

# **2011 Safety Management Assessment For Clark County, Washington**

**April 2011**



**Southwest Washington Regional Transportation Council**



# **2011 SAFETY MANAGEMENT ASSESSMENT**

**for  
Clark County, Washington**

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## CHAPTER I. INTRODUCTION

Safety for all modes of travel is an important component of the metropolitan transportation planning process. This is true for the Clark County, Washington region, where Southwest Washington Regional Transportation Council (RTC) serves as the Metropolitan Planning Organization (MPO) for Clark County, Washington.

Clark County is located in the southwestern part of the state of Washington. Urban Clark County is part of the northeast portion of the Portland-Vancouver-Beaverton Metropolitan Area.

*The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)* designated safety as a new, stand-alone planning factor and mandated that Metropolitan Planning Organizations develop a Safety Element as part of their long-range transportation plans.

This Safety Assessment is intended to be a component piece of the Metropolitan Transportation Plan for Clark County.

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### A. BACKGROUND

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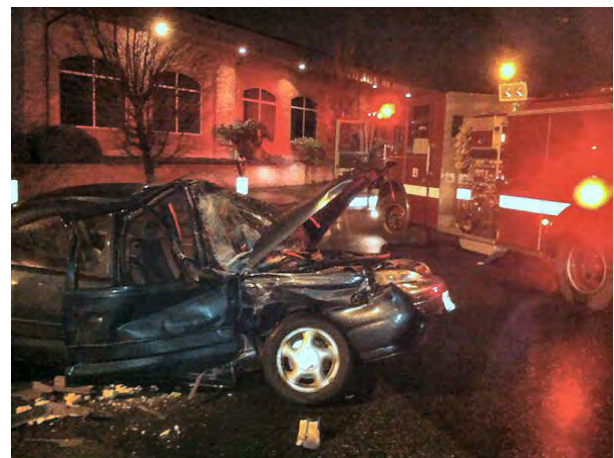
The U.S. Department of Transportation, through the Federal Highway Administration (FHWA) and the Federal Transit Administration, defines safety as freedom from unintentional harm.

Transportation safety research has shown that most collisions are preventable. The largest contributing factor in collisions is the behavior of the users of the transportation system. Many collisions could be avoided if users of the transportation system obeyed laws, avoided distractions, took appropriate

precautions, and focused on the task at hand.

In addition to user behavior, the transportation system needs to be designed, maintained, operated, and managed with the safety of all users in mind. The transportation system should serve its purpose without endangering the people who use it.

According to FHWA, there were approximately 5.8 million motor vehicle crashes in the United States in 2008 with the number of traffic fatalities reaching its lowest level since 1961. Even so, 2008 traffic collisions resulted in approximately 37,300 fatalities and 2.35 million injuries. According to Washington State's Strategic Highway Safety Plan 2010, Washington State is following national trends and is seeing a decline in fatality rates.



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### B. SAFETEA-LU REQUIREMENTS

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Transportation professionals have long recognized the need for an organized approach to transportation safety. With the passage of SAFETEA-LU in 2005, additional funding was made available for the application of procedures to enhance transportation safety efforts.

With SAFETEA-LU, a new core Highway Safety Improvement Program (HSIP) was established with the goal of reducing highway fatalities. The aim is for the Highway Safety Improvement Program to accomplish this by the prioritization of infrastructure safety funds and the implementation of strategic highway safety planning.

As part of the Highway Safety Improvement Program, funds were specifically set aside for a *Railway-Highway Crossings Program* and a *High Risk Rural Roads Program*. Additional federal and state programs also support safety improvements.

Under the Highway Safety Improvement Program, states must prepare a Strategic Highway Safety Plan and have the flexibility to target money for their most critical safety needs identified in the state plan.

Under SAFETEA-LU, MPOs are challenged with considering ways to increase the safety of the transportation system for both motorized and non-motorized users. Federal law requires that the metropolitan transportation planning process be consistent with the State's Strategic Highway Safety Plan.



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## C. TRANSPORTATION SAFETY PLANNING

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With the enactment of SAFETEA-LU, transportation safety planning was brought forward as a stand-alone planning factor. Transportation safety planning is defined

as a comprehensive, system-wide, multimodal, proactive process that integrates safety into surface transportation decision-making. A robust transportation safety planning process includes and integrates the "Four E's" of transportation safety:

- Education
- Engineering
- Enforcement
- Emergency Services

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## D. WASHINGTON STATE'S STRATEGIC HIGHWAY SAFETY PLAN – TARGET ZERO

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Within the Highway Safety Improvement Program each state is required to develop a statewide-coordinated safety plan that provides a comprehensive framework for reducing highway fatalities and serious injuries on all public roads.

In Washington State, the Washington State Department of Transportation (WSDOT) is the lead agency for developing the Strategic Safety Plan. Washington State's Strategic Highway Safety Plan, Target Zero, was initially completed in 2007 and updated in 2010.

Target Zero helps to assess statewide safety needs, encouraging and promoting good safety practices in the design and operation of the transportation system, as well as promoting safety by system users. The vision and goal of Target Zero is to reduce traffic fatalities and serious injuries to zero by 2030.

To achieve Target Zero, the state would need to significantly reduce fatalities by approximately 23 per year and reduce serious injuries by approximately 130 per year for each year over the next 20 years. Although Washington State has made significant improvements in the last decade, the goal set by Target Zero is well above recent achievements.





Target Zero is divided into four levels of priorities based on the percentage of traffic fatalities associated with each factor.

Priority One has three areas: impairment, run-off-the-road collisions, and speeding. These factors resulted in 40% or more of the traffic fatalities between 2006 and 2008.

Priority Two includes young drivers, distracted drivers, unrestrained vehicle occupants, and intersection-related crashes. Priority Two factors account for between 21% and 38% of traffic fatalities (2006-2008). While not a cause of fatalities, Traffic Data Systems is included as a level two priority because of the potential for improved data to provide understanding of the reason for traffic fatalities and serious injuries.

