

The Seattle Department of Transportation

# 2011 TRAFFIC REPORT





## Table of Contents

1. Introduction
2. Volume and Speed
  - a. Motor Vehicle Volume
  - b. Traffic Flow Map
  - c. Bicycle Volume
  - d. Pedestrian Volume
  - e. Motor Vehicle Speed
3. Traffic Collisions
  - a. Citywide Collision Rate
  - b. Fatal Collisions
  - c. Pedestrian Collisions
  - d. Bicycle Collisions
4. Traffic Enforcement
  - a. Traffic Citations
  - b. Automated Traffic Enforcement
5. Data Use
  - a. Nickerson Street
  - b. Aurora Corridor
6. Future Data Collection
  - a. Automated Bicycle Counter
  - b. Freight Data
7. Appendices

This report has been prepared in compliance with Seattle Municipal Code 11.16.220, which requires the City Traffic Engineer to present an annual traffic report that includes information about traffic trends and traffic collisions on city streets.

In gathering and compiling the information in this report, the Seattle Department of Transportation does not waive the limitations on this information's discoverability or admissibility under 23 U.S.C § 409.

For additional information about collisions on Seattle streets, readers may contact the City Traffic Engineer Dongho Chang at [dongho.chang@seattle.gov](mailto:dongho.chang@seattle.gov).

Peter Hahn  
Director  
Seattle Department of Transportation

Dongho Chang, P.E.  
City Traffic Engineer  
Seattle Department of Transportation

This page intentionally left blank.

Traffic volume, speed, and reported collisions are the three cardinal pieces of data traffic engineers use to evaluate engineering changes to the streets.

### Traffic Volume and Speed

The Seattle Department of Transportation (SDOT) collects and maintains volume data for vehicles (including trucks), pedestrians, and bicycles. Engineers and planners use volume data to select future project locations, support grant applications, and track the performance of traffic projects once they are installed.

SDOT has recently started regularly collecting vehicle speed data. Speed data is particularly useful for making traffic safety decisions such as those connected with traffic calming, Safe Routes to School, and crossing improvements.



### **Motor Vehicle Volume**

SDOT is responsible for counting the volume of traffic on certain city arterial streets each year. Traffic counts are taken throughout the year at 20 control count locations, 164 screen line locations and 111 additional locations.

At 20 locations, SDOT takes control counts every month. These counts are added together and divided by 12 to derive a monthly control factor. This factor is then applied to every count we take to adjust for seasonal changes in traffic. In addition, SDOT measures vehicle volume at 164 screen line locations. These locations are identified in Seattle's Comprehensive Plan, and the counts are used to determine screen line levels of service as required by the plan. We also measure vehicle volume at 111 additional locations each year. The locations of control, screen line, and other regular counts are shown on maps in the appendix. SDOT also measures volume at ad hoc locations throughout the year as needed for traffic analysis and engineering studies.

Using the annual counts taken at 19 of Seattle's bridges, SDOT derives a proxy number for citywide motor vehicle annual average daily traffic. Based on this data, volume has remained essentially the same as 2010. The graph of Seattle's annual average daily traffic (AADT) on page 2-3 shows that while volume was nearly flat from 2010 to 2011, it is still trending downward from a high in 2003, despite the steadily increasing population.

**Average Daily Traffic in Seattle**



**Seattle Population**



**Average Annual Employment**



Source: US Department of Labor, Bureau of Labor Statistics

**Transit Ridership**



Source: King County Metro and Sound Transit

Top 10 Arterial Segments by Volume			Average Week day Traffic (AWDT)
<b>West Seattle Bridge</b>	east of	Delridge Ramps	83,200
<b>Aurora Avenue N</b>	south of	Harrison Street	77,200
<b>East Marginal Way S</b>	south of	S Alaska Street	70,900
<b>Elliott Avenue W</b>	southeast of	W Mercer Place	49,300
<b>Montlake Boulevard NE</b>	north of	NE Pacific Place	46,000
<b>Valley Street</b>	west of	Fairview Avenue N	44,847
<b>15th Ave NW</b>	north of	W Armory Way	42,400
<b>S Michigan Street</b>	east of	6th Avenue S	41,400
<b>Lake City Way NE</b>	southwest of	NE 115th Street	40,800
<b>Denny Way</b>	west of	2nd Ave	40,300

All values are rounded to the nearest 100 vehicles and exclude the Alaskan Way viaduct and 1st Avenue South

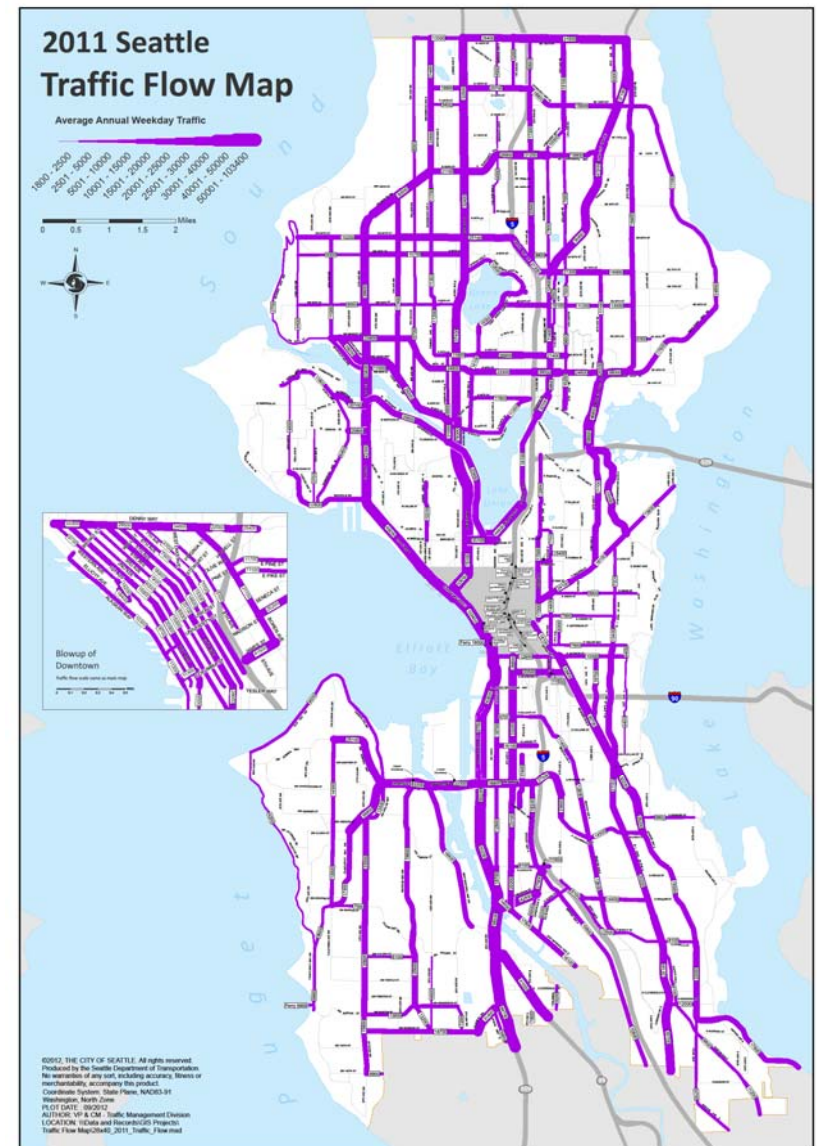
In 2011 the top ten arterials for traffic volume include three streets that were not on the list in 2010: 15th Avenue NW north of W Armory Way, Denny Way west of 2nd Avenue, and West Seattle Bridge east of the Delridge ramps.



## Flow Map

One of the uses of annual vehicle volume counts is to create the Traffic Flow Map, which uses different line weights to show relative traffic volumes on arterial streets. A copy of the 2011 Flow Map is shown. The volumes on the map represent the Average Annual Weekday Traffic (AAWDT) (5-days, 24-hour) for that section of roadway. A full size version to this map is available on SDOT's website at the following location:

<http://www.seattle.gov/transportation/tfdmaps.htm>



### Bicycle Volume

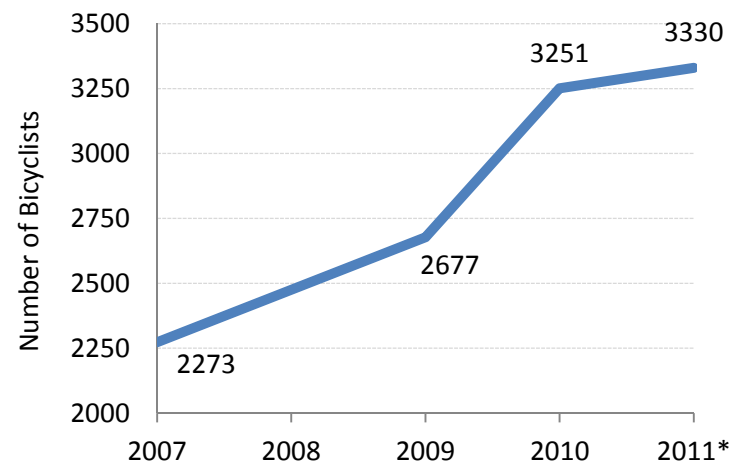
SDOT collects bicycle volume data with three different count programs: a quarterly citywide program, a downtown cordon manual count in odd numbered years, and a citywide manual count in even numbered years. In 2010, both the downtown cordon and the citywide locations were counted.

In 2011, only a portion of the downtown cordon count was completed due to lack of volunteers to count. This partial count was extrapolated based on changes noted at the counted locations and the results, displayed on the graph to the right, show a continuing upward trend.

The downtown cordon count can be compared to historical data going back to 1992 and is a measurement tool as the city strives to reach its goal of tripling the number of cyclists by 2017.



**SDOT Biennial Bicycle Cordon Count**



\*Extrapolated from partial count data

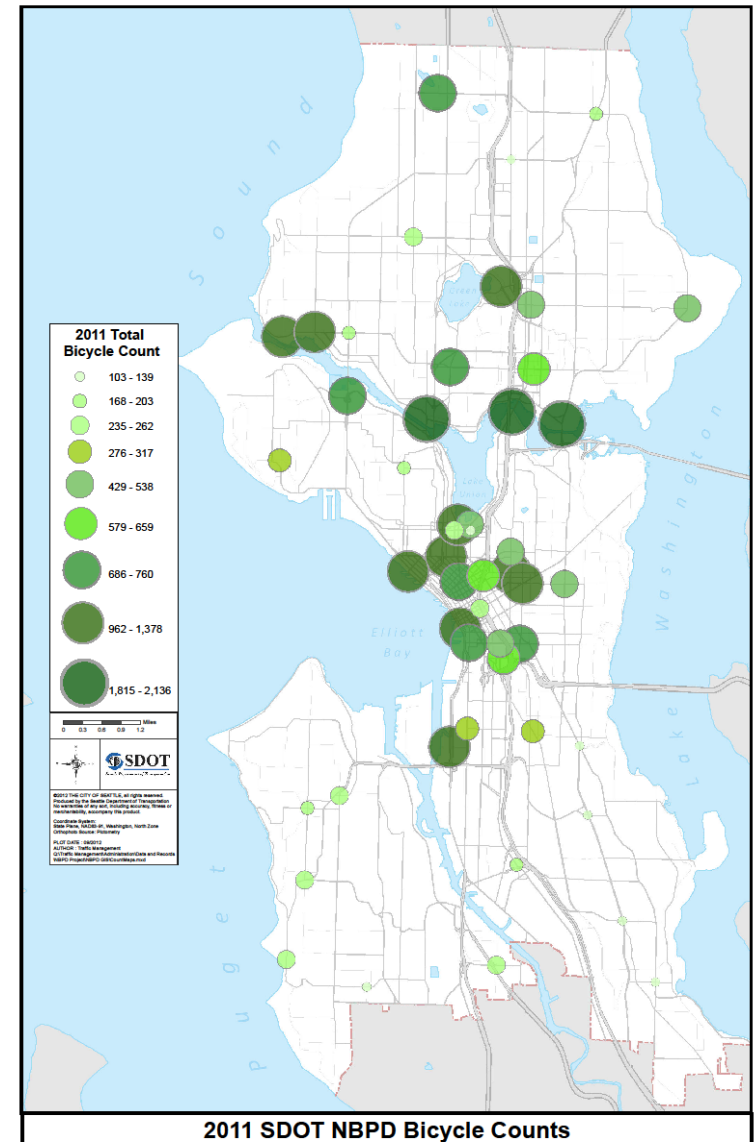
### Quarterly Citywide Bicycle Counts

In 2011 SDOT began a new systematic bicycle count program that uses [National Bicycle and Pedestrian Documentation \(NBPD\) methodology](#) to count bicycles and pedestrians at 50 locations citywide, four times a year. These locations (listed in the appendix) were carefully selected based on previous citywide bicycle counts, input from planners, and specific project requirements. The counts are conducted quarterly in January, May, July, and September. Each quarter's counts are collected for PM peak (5-7pm), off peak (10am-noon), and Saturday (noon - 2pm) time periods at each location. This adds up to 600 counts per year. The new counts program is more reliable and captures a broader snapshot of cycling than previous volunteer based counts, which will be phased out in the near future.

Citywide in 2011, the new program counted 30,604 cyclists. The cumulative totals for cyclists counted at each location in 2011 are shown on the map to the right; with larger, darker circles representing a higher number of cyclists.

As would be expected, the fewest number of cyclists, 3,251, were counted in January. July tops the chart with 11,218 cyclists. September just edges out May for the next most cyclists with 8,051 versus 7,474 for May. The location with the most cyclists counted in 2011 was the intersection of Fremont Ave N and N 34<sup>th</sup> St, with 2,136. More detailed results of counts by location can be found in the appendix and on the web at:

<http://www.seattle.gov/transportation/bikedata.htm>

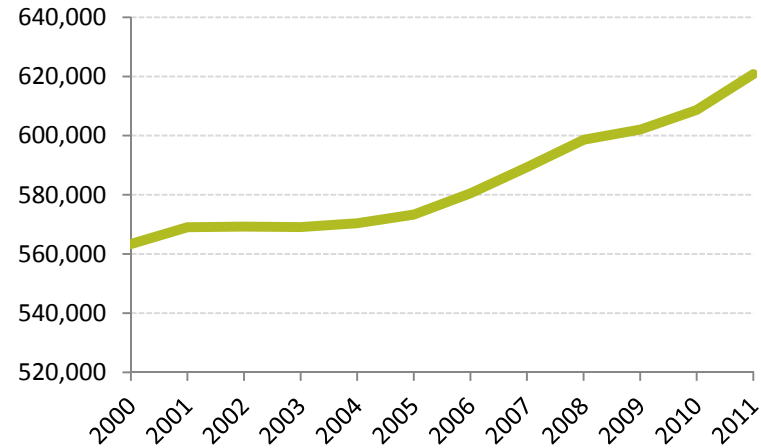


### Pedestrian Volume

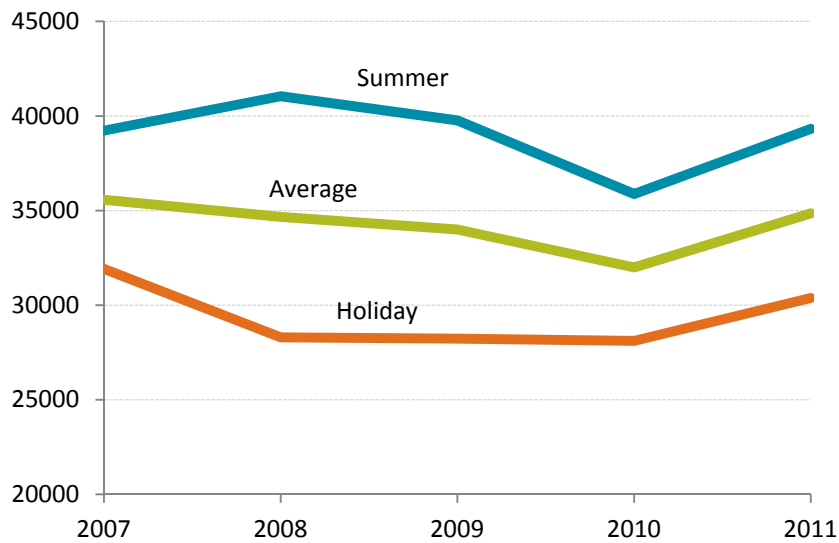
SDOT has been measuring pedestrian volume using the Downtown Seattle Association’s downtown pedestrian counts, both summer and holiday season, as well as US Census figures for Seattle’s population.

These counts reversed their recent downward trend, turning upwards in 2011 for both the summer and holiday counts.

### Seattle Population



### Downtown Seattle Pedestrian Counts



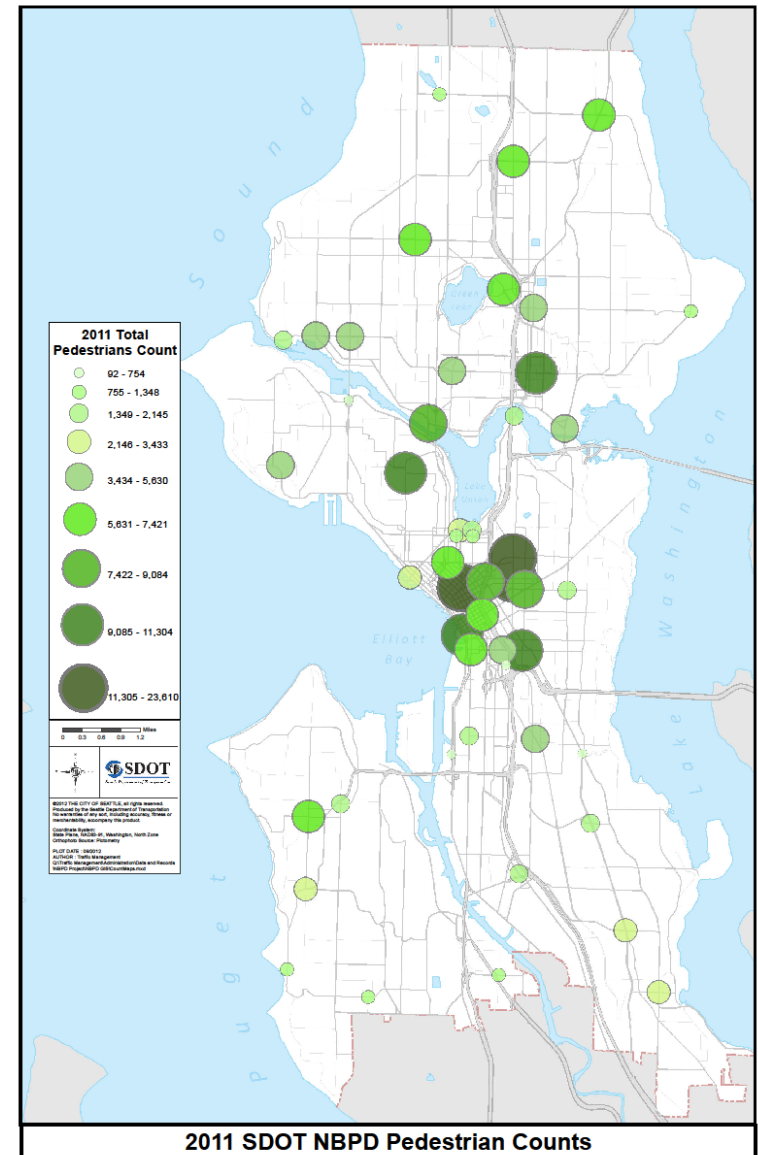
### Quarterly Citywide Pedestrian Counts

In 2011, SDOT started using the National Bicycle and Pedestrian Documentation project methodology for counting bicycles and pedestrians. These spot counts will provide consistent, annual pedestrian volumes that we can track over time. Each count is conducted at an intersection and records the number of pedestrians crossing each leg of the intersection.

