



Washington State Strategic Highway Safety Plan 2016

Target
ZERO

Zero Deaths &
Zero Serious Injuries
by 2030

JAY INSLEE
Governor



STATE OF WASHINGTON
Office of the Governor

August 18, 2016

To the People of Washington:

In 2000, Washington was the first state in the nation to set a uniquely ambitious goal: to reduce traffic fatalities and serious injuries to zero by the year 2030. This vision is called “Target Zero®.”

Many people thought it could not be done, but as we inch closer and closer to 2030, the trend lines tell us it can be achieved. In setting this goal and establishing a viable plan to get there, Washington has become a national leader in traffic safety, implementing innovative new strategies such as anti-texting laws and new partnerships like the locally-based Target Zero Teams.

Our progress has been impressive, as we’ve watched traffic fatalities fall each year since 2005. While I am proud of that achievement, in 2014 we saw an increase of 34 fatalities. That is too many people dying on our roads – and is a concerning increase. To continue the reduction in traffic fatalities, we are enlisting your help in implementing more groundbreaking programs in the next few years. This Target Zero plan includes many of these programs and strategies.

Target Zero is a highly collaborative plan created through the work of a number of talented people representing state agencies, city and county law enforcement, tribal transportation planners and law enforcement, and private organizations. Over 180 traffic safety experts from all over Washington actively participated in the development of the plan during the Target Zero revision project. The updated Target Zero plan is a detailed roadmap that coordinates the efforts and investments of traffic safety organizations across Washington, ensuring the use of the most effective strategies to improve traffic safety, and tracking progress toward the ultimate goal: Target Zero.

Target Zero is Washington State’s call to action for all citizens. I encourage you to read this Plan and become a traffic safety advocate to help implement these strategies in your communities. Together we can meet our Target Zero goal.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jay Inslee".

Jay Inslee
Governor

Washington Traffic Safety Commission



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Governor Jay Inslee

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Overview

Target Zero is a practitioner's plan, uniting the contributing organizations toward a common goal. It is intended to complement and be incorporated into the plans and programs of key state traffic safety agencies, as well as Tribes, cities, counties, and private organizations. The plan helps partners coordinate traffic safety programs, better align priorities and strategies, and build a common language and approach to traffic safety efforts across Washington State.

A fundamental element of the plan is that it is data driven, identifying the critical factors that contribute to fatal and serious injury crashes on Washington's roads. The plan then uses those factors to identify proven, recommended strategies along with new ones for reducing traffic deaths and serious injuries in a number of common areas.

The Target Zero plan identifies highway safety strategies for the next three to four years. Target Zero partners develop and implement specific projects that use Target Zero strategies, and also create applicable success measures. The actions, strategies, and measures are documented in partners' plans throughout the state, wherever the strategies are being implemented.

Target Zero complies with federal requirements

Federal law requires that our Strategic Highway Safety Plan be coordinated with the state's Highway Safety Plan, Commercial Vehicle Safety Plan, and the Highway Safety Improvement Program. This coordination includes harmonizing certain performance measures and targets. The role of our SHSP is to support the state's efforts to achieve these targets by establishing appropriate goals and objectives, outlining emphasis areas, and presenting effective strategies. To learn more about federal requirements, please see Appendix G.



Law and policy changes have coincided with significant drops in deaths from traffic crashes in Washington State

Achieving zero deaths and serious injuries will not be easy

Washington State created the first Target Zero plan in 2000. The plan established an ambitious goal of zero traffic fatalities by the year 2030, and the state has made significant progress since then. Over the years, we have seen positive trends in almost every traffic area — improvements in Impaired Driving stemming from the strengthening of DUI laws and increased enforcement, significant roadway engineering improvements, and implementation of stronger anti-texting and phone use laws.

Additionally, in the last several decades the auto industry has given us life-saving air bags, more crash-resistant vehicles, and better roll-over protection technology. Meanwhile, organizations such as the National Comprehensive Highway Research Program (NCHRP), Mothers Against Drunk Driving (MADD), the United States Department of Transportation (USDOT), the Governor's Highway Safety Association (GHSA), the American Automobile Association (AAA), and the Insurance Institute for Highway Safety (IIHS) have provided many tools and programs that have made our roads safer.

However, if Washington is to actually reach Target Zero by the year 2030, it will take a continued concerted effort on many fronts. Reaching our Target Zero goal will only be accomplished through federal, state, and local partnerships leveraging innovation, research, and changes in the traffic safety culture of our state. Together we can realize zero traffic deaths and serious injuries by 2030.

We've made great strides towards zero deaths and injuries – but haven't made it far enough yet

Each year from 2012 to 2014, more than 400 people died and another 2,000 were seriously injured on Washington's roadways. Looking further back, we find that from 2002 through 2011, Washington averaged 22 fewer traffic fatalities and 80 fewer serious injuries each year. While this is a great achievement, it is not enough to reach the goal of zero fatalities and serious injuries by 2030. Even one traffic fatality or serious injury is one too many. We must continue to do more.

Zero traffic deaths in your family, zero traffic deaths in our state

To achieve Target Zero by 2030, Washington must average 28 fewer fatalities and 134 fewer serious injuries each year, starting right now. As time passes, it becomes harder to achieve our goal because partners have already accomplished the simpler efforts. The improvements we have to make now are harder and more transformative than the ones that have come before. Complicating this issue, we have seen an upswing in fatalities and serious injuries, and a slowdown in our continuing trend toward zero in recent years. With limited resources and personnel, every strategy — every effort — must count toward achieving our goal. This requires deliberate thought, meaningful analysis, careful planning, and strong commitment to a variety of effective traffic safety strategies. Let's reach our Target Zero goal together — zero traffic deaths in your family, zero traffic deaths in our state.

Over the years, we have experienced positive trends in almost every emphasis area. Through the power of our partnerships, we have strengthened our Driving Under the Influence (DUI) laws, increased enforcement of impaired driving, improved automotive safety equipment, evolved our roadway engineering standards, and passed anti-texting and phone use laws.

Despite these great achievements, however, we are not on track to reach zero fatalities and serious injuries by 2030.

What's new in the 2016 plan

The 2016 plan includes new chapters:
 Improving our Traffic Safety Culture;
 New Technology and Traffic Safety;
 Evaluation, Analysis, and Diagnosis; and
 Legislation and Policy.