Priority Three includes unlicensed drivers, opposite direction multi-vehicle collisions, motorcyclists, pedestrians, and heavy trucks. These factors were involved in somewhere between 12% and 20% of the fatalities (2006-2008).

Priority Four includes areas that each involved less than 10% of all fatalities between 2006 and 2008. Factors include

older drivers, drowsy drivers, bicyclists, work zones, vehicle-train collisions, and school-bus-related collisions.

Some of the recommended objectives of the State's Target Zero plan include:

Impaired Driving (Priority 1): Target Zero focuses on education and enforcement of DUI laws. Strategies specifically target underage drivers, repeat offenders, and those with high blood alcohol content.

Run-Off-the-Road Collisions (Priority 1): Target Zero focuses on engineering improvements to reduce run-off-the-road collisions, minimize the consequences of leaving the roadway, and reduce speed related run-off-the-road collisions.

Speeding (Priority 1): Target Zero focuses on enforcement to reduce speeding, engineering measures to manage speed, and driver education about the dangers of excessive speed.

Young Drivers (Priority 2): Target Zero focuses on enforcement and education about the State's Intermediate Driver's License Law, underage drinking law, and the new law banning wireless devices.

Unrestrained Vehicle Occupants (Priority 2): Target Zero focuses on enforcement and education to maximize the use of occupant restraints by all vehicle occupants.

Distracted Drivers (Priority 2): Target Zero focuses on the collection and analysis of new distracted driver data that began in 2006, engineering to reduce the consequences of distracted driving, education of risks of distracted driving, and enforcement of distracted driving laws.

Intersections (Priority 2): Target Zero focuses on education, enforcement, and engineering to reduce motor vehicle collisions at intersections. The strategy

also targets vehicle collisions involving pedestrians and bicyclists at intersections.

Traffic Data Systems (Priority 2): Target Zero supports automation, accuracy, timeliness, completeness, accessibility, and integration of data collection. Target Zero also supports the development and integration of patient care information system for enhanced injury surveillance.

Unlicensed Drivers (Priority 3): Target Zero focuses on enforcement practices to reduce unlicensed drivers. Target Zero also supports the need to eliminate the need to drive by providing alternative transportation services.

Opposite-Direction Multi-Vehicle Collisions (Priority 3): Target Zero supports engineering and maintenance improvements to reduce opposite-direction multi-vehicle collisions.

Motorcyclists (Priority 3): Target Zero supports enforcement and education to reduce unskilled, unsafe, and impaired motorcyclists.

Pedestrians (Priority 3): Target Zero supports education, engineering, and enforcement to reduce collisions involving pedestrians. A specific objective targets safety for children walking to school.

Heavy Trucks (Priority 3): Target Zero supports enforcement, education, and engineering practices to reduce collisions involving heavy trucks. Specific areas targeted include fatigue and inattention, defective equipment, and barriers.

Emergency Medical Services (Priority 3): Supports education and engineering to enhance emergency medical capabilities to increase survivability.

Priority 4 Factors): Target Zero handles the Priority 4 factors by only providing a brief overview of factors and potential engineering and educational solutions.



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## E. RTC'S SUPPORT FOR TARGET ZERO

Southwest Washington Regional Transportation Council (RTC) supports the State's Target Zero Plan through the regional transportation planning process. It is the intent of RTC that through collaboration with WSDOT and other local agencies we can work together to achieve the vision of the Washington State's Strategic Highway Safety Plan, Target Zero and reduce traffic fatalities and serious injuries to zero by 2030.

RTC views this Safety Assessment as a logical extension of our efforts to improve transportation throughout the Clark County region. It is vital that the Clark County region builds and maintains a transportation system that provides a safe and secure means of travel by all modes.

Development of effective strategies to improve safety depends on accurate data that can be analyzed to identify needs. This Safety Assessment attempts to identify the factors associated with collisions and the location of collisions, so that improvement strategies can be developed and implemented.

## CHAPTER II. CLARK COUNTY COMPARISON TO TARGET ZERO

### A. INTRODUCTION

This section contains a discussion and a comparison of data contained in the Washington State Strategic Highway Safety Plan – Target Zero with data for Clark County, Washington.

### B. FATALITIES AND SERIOUS INJURIES TRENDS

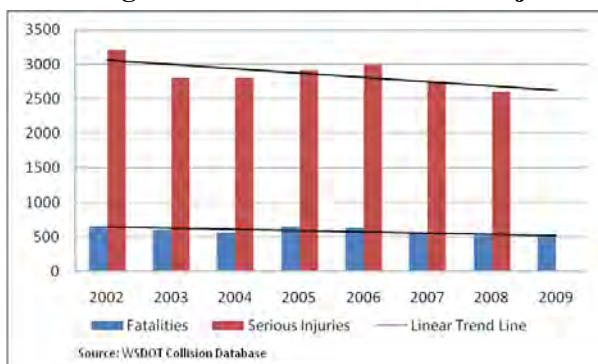
#### 1. OVERALL TRENDS

Over the past several years, national, state, and county trends have generally shown a significant reduction in number of collisions, fatalities, and serious injuries resulting from traffic collisions. Clark County has not followed these trends regarding serious injuries and has trended slightly upward.

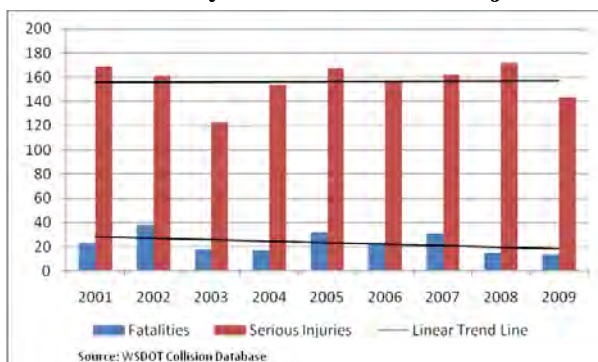
There are a number of factors that have resulted in the decline in traffic fatalities and serious injuries. Exposure to the risk of traffic collisions has declined because people are driving fewer miles due to higher gasoline prices and the slowing of the economy. Other factors include improvement to vehicle design, roadway engineering, educational programs, focused enforcement, and emergency response time.