Since these counts are collected in conjunction with the quarterly bicycle counts they share the January, May, July, and September count dates as well as the PM peak (5-7pm), off peak (10am-noon), and Saturday (noon -2pm) time periods.

This ongoing program will expand SDOT's data on pedestrians beyond the city center, as well as provide better insight into seasonal and daily pedestrian patterns. As the program matures, SDOT will be able to establish pedestrian volume trend for locations across the city.

The total number of pedestrian counted in 2011 by the program was 267,745. Pedestrian volumes were more consistent than cyclist volumes, ranging from 59,163 in January to 74,117 in July. The busiest pedestrian location counted in 2011 was Broadway and East Pine Street with 23,610 total pedestrians counted. The map to the right shows the cumulative pedestrian volumes for each location counted in 2011. This data is displayed in a tabular format in the appendix.



## Motor Vehicle Speed

Starting in 2010, SDOT began collecting speed data much as we collect volume data – at specified locations each year, in addition to those ad-hoc locations that serve site-specific traffic evaluation needs. SDOT also collects vehicle for purposes of traffic safety investigations, prospective project selection and design, and for evaluation of completed projects.

Engineers measure speed a number of different ways, including 85<sup>th</sup> percentile speed of traffic and high-end speeder percentage. The 85<sup>th</sup> percentile measure is the most commonly used and represents the speed at or below which 85 percent of traffic travels. The high-end speeder percentage is the percentage of drivers who exceed the posted speed limit by 10 miles per hour or more.

Aurora Avenue N, Stone Way N, Fautleroy Avenue SW, 24th Avenue NW, and Rainier Avenue S are all specified in the Pedestrian Master Plan as locations to report on trends in the 85<sup>th</sup> percentile speed of traffic. The 2011 results for these locations are listed in the table to the right. For complete results of the speed studies program, see the appendix.

Location	Direction	85th Percentile Speed	Speed Limit
Aurora Ave N, south of N 112th St	NB	42.8	35
Aurora Ave N, south of N 112th St	SB	42.5	35
Stone Way N, south of N 45th St	NB	25.2	30
Stone Way N, south of N 45th St	SB	27.1	30
24th Ave NW, south of NW 80th St	NB	31.6	30
24th Ave NW, south of NW 80th St	SB	31.5	30
Rainier Ave S, northwest of S Holly St	NWB	37.5	30
Rainier Ave S, northwest of S Holly St	SEB	36.3	30
Fautleroy Way SW, south of SW Alaska St	NB	35.2	35
Fautleroy Way SW, south of SW Alaska St	SB	34.2	35

The page intentionally left blank.

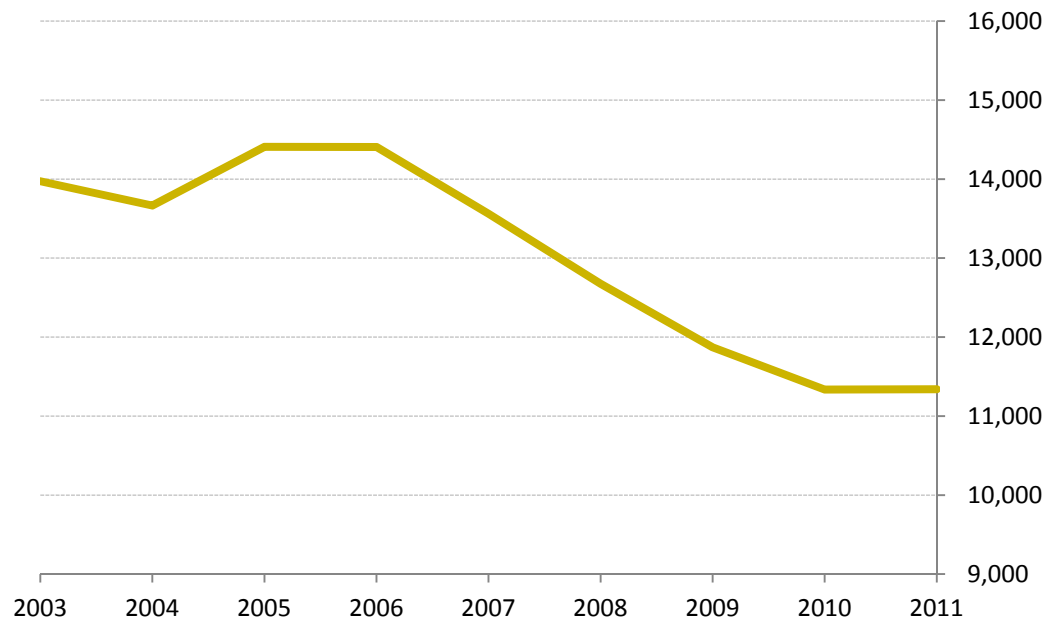
There were 11,339 collisions in 2011 on Seattle streets reported by local police departments, continuing the historically low level recorded in 2010.

### Traffic Collisions

While most collisions result from road user error or inattention, collision data can be used to help gauge the effectiveness of engineering and enforcement efforts and can help identify locations that may benefit from additional engineering treatments or enhanced enforcement efforts.

There were 11,339 police reported collisions on Seattle streets in 2011. In addition there were 1,108 reports filed by citizens, which are of limited value due to reliability and completeness factors. The number of police collision reports is essentially unchanged from 2010 as can be seen in the chart of this trend shown below. The trend for all types of reports is listed in the appendix.

**Police Reported Collisions on Seattle Streets**



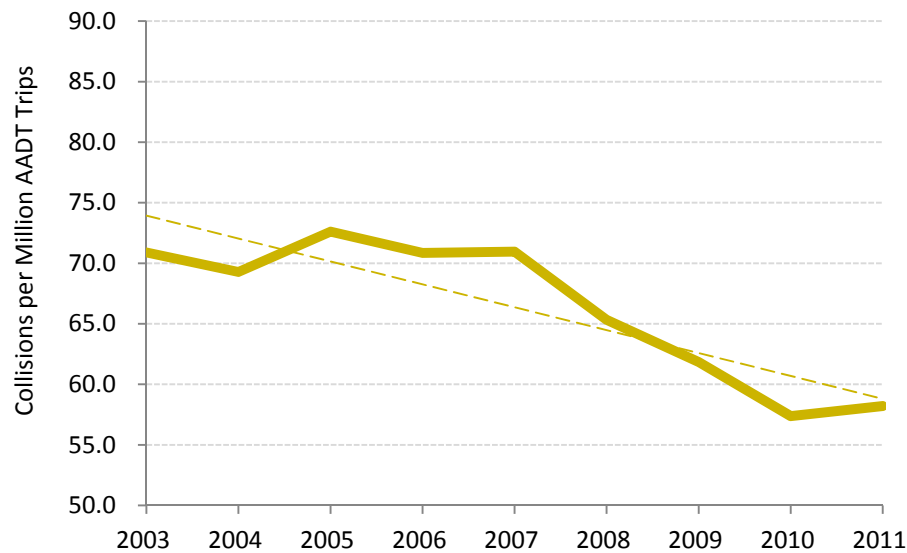


### Citywide Collision Rate

We continue to see a downward trend in the citywide collision rate. The rate that SDOT uses is the number of police reported collisions per Average Annual Daily Trip (AADT). The AADT used is a citywide approximation of arterial traffic volumes and in this case it has been adjusted to exclude volumes on I-5, I-90 and SR-520 because our collision data do not include collisions on these roadways. Though the methodology is imperfect, it is nevertheless illustrative.

Year	Police Reported Collisions	Average Daily Traffic	AADT	Citywide Collision Rate
2003	13,973	540,028	197,110,220	70.9
2004	13,665	540,423	197,254,395	69.3
2005	14,408	543,675	198,441,375	72.6
2006	14,406	557,068	203,329,820	70.9
2007	13,562	523,616	191,119,840	71.0
2008	12,674	531,508	194,000,420	65.3
2009	11,870	525,925	191,962,687	61.8
2010	11,336	541,320	197,581,800	57.4
2011	11,339	*533,735	194,813,275*	58.2

Citywide Collision Rate



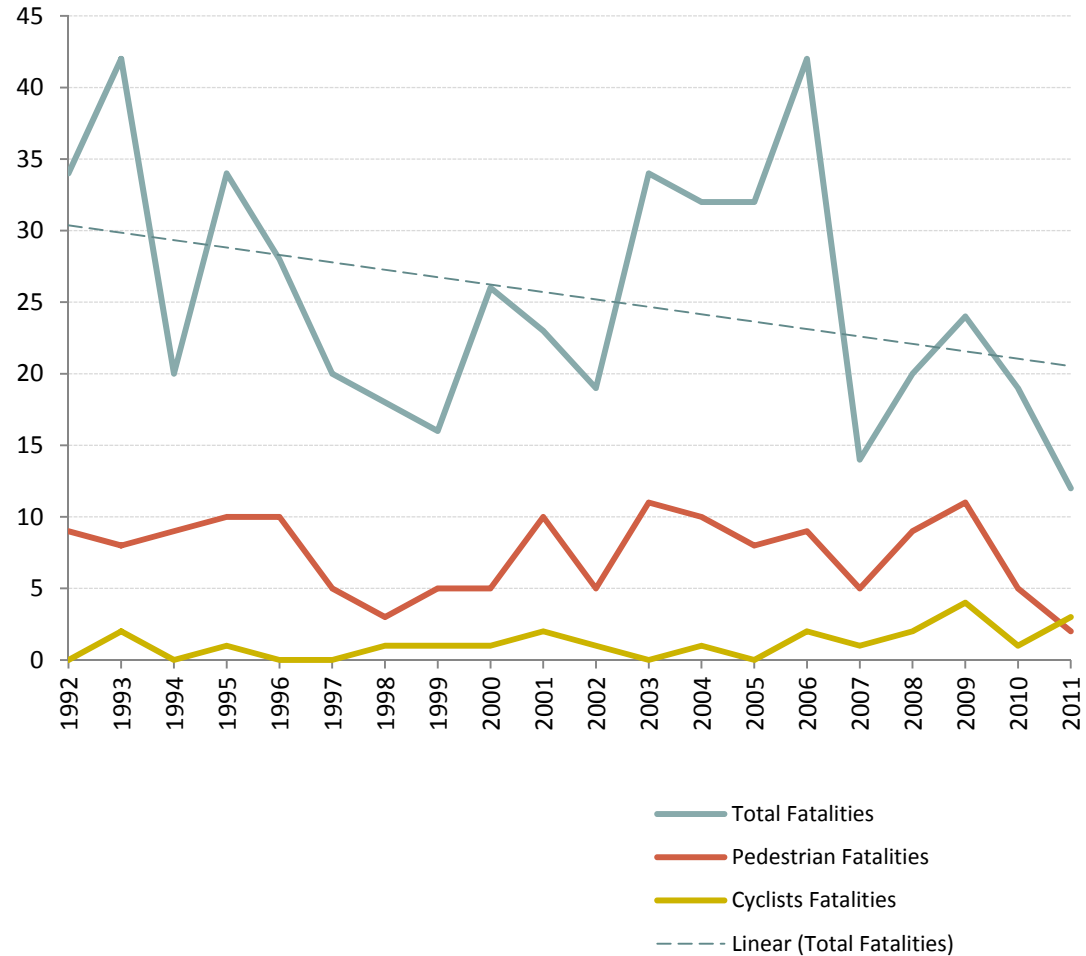
\* 2011 ADT and AADT use a 3 year average volume for the 16th Avenue South Bridge, which was closed for all of 2011.

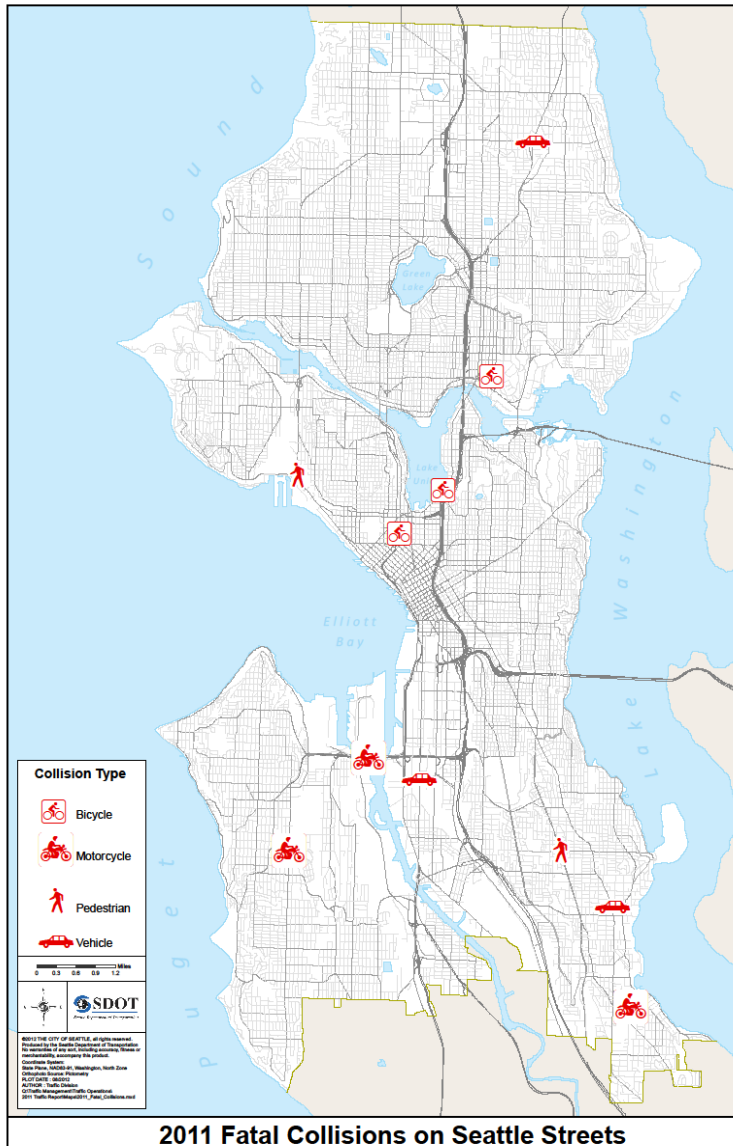
— Citywide Collision Rate  
- - - Linear (Citywide Collision Rate)

### Fatalities

In 2011, 12 fatalities resulted from 11 collisions on Seattle streets, the lowest number on record. These numbers do not include incidents on limited access State Highways and Interstates, but do include incidents on the Alaskan Way Viaduct. This continues a downward trend in the total number of fatalities on Seattle streets, which have decreased approximately 33% since 1992. Two of the 2011 fatalities were pedestrians and two were cyclists. The map on the page to the right shows the locations of all the fatal collisions on Seattle streets in 2011. See the appendix list of the fatalities and their location.

### Fatalities on Seattle Streets





In 2011 there were 11 fatal collisions resulting in 12 fatalities. The 2011 Fatalities on Seattle Streets table in the appendix lists specifics for each fatality.

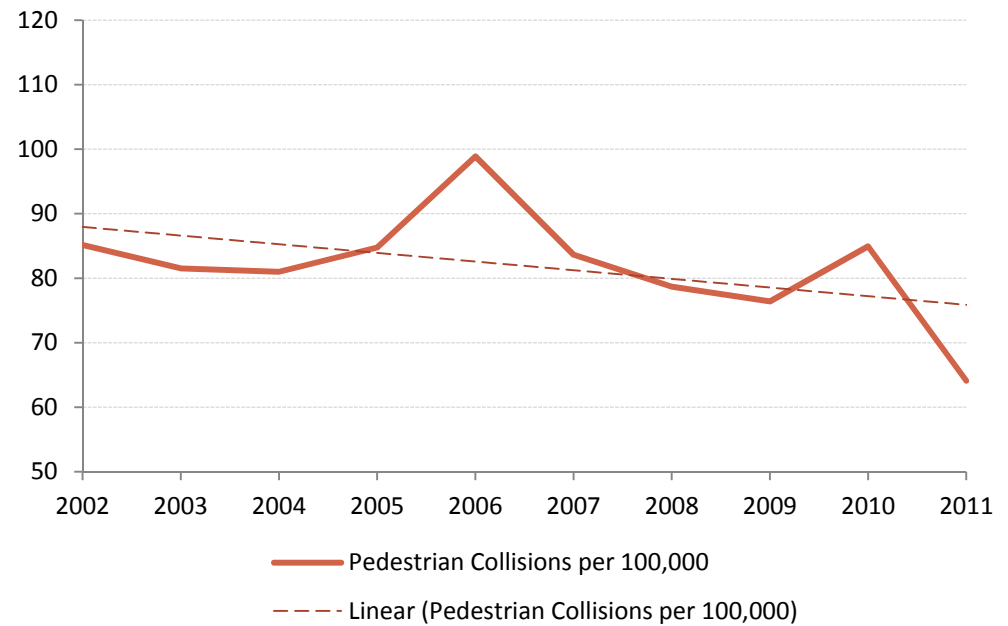
### Pedestrian Collision Rate

The 2009 Pedestrian Master Plan defined a decreasing trend in the rate of collisions involving pedestrians as a safety goal. SDOT continues to measure its pedestrian collision rate as the number of pedestrian collision divided by the population of the City of Seattle.

There is a noticeable decline in the pedestrian collision rate, shown in the graph to the right as the rate per 100,000 inhabitants, with a sharp decline of 21 collisions per 100,000 inhabitants from 2010 to 2011. SDOT hopes new investment in pedestrian improvements will continue this trend.