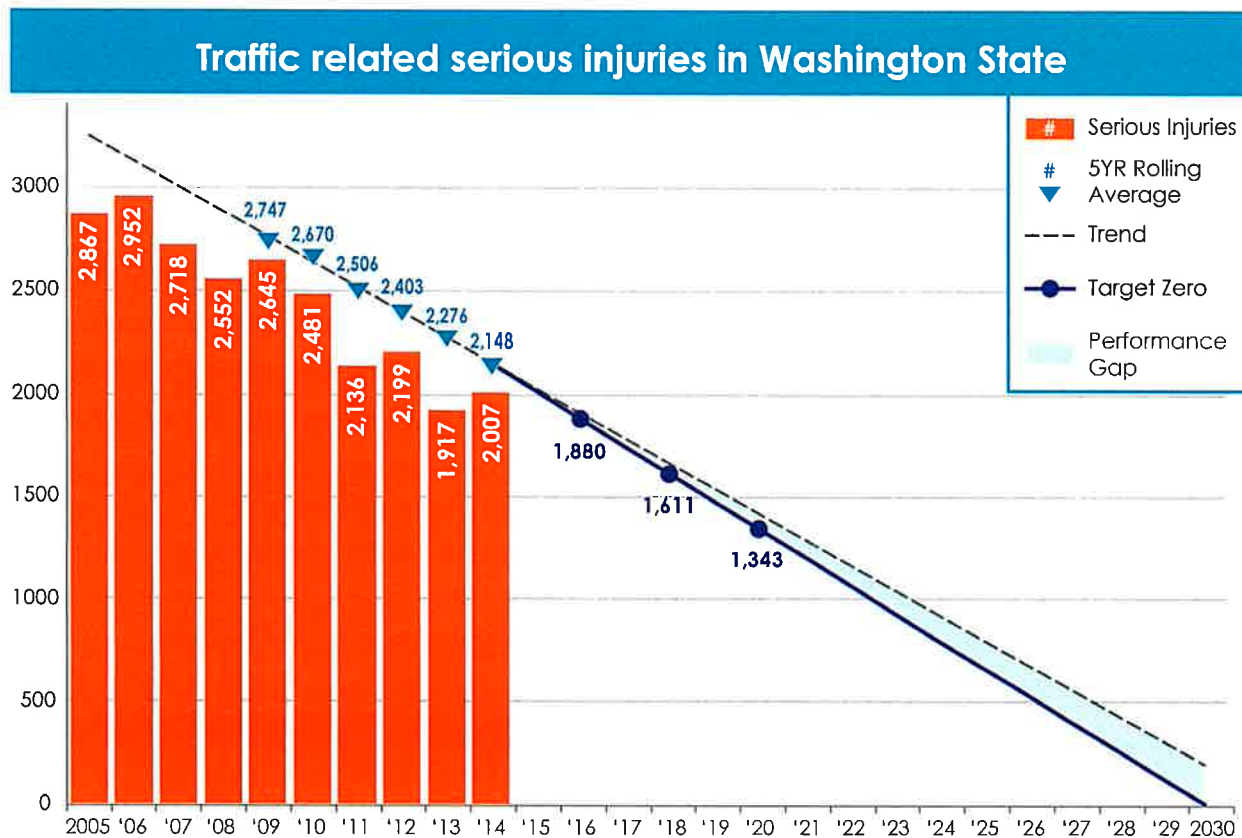
This version also features more graphics to better show traffic safety trends. This includes infographics, graphs, and tables, all downloadable at targetzero.com.

The Priority Table groups the priorities into emphasis areas based on similar factors and characteristics. Its organization is reflected in the order of the chapters in this version.

Run-off-the-road crash data has been combined with opposite direction crash data to create a new lane departure priority area.

Both the impairment and distraction involved priority areas now include pedestrians and bicyclists, in addition to the original drivers and motorcyclists.

The older driver age threshold has been lowered from 75 to 70 years old, because data shows that risk factors for older drivers have a statistically significant break point at age 70.



Recent Target Zero Achievements

Our state is proud of the safety improvements made in areas where we have focused a great deal of time, attention, and funding:

Young drivers aged 16–25. Fatalities involving younger drivers aged 16-25 have seen significant reductions since 2007. Current projections based on the 10-year trend show zero fatalities being achieved in 2024 and zero serious injuries in 2026. This success reflects effectiveness of the implementation of intermediate driver licenses, high visibility enforcement campaigns, and programs such as the Party Intervention Patrols.

Unrestrained vehicle occupants. Fatalities among vehicle passengers not wearing appropriate safety restraints have dropped more quickly than in other areas. Currently, projections based on the 10-year trend show zero fatalities in 2021 and zero serious injuries in 2026. This success reflects the effectiveness of the Click It or Ticket campaign's combination of education and enforcement, as well as several other innovative efforts to encourage greater and appropriate use of restraints for adults and children.

Lane departure crashes. Lane departure crashes resulting in fatalities and serious injuries have also seen dramatic reductions. Current ten-year trends project zero lane departure fatalities by 2027, and zero head-on serious injuries by 2028. This success is a reflection of various safety efforts on behalf of many Target Zero partners in reducing head-on and run-off-the-road events.

Current Target Zero Areas for Improvement

There are other areas where we are unfortunately not seeing such improved trends. In some areas, we need much higher declines in order to achieve Target Zero.

Pedestrians. Current trends for pedestrian fatalities and serious injuries are flat and may be on the rise. It may also be that more people are walking and increasing exposure, but state specific walking rates are not available. WSDOT, the state lead on pedestrian safety, has recently revised the *WSDOT Design Manual* as part of a formal design change intended to improve roadway safety for all users by considering modal needs and roadway context.

Motorcyclists. The ten-year trend in motorcyclist fatalities is flat, not increasing, but not decreasing. Looking at these fatalities in a rate per 100,000 motorcycle registrations, the outcome shows a slight decline in fatalities relative to number of registered riders, which is a promising sign. Declines among seriously injured motorcyclists are also promising; however, they are not quite on track to reach zero in 2030. Training and education for motorcycle riders and other drivers is crucial. Consistent helmet use is also critical to progress. Despite Washington's primary law requiring all motorcyclists to wear helmets, nearly 8% of fatally injured motorcycle riders were not wearing helmets.

Next Steps for the 2016 Target Zero Plan

Target Zero lays the foundation for achieving the vision of zero fatalities and serious injuries in the future. However, this vision will only become a reality if intentional steps are taken to implement and evaluate the plan on an ongoing basis. Partners at the federal, state, local, and Tribal levels must be able to implement the strategies listed in this plan in order to actually achieve zero deaths and injuries on Washington State's roads.

Decision and Performance Improvement

1	Traffic Data Systems	<i>Decision Improvement</i>
1	EMS and Trauma Response	<i>Performance Improvement</i>
1	Evaluation, Analysis, and Diagnosis	<i>Decision and Performance Improvement</i>

Washington State 2012-2014	Fatalities		Serious Injuries	
	Number	% Total	Number	% Total
	1,336	100%	6,123	100%

High Risk Behavior

1	Impairment Involved	756	56.6%	1,366	22.3%
1	Speeding Involved	508	38.0%	1,622	26.5%
2	Distraction Involved	395	29.6%	1,403	22.9%
2	Unrestrained Occupants	296	22.2%	627	10.2%
2	Unlicensed Driver Involved	248	18.6%	**	**
3	Drowsy Driver Involved	39	2.9%	194	3.2%

Crash Type

1	Lane Departure	750	56.1%	2,357	38.5%
1	Intersection Related	276	20.7%	2,129	34.8%

Road Users

1	Young Drivers 16–25 Involved	423	31.7%	2,057	33.6%
2	Motorcyclists	224	16.8%	1,110	18.1%
2	Pedestrians	204	15.3%	906	14.8%
2	Older Drivers 70+ Involved	162	12.1%	524	8.6%
3	Heavy Truck Involved	122	9.1%	318	5.2%
3	Bicyclists	29	2.2%	294	4.8%

Other Monitored Emphasis Areas

	Wildlife	7	0.5%	49	0.8%
	Work Zone	3	0.2%	96	1.6%
	Vehicle-Train	2	0.2%	5	0.1%
	School Bus-Involved	0	0.0%	15	0.2%

Priority level one

Emphasis areas include:

- Factors occurring in at least 30% of total fatalities or serious injuries.
- Decision and Performance Improvement.

Priority level two

Emphasis areas are factors occurring in at least 10% of total fatalities or serious injuries.

Priority level three

Emphasis areas are factors occurring in less than 10% of total fatalities or serious injuries.