Figures 3 and 4 display fatalities and serious injuries by jurisdiction (city, county, state, and unknown). The highest number of fatalities occurred on county facilities, followed by state and city facilities. The highest number of serious injuries occurred on county facilities, followed by city and state facilities.

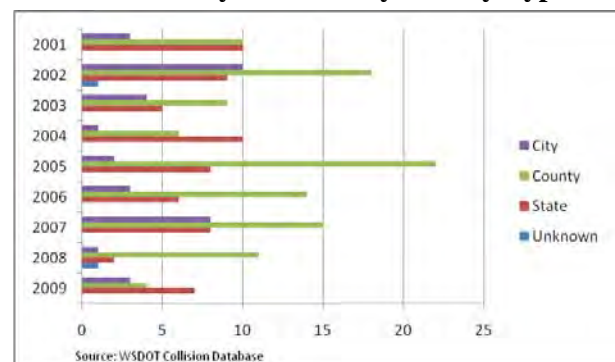
**Figure 1**  
**Washington State: Fatalities/Serious Injuries**



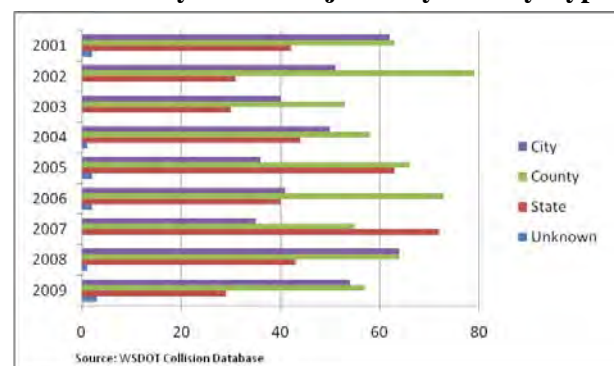
**Figure 2**  
**Clark County: Fatalities/Serious Injuries**



**Figure 3**  
**Clark County Fatalities by Facility Type**



**Figure 4**  
**Clark County Serious Injuries by Facility Type**



## 2. TRENDS BY FACTORS

Target Zero contains four levels of priorities based on the percentage of traffic fatalities associated with each factor. Table 1 is a comparison of these factors between Washington State and Clark County. For Washington State, years 2006 to 2008 were used and for Clark County years 2005 to 2009.

The data shows that Clark County has a lower percentage of fatalities associated

with Priority One factors (Impaired Driver, Run off the Road, and Speeding Involved). For Priority Two factors, Clark County had a significantly higher percentage of Young Drivers. Unrestrained Passenger Vehicle Occupant was lower than the state average. Factors 3 and 4 showed greater fluctuations but generally account for a lower number of the overall fatalities.

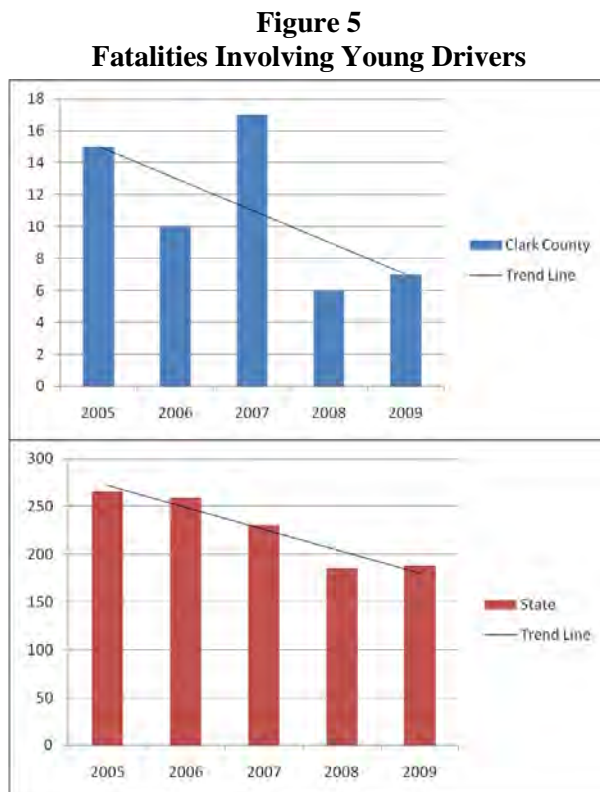
**Table 1**  
**Washington State and Clark County**  
**Comparison of Factors Involved in Traffic Fatalities**

Factors	2006-2008 State		2005-2009 Clark County	
	Death	Percent	Death	Percent
<b>Priority One</b>				
Alcohol and/or Drug impaired Driver	828	48.0%	47	40.9%
Run off the Road	722	41.9%	36	31.3%
Speeding Involved	693	40.2%	39	33.9%
<b>Priority Two</b>				
Young Drivers 16-25	654	37.9%	55	47.8%
Drivers 21-25	358	20.8%	30	26.1%
Drivers 16-20	318	18.4%	30	26.1%
Unrestrained Passenger Vehicle Occupant	481	27.9%	25	21.7%
Distracted Driver Involved	426	24.7%	N/A	N/A
Intersection Related	356	20.6%	24	20.9%
Traffic Data System	N/A	N/A	N/A	N/A
<b>Priority Three</b>				
Unlicensed Driver Involved	352	20.4%	N/A	N/A
Opposite Direction Multi-Vehicle Collisions	323	18.7%	27	23.5%
Motorcyclist	225	13.0%	11	9.6%
Pedestrian	198	11.5%	16	13.9%
Heavy Truck	198	11.5%	9	7.8%
Emergency Medical Services	N/A	N/A	N/A	N/A
<b>Priority Four</b>				
Older Driver Involved (75+)	120	7.0%	3	2.6%
Drowsy Driver Involved	77	4.5%	6	5.2%
Bicyclist	30	1.7%	5	4.3%
Work Zone	21	1.2%	2	1.7%
Wildlife	9	0.5%	N/A	N/A
Vehicle-Train Involved	8	0.5%	N/A	N/A
School Bus-Related	1	0.1%	N/A	N/A
Aggressive Driver Involved	N/A	N/A	N/A	N/A