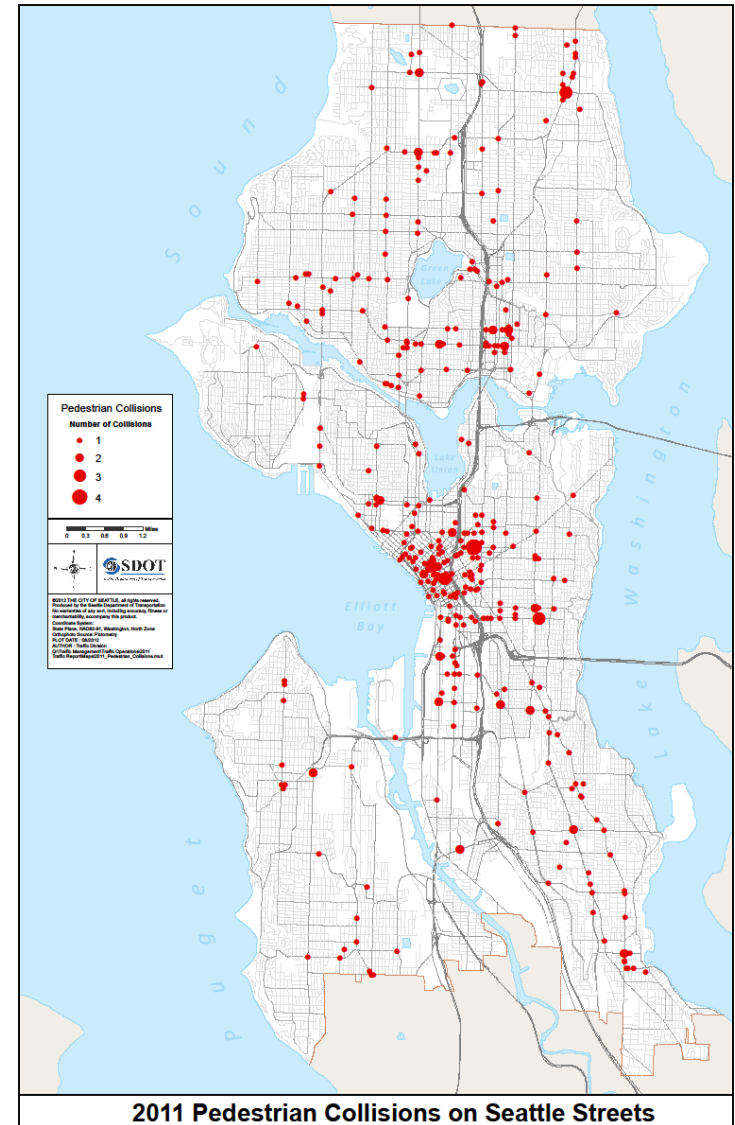
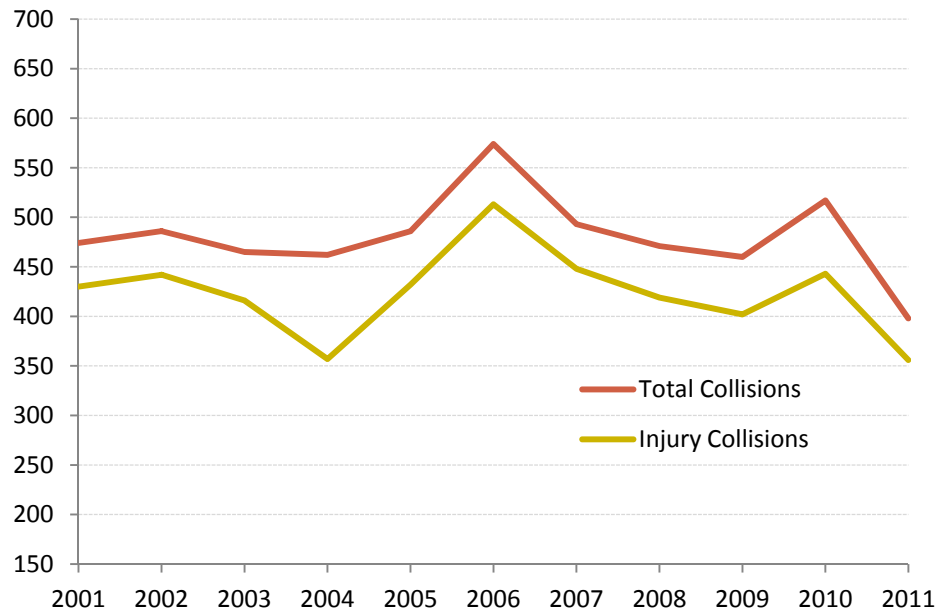


### Pedestrian Collisions per 100,000 Inhabitants





**Total and Injury Collisions for Pedestrians**



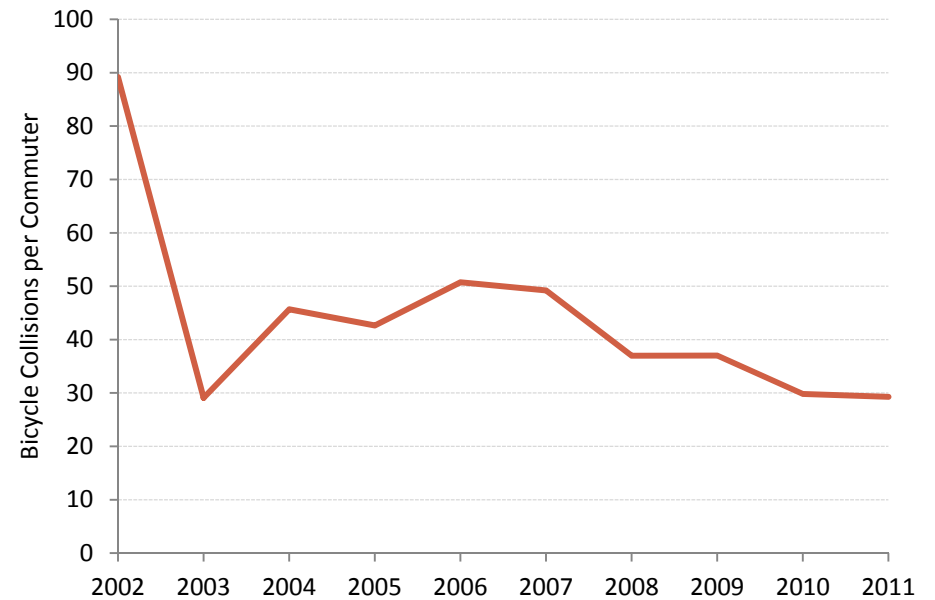
### Bicycle Collision Rate

The chart to the right show the bicycle collision rate as a factor of the number of bicycle commuters as reported by the U.S. Census Bureau's American Community Survey (ACS). Currently, the ACS number is the best proxy that SDOT has for the total number of cycling trips in the City of Seattle. Eventually the quarterly citywide cyclists count totals will be used to calculate the bicycle collision rate but not enough data exists to track a trend yet.

The bicycle collision rate shows a decreasing trend since 2007 when SDOT Bicycle Master Plan was implemented. This decreasing trend shows that even though total bicycle collisions may increase, the number of cyclists on the road is increasing faster and thus the bicycle collision rate is decreasing.



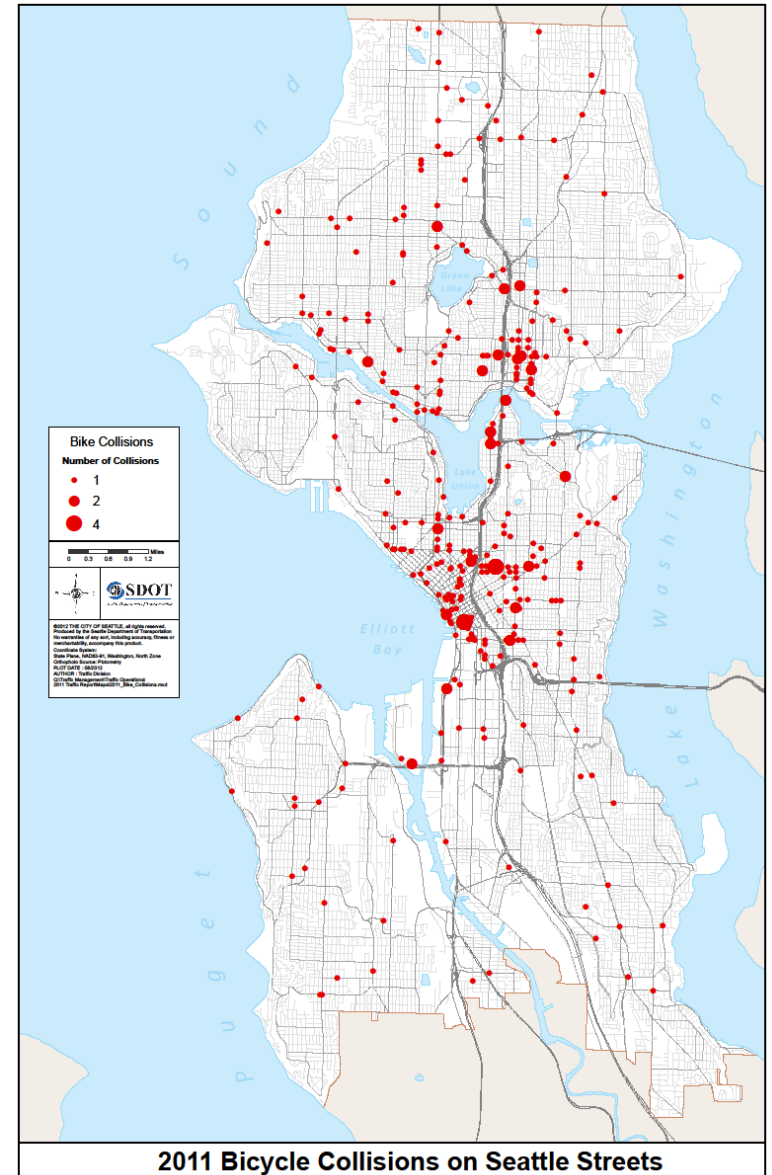
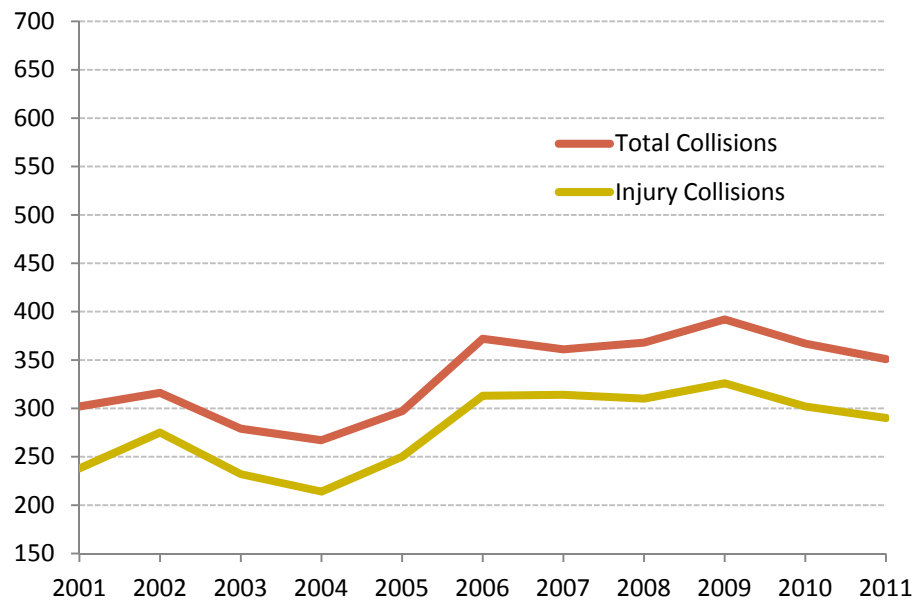
### Bicycle Collision Rate per Bicycle Commuter\*



\*Bicycle commuters as reported by the ACS



Total and Injury Collisions for Cyclists



**SDOT partners with the Seattle Police Department (SPD) to focus enforcement in areas of concern for traffic safety.**

### **Traffic Enforcement**

Enforcement is a critical component of traffic safety. SDOT partners with the Seattle Police Department (SPD), sharing information that helps focus enforcement efforts where they can do the most good. Enforcement can curb undesirable behavior such as speeding, aggressive driving, jaywalking and failure to yield the right of way.

SDOT regularly receives suggestions about locations where additional traffic enforcement might help curb undesirable traffic behavior. In addition, as a result of our engineers' work, SDOT identifies locations where police enforcement might yield a better roadway environment. SDOT forwards enforcement requests to the SPD Traffic Section monthly, and the SPD Traffic Section takes these requests into consideration as they allocate their officers' time and efforts. SPD and SDOT continue to develop their partnership with regards to traffic safety enforcement and data.

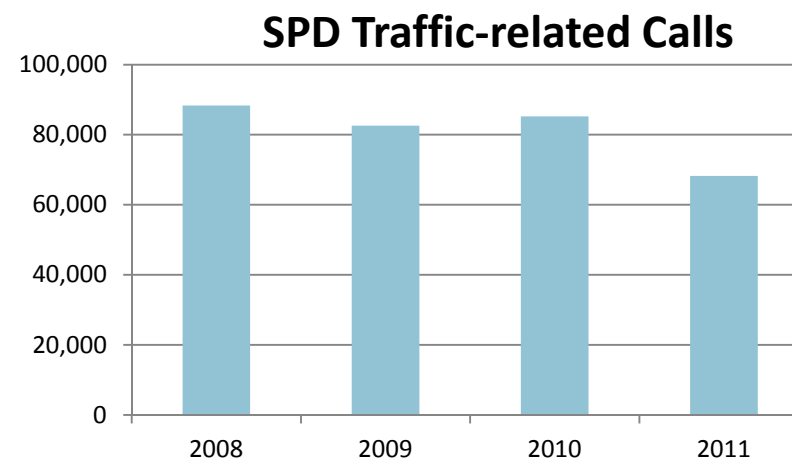
Because of the way police officers call data is recorded, SDOT is using two data sets for analysis. The first is the data extracted from SPD's computer-aided dispatch system (CAD). This system records officers' "calls." The second data set uses the citation statistics from SPD's Traffic Section.





### Traffic-related Calls

CAD-generated ‘calls’ do not reflect a high degree of specificity within certain types of incidents. For example, a “moving violation” call may or may not have resulted in a citation. It might be a speeding ticket, a failure-to-yield ticket or any other type of moving violation. SPD’s Traffic Section’s statistics contain this level of detail, but their statistics do not reflect traffic infractions issued by SPD’s non-traffic patrol officers and aren’t always recorded in the CAD system. These are very different sets of data, which cannot be combined.



### 2008-2011 Seattle Police Department Traffic-related Calls

Type of Incident	2008	2009	2010	2011
Blocking Traffic	2,774	2,204	2,444	2,198
Accident Investigation	20,386	17,884	18,061	17,390
Assist Motorist	2,027	1,754	1,663	1,538
DUI	1,637	1,812	2,060	2,225
Moving Violation	32,838	33,861	37,131	23,714
Pedestrian Violation	1,981	1,824	2,676	1,286
Parking Violation (excluding abandoned vehicles)	26,592	21,630	20,845	19,714

**Traffic Section Citations**

To the right is a listing of the number of citations issued by members of SPD’s cadre of traffic police in 2011 and the two previous years. Moving violations and speeding continue to be the most issued citations. Overall, 68,349 citation were issued in 2011 by SPS’s Traffic Section. This is up almost 9% over the number of citations issued in 2010 even though no data was available on School Zone-related citation for 2011.

**Automated Enforcement**

The city of Seattle uses two kinds of automated enforcement: traffic safety cameras located at signalized intersections and a mobile speed van used in school zones and on arterial streets with documented speeding issues.

**Traffic Safety Cameras**

Seattle Police Department currently has 30 traffic safety cameras – also known as red light cameras – at 21 different arterial intersections throughout the city. Based on evaluation of the first six cameras deployed in 2006, the cameras reduced red-light running by more than 40 percent. These same cameras showed an 18% drop in red light-related collisions (right-angle crashes), comparing three years before cameras. These findings are preliminary and should be used cautiously as SDOT data show that collision rates are down citywide over the last decade.

In 2011, the traffic safety cameras resulted in SPD issuing 42,373 citations, as detailed in the table on page 4-4. The map on the page to the right shows the locations of all the fatal collisions on Seattle streets in 2011. See the appendix list of the fatalities and their location.

**2009-2011 Seattle Police Department - Traffic Section Citations**

Type of Infraction	2009	2010	2,011
Pedestrian infraction	1,274	1,570	1,635
Warnings	3,557	5,071	9,654
School Zone-related	3,727	1,468	NA
Moving Violations	29,347	27,384	28,530
Right of Way to Pedestrians	406	197	376
Right of Way to Vehicles	140	165	201
Signal/Stop Sign	2,226	2,172	2,245

<b>2011 Traffic Safety Camera Locations</b>			<b>2011 citations</b>
<b>North Seattle</b>			
Eastbound	45 <sup>th</sup> Street	Roosevelt Way	<b>2,044</b>
Eastbound	NW Market Street	15 <sup>th</sup> Avenue NW	<b>1,161</b>
Westbound	NW Market Street	15 <sup>th</sup> Avenue NW	<b>1,344</b>
Southbound	15 <sup>th</sup> Avenue NW	NW 80 <sup>th</sup> Street	<b>2,380</b>
Southbound	Stone Way N	NW 40 <sup>th</sup> Street	<b>2,190</b>
Northbound	Aurora Avenue N	NW 85 <sup>th</sup> Street	<b>2,067</b>
Eastbound	NE 80 <sup>th</sup> Street	5 <sup>th</sup> Avenue NE	<b>467</b>
Eastbound	NE 45 <sup>th</sup> Street	Union Bay Place	<b>1,561</b>
Westbound	NE 45 <sup>th</sup> Street	Union Bay Place	<b>1,749</b>
Northbound	NE 45 <sup>th</sup> Street	Union Bay Place	<b>258</b>
<b>Central Seattle</b>			
Southbound	6 <sup>th</sup> Avenue	James Street	<b>2,719</b>
Eastbound	5 <sup>th</sup> Avenue	Spring Street	<b>1,824</b>
Eastbound	Denny Way	Fairview Avenue	<b>1,754</b>
Westbound	Denny Way	Fairview Avenue	<b>1,188</b>
Northbound	Broadway	E Olive Way	<b>949</b>
Eastbound	Olive Way	Broadway	<b>797</b>
Southbound	Broadway	Pine Street	<b>2,013</b>
Southbound	Boren Avenue	James Street	<b>1,858</b>
Southbound	23 <sup>rd</sup> Avenue E	E John Street	<b>1,538</b>
Northbound	9 <sup>th</sup> Avenue	James Street	<b>455</b>
<b>South Seattle</b>			
Northbound	Rainier Avenue	S Orcas Street	<b>683</b>
Southbound	Rainier Avenue	S Orcas Street	<b>989</b>
Northbound	14 <sup>th</sup> Avenue S	S Cloverdale Street	<b>200</b>
Eastbound	S Cloverdale Street	14 <sup>th</sup> Avenue S	<b>688</b>
Westbound	SW Avalon Way	35 <sup>th</sup> Avenue SW	<b>1,013</b>
Southbound	35 <sup>th</sup> Avenue SW	SW Thistle Street	<b>2,309</b>
Northbound	Rainier Ave S	S Massachusetts	<b>3,573</b>
Westbound	S McClellan Street	Martin Luther King Jr Way S	<b>444</b>
Southbound	Martin Luther King Jr. Way S	S McClellan Street	<b>1,307</b>
Northbound	Martin Luther King Jr. Way S	S McClellan Street	<b>851</b>

**Mobile Speed Van Enforcement**

The Seattle Police Department deploys a mobile van equipped with traffic safety camera and across-the-road radar to document speeds and issue citations for school zone and arterial street speed violations. The primary purpose of the “speed van” is to enhance pedestrian safety by slowing vehicle speeds and citing speed zone violators.

Beginning in April 2010, SPD initiated photo speed enforcement on arterial streets in a pilot project authorized during the 2009 state legislative session. Using the same photo radar van employed in school zones, the SPD Traffic Section deploys the van to selected arterial locations up to four days per week, in an effort to gauge effects on speeding. In 2011, the speed vans resulted in Seattle Police Department issuing 1,836 citations, as shown in the table.