**Serious injury data for unlicensed drivers are unavailable

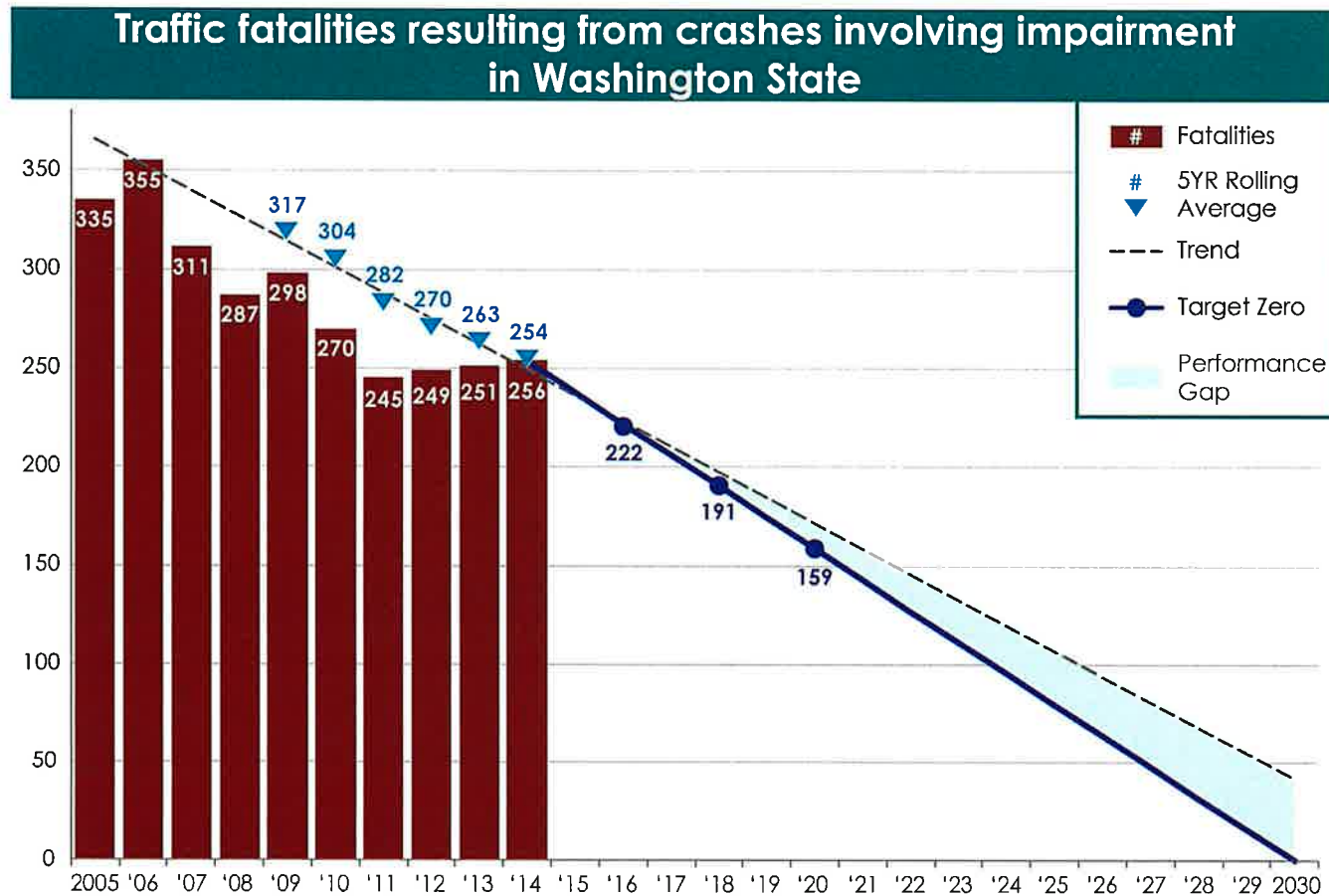
Where does our crash data come from?

Throughout the Target Zero plan, traffic fatality and serious injury data (if available) are presented for each priority emphasis area. Fatality data is from the Fatality Analysis Reporting System (FARS), and serious injury data is from WSDOT’s Crash Location and Analysis System (CLAS). Fatalities are represented with the color red, and serious injuries with orange.

The fatality and serious injury graphs throughout Target Zero display a performance trend line based on six five-year rolling averages derived from the most recent ten years of data, along with the Target Zero line.

The Target Zero line is where we need to be to achieve our vision of zero deaths by 2030. Many of the trends show an impressive decline for 2012–2014. However, most trends also show that we must continue to push harder in order to reach zero fatalities and serious injuries by 2030. The area between the five-year rolling average performance trend and the Target Zero line is our performance gap (shaded in light blue) and shows the improvement needed to achieve Target Zero.

For more information on the methodologies and data sources used to calculate these numbers, please see Appendix C and Appendix D.



What's New

New Legislation with Traffic Safety Implications, 2012 to 2014

12-Hour impound hold. Mandates a 12-hour impound hold on motor vehicles used by persons arrested for DUI.

24/7 sobriety programs. Establishes a statewide 24/7 Sobriety Program Pilot Program, an alternative to incarceration for repeat impaired driving offenders. This program ensures that participants are monitored and tested for drug and alcohol use so that they remain sober and are following court-directed activity.

Conditions of pre-trial release. Repeat DUI arrestees in Washington are now required to be held until they see a judge. As a condition of pre-trial release, the judge must require the repeat DUI arrestees to only drive a vehicle with ignition interlock device installed, attend a 24/7 sobriety program, or both.

Marijuana. Washington voters legalized recreational marijuana through a 2012 initiative process. The initiative set a 5 ng of THC per se limit. The first recreational marijuana stores in the state opened in the summer of 2014. While it is too soon to tell if this new legislation will affect traffic deaths and serious injuries, a preliminary report by the Washington Traffic Safety Commission showed an initial increase in the number of drivers involved in deadly traffic crashes with THC in their blood.¹

Open Container Marijuana Law. It is illegal for drivers or passengers to keep or consume marijuana in a motor vehicle when the vehicle is upon a highway, unless the marijuana is in an unopened, sealed container, or in a spot not immediately accessible by passengers or drivers.

Automated school bus safety cameras. Authorizes school districts to install automated safety cameras on school buses to detect vehicles that fail to stop for a bus. All revenue collected is used for school zone safety projects.



Sobriety Checkpoints

Sobriety checkpoints are traffic stops, or checkpoints, where officers are set up on a roadway to stop vehicles to check for impaired drivers. Law enforcement officers operate sobriety checkpoints at times and places where data show impaired driving is common, such as cities and towns after bars and restaurants close, or heavily traveled holiday weekend routes. These checkpoints are publicized in advance to give drivers who might be at risk of driving impaired a chance to plan ahead to find safe ways to travel. Target Zero considers sobriety checkpoints a proven strategy, based on *Countermeasures That Work*.

Discussion

Sobriety checkpoints are one of the most effective countermeasures to combat impaired driving, and the sole remaining proven impaired driving measure not currently deployed in Washington.⁵ Allowing sobriety checkpoints in Washington would save about 15 lives, prevent 1,350 injuries, and reduce taxpayer crash costs by about \$47 million each year.⁶

In 1988, the Washington State Supreme Court heard the case of the City of Seattle v. Mesiani.⁷ The Court held that the checkpoints conducted without authority of law were unconstitutional. However, some opinions suggested that sobriety checkpoints could be executed constitutionally in Washington when conducted under “authority of law” and appropriately structured conditions.

In Michigan Department of State Police v. Sitz in 1990, the US Supreme Court found sobriety checkpoints to be constitutionally permissible under the “special needs” exception, in which law enforcement officers may directly conduct searches and seizures without individualized suspicion for the purpose of minimizing risk of harm to the public. The Court held that the removal of impaired drivers pursuant to a sobriety checkpoint program did not violate the Fourth Amendment.

In 2008 and 2011, Washington legislators introduced bills that would provide necessary “authority of law” to conduct sobriety checkpoints.

No committee action was taken on either bill.

Washington’s constitutional privacy protections may call for additional sobriety checkpoint protocols in order to operate within Washington State’s legal framework. In addition to the NHTSA recommendations, strict protocol for Washington could consist of checkpoints complying with the following:

- Conduct checkpoints only in areas where data show high incidence of impaired-driving-related crashes, DUI arrests, or citizen complaints.
- Obtain a warrant that clearly describes the how, what, where, and why of the checkpoint activity.
- Only ask drivers for identification, insurance, and vehicle registration when an officer has reasonable suspicion that a crime has occurred.