### 3. CLARK COUNTY PRIORITY FACTORS

1. Young Drivers (47.8%): Motor vehicle crashes are the leading cause of death for young people ages 16-25 in Washington State. Drivers in this age group have the highest crash rate and the highest rates of speeding, impaired driving, and distracted driving of any driver age group in the state.

The Young Drivers, ages 16 to 25, factor is the most common cited in fatal collisions within Clark County. Statewide it is the fourth highest factor. Clark County's average is approximately 10% higher than the state average.



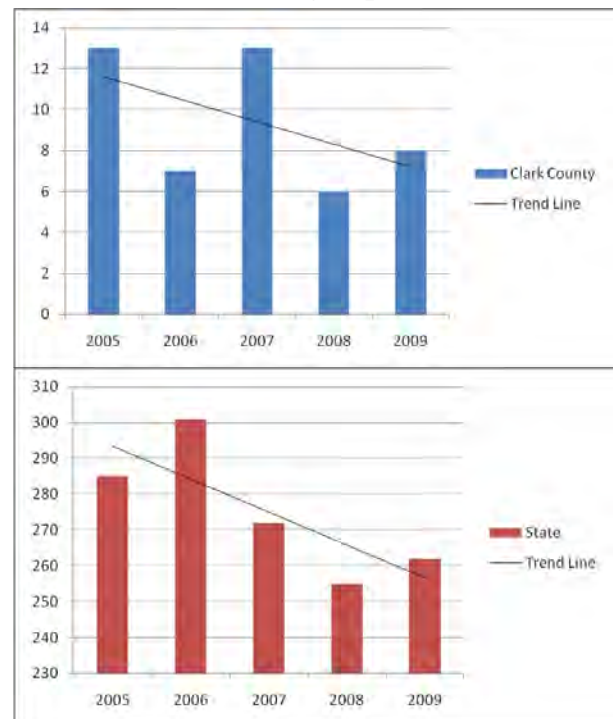
Young drivers should become a focus through additional education and enforcement within Clark County.

2. Impaired Driving (40.9%): In Washington State, a driver is considered to be driving under the influence (DUI) if the driver's blood alcohol concentration is .08 or higher, or if the driver is impaired by other drugs, or both. Drugs include both

legal and illegal drugs, including prescription and over-the-counter drugs. Drivers under the age of 21 can be arrested for DUI with a blood alcohol concentration of .02 or higher.

Although Alcohol and Drug Impairment was the most common cited factor in fatal collisions in Washington State, it was only the second leading factor in Clark County behind young drivers. Clark County's average is approximately 7% lower than the state average.

**Figure 6  
Fatalities Involving Impaired Drivers**



Impaired driving is a nation-wide problem that has been tackled for decades through education and enforcement. Although there has been a significant reduction in fatalities due to impaired driving over the past several decades, this is a factor that Clark County, the State, and the nation must continue to address.

Target Zero also provides the following information about impaired driving fatalities:

- 49% between the ages of 16 and 30
- 84% are males
- 63% occurred in rural areas
- 66% occurred at night (6 pm – 6 am)
- 52% occurred during the weekend
- 42% occurred during summer months (June to September)
- 67% were one occupant vehicles
- 58% involved a single vehicle
- 50% were also speeding
- Over 50% were not wearing a seat belt
- There has been a 104% increase in the last decade of drug-involved fatalities



WSDOT

3. **Speeding (33.9%):** Speeding occurs when drivers travel above the posted speed or when they travel too fast for conditions. Drivers may be traveling well under the posted speed but weather conditions or poor visibility could still cause drivers to lose control of their vehicles if they don't have enough stopping time.

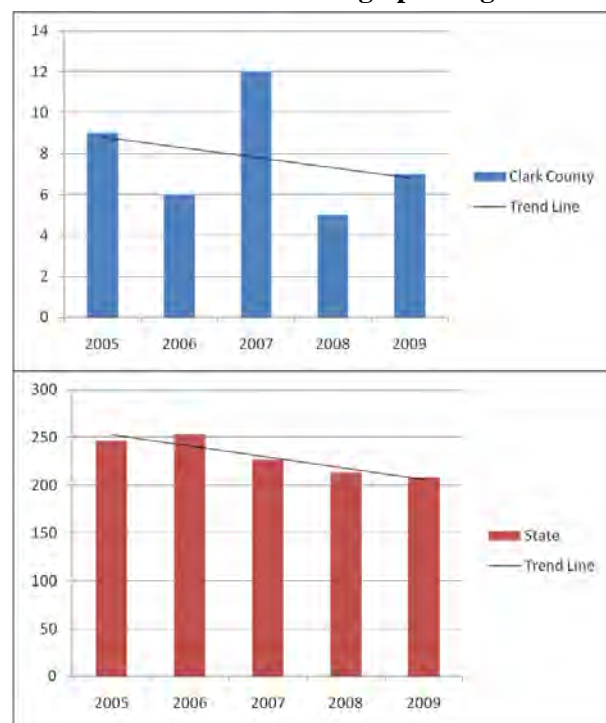
Speeding is the third most common factor involved in fatalities in Clark County, and second most common factor state wide. Clark County's average is approximately 6% lower than the state average.