The speed van has been effective when and where deployed. An evaluation of results from the pilot deployment during the 2008-2009 school year showed a decrease of between 5 MPH and 10 MPH in school zones with children present – a critical reduction for increasing pedestrian safety.

<b>2011 Speed Van Locations</b>			<b>2011 citations</b>
Bryant Elementary School/Assumption	NE 60th Street	35 <sup>th</sup> Avenue NE	29
Bagley Elementary School	N 80 <sup>th</sup> Street	Stone Avenue N	26
Gatewood Elementary School	SW Myrtle Street	Fauntleroy Way SW	544
Highland Park Elementary School	SW 11 <sup>th</sup> Avenue	SW Henderson Street	23
Gatzert Elementary School	E 14 <sup>th</sup> Avenue	E Yesler Street	44
Arterial	35 <sup>th</sup> Avenue SW	SW Dawson Street	443
Arterial	Elliott Avenue W	6 <sup>th</sup> Avenue W	727

This page intentionally left blank.

Collision and speed data allow SDOT to evaluate the success of traffic safety projects like the Nickerson Street rechannelization and the Aurora Traffic Safety Corridor.

### Data Use Case Study: Nickerson Street Rechannelization

In the summer of 2008, Seattle removed three marked crosswalks along Nickerson Street that no longer met guidelines for marked crosswalks. When the crosswalks were removed, there was a strong plea from the community to make improvements in support of pedestrian crossings. Seattle made a commitment to evaluate other pedestrian improvements – including a possible rechannelization, or “road diet”. SDOT hired an independent consultant for the traffic analysis, and SDOT determined that reconfiguring Nickerson Street from four lanes to three with a center turn lane would accommodate traffic and allow better pedestrian crossings. The analysis also included consideration of freight access in the designated project area. It was completed in the summer of 2010. SDOT then added two new marked crosswalks and monitored speeds and collisions over the next year.



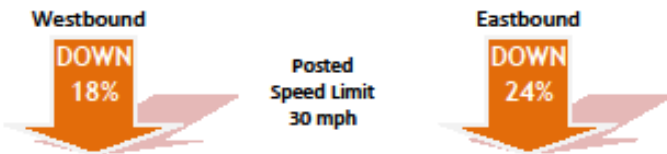
*Before*



*After*

## Improving Safety on Nickerson Street

Average Speed of Vehicles was 42 mph, is now 33 mph



Speeders  
(Percent driving over the speed limit)



Top End Speeders  
(Percent driving 10 mph or more over the speed limit)



The project improved traffic safety by dramatically reducing speeds on Nickerson Street. The percent of drivers traveling over the speed limit has been reduced by more than 60 percent, and top-end speeders have fallen by 90 percent. The 85th percentile had been 12 miles per hour over the speed limit; it is now 3 miles per hour over.

Meanwhile, the traffic volume (including freight) remains essentially the same as it was before the rechannelization, with no evidence of traffic diversion. Additionally, there has been a 27 percent reduction in total collisions over the preceding five-year average.

By responding to the needs of all users this project improved safety for everyone without compromising the functionality of the corridor.

**Change in Number of Collisions on Nickerson from 13th Ave W to N Florentia St after Rechannelization**

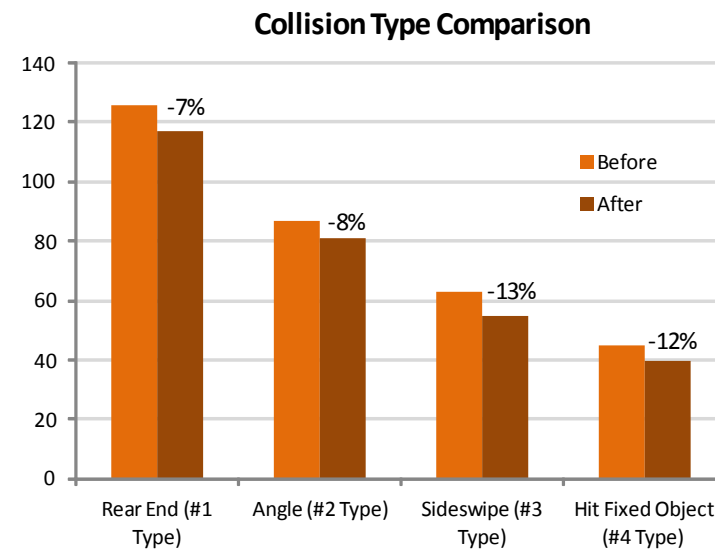
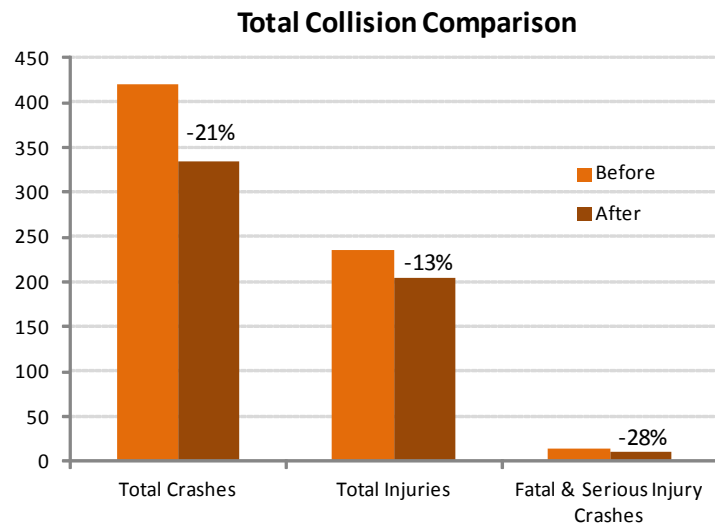
	8/23/2008 to 2/23/2010	8/23/2010 to 2/23/2012	Percent Decrease comparing 18 month periods before and after rechannelization 8/23 to 2/23
Vehicle Vehicle	39	33	15%
Vehicle only	1	1	0%
Vehicle Bike	3	1	67%
Vehicle Pedestrian	3	0	100%
Unknown	3	1	67%
<b>Grand Total</b>	<b>49</b>	<b>36</b>	<b>27%</b>

### Data Use Case Study: The Aurora Traffic Safety Corridor

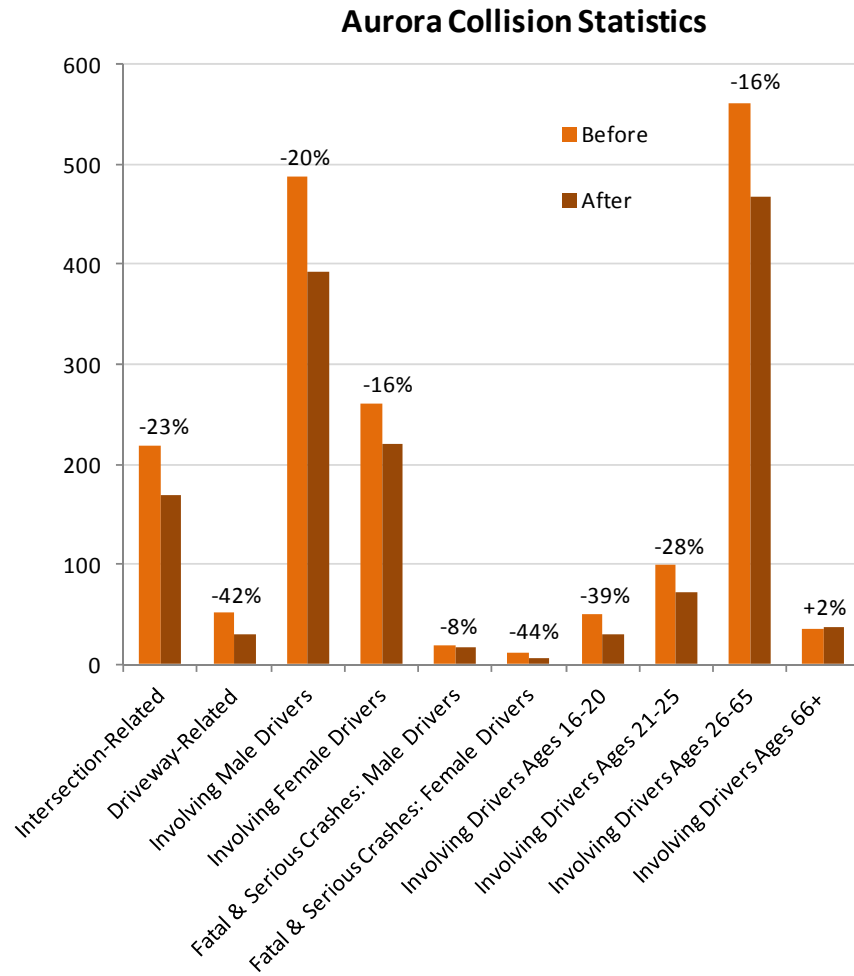
The Aurora Traffic Safety Project was a two year effort to improve safety along Aurora Avenue North. A collaborative effort with the Washington Traffic Safety Commission (WTSC) and the Washington State Department of Transportation (WSDOT), this project aimed to reduce collisions on Aurora by 25 percent using short-term, low-cost solutions such as engineering, education, and enforcement efforts. Based on the 2009 action plan, SDOT implemented engineering projects on Aurora with intentions of improving pedestrian, bicycle, and traffic safety. Highlights included new left turn signals at North 80<sup>th</sup> Street and Aurora Avenue North, fourteen new curb ramps, and new stop bars at all signalized intersections.

### Collisions

Preliminary data showed that the project’s efforts would help reduce collisions. Analysis after the completion of the project comparing the three years before to the two years after confirmed the reduction. The total number of collisions declined 21 percent, and the number of collisions involving injury declined 13 percent. Rear-end, angle, sideswipe and hitting fixed object collisions each declined approximately 10 percent.





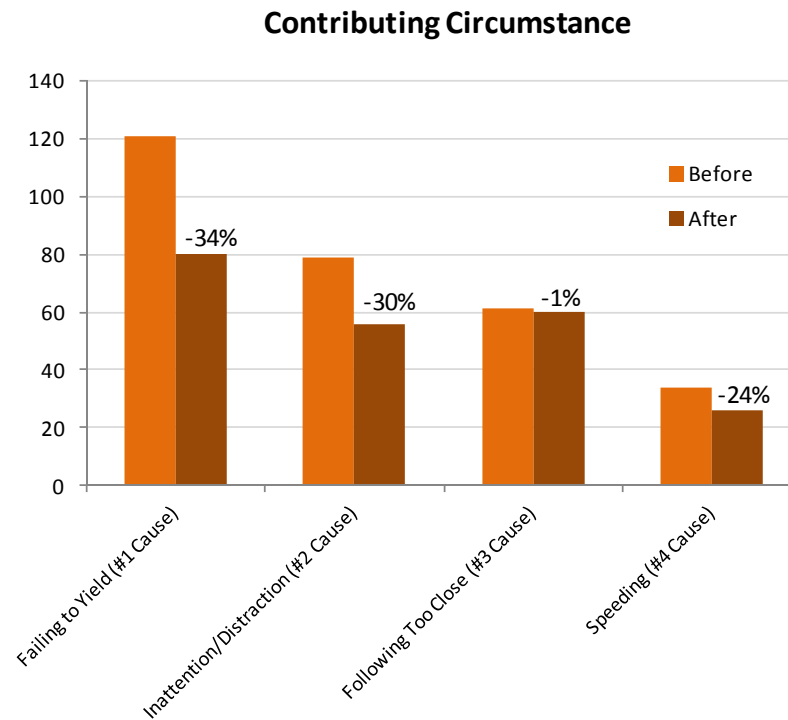


To the left is a chart of collision statistics before and after the project, categorized by the circumstances of each collision. Collisions that were driveway-related, fatal and serious involving female drivers, and involving drivers ages 16 to 20 each declined approximately 40 percent. Other significant decreases include intersection-related collisions, collisions involving male drivers, and drivers ages 21 to 25. The only increase noted was the number of incidents involving drivers ages 66 and older, which increased 2 percent.



While most collision reports do not specify a contributing factor, the top four contributing factors all showed significant reductions after the project. We note that while the vast majority of citations issued by traffic police are for speeding, the most common contributing factor for collisions remains the failure to yield the right of way.

As a result of the Aurora Traffic Safety Project, the number of collisions caused by failing to yield the right of way declined 34 percent, with the percent decrease for collisions caused by inattention or distraction close behind at 30 percent. In addition, the number of collisions caused by speeding declined by 24 percent.



This page left intentionally blank.

**Freight volume data will allow informed decisions on future freight mobility improvements.**

### **Future Data Collection**

As SDOT strives to be more data driven when making decisions, it becomes important to have not only spot counts for various modes but realistic estimates of daily and weekday volume like we currently have for motor vehicles. To accomplish this, it's helpful to have some locations that are counted very regularly or even continuously. It's also important to have data on all modes that use Seattle's transportation network; cars, trucks, bikes, and pedestrians.

### **Automated Bicycle Counter**

In 2012 SDOT will install a permanent automatic bicycle counter on the north approach to the Fremont Bridge. This new counter will collect data on continuously 24 hours a day 365 day a year. The data collected by this counter will give SDOT detailed insight into the daily and seasonal patterns of cycling. It will also allow for calculations of weather factors to accurately account for things like the widely noted decrease in cycling on rainy days.



## Freight and Truck Data

Data on freight and truck movement in Seattle has been collected in response to ad-hoc requests. In 2010 SDOT began a four year program to collect data on selected arterials that will be processed to give truck volumes based on the federal government's thirteen classes of vehicle, most of which are trucks. When the data collection cycle is complete in 2013, it will be processed then displayed on a freight flow map and the four year collection cycle will begin again. This new data will allow the department to go beyond just designating freight routes, to actually monitoring what arterials trucks are using most frequently. Such knowledge will inform decisions on future freight mobility improvements.



**Appendices**

- Volume Count Locations 7-1
- Speed Studies 7-7
- Historical Data 7-14
- 2011 All Collisions 7-15
- 2011 Fatalities 7-17
- 2011 Pedestrian Collisions 7-18
- 2011 Bike Collisions 7-29
- Glossary of Terms 7-39

**2011 Volume Count Locations**

These locations are counted every month. The resulting counts are added together and divided by 12 to determine a monthly control factor. This factor is then applied to every count taken to correct for seasonal variation.

**Control Count Locations**

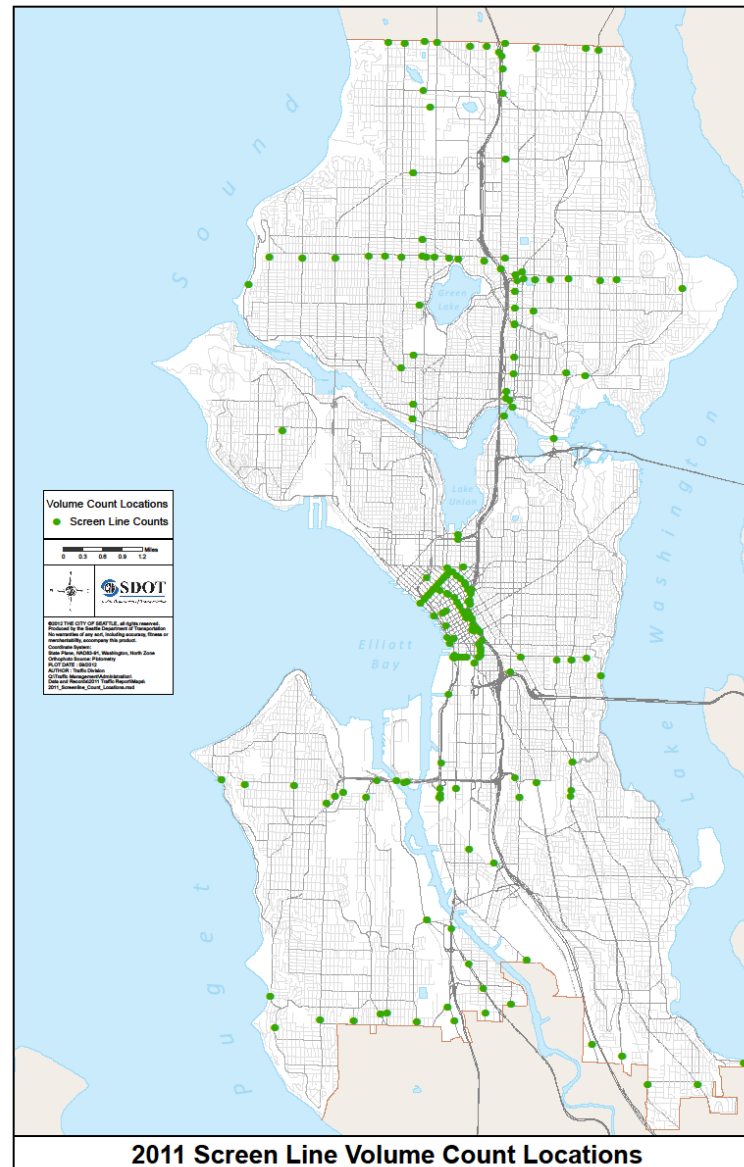
1. DENNY WAY, W/O 2ND AVE
2. E MADISON ST, SW/O 17TH AVE
3. EAST GREEN LAKE WAY N, NE/O N 57TH ST
4. FREMONT BR, S/O POINT A
5. N 85TH ST, W/O ASHWORTH AVE N
6. QUEEN ANNE AVE N, S/O CROCKETT ST
7. UNIVERSITY BR, SW/O POINT A
8. LAKE CITY WAY NE, NE/O NE 95TH ST
9. M L KING JR. WAY S, N/O S ANDOVER ST
10. NW MARKET ST, W/O 8TH AVE NW
11. RAINIER AVE S, S/O S OTHELLO ST
12. S LANDER ST, W/O 6TH AVE S
13. ALKI AVE SW, W/O HARBOR AVE SW
14. 3<sup>rd</sup> Ave SE/O Union St
15. ALASKAN WAY SE/O BLANCHARD
16. STEWART St, NE/O 4<sup>th</sup> AVE
17. UNIVERSITY ST, SW/O 4<sup>th</sup> AVE
18. EAST MARGINAL WAY S, S/O S ALASKA ST
19. WEST SEATTLE BRIDGE, NE/O FAUNTLEROY
20. SW SPOKANE BRIDGE, W/O SW SPOKANE ST