A well-crafted statute authorizing sobriety checkpoints using the above procedures may provide the “authority of law” required to meet the Washington State Constitutional standard set forth in Article 1, Section 7. Once the authority has been established, it will be the work of the Washington Supreme Court to determine the constitutionality of sobriety checkpoints conducted in accordance with the provisions outlined here.

Recommendation

Pass legislation allowing sobriety checkpoints in Washington State.

24/7 Sobriety Programs

Local jurisdictions are authorized to establish 24/7 sobriety programs for DUI offenders. This program requires DUI offenders to submit to testing, often twice a day, for alcohol or any drug. A study found a 12% reduction in DUI recidivism in counties that adopted the program in South Dakota. Additionally, a RAND Corporation study suggests that providing a 24/7 sobriety monitoring option for DUI offenders and offenders of other substance abuse related crimes has a positive public health effect on traffic fatality rates.

Recommendation for Local Jurisdictions

Establish 24/7 sobriety programs for DUI offenders

Other possible impaired driving laws

Many other potential laws could change the landscape of traffic safety in Washington State. Although Target Zero partners are not currently proposing the legal interventions listed below, we are tracking these programs in other states and countries to see if they eventually might be transferable to our state.

Sanctions. The first four times within 10 years that a person is convicted of a DUI in Washington, it is a gross misdemeanor punishable by up to a year in jail and up to a \$5,000 fine. On fifth and subsequent convictions within ten years, a DUI is a class C felony. For the past few years, Washington's Legislature has considered bills that would make a person's fourth and subsequent DUI convictions felonies. At the time of this writing, these bills have not progressed through the process to be enacted. The expense of adding people to the state's prison system is often cited as one of the reasons this bill has not passed.

Deferred prosecution for DUI. Washington offers a formal deferred prosecution in statute, but limits it to once per lifetime. Requirements for this formal deferred prosecution include treatment, ignition interlock provisions, and other conditions as ordered by the court.⁸ Washington's formal deferred prosecution has been proven effective at reducing DUI recidivism.⁹ A study showed that deferred prosecution participants had an overall recidivism rate of 35.5%, compared to a comparison group's recidivism rate of 52%. However, a formal deferred prosecution is tracked as a prior offense if the offender commits a later offense.

It is a common practice for prosecutors in Washington to negotiate a plea agreement resulting in reduced penalties. If an original DUI is plead to a lesser offense, such as reckless or negligent driving, that lesser-offense conviction would end up being counted as a prior DUI if the person were to incur a subsequent DUI. Since Washington limited deferred prosecutions to one per lifetime, many DUI defense attorneys now advise their clients against taking a deferred prosecution on their first DUI. Allowing more than one deferred prosecution may encourage treatment for first-time offenders earlier, when it is more likely to be effective.

Per se levels. All 50 states have set an illegal per se limit of .08 BAC for drivers over 21, and a .02 or less for drivers under 21. No states, but many countries, have stricter BAC per se limits, from .02 to .05.

Legislation and policy for young drivers

In Washington, teens 16–17 years old move through two restricted phases of licensing before being granted an unrestricted driver’s license: first the instruction permit, then intermediate driver’s license. The Legislature established the intermediate driver’s license a decade ago. It has been credited with reducing the number of fatality crashes involving 16 and 17 year olds. Many other states also established intermediate driver’s licensing at that time. As researchers have studied the effects of these laws, traffic safety experts have developed a model graduated licensing system.

Requirements to receive an instruction permit

Component	Current Washington State law	Recommendation
Minimum age for instruction permit	<ul style="list-style-type: none"> If enrolled in a driver training course, age 15 If not enrolled in a driver training course, age 15 ½ if you pass a knowledge test 	Age 16 FAST Act: requires vision and knowledge assessment prior to receiving learner’s permit
Minimum months in instruction permit phase	6 months	12 months

Requirements to receive an Intermediate Driver’s License

Component	Current Washington State law	Recommendation
Minimum age for intermediate license	Age 16	Age 17
Minimum months in intermediate license phase	No minimum requirement. Restrictions apply until driver is 18	12 months
Supervised hours of driving experience	50 hours	80–120 hours
Nighttime restriction	1 am to 5 am	9 pm to 5 am. Restriction should last one year
Teenage passengers	No passengers under 20 for the first six months (except for immediate family members) No more than 3 passengers under 20 (except for immediate family members) for the next six months	The “no teen passenger limit” should last one year
New driver decal requirement	No requirement	Help law enforcement identify Intermediate drivers license holders through a license plate tag

Notes:

1. “Driver Toxicology Testing and the Involvement of Marijuana in Fatal Traffic Crashes, 2010–2014,” Washington Traffic Safety Commission Traffic Safety Studies, Revised February 2016, http://wtsc.wa.gov/wp-content/uploads/dlm_uploads/2015/10/Driver-Toxicology-Testing-and-the-Involvement-of-Marijuana-in-Fatal-Crashes_REVFeb2016.pdf
2. National Center for DWI Courts, National Association of Drug Court Professionals, <http://www.dwicourts.org>
3. Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 8th Edition, DOT HS 812 202, November 2015, “Chapter 1, Alcohol- and Drug-Impaired Driving,” (National Highway Traffic Safety Administration, NHTSA, Washington, DC), <http://www.ghsa.org/html/publications/countermeasures.html>
4. Michigan DUI Courts Outcome Evaluation, Final Report to the Michigan Supreme Court State Court, Administrative Office, March 2008, (Carey, Fuller, Kissick, Taylor, & Zold-Kilbourn), http://www.dwicourts.org/sites/default/files/nadcp/MI%20DUI%20Outcome%20Evaluation%20FINAL%20REPORT%20Re-Release%20March%202008_0.pdf
5. Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 8th Edition, DOT HS 812 202, November 2015, “Chapter 3, Speeding and Speed Management,” (National Highway Traffic Safety Administration, NHTSA, Washington, DC), <http://www.ghsa.org/html/publications/countermeasures.html>
6. Prioritizing Interventions and Cost Calculator for States, Centers for Disease Control and Prevention (CDC). <https://wwwn.cdc.gov/mvip/>
7. “City of Seattle v. Mesian.” 755 P.2d 775 (Wa. 1988) required legislative authority for checkpoints, <http://law.justia.com/cases/washington/supreme-court/1988/53825-5-1.html>
8. Revised Code of Washington (RCW). RCW 10.05.150:Alcoholism program requirements, <http://app.leg.wa.gov/RCW/default.aspx?cite=10.05.150>
9. Washington State Institute for Public Policy, “Deferred Prosecution of DUI Cases in Washington State: Evaluating the Impact on Recidivism,” August 2007, Document No. 07-08-1901, http://www.wsipp.wa.gov/ReportFile/992/Wsipp_Deferred-Prosecution-of-DUI-Cases-in-Washington-State-Evaluating-the-Impact-on-Recidivism_Full-Report.pdf
10. Insurance Institute for Highway Safety, Relationship of Traffic Fatality Rates to Maximum State Speed Limits, April 2016, Charles M. Farmer, <http://www.iihs.org/frontend/iihs/documents/masterfiledocs.ashx?id=2117>
11. Countermeasures That Work, p 3-21
12. Washington Distracted Driving Report Cards, 2014. Statewide Collaboration: Harborview Injury Prevention and Research Center, UW Medicine, Public Health-Seattle & King County, King County Prosecuting Attorney’s Office. <http://depts.washington.edu/hiprc/collaborate/%20outreach/distracted-driving/>
13. Measuring Cognitive Distraction in the Automobile III: A Comparison of Ten 2015 In-Vehicle Information Systems, October 2015. AAA Foundation for Traffic Safety (David L. Strayer, Joel M. Cooper, Jonna Turrill, James R. Coleman, and Rachel J. Hopman). https://www.aaafoundation.org/sites/default/files/strayerIII_FINALREPORT.pdf

Please see Appendix I: Additional Resources for a complete list of references.