Speeding is a major factor in many fatality collisions. Education, enforcement, and engineering can all help to reduce speed and improve safety.

Target Zero also provides the following information about speeding:

- Over 40% fatalities involve speeding
- Over 30% of Serious Injuries involve speeding
- Speeding is the number one factor in fatal crashes involving drivers age 16 to 25
- Second highest factor is motorcycle fatalities
- Nearly one-third of speeding fatal crashes occur between July and September
- Half of all speeding related deaths occur during the weekend
- Nearly half of all speed related serious injuries occur on weekends (Friday-Sunday) between 3 and 6 pm

**Figure 7**  
**Fatalities Involving Speeding**



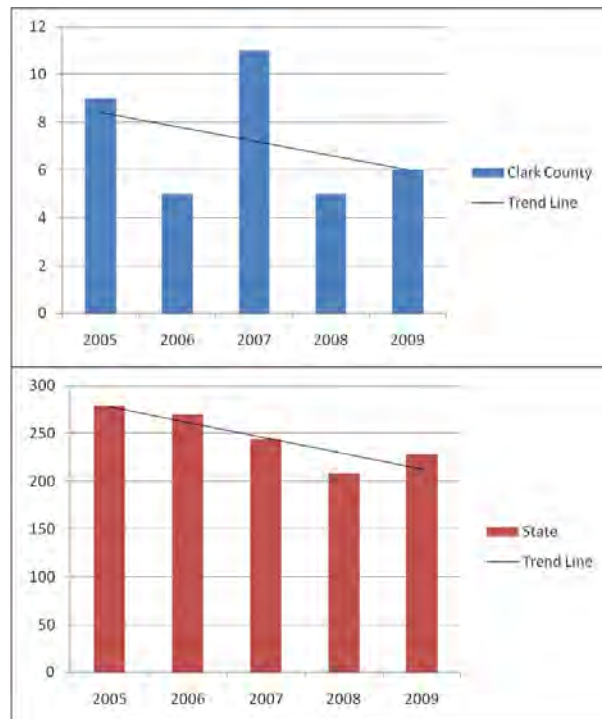
- 60% of speeding drivers in fatal crashes were impaired by alcohol or drugs
- 40% of speeding drivers in fatal crashes were not wearing a seat belt

4. Run-Off-the-Road (31.3%): A run-off-the-road crash occurs when a vehicle leaves the road during a collision.

Although run-off-the-road crash was the second most common factor in fatal collisions in Washington State, it was only the fourth leading factor in Clark County. Clark County's average is approximately 10% lower than the state average.

Based on Washington State collision data, once a vehicle leaves the roadway, the most harmful event is likely to be an overturn or impact with an object (tree, utility pole, ditch, and fence).

**Figure 8**  
**Run-Off-the-Road**



Improving driver behavior will significantly reduce run-off-the-road fatalities. Behavior such as speeding, driving under the

influence, and driver distraction are major contributors to run-off-the road fatalities.

Although preventing a vehicle from leaving the road is the best solution, another strategy is to minimize the consequences of leaving the road. Removing or relocating roadside objects, flattening slopes, and other engineering solutions can reduce fatalities associated with run-off-the-road collisions.



City of Vancouver

5. Distracted Drivers (N/A): Distracted driving is a non-driving activity that diverts a driver's attention from the primary task of driving and increases the risk of crashes. Driver distractions include activities such as cell phone use, texting, eating, drinking, talking with passengers, and using in-vehicle technologies.

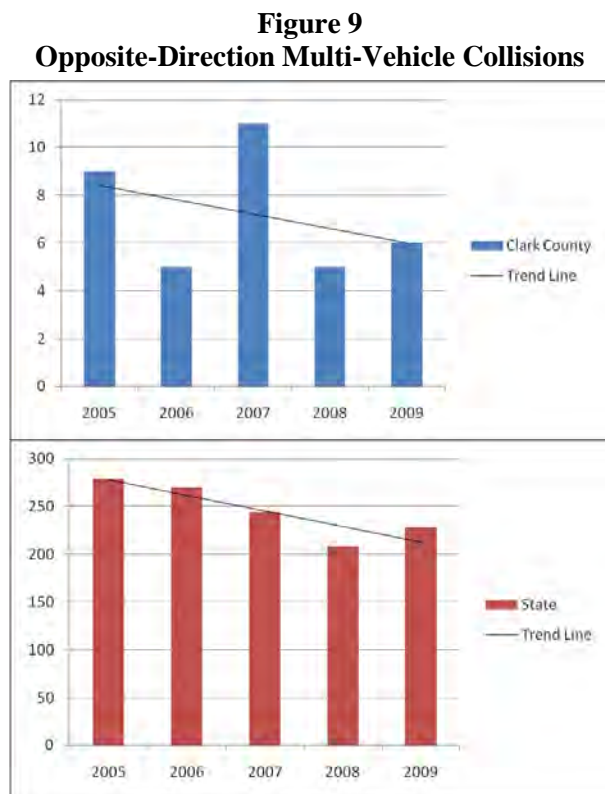
Distracted driving was involved in 24.7% of the statewide fatalities. However, a change in the reporting method made it difficult to get a comparable figure for Clark County. For the purpose of this report, it is assumed that Clark County has the same rate as the statewide average of 24.7%.

Distracted driving has received more attention in light of increased use of wireless communication devices. In addition, there have been several high profile distracted driving fatalities in Clark County in recent years.

Beginning on June 10, 2010, use of a hand-held wireless communication device or texting while operating a motor vehicle became a primary enforcement law in Washington State. In addition to tougher laws, Washington State plans to decrease distracted driving collisions through educating drivers on the risks associated with distracted driving.

6. Opposite-Direction Multi-Vehicle Collision (23.5%): An opposite-direction multi-vehicle crash typically occurs when one vehicle crosses over a roadway center line or a median and crashes into a vehicle traveling in the opposite direction.