**MONTHLY EXPANSION FACTORS**

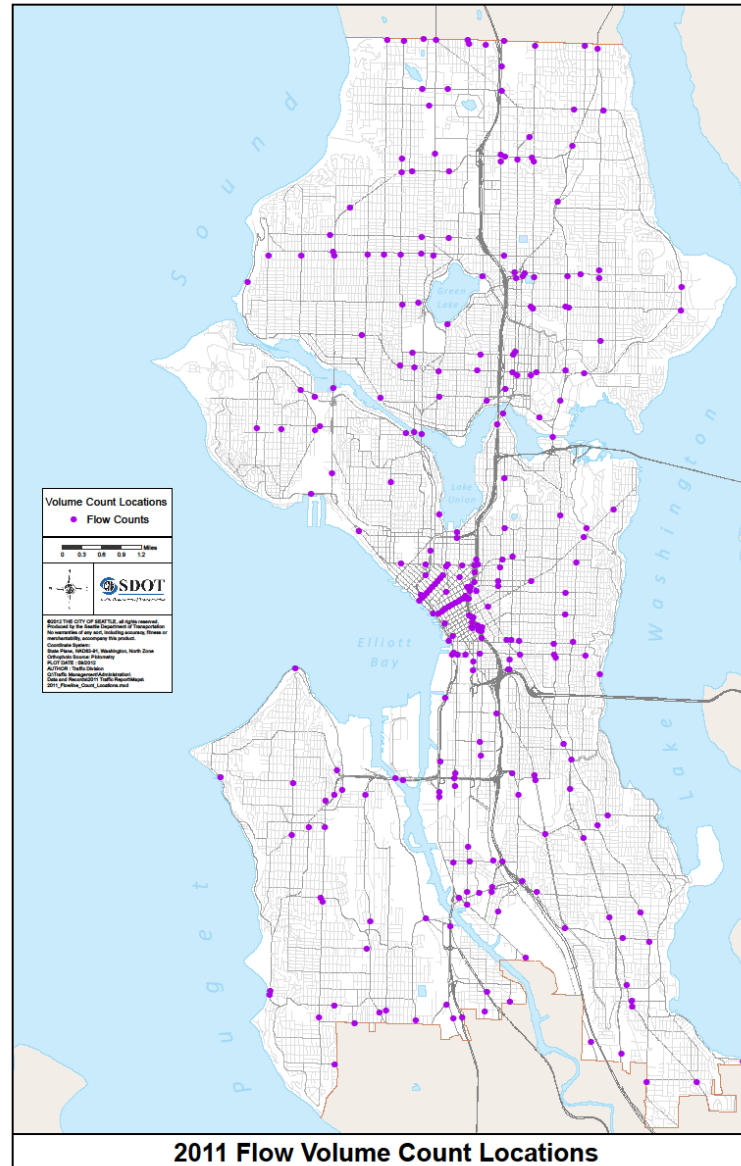
AGGREGATE OF CONTROL COUNT LOCATIONS (Less: WS BR )													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Count</b>	399770	399557	391461	394916	409096	411963	401629	397075	395461	391396	393549	386221	397674
<b>Factor</b>	<b>0.995</b>	<b>0.995</b>	<b>1.016</b>	<b>1.007</b>	<b>0.972</b>	<b>0.965</b>	<b>0.990</b>	<b>1.002</b>	<b>1.006</b>	<b>1.016</b>	<b>1.010</b>	<b>1.030</b>	

CBD EXPANSION FACTORS													
AGGREGATE OF ALASKAN WY, DENNY WY, STEWART ST, UNIVERSITY ST AND 3 AVE													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Count</b>	71482	78136	67009	73214	73673	72737	73095	72081	66848	66289	72185	71003	71479
<b>Factor</b>	<b>1.000</b>	<b>0.915</b>	<b>1.067</b>	<b>0.976</b>	<b>0.970</b>	<b>0.983</b>	<b>0.978</b>	<b>0.992</b>	<b>1.069</b>	<b>1.078</b>	<b>0.990</b>	<b>1.007</b>	

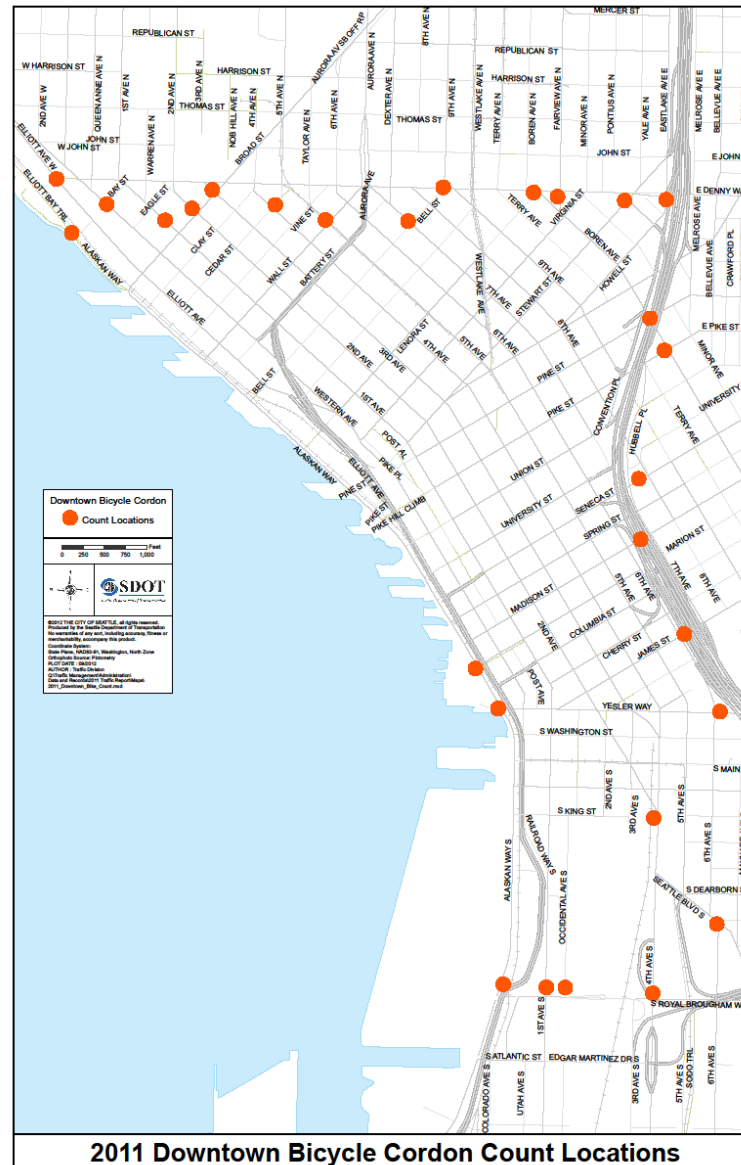






**2011 Bridge Count Locations**

1. Aurora Bridge
2. Ballard Bridge
3. Fremont Bridge
4. Montlake Bridge
5. Spokane Street Corridor (Duwamish River West Waterway)
6. West Seattle Bridge (Highrise)
7. SW Spokane Bridge (Swing)
8. University Bridge
9. 1 Ave S Bridge
10. 16th Ave S Bridge (closed – not counted in 2011)
11. 1-90 Bridge
12. SR520 Bridge
13. I-5 Bridge



## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
Fauntleroy Way SW N/O SW Findlay St	NB	35	39.2	1.4	10/21/08
Rainier Ave S N/O S Willow St	NB	35	37.1	0.6	12/3/09
Rainier Ave S S/O Rainier Pl S	SB	35	35.1		3/26/09
Stone Way N N/O N 36th St	NB	30	34.6	1.6	12/2/09
35th Ave SW, N/O SW Willow St	NB	35	39.8	1.4	1/20/10
35th Ave SW, N/O SW Willow St	SB	35	40.9	3.2	1/20/10
4th Ave S, S/O S Bennett St	NB	35	39.9	6.9	7/27/10
4th Ave S, S/O S Bennett St	SB	35	37.0	1.6	7/27/10
8th Ave S, S/O S Director St	NB	30	36.4	5.9	6/17/10
8th Ave S, S/O S Director St	SB	30	37.8	11.8	6/17/10
8th Ave SW, N/O SW Roxbury St	NB	35	36.3	0.6	3/22/10
8th Ave SW, N/O SW Roxbury St	SB	35	36.3	0.7	3/22/10
Aurora Ave N, N/O N 97th St	NB	45	41.0		2/26/10
Delridge Way SW, N/O SW Myrtle St	NB	35	37.9	0.6	11/29/10
Delridge Way SW, N/O SW Myrtle St	SB	35	35.8	0.1	11/29/10
Ellis Ave S, S/O S Warsaw St	NB	30	40.5	17.5	5/25/10
Ellis Ave S, S/O S Warsaw St	SB	30	40.1	15.3	5/25/10
Fremont Ave N, S/O N 42nd St	NB	35	32.7	0.5	1/26/10
Fremont Ave N, S/O N 42nd St	SB	35	35.0	0.5	1/26/10
Greenwood Ave N, N/O N 137th St	NB	35	41.8	4.1	2/18/10
Greenwood Ave N, N/O N 137th St	SB	35	43.3	7.9	2/18/10
Greenwood Ave N, S/O N 100th St	NB	30	40.3	16.4	9/23/10
Greenwood Ave N, S/O N 100th St	SB	30	40.1	15.4	9/23/10
Madison St, SW/O Lake Washington Blvd	NEB	30	28.5	0.2	11/29/10

## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
Madison St, SW/O Lake Washington Blvd	SWB	30	29.3	0.3	11/29/10
N 130th St, W/O Ashworth Ave N	EB	30	38.8	9.7	6/24/10
N 130th St, W/O Ashworth Ave N	WB	30	37.7	6.6	6/24/10
NE 125th St, W/O 25th Ave NE	EB	35	39.1	2.2	7/20/10
NE 125th St, W/O 25th Ave NE	WB	35	39.9	5.5	7/20/10
NE 50th St, W/O 1st Ave NE	EB	30	35.1	2	12/15/10
NE 50th St, W/O 1st Ave NE	WB	30	37.4	5.7	12/15/10
Nickerson St, W/O Warren Ave N	EB	30	34.6	1.3	10/21/10
Nickerson St, W/O Warren Ave N	WB	30	36.6	4	10/21/10
NW 65th St, W/O 12th Ave NW	EB	30	31.9	0.5	6/15/10
NW 65th St, W/O 12th Ave NW	WB	30	31.9	0.3	6/15/10
Pinehurst Way NE, NE/O NE 115th St	NEB	30	39.7	13.5	12/21/10
Pinehurst Way NE, NE/O NE 115th St	SWB	30	40.9	17.7	12/21/10
Roosevelt Way NE, N/O NE 52nd St	SB	30	32.7	2.1	1/26/10
S Lucile St, W/O Airport Way S	EB	30	30.6	2	7/27/10
S Lucile St, W/O Airport Way S	WB	30	30.1	0.3	7/27/10
S Othello St, E/O 43rd Ave S	EB	30	33.5	0.9	11/4/10
S Othello St, E/O 43rd Ave S	WB	30	32.8	0.7	11/4/10
Seaview Ave NW, N/O NW 63rd St	NB	30	34.7	1.5	8/16/10
Seaview Ave NW, N/O NW 63rd St	SB	30	35.0	2	8/16/10
SW Admiral Way, SE/O SW City View St	NWB	30	40.6	18.3	6/15/10
SW Admiral Way, SE/O SW City View St	SEB	30	42.1	25.5	6/15/10
SW Roxbury St, E/O 26th Ave SW	EB	30	32.4	1.4	11/29/10
SW Roxbury St, E/O 26th Ave SW	WB	30	32.8	7.2	11/29/10
10th Ave E, S/O E Boston St	NB	30	31.2	0.2	1/27/11
10th Ave E, S/O E Boston St	SB	30	33.5	0.2	1/27/11

## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
11th Ave NE, S/O NE 45th St	NB	30	27.8	0.2	10/25/11
12th Ave NE, S/O NE 75th St	NB	30	31.2	0.4	11/8/11
14th Ave, N/O E Yesler Way	NB	30	31.8	0.3	7/20/11
14th Ave, N/O E Yesler Way	SB	30	31.1	0.3	7/20/11
15th Ave NE, S/O NE 45th St	NB	30	28.0	0.7	10/25/11
15th Ave NE, S/O NE 45th St	SB	30	27.7	0.3	10/25/11
16th Ave SW, N/O SW Cambridge St	NB	30	33.3	0.7	8/18/11
16th Ave SW, N/O SW Cambridge St	SB	30	32.3	0.3	8/18/11
1st Ave NE, S/O NE 145th St	NB	30	34.9	1.6	7/25/11
1st Ave NE, S/O NE 145th St	SB	30	36.5	3.2	7/25/11
24th Ave E, N/O E Prospect St	NB	30	39.1	11.0	11/29/11
24th Ave E, N/O E Prospect St	SB	30	39.3	12.2	11/29/11
24th Ave NW, S/O NW 80th St	NB	30	31.6	0.3	10/27/11
24th Ave NW, S/O NW 80th St	SB	30	31.5	0.3	10/27/11
28th Ave W, S/O W Dravus St	NB	30	35.2	1.9	8/2/11
28th Ave W, S/O W Dravus St	SB	30	34.4	1.1	8/2/11
30th Ave NE, S/O NE 145th St	NB	30	31.2	0.3	7/25/11
30th Ave NE, S/O NE 145th St	SB	30	29.5	0.0	8/4/11
31st Ave S, S/O S Jackson St	NB	30	37.4	11.0	8/15/11
31st Ave S, S/O S Jackson St	SB	30	33.5	0.6	8/15/11
32Nd Ave NW, S/O NW 80th St	NB	30	33.3	1.6	7/25/11
32Nd Ave NW, S/O NW 80th St	SB	30	32.2	0.8	7/25/11
34th Ave W, N/O W Barrett St	NB	30	31.9	0.3	8/2/11
34th Ave W, N/O W Barrett St	SB	30	32.0	0.2	8/2/11
35th Ave NE, S/O NE 75th St	NB	30	32.2	0.7	1/26/11
35th Ave NE, S/O NE 75th St	SB	30	30.9	0.3	1/26/11

## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
6th Ave S, S/O S Forest St	NB	30	37.2	6.4	5/25/11
6th Ave S, S/O S Forest St	SB	30	33.6	1.7	5/25/11
Aurora Ave N, S/O N 112th St	NB	35	42.8	5.4	11/3/11
Aurora Ave N, S/O N 112th St	SB	35	42.5	6.3	11/3/11
Beach Dr SW, SE/O 61st Ave SW	NWB	30	28.9	0.2	8/18/11
Beach Dr SW, SE/O 61st Ave SW	SEB	30	29.6	0.1	8/18/11
Boren Ave, SE/O Pike St	NWB	30	28.3	0.9	7/19/11
Boren Ave, SE/O Pike St	SEB	30	29.0	0.3	7/19/11
Broadway, S/O E Denny Way	NB	30	25.5	0.1	10/26/11
Broadway, S/O E Denny Way	SB	30	24.9	0.0	10/26/11
E Cherry St, W/O 26th Ave	EB	30	31.2	0.4	7/19/11
E Cherry St, W/O 26th Ave	WB	30		0.8	7/19/11
E John St, E/O Broadway E	EB	30	27.5	0.1	1/27/11
E John St, E/O Broadway E	WB	30	28.1	0.0	1/27/11
E Pike St, W/O Broadway	EB	30	23.7	0.2	7/20/11
E Pike St, W/O Broadway	WB	30	23.7	0.1	7/20/11
E Pine St, W/O Broadway	EB	30	24.1	0.0	7/20/11
E Pine St, W/O Broadway	WB	30	25.0	0.1	7/20/11
E Union St, W/O 26th Ave	EB	30	39.0	13.4	1/27/11
E Union St, W/O 26th Ave	WB	30	34.4	1.3	1/27/11
East Green Lake Dr N, NW/O Latona Ave NE	NWB	30	30.8	0.2	6/27/11
East Green Lake Dr N, NW/O Latona Ave NE	SEB	30	31.0	0.2	6/27/11
East Marginal Way S, N/O Alaskan Wy VI NB	NB	35	36.5	1.0	12/21/11
East Marginal Way S, NW/O S Michigan St	NWB	35	37.3	1.0	5/25/11
East Marginal Way S, NW/O S Michigan St	SEB	35	35.6	0.4	5/25/11
Fauntleroy Way SW, S/O SW Alaska St	NB	35	35.2	0.3	5/26/11

## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
Fauntleroy Way SW, S/O SW Alaska St	SB	35	34.2	0.2	5/26/11
Gilman Ave W, NW/O W Emerson Pl	NWB	30	35.5	1.7	8/2/11
Gilman Ave W, NW/O W Emerson Pl	SEB	30	34.7	1.0	8/2/11
Holman Rd NW, NE/O 13th E Ave NW	NEB	35	39.6	1.9	7/25/11
Holman Rd NW, NE/O 13th E Ave NW	SWB	35	38.8	1.3	7/25/11
M L King Jr ER Way S, N/O S Andover St	NB	35	40.3	3.0	12/14/11
M L King Jr WR Way S, N/O S Andover St	SB	35	40.3	3.1	12/22/11
M L King Jr Way E, S/O E John St	NB	30	33.1	0.9	7/20/11
M L King Jr Way E, S/O E John St	SB	30	33.9	1.2	7/20/11
M L King Jr Way S, S/O S Holly St	NB	35	37.7	1.4	10/26/11
M L King Jr Way S, S/O S Holly St	SB	35	37.3	1.4	10/26/11
M L King Jr Way, N/O E Yesler Way	NB	30	31.8	0.3	7/20/11
M L King Jr Way, N/O E Yesler Way	SB	30	31.1	0.3	7/20/11
N 105th St, W/O Evanston W Ave N	EB	30	35.6	2.5	11/29/11
N 105th St, W/O Evanston W Ave N	WB	30	36.0	3.9	11/29/11
N 40th St, E/O Stone Way N	EB	30	24.6	0.1	6/23/11
N 40th St, E/O Stone Way N	WB	30	25.2	0.2	6/23/11
N 46th St, W/O Phinney Ave N	EB	30	33.3	0.6	11/29/11
N 46th St, W/O Phinney Ave N	WB	30	34.8	1.9	11/29/11
NE 145th St, E/O 5th Ave NE	EB	35	39.1	1.4	8/31/11
NE 145th St, E/O 5th Ave NE	WB	35	35.2	0.5	8/31/11
NE 55th St, E/O 35th Ave NE	EB	25	27.1	0.3	1/26/11
NE 55th St, E/O 35th Ave NE	WB	25	25.5	0.2	1/26/11
NE Northgate Way, W/O 15th Ave NE	EB	30	37.4	5.7	12/7/11
NE Northgate Way, W/O 15th Ave NE	WB	30	36.9	4.7	12/7/11
NE Pacific St, NE/O 2Nd Ave NE	NEB	30	34.1	0.8	10/10/11



## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
NE Pacific St, NE/O 2Nd Ave NE	SWB	30	34.1	0.8	10/10/11
NW 85th St, W/O 16th Ave NW	EB	30	17.7	0.6	7/25/11
NW 85th St, W/O 16th Ave NW	WB	30	29.7	0.2	7/25/11
NW Market St, W/O 8th Ave NW	EB	30	34.9	3.2	12/12/11
NW Market St, W/O 8th Ave NW	WB	30	35.7	2.5	12/12/11
Olson Pl SW, SW/O 1st Ave S	NEB	35	41.4	4.6	11/2/11
Olson Pl SW, SW/O 1st Ave S	SWB	35	39.6	2.4	11/2/11
Phinney Ave N, S/O N 65th St	NB	30	28.5	0.3	6/27/11
Phinney Ave N, S/O N 65th St	SB	30	28.0	0.2	6/27/11
Rainier Ave S, NW/O S Holly St	NWB	30	37.5	6.1	7/21/11
Rainier Ave S, NW/O S Holly St	SEB	30	36.3	4.2	8/3/11
Rainier Ave S, S/O S Othello St	NB	30	35.9	3.8	12/14/11
Rainier Ave S, S/O S Othello St	SB	30	35.2	2.2	12/14/11
Renton Ave S, SE/O S Henderson St	NWB	30	39.8	14.0	8/15/11
Renton Ave S, SE/O S Henderson St	SEB	30	40.0	14.9	8/15/11
S Columbian Way, W/O Beacon WR Ave S	EB	35	34.5	0.2	2/3/11
S Columbian Way, W/O Beacon WR Ave S	WB	35	37.6	0.8	2/3/11
S Dearborn St, W/O 13th Ave S	EB	30	38.3	8.7	7/21/11
S Dearborn St, W/O 13th Ave S	WB	30	37.4	5.9	7/21/11
S Graham St, E/O Swift Ave S	EB	30	29.6	0.3	8/18/11
S Graham St, E/O Swift Ave S	WB	30	32.1	0.4	8/18/11
S Jackson St, W/O 23Rd Ave S	EB	30	34.2	1.7	8/3/11
S Jackson St, W/O 23Rd Ave S	WB	30	34.7	1.6	7/21/11
S Lander St, W/O 6th Ave S	EB	30	28.0	0.6	12/8/11
S Lander St, W/O 6th Ave S	WB	30	24.9	0.2	12/8/11
Sand Point Way NE, S/O NE 74th St	NB	40	38.0	0.2	11/28/11

## Speed Studies

Location	Direction	Speed Limit	85th Percentile Speed	High-end Speeder Percentage	Date
Sand Point Way NE, S/O NE 74th St	SB	40	39.0	0.2	11/28/11
Stone Way N, S/O N 45th St	NB	30	25.2	0.2	6/23/11
Stone Way N, S/O N 45th St	SB	30	27.1	0.0	6/23/11
SW Avalon Way, N/O 30th Ave SW	NB	30	35.5	1.7	7/26/11
SW Avalon Way, N/O 30th Ave SW	SB	30	34.9	1.3	7/26/11
SW Morgan St, W/O 35th Ave SW	EB	30	29.8	0.2	7/26/11
SW Morgan St, W/O 35th Ave SW	WB	30	31.6	0.3	7/26/11
Swift Ave S, NW/O S Albro Pl	NWB	30	39.5	12.8	8/30/11
Swift Ave S, NW/O S Albro Pl	SEB	30	37.0	4.3	8/30/11
W Dravus St, E/O 20th Ave W	EB	30	34.8	1.9	8/1/11
W Dravus St, E/O 20th Ave W	WB	30	36.5	4.1	8/1/11

### All Reported Collisions

Year	Statewide Collisions	Seattle Collisions	Police Reported	Citizen Reported
2011	98,881	12,447	11,339	1,108
2010	101,887	*12,554	11,336	*1,218
2009	103,008	13,358	11,870	1,488
2008	110,494	14,217	12,674	1,543
2007	118,829	15,133	13,562	1,571
2006	122,172	15,966	14,406	1,560
2005	123,158	16,146	14,408	1,738
2004	114,268	15,522	13,665	1,857
2003	113,313	16,053	13,973	2,080

Seattle Collisions do not include those on limited access State Highways and Interstates within the city limits. Seattle Collisions only include those reported by the police or reported by citizens to the police that occur in public right of way and are not intentional.

### Bicycle Collisions

Year	Total Collisions	Injury Collisions	Fatal Collisions
2001	302	238	2
2002	316	275	1
2003	279	232	0
2004	267	214	1
2005	297	250	0
2006	372	313	2
2007	361	314	1
2008	368	310	2
2009	392	326	4
2010	367	302	1
2011	352	290	3

### Pedestrian Collisions

Year	Total Collisions	Injury Collisions	Fatal Collisions
2001	474	430	10
2002	486	442	5
2003	465	416	11
2004	462	357	10
2005	486	432	8
2006	574	513	10
2007	493	448	6
2008	471	419	9
2009	460	402	11
2010	517	443	5
2011	398	356	2

## 2011 Collision Tables for All Collisions

### 2011 Total Collisions by State Collision Type

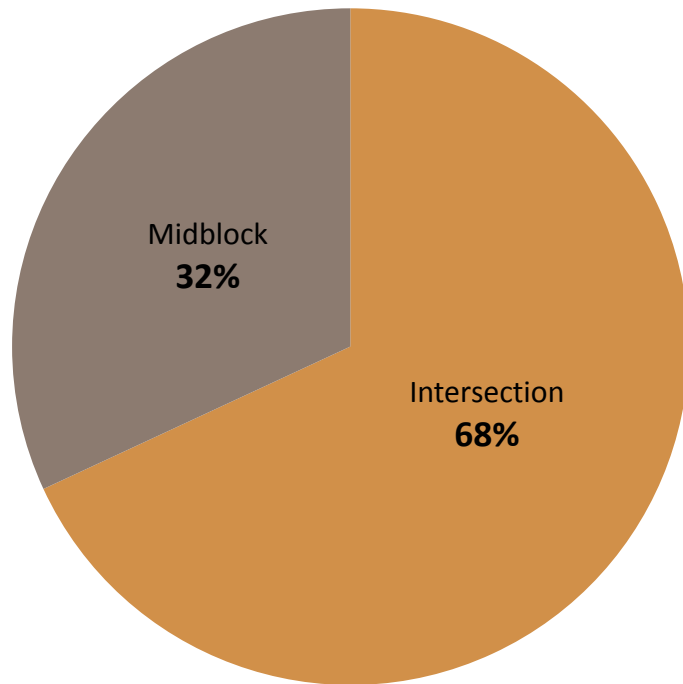
State Collision Type	Total Collisions	Percent of All Collisions
Parked Car	3115	25%
Right Angle	1912	15%
Rear End	1834	15%
Sideswipe	982	8%
Left Turn	871	7%
Fixed Object	749	6%
Pedestrian	379	3%
Other	353	3%
Pedal Cycle	349	3%
Right Turn	217	2%
Head-On	93	1%
Unclassified	1592	13%
<b>Grand Total</b>	<b>12446</b>	<b>100%</b>

2011 Contributing Circumstance	Collisions
None noted	6,609
Did Not Grant Right of Way to Vehicle	2,073
Inattention	865
Following too Closely	821
Improper Turn	473
Improper Backing	448
Disregard Stoplight	426
Did Not Grant Right of Way to Pedestrian	421
Under the Influence of Alcohol	408
Exceeding Reasonable and Safe Speed	392
Disregard Stop Sign	193
Over the Center Line	193
Operating Defective Equipment	109
Distractions Outside Vehicle	105
Improper U-Turn	104
Exceeding Speed Limit	87
Improper Passing	81
Disregard Yield Sign	61
Objects Inside Vehicle	60
Apparently Ill	46
Apparently Asleep	45
Distractions Inside Vehicle	35
Operating Handheld Cell Phone	26
Improper Parking Location	26
Under the influence of Drugs	22

Apparently Fatigued	13
Adjusting Audio or Entertainment System	12
Eating or Drinking	12
Failing to Signal	10
Smoking	8
Operating Other Electronic Devices	8
Had Taken Medication	6
Headlight Violation	5
Disregard Flagger/Officer	5
Improper Signal	3
Operating Hands-Free Cell phone	2
Reading or Writing	2
Grooming	1
Other	3,079
Unknown	2,940
<b>Total</b>	<b>20,235</b>

<b>2011 Fatalities on Seattle Streets</b>						
<b>Location</b>	<b>Collision Date</b>	<b>Time</b>	<b>Collision Type</b>	<b>Description</b>	<b>Age</b>	<b>Sex</b>
4300 block of 1st Ave S	1/1/2011	12:05a	Vehicle	Vehicle veered out of lane, collided with bus	27	F
MLK Jr Way S and S Orcas St	2/11/2011	9:42p	Pedestrian	Pedestrian struck by vehicle	78	F
Rainier Ave S and S Myrtle St	4/5/2011	6:33p	Vehicle	Vehicle struck right turning vehicle	68	M
35th Ave SW and SW Juneau St	4/13/2011	9:39p	Motorcycle	Motorcycle struck vehicle	25	M
S Roxbury St and 55th Ave S	5/29/2011	12:45p	Motorcycle	Motorcycle struck left turning vehicle	39	M
Dexter Ave N and Thomas St	7/28/2011	3:44p	Bike	Bicycle struck by left turning vehicle	44	M
1100 block Fairview Ave N sidewalk/stairs	8/30/2011	6:08p	Bike	Bicycle rode over stairs	51	M
University Way NE and NE Campus Parkway	9/10/2011	6:15p	Bike	Bicycle struck left turning vehicle	23	M
1000 block of West Seattle Br EB	9/27/2011	6:50a	Motorcycle	Motorcycle lost control while passing	53	M
Elliot Ave W and W Garfield St	10/2/2011	12:35a	Pedestrian	Vehicle struck pedestrian in crosswalk	57	M
Lake City Way NE and NE 110th St	11/15/2011	3:38p	Vehicle	Rear end collision	26	F
Lake City Way NE and NE 110th St	11/15/2011	3:38p	Vehicle	Rear end collision	33	M

## 2011 Pedestrian Collisions



**2011 Pedestrian Collision Locations  
for all collisions**

### 2011 Pedestrian Actions in Collisions

Pedestrian Action	Incidences
Crossing at Intersection with Signal	125
Crossing at Intersection - No Signal	67
Crossing Midblock No Crosswalk	28
Crossing at Intersection Against Signal	22
Other Actions	20
At Intersection Not Using Crosswalk	15
Standing or Working in Roadway	13
Not in Roadway	10
From Behind Parked Vehicle	7
Crossing Midblock in Crosswalk	5
Walking in Roadway	3
Fell or Pushed in to Path of Vehicle	2
Playing in Roadway	2
Walking on Shoulder with Traffic	1
Lying in Roadway	1
<b>Total</b>	<b>321</b>

For collisions with State data

<b>2011 Contributing Circumstances for Drivers in Pedestrian Collisions</b>	
<b>Contributing Circumstance</b>	<b>Incidences</b>
Did Not Grant Right of Way to Pedestrian	156
None	72
Other	26
Inattention	8
Disregard Traffic Signal	5
Disregard Stop Sign/Flashing Red	3
Under the Influence of Alcohol	3
Improper Turn	2
Driver Distractions Outside Vehicle	2
Following Too Closely	1
Unknown Driver Distraction	1
Driver Interacting with Passengers, Animals or Objects Inside Vehicle	1
Exceeding Reasonable and Safe Speed	1
Exceeding Speed Limit	1
<b>Grand Total</b>	<b>282</b>

Not all collisions note contributing circumstances. Some collisions note multiple contributing circumstances.



### Injury Class of Pedestrians Involved in Collision in 2011

Age Group	Unknown	No Injury	Possible Injury	Non Serious Injury	Serious Injury	Fatality	Non-Traffic Fatality	Non-Traffic Injury	Total	Percent of Total
0 to 4	1		2	2					5	1.5%
5 to 14		1	11	6	1				19	5.9%
15 to 24	1	1	25	22	11				60	18.6%
25 to 34	2	2	38	22	9				73	22.6%
35 to 44	1	4	19	16	8				48	14.9%
45 to 54		2	20	13	4			1	40	12.4%
55 to 64		3	11	5	2	1	1		23	7.1%
65 and up		1	8	11	6	1			27	8.4%
Missing	4	2	9	11	2				28	8.7%
<b>Total</b>	9	16	143	108	43	2	1	1	323	100.0%

For collisions with State data

**2011 Pedestrian Injury Class by Clothing Visibility**

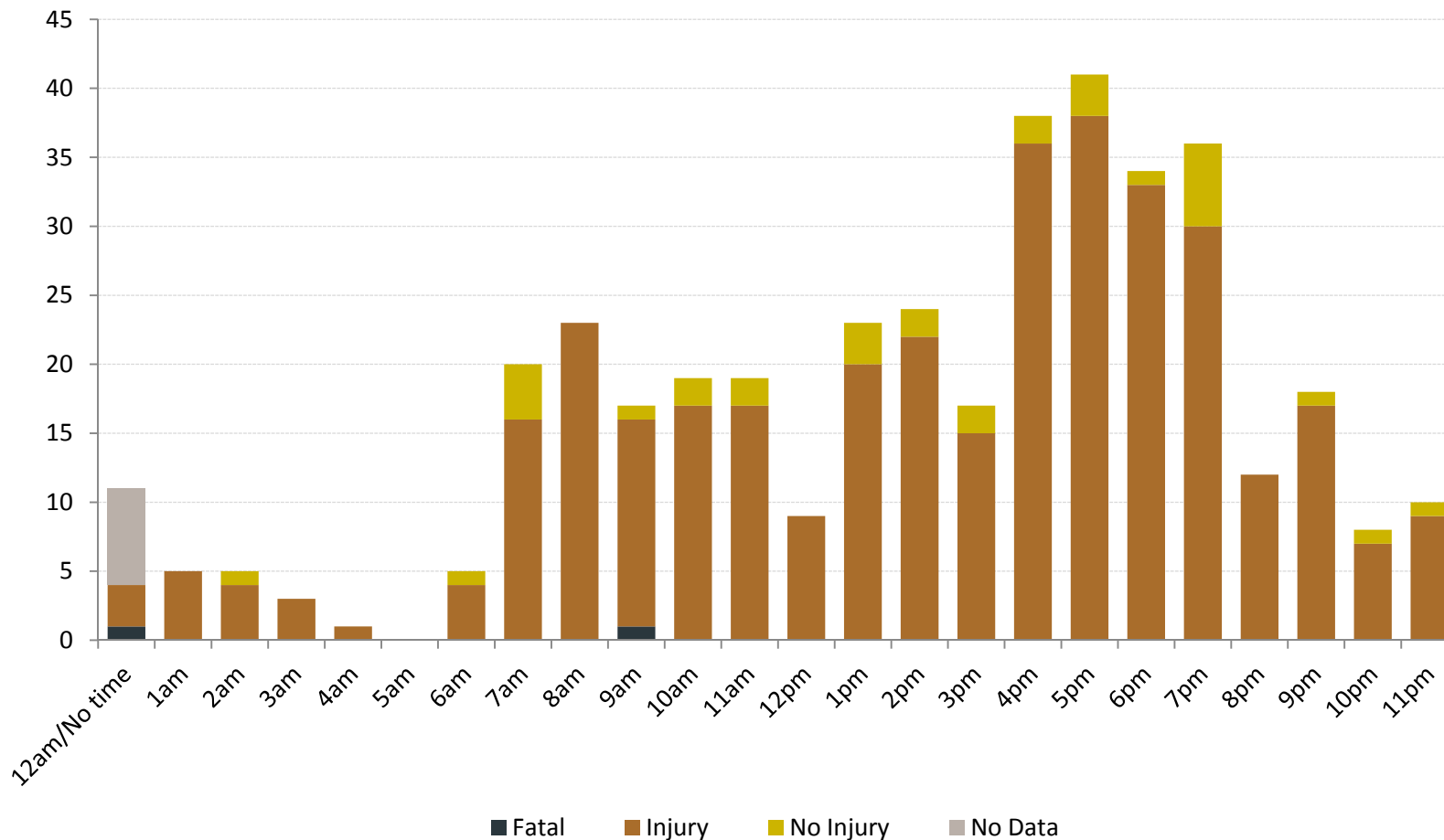
<b>Clothing Visibility</b>	<b>Unknown</b>	<b>No Injury</b>	<b>Possible Injury</b>	<b>Non Serious Injury</b>	<b>Serious Injury</b>	<b>Fatality</b>	<b>Non-Traffic Fatality</b>	<b>Non-Traffic Injury</b>	<b>Total</b>
<b>Mixed</b>	3	11	79	57	26			1	177
<b>Dark</b>	4	3	48	37	13				105
<b>Light</b>	1	1	11	12	2		1		28
<b>Missing</b>		1	3		1	2			7
<b>Other Reflective - Shoes, Patches, etc</b>	1		1	1	1				4
<b>Retro - Reflective</b>			1	1					2
<b>Total</b>	9	16	143	108	43	2	1	1	323

For collisions with State data

**2011 Pedestrian Collision Severity by Time of Day**

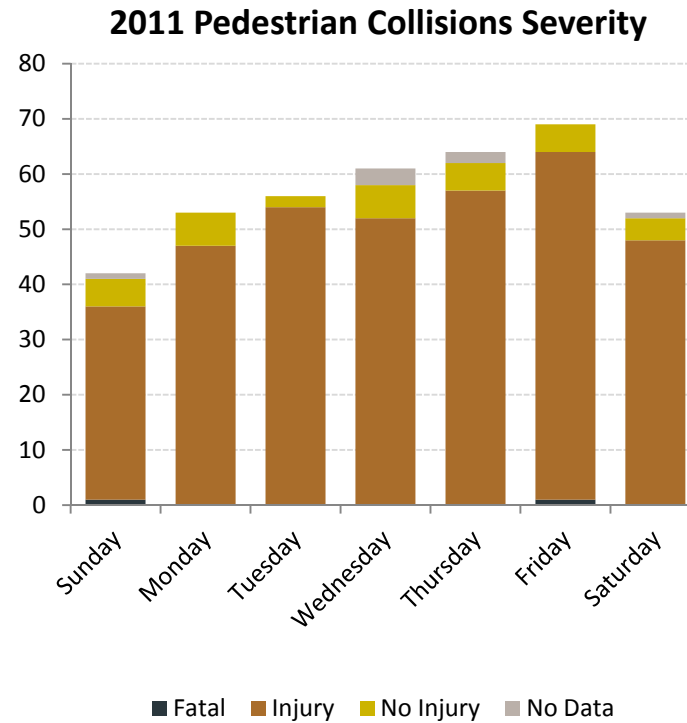
<b>Hour</b>	<b>No Injury</b>	<b>Injury</b>	<b>Fatal</b>	<b>No Data</b>	<b>Total</b>
12am/No time		3	1	7	<b>11</b>
1am		5			<b>5</b>
2am	1	4			<b>5</b>
3am		3			<b>3</b>
4am		1			<b>1</b>
5am					
6am	1	4			<b>5</b>
7am	4	16			<b>20</b>
8am		23			<b>23</b>
9am	1	15	1		<b>17</b>
10am	2	17			<b>19</b>
11am	2	17			<b>19</b>
12pm		9			<b>9</b>
1pm	3	20			<b>23</b>
2pm	2	22			<b>24</b>
3pm	2	15			<b>17</b>
4pm	2	36			<b>38</b>
5pm	3	38			<b>41</b>
6pm	1	33			<b>34</b>
7pm	6	30			<b>36</b>
8pm		12			<b>12</b>
9pm	1	17			<b>18</b>
10pm	1	7			<b>8</b>
11pm	1	9			<b>10</b>
<b>Total</b>	<b>33</b>	<b>356</b>	<b>2</b>	<b>7</b>	<b>398</b>

### 2011 Pedestrian Collision Severity by Hour of Day



2011 Pedestrian Collisions by Day of Week					
Day of Week	No Injury	Injury	Fatal	No Data	Total
Sunday	5	35	1	1	42
Monday	6	47			53
Tuesday	2	54			56
Wednesday	6	52		3	61
Thursday	5	57		2	64
Friday	5	63	1		69
Saturday	4	48		1	53
<b>Total</b>	33	356	2	7	398