Legislative and policy strategies for reducing fatalities and serious injuries		
OBJECTIVE	STRATEGIES	IMPLEMENTATION AREAS
IMP.5. Foster leadership to facilitate impaired driving system improvements	IMP.5.1 Continue to build partnerships designed to reduce impaired driving. (P, NCHRP)	Leadership/Policy
	IMP.5.2 Encourage laws that will allow the state to utilize sobriety checkpoints. (P, CTW)	Leadership/Policy
	IMP.5.3 Implement the corridor safety model in high-crash locations where data suggest a high rate of impaired driving. (P, NCHRP)	Leadership/Policy
	IMP.5.4 Encourage laws that use any money collected from DUI fines in excess of \$101 to support impaired driving reduction efforts. (R, GHSA)	Leadership/Policy
	IMP.5.5 Lower the per se BAC limit from .08 to .05 (P, META)	Leadership/Policy
	IMP.5.6 Establish and support the Judicial Outreach Liaison program. (R, NHTSA)	Leadership/Policy
	IMP.5.7 Monitor ignition interlock manufacturers and installers to ensure a continued viability and validity of program. (P, CTW)	Leadership/Policy
	IMP.5.8 Monitor reports from ignition interlock manufacturers on alcohol failures on ignition interlocks and conduct compliance checks. (P, CTW)	Leadership/Policy
	IMP.5.9 Investigate ignition interlock circumvention attempts. (P, CTW)	Leadership/Policy
SPE.1. Reduce speeding through enforcement activities	SPE.1.3 Increase penalties for repeat and excessive speeding offenders. (R, CTW)	Leadership/Policy
	SPE.1.4 Equip law enforcement officers with appropriate equipment for speeding enforcement. (R, WSP)	Enforcement, Leadership/Policy
SPE.3. Build partnerships to increase support for speed reducing measures	SPE.3.1 Use the corridor safety model in high-crash locations where data suggests a high rate of speeding-related fatal or serious injury crashes. (P, CTW)	Leadership/Policy, Education, Engineering, Enforcement
	SPE.3.3 Increase data sharing between local officers, Tribal police, and engineering agencies to identify and develop solutions for areas where speeding is a problem. (R, DDACTS)	Leadership/Policy
	SPE.3.5 Work with Washington Trucking Association and WSP's Commercial Vehicle Enforcement Division to encourage company policies which, when backed with speed monitors or speed regulators, can reduce speeding in commercial vehicles. (R, WSP)	Leadership/Policy
	SPE.3.9 Collaborate with BIA, Indian Health Services, and NATEO to support Tribal Nations who seek to reduce speeding-related crashes on Tribal lands. (U)	Leadership/Policy
DIS.2. Increase/strengthen fines and assist in improved adjudication of distracted driving citations	DIS.2.1 Visibly enforce existing statutes to deter distracted driving. (U)	Enforcement, Leadership/Policy
P: Proven R: Recommended U: Unknown		

Legislative and policy strategies for reducing fatalities and serious injuries		
OBJECTIVE	STRATEGIES	IMPLEMENTATION AREAS
UNL.3. Enhance enforcement	UNL.3.4 Evaluate the impact of the removal of suspension for failure to appear on non-moving citations. (U)	Leadership/Policy
UNL.4. Enhancement of data gathering and reporting ability	UNL.4.1 Make system changes necessary at WSDOT and DOL to enable analysts to identify unlicensed drivers involved in serious injury crashes. (R, DDACTS)	Leadership/Policy
	UNL.4.2 Ensure routine linkage of citations to driver records so appropriate citations may be added to the crash being investigated. (R, NCHRP)	Leadership/Policy
LDX.3. Minimize the consequences of leaving the roadway	LDX.3.7 Locate and inventory fixed objects inside the clear zone to support development of programs and projects to reduce the severity of run-off-the-road crashes. (R, WSDOT)	Leadership/Policy
INT.1. Reduce motor vehicle crashes at intersections	INT.1.10 Restrict or eliminate turning maneuvers at intersections. (R, NCHRP)	Engineering, Leadership/Policy
INT.2. Improve driver compliance at intersections	INT.2.1 Implement automated enforcement (photo red-light cameras) of red-light running at locations with angle crashes. (P, NCHRP)	Enforcement, Engineering, Leadership/Policy
	INT.2.4 Implement automated enforcement (cameras) of approach speeds. (R, NCHRP)	Enforcement, Engineering, Leadership/Policy
YDI.1. Foster compliance with the State's IDL laws	YDI.1.1 Encourage Tribes to pass IDL laws. (P, CTW)	Leadership/Policy
	YDI.1.2 Provide resources to Young Driver Action Council to improve awareness — especially for parents and teens — and compliance with the IDL law. Highlight high-risk situations where clear parental limit-setting will be most effective. (R, CTW)	Leadership/Policy
	YDI.1.3 Promote increased enforcement of IDL by passing legislation requiring a sticker program to identify vehicles used by IDL license holders. (R, LIT)	Leadership/Policy
	YDI.1.4 Provide local Target Zero Task Forces with information and materials about IDL for teens, parents, law enforcement, and driver education programs. (R, WTSC)	Education Leadership/Policy
YDI.2. Strengthen Intermediate Driver License restrictions	YDI.2.1 Adjust curfew to include 9 p.m. – 5 a.m., the hours when young driver serious injury and fatality crashes are highest. (P, CTW)	Leadership/Policy
	YDI.2.2 Lengthen permit holding period beyond six months. (R, CTW)	Leadership/Policy
	YDI.2.3 Extend passenger restriction to one full year after licensed. (R, NCHRP)	Leadership/Policy
	YDI.2.4 Strengthen requirements for parents around the documentation and certification of the 50-hour behind-the-wheel time young drivers are to complete before licensure. (U)	Leadership/Policy
	YDI.2.5 Strengthen restrictions so penalties kick in with the first ticket IDL driver gets. (U)	Leadership/Policy

P: Proven R: Recommended U: Unknown

Legislative and policy strategies for reducing fatalities and serious injuries		
OBJECTIVE	STRATEGIES	IMPLEMENTATION AREAS
MCX.6. Strengthen and improve motorcycle laws to increase motorcycle safety	MCX.6.1 Promote the option for motorcyclists to take a safety class in lieu of a traffic ticket being added to his/her driving record. Currently some county courts offer drivers of other vehicles the option of traffic school to dismiss certain driving violations from their record and insurance. (U)	Education, Leadership/Policy
	MCX.6.2 Require mandatory motorcycle insurance coverage—minimum of liability just as automobiles require. (U)	Leadership/Policy
PED.1. Reduce vehicle operating speeds where the land use context indicates that pedestrians will/may be present.	PED.1.1 Revise design practices to emphasize context and target speed to reflect the needs of all road users. (R) (P, AASHTO)	Engineering/Policy
PED.4. Expand and improve pedestrian facilities	PED.4.5 Implement Complete Streets policies to provide for all modes of transportation. (R, NCSC)	Leadership/Policy, Engineering
PED.6. Improve data and performance measures	PED.6.1 Collect miles walked data (similar to collecting VMT); continue to track pedestrian counts through Washington’s Pedestrian and Bicycle Documentation Project. (R, DDACTS)	Leadership/Policy
ODI.1. Identify old drivers at an elevated crash risk	ODI.1.1 Implement Model Driver Screening and Evaluation Program Guidelines for Motor Vehicle Administrators for screening and evaluating older drivers’ physical and cognitive abilities and skills. (P, CTW)	Leadership/Policy, Education
	ODI.1.2 Provide training to law enforcement, medical professionals, licensing representatives, and community members for recognizing physical and cognitive deficiencies affecting safe driving in older drivers, including submitting reevaluation referrals to DOL. (P, CTW)	Enforcement, Leadership/Policy, Education
	ODI.1.3 Continue to restrict driver license online eligibility and renewals for drivers age 70+. (U)	Leadership/Policy
ODI.3. Reduce risk of serious injury and fatalities	ODI.3.1 Provide incentives for older drivers who use alternative modes of transportation. (R, FTA)	Education, Leadership/Policy
BIC.1. Improve bicyclist and driver safety awareness and behavior	BIC.1.2 Increase the number of people bicycling to achieve safety in numbers. (R, LIT)	Leadership/Policy, Education
BIC.2. Enact policies/laws to improve bicycle safety	BIC.2.1 Encourage bicycle helmet use for children and adults. (U)	Leadership/Policy, Education
BIC.3. Improve bicyclist facilities	BIC.3.6 Implement Complete Streets policies to provide for all modes of transportation. (R, NCSC)	Leadership/Policy, Engineering
P: Proven R: Recommended U: Unknown		