Opposite-direction multi-vehicle crashes are the sixth most common factor involved in fatalities in Clark County, and eleventh statewide. Clark County's average is approximately 5% higher than the state average.



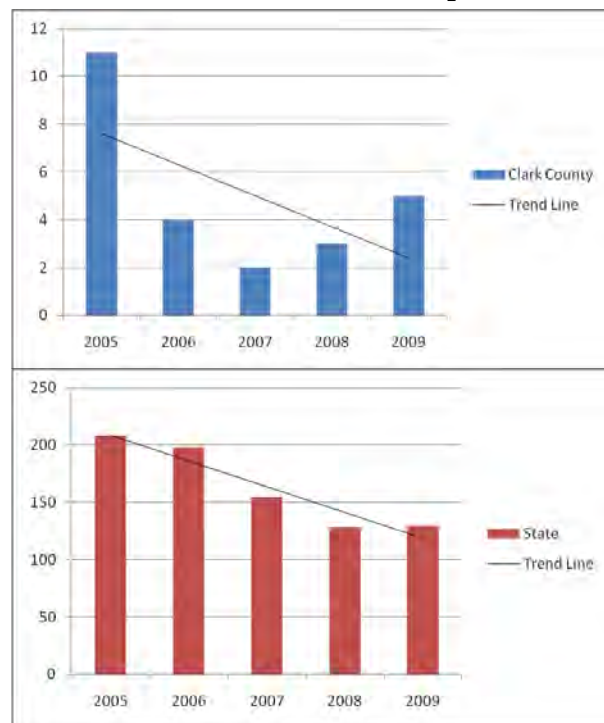
Opposite-direction multi-vehicle crashes are often caused by a driver's impairment, speed, or distraction. Addressing these factors will reduce this type of collision.

Engineering strategies can also help reduce the likelihood of these types of collisions.

7. Unrestrained Vehicle Occupants (21.75%): Seat belt usage has been increasing in Washington State and has resulted in a steady decline in traffic fatalities and serious injuries.

Although unrestrained vehicle occupants was the fifth most common factor in fatal collisions in Washington State, it was the seventh most common factor in Clark County. Clark County's average is approximately 6% lower than the state average indicating that Clark County may have a higher seatbelt usage.

**Figure 10**  
**Unrestrained Vehicle Occupants**



Washington state laws and enforcement efforts have resulted in a significant reduction in unrestrained occupant fatalities. In Washington State, wearing a seat belt became a primary enforcement law in June of 2002.

New strategies in Washington State focus on increasing seatbelt use for tribes and

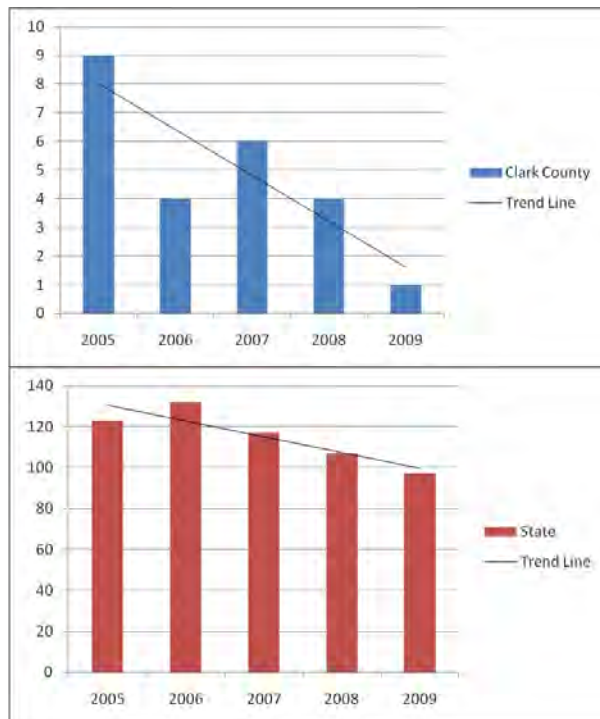


teens. Research shows low seat belt usage patterns on tribal reservations and teens, age 16 to 20, have the lowest seat belt usage of any age group. Increased usage of appropriate child restraint to protect children from serious injuries or fatalities in collisions is also targeted.

8. **Intersections (20.9%):** Intersections, where two or more roads join or cross, are a major source of encounters between road users. Intersections involve turning and crossing maneuvers that provide opportunities for collisions between vehicle and other transportation system users.

Intersection related fatalities were the eighth most common factor in Clark County and seventh Statewide for fatal collisions. Clark County's average is approximately the same as the state average.

**Figure 11**  
**Intersections**



Reducing driver speeding and impairment as well as engineering strategies will reduce these types of collisions.

9. **Other Factors:** Walking and bicycling are critical components of the transportation system. For those without access to vehicles, walking and bicycling may be a necessity. Creating livable communities that increase the safety of pedestrians and bicyclists is important.

Clark County has a higher rate of fatalities for both pedestrians and bicyclists, approximately 2% higher than the state average. This is likely related to the fact that there are more conflicts for pedestrian and bicycle in urban areas.

Education, enforcement, and engineering solutions can reduce pedestrian and bicycle collisions.



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## CHAPTER III.

# CLARK COUNTY HIGH COLLISION INTERSECTIONS

### A. INTRODUCTION

Intersections are a critical component of the transportation network that impact both safety and mobility. Intersections are often the controlling factor in determining the capacity of an urban arterial. However, intersections also have a high number of conflicts between various movements and users. So it becomes important to design intersections that balance safety and mobility.

Collisions at intersections represent a significant portion of the region's total accounting for almost a third of the total collisions county wide. A majority of intersection collisions occur within cities, where intersection collisions account for almost 45% of the collisions on city streets.

Intersections, where two or more roads join or cross, are a major source of encounters between transportation system users. Intersections involve turning and crossing maneuvers that provide opportunities for collisions between vehicle and other transportation system users. Intersection related rear-end collisions account for a significant portion of the collisions at intersections.

