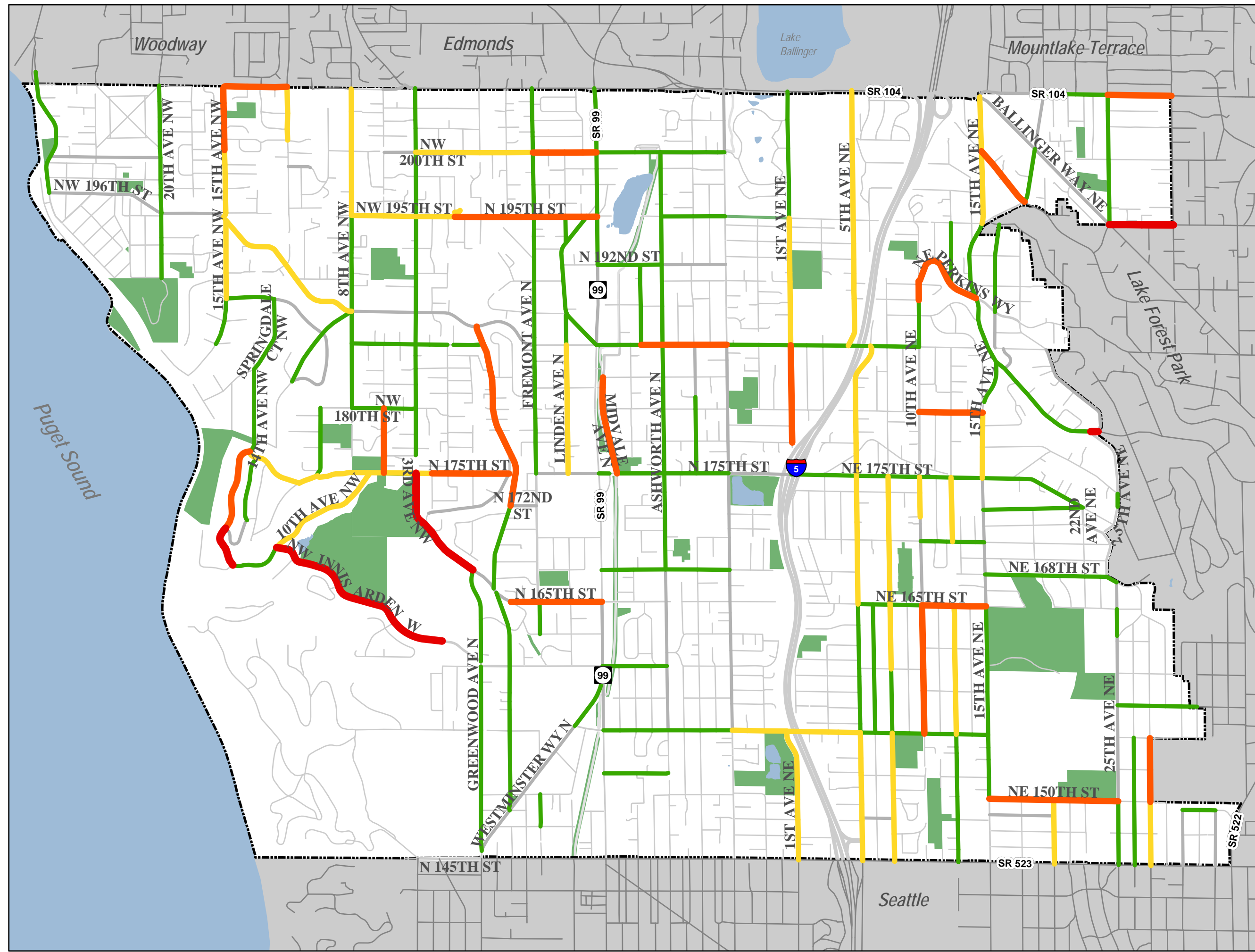
Legend for Speed Ranges

- 10 to 13 MPH Over
- 8 to 9 MPH Over
- 6 to 7 MPH Over
- 3 to 5 MPH Over
- 1 to 2 MPH Over



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SHORELINE







Geographic Information System

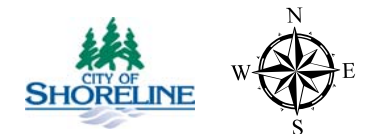
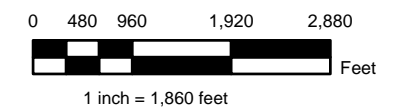
Attachment B3

City of Shoreline Traffic Speed Map 2013

85 Percentile Speeds
24-Hour Average Weekday Traffic
(Combined Two-Directional Averages)

Legend for Speed Ranges

-  45+
-  40 - 45
-  35 - 40
-  30 - 35
-  25 - 30
-  <25



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Map Data: Through December 2013
No warranties of any sort, including accuracy, fitness, or merchantability, accompany this product.