Legislative and policy strategies for reducing fatalities and serious injuries		
OBJECTIVE	STRATEGIES	IMPLEMENTATION AREAS
TDS.2. Remove barriers to data sharing and integration (continued)	TDS.2.4 Increase EMS reporting by first responders throughout the state to the Washington Emergency Medical Services Information System (WEMSIS). (R, DOH)	Leadership/Policy, EMS Leadership/Policy,
	TDS.2.6 Educate data reporting agencies about state/federal fatal crash timeliness reporting statutes and increase enforcement of these statutes. (P, WTSC)	Leadership/Policy, Education
	TDS.2.7 Create connections for systems with similar or duplicate data to eliminate duplicate entry. (R, TRC)	Leadership/Policy
TDS.3. Sustain high levels of collaboration and acquired knowledge within the TRC	TDS.3.1 Provide more frequent and enhanced traffic safety trend reporting. Present data/trends in a manner that is easy to understand and is actionable. (R, DDACTS)	Leadership/Policy, Education
	TDS.3.2 Maintain a meaningful and valid set of traffic records performance measures to gauge the quality of traffic safety data. Ensure measures are accessible and periodically reviewed. (R, DDACTS)	Leadership/Policy
	TDS.3.3 Support training opportunities to enhance traffic safety data analysis and research skills. (U)	Leadership/Policy
TDS.4. Identify and secure targeted investments to sustain TRC initiatives	TDS.4.1 Create a maintenance and support model for SECTOR that further that improves operations, speeds change request implementation, and enhances user support. (R, eTRIP GT)	Leadership/Policy
EMS.1. Reduce injury deaths and hospitalizations through EMS response and access to trauma care	EMS.1.3 Identify funding strategies that assist air medical services in filling gaps in coverage for emergency air medical response as identified in the state EMS and Trauma System Plan. (R, DOH)	Leadership/Policy, EMS
	EMS.1.6 Ensure adequate and efficient distribution of pre-hospital EMS resources at all levels (aid and ambulance) according to the EMS and Trauma State and Regional Plans. (R, DOH)	Leadership/Policy, EMS
EMS.2. Increase communication and data capacity	EMS.2.1 Enable seamless communications capabilities among EMS, law enforcement, and fire services agencies through interoperability. (R, NCHRP)	EMS, Enforcement, Leadership/ Policy
	EMS.2.2 Ensure that the Washington State EMS and Trauma Care System (WEMSIS) has a statewide comprehensive, robust pre-hospital data system utilizing a data set with standard definitions. (R, NCHRP)	Leadership/Policy, EMS
	EMS.2.3 Increase the number of EMS agencies reporting to WEMSIS. (R, NCHRP)	Leadership/Policy, EMS
	EMS.2.4 Provide WEMSIS data for linking to collision records. (R, DOH)	Leadership/Policy, EMS
P: Proven R: Recommended U: Unknown		

So what do we think is normal for Washington drivers? Do we all see traffic safety as an important issue to most people in our communities? Do we all believe it is possible to prevent fatal and serious injury crashes? Do we all believe seatbelts are effective in saving lives? Do we all think most people obey the speed limit? Do we all have the attitude that police enforcement of traffic laws is beneficial? And finally, do we admire those people we know who are safe drivers?

We need to collectively make safe driving not just normal, but admirable. Our culture should motivate us to aspire to become safe road users, in the same way that we now value smoke-free environments. We need our culture to embrace, celebrate, and promote the responsibility each of us has to be a safe road user. When we reach this place, being a safe driver will not only be important for our own self-esteem and sense of belonging, but it will also be the foundation to ensure the safety of our family, friends, neighbors, and colleagues.

Target Zero is a call to action. It shakes the roots of our belief that “accidents happen” and that the loss of life and health are acceptable outcomes of driving. As partners in the pursuit of Target Zero, we strive for a culture of safe driving in Washington. We reject prevailing cultural norms around driving behaviors such as speeding, distraction, and impaired driving in favor of absolute intolerance for these behaviors. Such sweeping changes in normative driving behavior are critical to reaching the vision of zero traffic deaths and serious injuries by 2030.

We invite Washingtonians to challenge the prevailing belief that fatality and serious injury crashes are inevitable prices to pay for mobility. Together we can improve safe driving beliefs and behaviors until we reduce the risk of death and serious injury to zero — because every life counts.

Taking action to change traffic safety culture

Starting in 2016, WTSC will fund a project to establish a better understanding of our current traffic safety culture. Partners will analyze this data to determine which values and beliefs are the most influential on Washington drivers' behavior. The data will provide direction in the development of a systematic and coordinated approach to traffic safety marketing across sub-cultures within our state. The study will also give partners a baseline to test against, to see if newly developed messages and their delivery are improving our state's traffic safety culture as intended. The next version of Target Zero will include updates on this work.

These mobile devices may also be carried by vulnerable users like pedestrians, motorcyclists, bicyclists, and transit users, making them more visible to surrounding traffic.

Autonomous vehicles will likely be on our roads soon

Autonomous connected vehicles — also known as automated or self-driving vehicles — use advanced control systems to sense and react to their environment through various technology systems. The vehicles can operate with little or no driver input. The anticipated benefits of these vehicles include decreased crashes, increased mobility, and an increase in fuel efficiency.

Car manufacturers currently envision that autonomous connected vehicles will be equipped with an override switch, which would allow a human driver, sitting in the driver's seat, to take control when needed. Vehicles with significant autonomous operations capability will likely be available for use by the general public by 2020 with significant new capabilities being added each model year between now and then.

Cars will soon be able to prevent alcohol-impaired people from driving

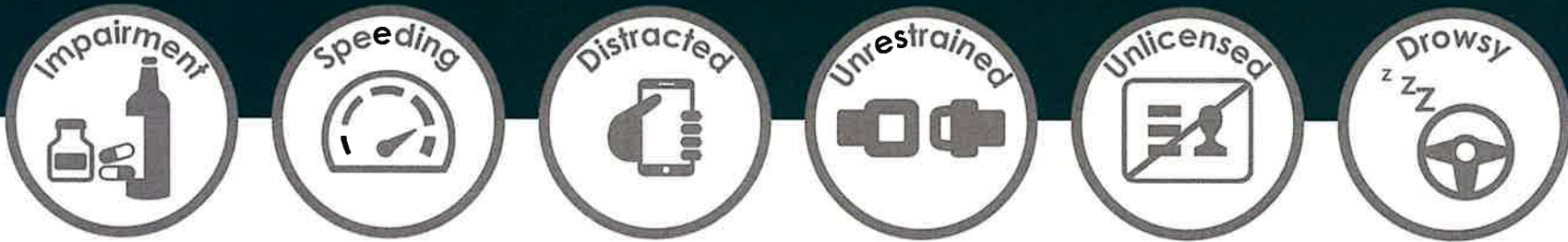
The Driver Alcohol Detection System for Safety (DADSS) program was launched to research, develop, and demonstrate non-invasive in-vehicle alcohol detection technologies. These technologies can quickly and accurately measure a driver's blood alcohol concentration (BAC), by testing for alcohol in a potential driver's breath or touch. These advanced technologies offer the potential for a system that will prevent a vehicle from being driven when the driver's BAC exceeds the US legal limit of 0.08.