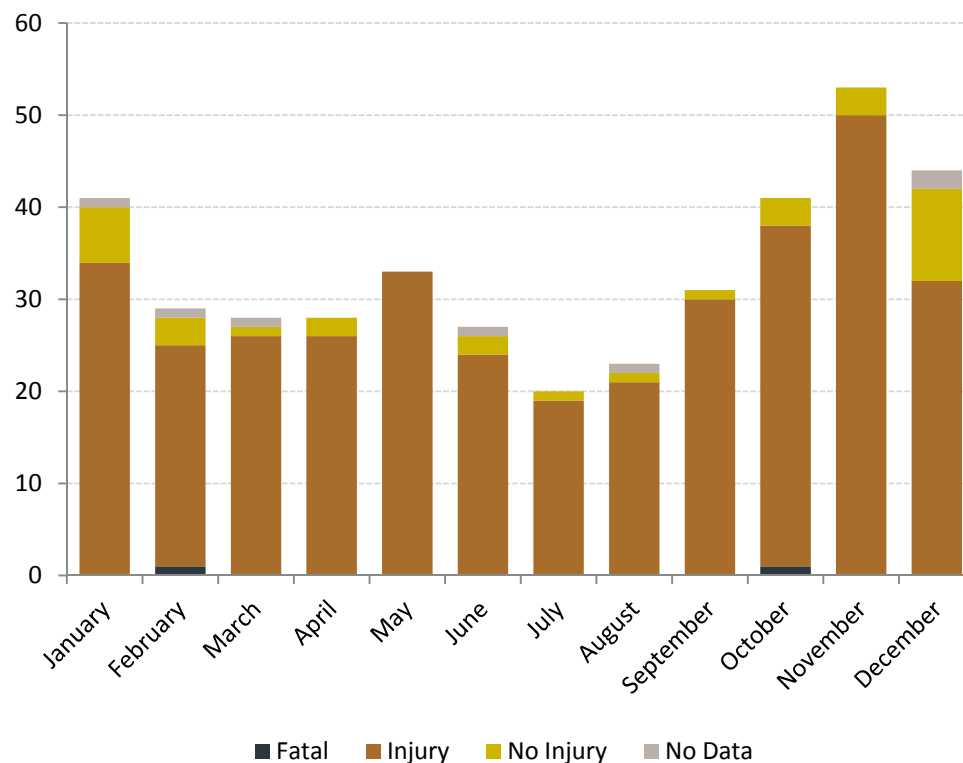
Based on State data



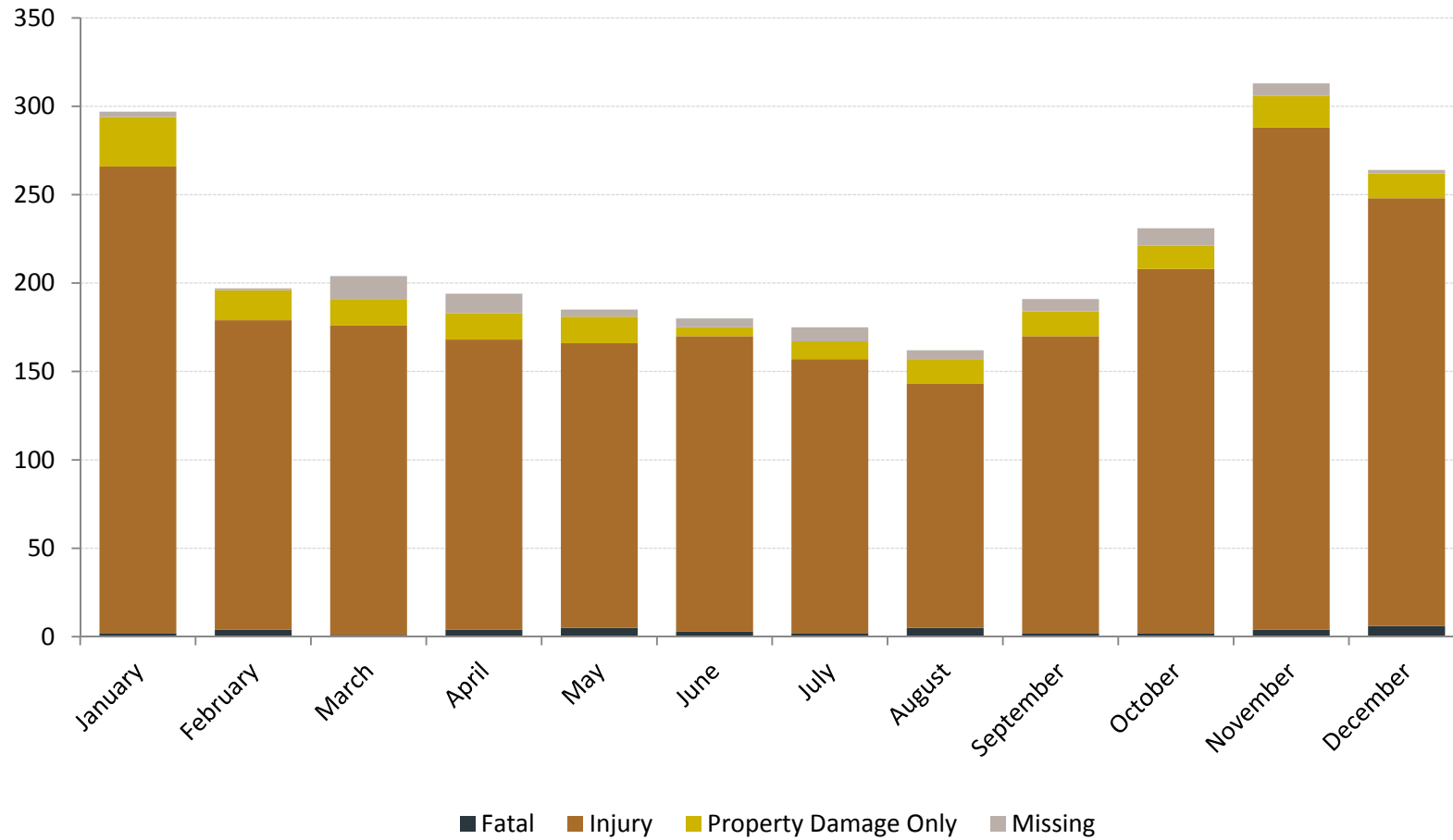
2011 Pedestrian Collision Severity by Month					
Month	No Injury	Injury	Fatal	No Data	Total
January	6	34	1	1	41
February	3	24	1	1	29
March	1	26		1	28
April	2	26			28
May		33			33
June	2	24		1	27
July	1	19			20
August	1	21		1	23
September	1	30			31
October	3	37	1		41
November	3	50			53
December	10	32		2	44
<b>Total</b>	<b>33</b>	<b>356</b>	<b>2</b>	<b>7</b>	<b>398</b>

Based on State data

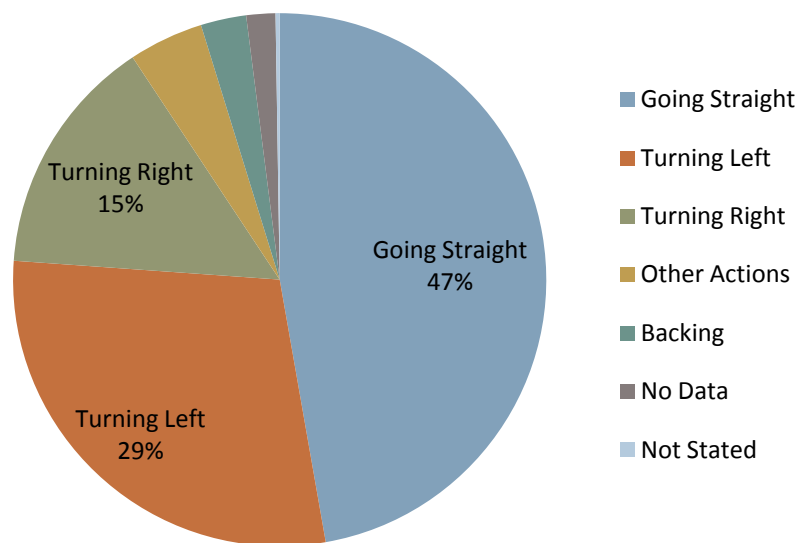
2011 Pedestrian Collision Severity



### Five-Year (2006-2010) Pedestrian Collision Severity by Month



<b>2011 Pedestrian Collision Severity by Vehicle Action</b>					
<b>Vehicle Action</b>	<b>No Injury</b>	<b>Injury</b>	<b>Fatality</b>	<b>No Data</b>	<b>Total</b>
<b>Going Straight</b>	13	173	2		188
<b>Turning Left</b>	12	103			115
<b>Turning Right</b>	4	54			58
<b>Other Actions</b>	4	14			18
<b>Backing</b>		11			11
<b>No Data</b>				7	7
<b>Not Stated</b>		1			1
<b>Total</b>	33	356	2	7	398

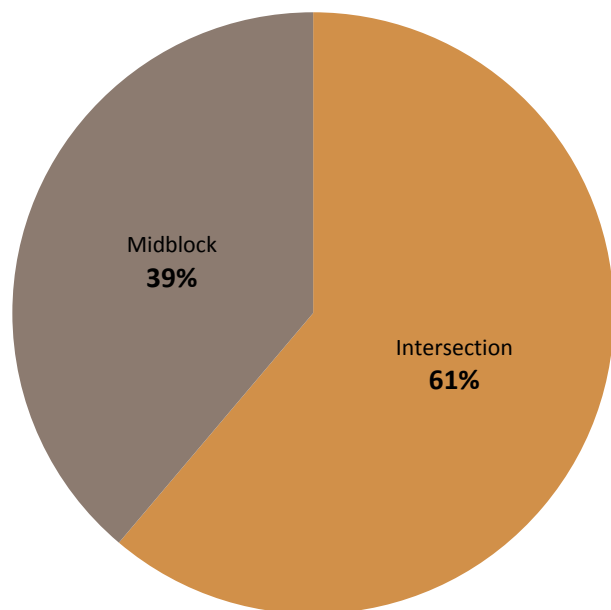




<b>2011 Pedestrian Collision Severity by Weather</b>					
<b>Weather</b>	<b>No Injury</b>	<b>Injury</b>	<b>Fatal</b>	<b>No Data</b>	<b>Total</b>
Clear or Partly Cloudy	20	199	1		<b>220</b>
Raining	6	78			<b>84</b>
Overcast	4	68			<b>72</b>
Unknown	2	10			<b>12</b>
No Data				8	<b>8</b>
Fog	1	1			<b>2</b>
<b>Total</b>	<b>33</b>	<b>356</b>	<b>1</b>	<b>8</b>	<b>398</b>

<b>2011 Pedestrian Collision Severity by Type of Vehicle Involved</b>					
<b>Vehicle Type(s)</b>	<b>No Injury</b>	<b>Injury</b>	<b>Fatal</b>	<b>No Data</b>	<b>Total</b>
Passenger Car	16	154			<b>170</b>
Pickup	3	77			<b>80</b>
Not Stated	1	12			<b>13</b>
Bus	1	10			<b>11</b>
Taxi	1	4			<b>5</b>
Small Truck		4			<b>4</b>
Passenger Car & Pickup	1	1			<b>2</b>
School Bus		1			<b>1</b>
Motorcycle		1			<b>1</b>
Train	1				<b>1</b>
Truck Tractor		1			<b>1</b>
Tractor Trailer		1			<b>1</b>
No Data	9	90	2	7	<b>108</b>
<b>Total</b>	<b>33</b>	<b>356</b>	<b>2</b>	<b>7</b>	<b>398</b>

## 2011 Bicycle Collision Tables



2011 Bike Collision Locations  
for all collisions

Not all collisions note contributing circumstances. Some collisions note multiple contributing circumstances.

### Contributing Circumstances for Drivers in 2011 Bike Collisions

Contributing Circumstance	No Injury	Injury	Fatal	Total
Did not Grant Right of Way to Cyclist	9	62	1	72
None	9	45		54
Other	10	36		46
Inattention	2	9		11
Did not Grant Right of Way to Vehicle	1	8		9
Missing	3	6		9
Improper Turn		2		2
Disregard Traffic Signal		2		2
All Others	1	3		4
<b>Total</b>	<b>35</b>	<b>173</b>	<b>1</b>	<b>209</b>

For collisions with State data

### Contributing Circumstances for Cyclists in 2011 Bike Collisions

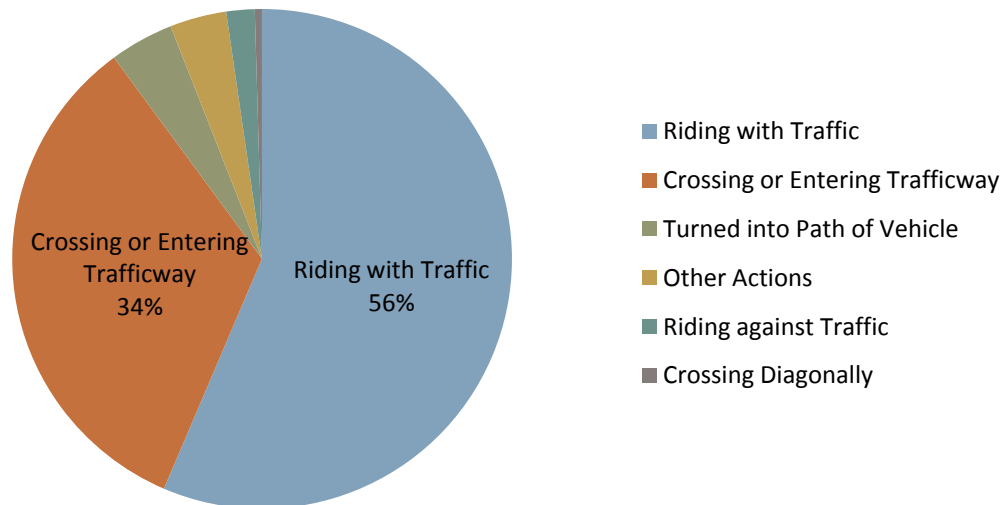
Contributing Circumstance	No Injury	Injury	Fatal	Total
None	11	107	1	119
Other	8	29	1	38
Did not Grant Right of Way to Vehicle	4	11		15
Disregard Traffic Signal	2	7		9
Exceeding Reasonable and Safe Speed	1	6		7
Disregard Stop Sign		5		5
Inattention	1	4		5
Under the Influence of Alcohol		4		4
Improper Passing		3		3
On Wrong Side of Road	1	2		3
Improper Turn		2		2
Headlight Violation		2		2
All Others		5	1	6
<b>Total</b>	<b>28</b>	<b>187</b>	<b>3</b>	<b>218</b>

**Injury Class by Cyclist Action in 2011 Cyclists Involved Collisions**

Bicyclist Action	No Injury	Possible Injury	Non Serious Injury	Serious Injury	Fatality	Unknown	Total	Percent of Total
Riding with Traffic	7	29	59	16	2	10	<b>123</b>	56.4%
Crossing or Entering Trafficway	8	21	38	2		4	<b>73</b>	33.5%
Turned into Path of Vehicle		2	5	2			<b>9</b>	4.1%
Other Actions		3	3	1	1		<b>8</b>	3.7%
Riding against Traffic		1	1			2	<b>4</b>	1.8%
Crossing Diagonally		1					<b>1</b>	0.5%
<b>Total</b>	<b>15</b>	<b>57</b>	<b>106</b>	<b>21</b>	<b>3</b>	<b>16</b>	<b>218</b>	<b>100.0%</b>

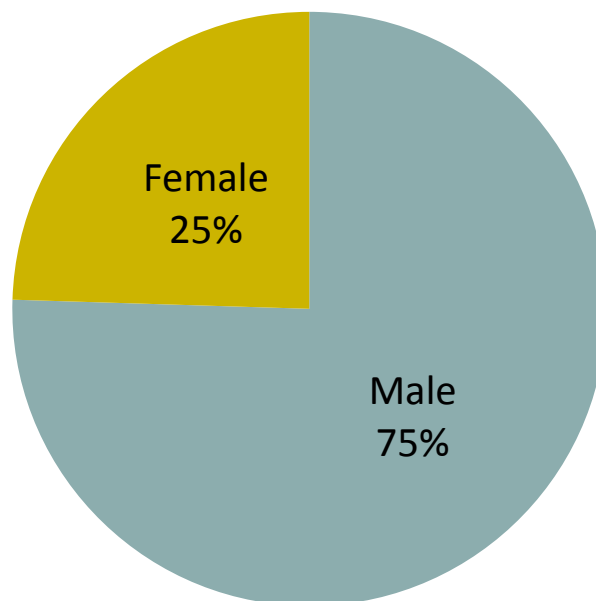
For collisions with State data

Cyclist's Action In Cyclists Involved Collisions for 2011



Injury Class for Cyclists Involved in 2011 Collisions by Gender							
Gender	Unknown	No Injury	Possible Injury	Non Serious Injury	Serious Injury	Fatality	Total
Male	13	11	36	77	14	3	154
Female	1	1	16	25	7		50
Total	14	12	52	102	21	3	204

Gender of Cyclists  
 Involved in 2011 Collisions  
 for collision with State data



**Injury Class for Cyclists Involved in 2011 Collisions by Age**

<b>Age Group</b>	No Injury	Possible Injury	Non Serious Injury	Serious Injury	Fatality	No Data	Total	Percent of Total
<b>5 to 14</b>	1	1	3				5	2%
<b>15 to 24</b>	4	9	28	6	1		48	22%
<b>25 to 34</b>	2	22	31	5			60	28%
<b>35 to 44</b>	4	7	17	7	1	1	37	17%
<b>45 to 54</b>	2	7	8		1	2	20	9%
<b>55 to 64</b>	1	4	6	1			12	6%
<b>65 and up</b>			4				4	2%
<b>Missing</b>	1	7	9	2		13	32	15%
<b>Total</b>	15	57	106	21	3	16	218	100%

### 2011 Bike Collision Severity by Hour of Day

Hour	No Injury	Injury	Fatal	No Data	Total
12am/No time		2		11	13
1am	1	7			8
2am		2			2
3am	1	1			2
4am					0
5am	1				1
6am		10			10
7am	2	10			12
8am	1	23			24
9am	2	13			15
10am	3	9			12
11am	3	15			18
12pm	3	17			20
1pm	2	17			19
2pm		14			14
3pm	4	17	1		22
4pm	3	26			29
5pm	3	49			52
6pm	6	19	2		27
7pm	3	8			11
8pm	3	16			19
9pm	3	10			13
10pm	1	3			4
11pm	3	2			5
<b>Total</b>	<b>48</b>	<b>290</b>	<b>3</b>	<b>11</b>	<b>352</b>