### B. HIGH COLLISION INTERSECTIONS

Major intersections of two arterials, controlled with a traffic signal, generally have the highest total number of collisions. The analysis of Clark County collision data identified 30 signalized intersections with 20 or more collisions for years 2007-2009. Table 2 includes a list of these intersections with total number of collisions and collision rates. It is important to note that many of the identified intersections have collision rates

well below average, but have 20 or more collisions due, in part, to overall traffic volumes.

In addition to signalized intersections, there are other intersections and road segments that have a high number of collisions. Due to the total number of collisions, this report focuses only on signalized intersections with 20 or more collisions during the three-year period.

**Table 2**  
**2007-2009 High Collision Intersections**

Intersection	Total Collisions	Collision Rate
SR-500/SR-503 @ Padden Parkway	104	4.94
SR-500 @ St. Johns	85	3.46
SR-500 @ 54th Av.	83	3.66
SR-500 @ Fourth Plain	75	2.88
SR-500 @ 42nd Av.	69	3.24
NE Andresen Rd @ Padden Pkwy	44	2.30
Mill Plain Blvd. @ Chkalov Dr.	39	1.37
NE Hwy 99 @ NE 78th St	37	2.06
Mill Plain Blvd. @ 136th Av.	34	1.64
Padden Pkwy @ NE 94th Ave	34	2.41
SR-500 @ 76th St.	33	1.95
Fourth Plain @ Andresen Rd.	32	1.68
SR-14 @ Union (SR-500)	30	2.91
NE 78th St @ NE St Johns Rd	29	1.77
SR-503 @ SR-502	29	1.68
NE 99th St @ NE 7th Ave	27	3.08
NE 119th St @ NE 72nd Ave	26	3.11
SR-503 @ 99th St.	26	2.06
SR-502 @ SW 12th Av.	25	2.35
SR-503 @ 199th St.	25	1.94
SR-500 @ 65th St.	24	1.59
Mill Plain Blvd. @ 117th Av.	23	1.43
NE Andresen Rd @ NE 58th St	22	2.37
SR-503 @ 119th St.	22	1.54
NE 78th St @ NE Hazel Dell	21	1.63
NE Hwy 99 @ NE 99th St	21	1.59
SR-500 @ 71st St. (Fred Meyer)	21	1.51
18th St. @ 112th Av.	20	2.68
Mill Plain Blvd. @ 164th Av.	20	1.14
SR-14 @ 2nd St.	20	2.28

Figure 12 displays Clark County High Collision Intersections by Total Collisions for years 2007 through 2009. Thirty intersections had 20 or more collisions during the three-year period. Of the identified intersections, the SR-500/SR-503/Padden Parkway intersection had over 100 collisions, while four intersections along SR-500 had between 50 and 99 collisions, and twenty-five other intersections had between 20 and 49 collisions.

Figure 13 displays Clark County High Collision Intersections by Collision Rate. Of the 30 identified intersections, seven had a collision rate of 3.0 or higher, two intersections had a rate between 2.5 and 3.0, and 21 intersections had a collision rate below 2.5.

Collision rate is calculated based on number of collisions per million entering vehicles. Generally, a collision rate above 3.0 is considered above average. Collisions per million entering vehicle is calculated using the following formula:

$$\frac{\text{Number of collisions 2007-2009} \times 1,000,000}{365 \text{ days/year} \times 3 \text{ years} \times \text{Entering Daily Traffic Volume}}$$



The Columbian

## C. SAFETY IMPROVEMENTS

Safe and efficient traffic flow cannot be achieved by design alone; it requires a coordinated effort between engineering of intersections, vehicle technology, education of drivers, and traffic enforcement.

There are a number of transportation improvements that can be considered to improve intersection safety. These improvements could include everything from low cost to high cost improvements.

Clear road markings, signage, and median barriers are low cost methods of improving safety. Grade separation should be considered for intersections with high volumes and faster speeds. In addition, other innovative approaches to intersection safety should be considered. This could include red light cameras, roundabouts, and other innovative approaches.



Google Earth

The following provides additional information on intersections with a collision rate greater than 2.5 collisions per million entering vehicles:

1. SR-500/SR-503 @ Padden Parkway - 4.94 Collision Rate. This intersection has the highest collision rate among the signalized intersection with 20 or more collisions. It also has the most total collisions and is the fifth highest volume intersection in Clark County. As with many of the high volume intersections,

this intersection has a high number of rear-end collisions (79% of collisions). Almost half of the rear-end collisions are associated with two vehicles turning right. The long-term solution identified in the Metropolitan Transportation Plan (MTP) is a new interchange at this location.

2. SR-500 @ 54<sup>th</sup> Avenue – 3.66 Collision Rate. This is the fourth highest volume intersection in Clark County. This intersection has the third highest number of collisions and second highest collision rate. This intersection has a high number of rear-end collisions (75% of collisions). The long-term solution identified in the MTP is a new interchange.

3. SR-500 @ St. Johns – 3.46 Collision Rate. This is the third highest volume intersection in Clark County, with the second highest number of collisions, and third highest collision rate. Rear-end collisions are the most common (60% of collisions) at this intersection. Construction of a new interchange is beginning in 2011 which should be completed in 2013. This interchange project will improve traffic flow and safety.



WSDOT

4. SR-500 @ 42<sup>nd</sup> Avenue – 3.24 Collision Rate. This project is the sixth highest volume intersection in Clark County, and has the fifth highest number of collisions and the fourth highest Collision rate. Collisions are predominately rear-end collisions (62%) and entering at an angle (23%). The

long-term solution identified in the MTP is grade separation.