Road-side drug testing is also on the horizon

In the not-too-distant future, law enforcement could have handheld devices to check for drug use in drivers. Currently, in Washington, this work must be done by a certified Drug-Recognition Expert (DRE). These devices would allow officers to test for drug positivity on the side of the road, much in the same manner that an officer can currently use a portable breath-testing device to detect alcohol and get a preliminary BAC reading. The handheld devices may use saliva, breath, or perspiration to test for the presence of cocaine, heroin, cannabis, amphetamines, methamphetamine, and possibly other impairing drugs.

Over the horizon...

What these advancements may mean related to new safety strategies and approaches will take shape nationally over the next several years. The enduring question for the traffic safety community, regardless of the innovation, will be how or if it should be applied to enhance the safety of the traveling public. Washington State agencies are tracking progress in this area, engaging in national dialogue, and considering opportunities to demonstrate and apply new safety solutions as they develop.

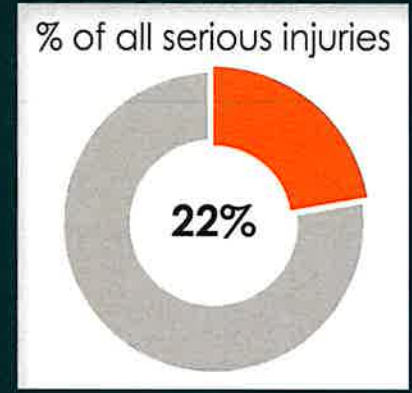


Driver behavior is a factor in a majority of fatal and serious injury collisions. It is clear that affecting driver decisions is a key part of improving traffic safety, whether it is by changing behaviors through education and enforcement, or minimizing their effects through engineering.

Some behaviors have been known for decades as being dangerous, such as speeding or driving under the influence of alcohol or while positive for drugs. Others are relatively newly recognized, such as distracted driving and drowsy driving. This chapter will evaluate which behaviors are likely to result in serious and fatal collisions, and how to address those behaviors and their effects to get to Target Zero.

Overview

Washington has been combating impairment in motor vehicles crashes for decades and has made significant progress. Despite this, impairment continues to be the main factor in fatal crashes in Washington. From 2012–2014, there were 756 fatalities involving impairment (57%), and 1,366 serious injuries involving impairment (22%). Fatalities involving impairment decreased seven percent, compared with 2009–2011. During this same time period, serious injuries involving impairment decreased by 15%.



What's New

Target Zero has expanded the definition of impairment from just impaired drivers: it now contains impairment on behalf of all people involved in a crash, including pedestrians and bicyclists. Partners widened this definition to draw attention to impairment among non-drivers, and to help create policies and strategies to help prevent those crashes.

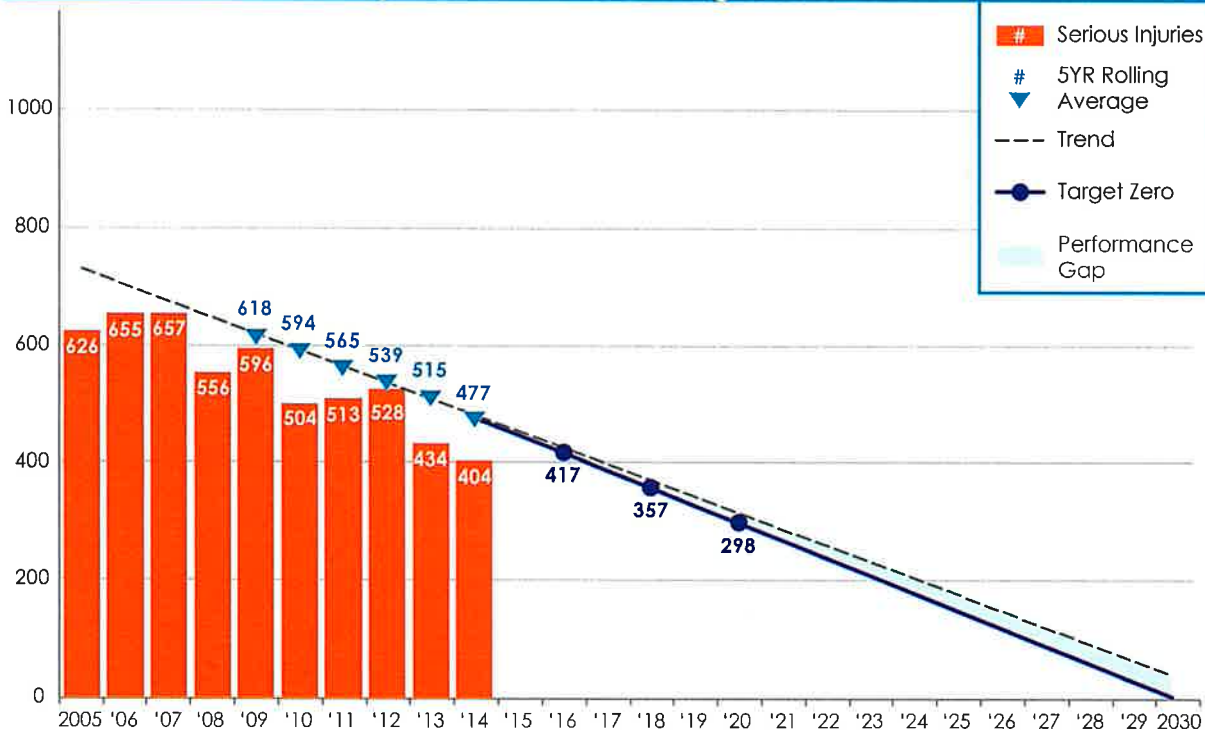
Washington State voters approved Initiative 502, which legalized the growing, sale, and use of recreational marijuana. There are currently over 200 retail stores for recreational marijuana in the state.

Partners created The Impaired Driving Work Group to consider recommendations for smarter and tougher impaired driving laws for the Washington State Legislature. The Work Group was convened to discuss technical corrections to the DUI statute, in preparation for the 2016 and 2017 legislative sessions.

The state created a 24/7 sobriety monitoring program to provide an alternative to incarceration for impaired drivers. The program ensures that participants are monitored and tested for drug and alcohol use so they remain sober and are following court-directed activity.

continued on next page

Traffic related serious injuries resulting from crashes involving impairment in Washington State



Note: Alcohol impairment and drug-positivity is significantly underreported as a factor in serious injury crashes in Washington State.

A rigorous analysis by Peck et al (2009) found that drivers ages 21 and above with a BAC of .07 are 39% more likely to be involved in a traffic crash than drivers with a BAC of 0. Furthermore, drivers under the age of 21 (who are not legally allowed to drink at all) with a BAC of .07 are 400% more likely to crash than young drivers with a BAC of 0.

Recently, NTSB recommended the per se BAC limit be lowered to .05 because most drivers begin to have difficulties with depth perception and other visual functions at that level. All 50 states currently have a .08 per se limit; NTSB believes if all states adopted the .05 standard, it would save 1,000 lives nationwide annually.