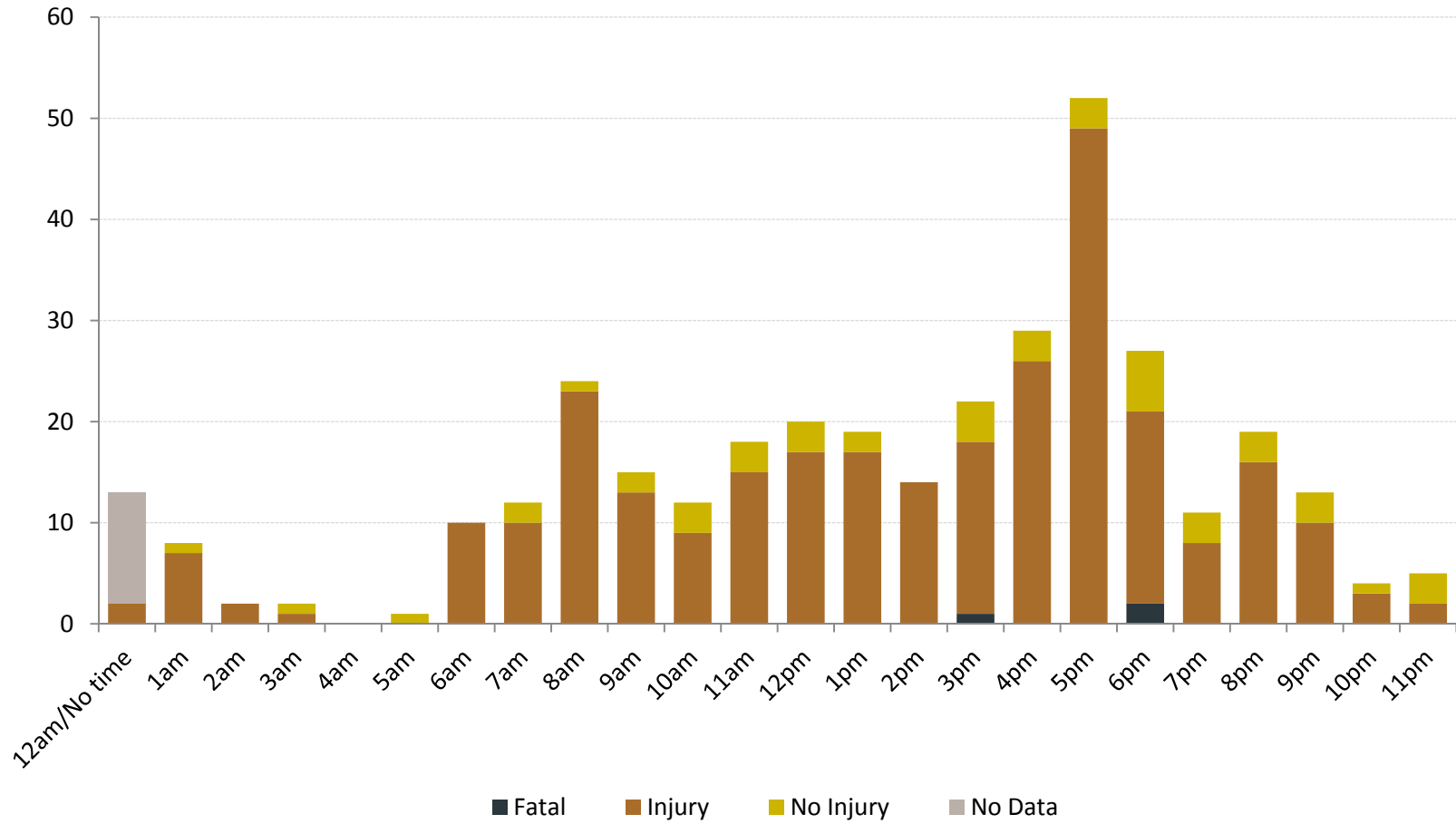
### 2011 Bike Collision Severity by Day of Week

Day of Week	No Injury	Injury	Fatal	No Data	Total
Sunday	1	20		2	23
Monday	14	33		3	50
Tuesday	6	51	1	2	60
Wednesday	1	55		1	57
Thursday	10	46	1	2	59
Friday	10	41			51
Saturday	6	44	1	1	52
<b>Total</b>	<b>48</b>	<b>290</b>	<b>3</b>	<b>11</b>	<b>352</b>

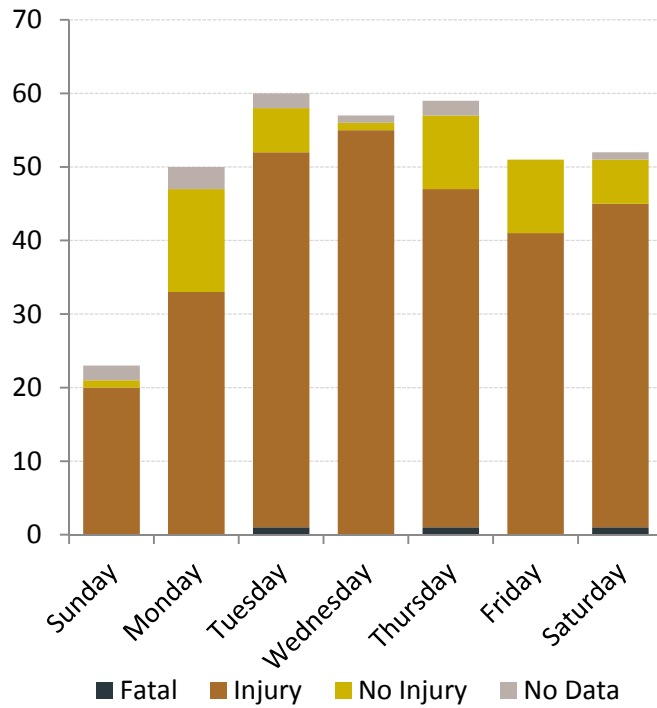
### 2011 Bike Collision Severity by Month

Month	No Injury	Injury	Fatal	No Data	Total
January	6	21		1	28
February		10		1	11
March	2	20		2	24
April	1	26			27
May	4	22			26
June	5	36		2	43
July	12	29	1	2	44
August	4	39	1	1	45
September	3	40	1		44
October	3	21		1	25
November	4	15			19
December	4	11		1	16
<b>Total</b>	<b>48</b>	<b>290</b>	<b>3</b>	<b>11</b>	<b>352</b>

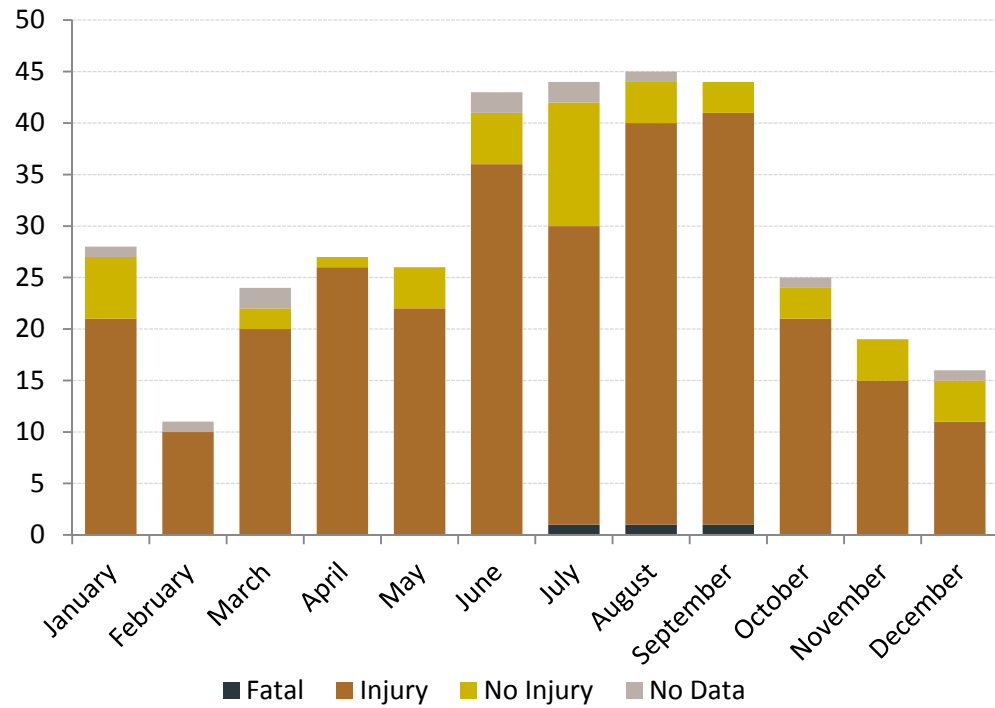
### 2011 Bike Collision Severity by Hour of Day



2011 Bike Collision Severity by Day

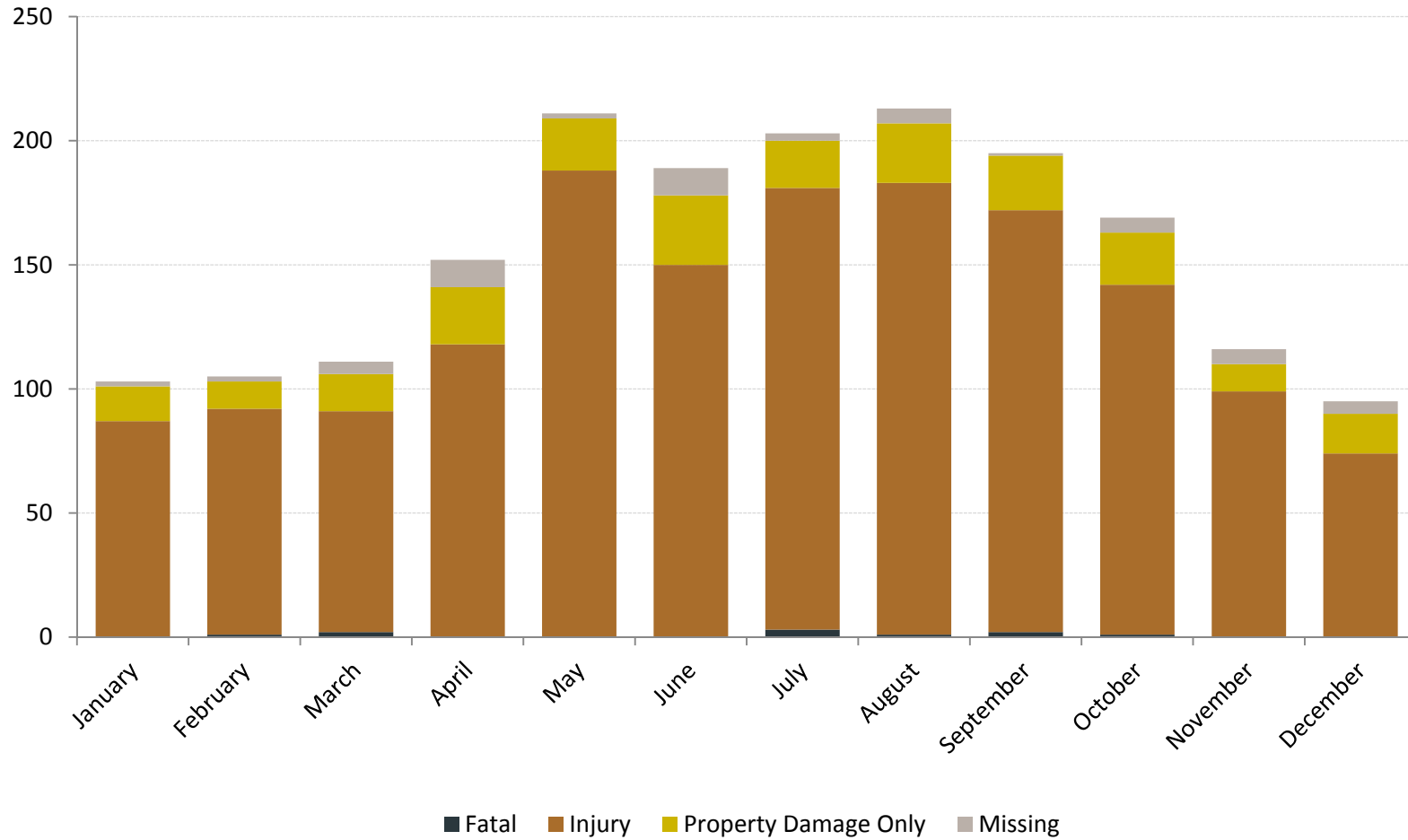


2011 Bike Collision Severity by Month





### Five-Year (2006-2010) Bike Collision Severity by Month

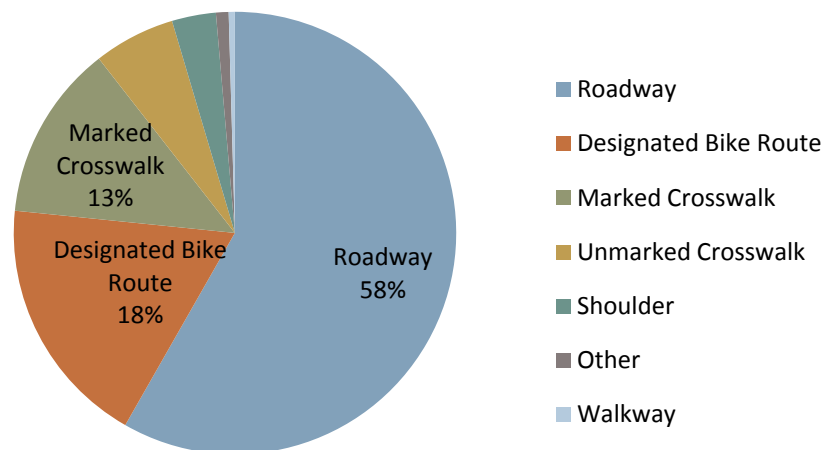


### Injury Class Cyclists Involved in 2011 Collision by Facility Type

Facility Type	No Injury	Possible Injury	Non Serious Injury	Serious Injury	Fatality	Unknown	Total
Roadway	5	36	56	15	1	14	127
Designated Bike Route	3	6	25	4	1	1	40
Marked Crosswalk	6	6	14	2			28
Unmarked Crosswalk	1	7	5				13
Shoulder		1	5			1	7
Other			1		1		2
Walkway		1					1
<b>Total</b>	15	57	106	21	3	16	218

For collisions with State data

### Facility Type for 2011 Cyclists Involved Collisions



### Injury Class of Cyclists Involved in 2011 Collisions by Weather

Weather	No Injury	Possible Injury	Non		Fatality	No Data	Total
			Serious Injury	Serious Injury			
Clear or Partly Cloudy	6	28	59	15	2	8	118
Overcast	2	16	24	2		2	46
Raining	6	13	17	4		5	45
Unknown	1		6			1	8
Missing					1		1
<b>Total</b>	<b>15</b>	<b>57</b>	<b>106</b>	<b>21</b>	<b>3</b>	<b>16</b>	<b>218</b>

For collisions with State data

### Injury Class Severity of Cyclists Involved in 2011 Collisions by Clothing Type

Clothing	No Injury	Possible Injury	Non		Fatality	No Data	Total
			Serious Injury	Serious Injury			
Dark	6	19	26	6		3	60
Light	1	7	10	4		3	25
Mixed	7	27	56	9	1	9	109
Retro - Reflective		2	3			1	6
Other Reflective Apparel	1	2	7	1			11
None Listed			4	1	2		7
<b>Total</b>	<b>15</b>	<b>57</b>	<b>106</b>	<b>21</b>	<b>3</b>	<b>16</b>	<b>218</b>

For collisions with State data

<b>Contributing Circumstances for Cyclists in 2011 Bike Collisions</b>				
<b>Contributing Circumstance</b>	<b>No Injury</b>	<b>Injury</b>	<b>Fatal</b>	<b>Total</b>
None	11	107	1	119
Other	8	29	1	38
Did not Grant Right of Way to Vehicle	4	11		15
Disregard Traffic Signal	2	7		9
Exceeding Reasonable and Safe Speed	1	6		7
Disregard Stop Sign		5		5
Inattention	1	4		5
Under the Influence of Alcohol		4		4
Improper Passing		3		3
On Wrong Side of Road	1	2		3
Improper Turn		2		2
Headlight Violation		2		2
All Others		5	1	6
<b>Total</b>	<b>28</b>	<b>187</b>	<b>3</b>	<b>218</b>

For collisions with State data

Not all collisions note contributing circumstances. Some collisions note multiple contributing circumstances.

<b>Contributing Circumstances for Drivers in 2011 Bike Collisions</b>				
<b>Contributing Circumstance</b>	<b>No</b>			<b>Total</b>
	<b>Injury</b>	<b>Injury</b>	<b>Fatal</b>	
Did not Grant Right of Way to Cyclist	9	62	1	72
None	9	45		54
Other	10	36		46
Inattention	2	9		11
Did not Grant Right of Way to Vehicle	1	8		9
Missing	3	6		9
Improper Turn		2		2
Disregard Traffic Signal		2		2
All Others	1	3		4
<b>Total</b>	<b>35</b>	<b>173</b>	<b>1</b>	<b>209</b>

For collisions with State data

Not all collisions note contributing circumstances. Some collisions note multiple contributing circumstances.

## Glossary

### TRAFFIC VOLUME TERMS

Source – William R. McShane and Roger P. Roess, *Traffic Engineering* (Englewood Cliffs, New Jersey: Prentice Hall, 1990) 49.

**ADT:** Average Daily Traffic. An average 24-hour traffic volume at a given location for some period of time less than a year.

**AWDT:** Average Weekday Daily Traffic. An average 24-hour traffic volume occurring on weekdays for some period of time less than one year, such as for a month or a season.

**AADT:** Average Annual Daily Traffic. The average 24-hour traffic volume at a given location over a full 365-day year.

### INJURY TYPES

Source – State of Washington Police Traffic Collision Report Instruction Manual and SDOT

**No Injury:** Applies when the officer at the scene has no reason to believe that, at the time of the collision, the person received any bodily harm due to the collision.

**Possible Injury:** Any injury reported to the officer or claimed by the individual such as momentary unconsciousness, claim of injuries not evident, limping, complaint of pain, nausea, hysteria, etc. These are counted as injuries when the total number of injuries is presented.

**Non Serious Injury:** Any injury other than fatal or disabling at the scene, including broken fingers or toes, abrasions, etc.

**Serious Injury:** This refers to any injury that results in at least a temporary impairment, e.g. a broken limb. It does not mean that the collision resulted in a permanent disability.

**Fatality:** This category includes persons who died at the scene of the collisions, were dead on arrival at the hospital, or died within 30 days of the collision from collision-related injuries.

### ROADWAY CLASSIFICATION TYPES

Source – City of Seattle Comprehensive Plan, Section 3.4 and SDOT

**Residential (Non-Arterial) Streets:** Roadways that provide localized traffic circulation, including access to neighborhood land uses, commercial and industrial land uses, and access to higher level traffic streets.

**Collector Arterials:** Roadways that collect and distribute traffic from principal and minor arterials to local access streets or provide direct access to destinations.

**Minor Arterials:** Roadways that distribute traffic from principal arterials to collector arterials and access streets.

**Principal Arterials:** Roadways that are intended to serve as the primary routes for moving traffic through the city, connecting urban centers and urban villages to one another, or to the regional transportation network.



The Seattle Department of Transportation  
700 5th Avenue, Suite 3800  
PO Box 34996  
Seattle, WA 98124-4996  
(206) 684-ROAD  
[www.seattle.gov/transportation](http://www.seattle.gov/transportation)

## making a DIFFERENCE

In order to minimize printing costs and reduce paper use,  
a limited number of copies were printed on recycled paper.

This report is available to view at:

<http://www.seattle.gov/transportation/reports.htm>