5. NE 119<sup>th</sup> Street @ NE 72<sup>nd</sup> Avenue – 3.11 Collision Rate. This intersection has moderate traffic volumes and has the 17<sup>th</sup> most collisions, while having the fifth highest collision rate. The collisions are predominately entering at an angle (46%) and Opposite Direction/1 left 1 straight (35%). The Clark County Transportation Improvement Program (TIP) includes a road project, which includes upgrades at this intersection, scheduled to begin in 2012.

6. NE 99<sup>th</sup> Street @ NE 7<sup>th</sup> Avenue – 3.08 Collision Rate. This intersection has moderate entering traffic volumes and the 16<sup>th</sup> most collisions while having the sixth highest collision rate. The collisions are predominately rear-end collisions (59%). The close proximity to the I-5 Interchange may contribute to drivers not expecting another traffic signal so soon. Clark County has an existing project programmed within their TIP to improve signal coordination in this area.

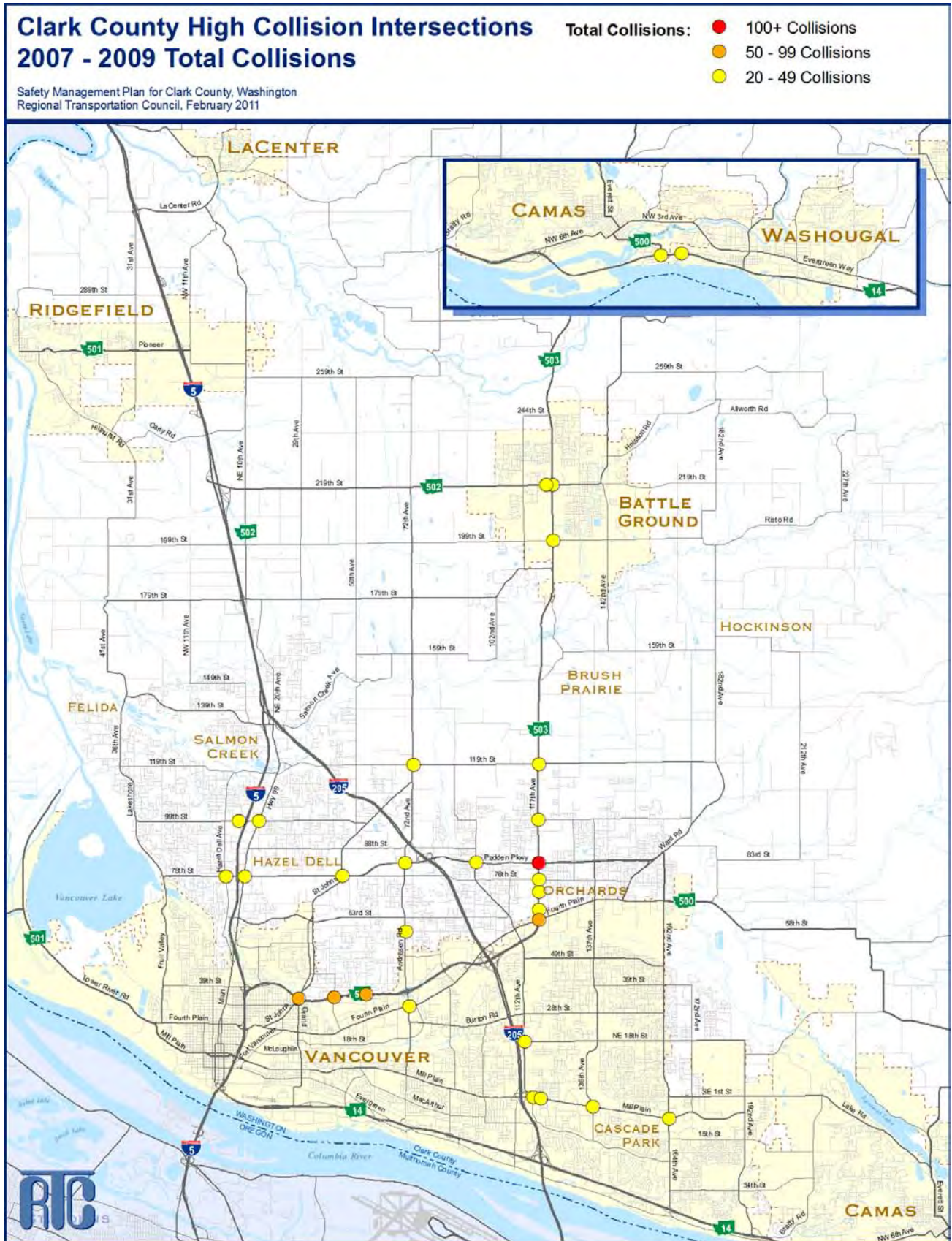
7. SR-14 @ Union (SR-500) – 2.91 Collision Rate. This intersection has moderate traffic volumes and has the 13<sup>th</sup> most collisions while having the seventh highest collision rate. The collisions are predominately rear-end collisions (63%). Construction begins in 2011 of a new interchange which will be completed in 2012. This interchange project will improve traffic flow and safety.

8. SR-500 @ Fourth Plain Boulevard – 2.88 Collision Rate. This intersection is the second highest volume intersection in Clark County. This intersection has a high number of rear-end collisions (79% of collisions). The collision rate is the eighth highest and the number of collisions is the fourth highest. A long-term solution has not been developed, but several concepts have been discussed.

In 2012, WSDOT will add a right turn lane from southbound SR 503 to westbound Fourth Plain Blvd. This project will also add a center barrier just north of the intersection between Fourth Plain and 65<sup>th</sup> Street to improve safety.

9. NE 18<sup>th</sup> Street @ NE 112<sup>th</sup> Avenue – 2.68 Collision Rate. This intersection has moderate traffic volumes and various collision types. This intersection is currently under construction and will be rebuilt to improve safety and accommodate traffic associated with a future I-205/18<sup>th</sup> Street Interchange.

**Figure 12**  
**Clark County High Collision Intersections by Total Collisions**



**Figure 13**  
**Clark County High Collision Intersections by Collision Rate**