The impacts of Initiative 1183 (privatized sales of hard liquor in Washington as of June, 2012) and Initiative 502 (legalized the sale and distribution of marijuana in Washington as of 2013) continue to bring new challenges. The number of stores with hard liquor licenses increased from 328 in 2010 to more than 1,400 in 2015. Marijuana is easily accessible with over 200 retail stores statewide and more licenses are being sold monthly. The state established a per se limit of 5 nanograms of active THC per milliliter of blood as the standard for impairment by marijuana. Currently, a blood draw is required to prove impairment by marijuana. Researchers are working on a breath or saliva test. Partners need to formulate new strategies and policies to address these changes.

WTSC marijuana study shows the number of THC-positive drivers involved in fatal crashes increased

In response to legalized marijuana in Washington State, the WTSC partnered with the WSP Toxicology Lab to review detailed toxicology results on drivers involved in fatal crashes. Although the FARS database collects information on drug results from toxicology testing, the existing code set does not distinguish between delta-9 THC (the psychoactive substance shown to cause driver impairment) and the inactive metabolite of marijuana that may be detected in the body for up to 30 days.

This detailed marijuana information was combined with the existing detailed FARS information to create a one-of-a-kind data set that is currently being used to analyze and monitor the impact of legalized marijuana in Washington State. Among the findings:

- The number of THC-positive drivers involved in fatal crashes increased. The frequency of drivers in fatal crashes that tested positive for THC, alone or in combination with alcohol or other drugs, was highest in 2014 (75 drivers) compared to the previous four-year average (36 drivers annually).
- The number of drivers in fatal crashes who were impaired by alcohol only (not drug-positive as well) decreased. The frequency of drivers with alcohol \geq BAC .08 and no other drugs was lowest in 2014 (51 drivers) compared to the previous four-year average (98 drivers).
- The largest proportion of THC- or carboxy-THC-positive drivers in fatal crashes were young drivers. Among drivers in fatal crashes who tested positive for only THC or only carboxy-THC, the largest proportion are ages 16–25. This age group also had the highest proportion of drivers with alcohol \geq BAC .08. Of drivers that tested positive for the combination of THC and alcohol \geq BAC .08, 39.8% were ages 16–25.
- The most frequently reported driver error among drivers in fatal crashes with only THC was lane deviation (13%), followed by overcorrecting (8.9%).

More than half of drivers with only alcohol \geq BAC .08 involved in fatal crashes were speeding. Over 60% of drivers with alcohol \geq BAC .08 as well as THC impairment were speeding.

Impairment definitions

Impaired driving

Washington State has focused on impaired driving for many years, and as a result there is a great deal of data on impairment. Target Zero partners have explored the data through many different lenses in order to better analyze the impairment problem.

Here is a short list of impairment terms and their definitions as used in Target Zero:

Impaired driver involved (drugs, alcohol, or both)

Fatalities: Any driver with a Blood Alcohol Concentration (BAC) of .08 or higher and/or a positive drug result, as confirmed by the state Toxicology Laboratory.

Serious injuries: Any driver or non-motorist in which the investigating officer or drug recognition expert (DRE) indicated that the person was impaired by drugs or alcohol and reported in contributing circumstances as "Under the Influence of Alcohol," "Under the Influence of Drugs," or "Had Taken Medication" or sobriety reported as "HBD – Ability Impaired" or "HBD – Ability Impaired (tox test)."

Impaired pedestrian/bicyclist involved (drugs, alcohol, or both)

Fatalities: Any pedestrian or bicyclist with a BAC of .08 or higher and/or a positive drug result, as confirmed by the state Toxicology Laboratory.

Serious injuries: No data.

Drug impaired driver involved

Fatalities: Any driver with a positive drug result, as confirmed by the state Toxicology Laboratory.

Serious injuries: NOT APPLICABLE. Due to no confirmation by toxicology, drug impairment involved serious injuries are not reported.

Alcohol impaired driver involved

Fatalities: Any driver with a BAC of .08 or higher, as confirmed by the state Toxicology Laboratory.

Serious injuries: Any driver or non-motorist in which the investigating officer or DRE indicated that the person was impaired by alcohol and reported in contributing circumstances.

Drinking driver involved

Fatalities: Any driver with a BAC of any value except 0, as confirmed by the state Toxicology Laboratory. This also includes alcohol impaired drivers (those with BAC at or above .08).

Serious injuries: Any driver who the investigating officer or DRE indicated had been drinking any alcohol, or with a BAC of any value except 0, as confirmed by the state Toxicology Laboratory. These are not mutually exclusive, and also include alcohol impaired drivers those with BAC at or above .08).

Driving under the influence (DUI) (legal definition)

In Washington State, a person is guilty of driving while under the influence of intoxicating liquor, marijuana, or any drug if the person drives a vehicle within this state and:

- Has, within two hours after driving, an alcohol concentration of .08 or higher as shown by analysis of the person's breath or blood made under RCW 46.61.506; or
- Has, within two hours after driving, a THC concentration of 5.00 or higher as shown by analysis of the person's blood made under RCW 46.61.506; or
- Is under the influence of or affected by intoxicating liquor, marijuana, or any drug; or
- Is under the combined influence of or affected by intoxicating liquor, marijuana, and any drug.

Per se alcohol limit

No further proof is needed. When a person is found to have, within two hours after driving, an alcohol concentration of .08 or higher or a THC concentration of 5.00 nanograms per milliliter of blood or higher, that person is guilty "per se" of driving under the influence.

Contributing circumstances and factors

2012–2014: Impaired drivers

- More than half (60%) of alcohol-impaired and/or drug-positive drivers in fatal crashes, and 64% of those in serious injury crashes, were ages 16–39.
- Eighty-two percent of alcohol-impaired and/or drug-positive drivers in fatal crashes, and 78% in serious crashes, were male.
- More than half (52%) of impairment-involved fatalities occurred in rural areas. The other 48% occurred in urban areas.
- Six counties in Washington accounted for over 60% of impairment involved fatalities: King (20%), Pierce (11%), Snohomish (10%), Yakima (seven percent), Spokane (seven percent), and Clark (seven percent).
- Nearly half (52%) of fatalities occurred at nighttime (7 p.m. – 4:59 a.m.)
- Nearly half (48%) of fatalities occurred on Friday–Sunday.
- The most impairment-involved fatalities occurred in May (13%) and the fewest in January (7%).
- Sixty-three percent (63%) of those killed died in single-vehicle crashes.
- Half of pedestrians and bicyclists impaired by alcohol or positive for drugs were between the ages of 21 and 49.
- Nearly three out of four impaired pedestrians and bicyclists involved in a fatal crash were male.

Washington State laws relating to impaired driving

RCW 46.61.502 Driving under the influence

RCW 46.61.503 Driver under 21 years of age consuming alcohol or marijuana

RCW 46.61.504 Physical control of vehicle under the influence

RCW 46.25.110 Operating a commercial motor vehicle while having alcohol or THC in system

RCW 46.61.5055 Alcohol violators — Additional fee — Distribution

Programs and successes

Integrated systems approach brings in many partners to address impaired driving

Impaired driving is a societal issue that pushes us beyond traditional traffic safety partnerships. Washington Traffic Safety Commission (WTSC) chairs the Washington Impaired Driving Advisory Council (WIDAC). WIDAC consists of representatives from highway safety office, law enforcement, health, injury prevention, treatment/rehabilitation, ignition interlock programs, prosecution, judiciary, toxicology, data and traffic records, training, private business, advocacy, community task forces, probation, corrections, Tribal Nations, and the Washington State Liquor and Cannabis Board (LCB). WIDAC seeks to reduce impaired driving statewide through coordinated planning, training, programs, and evaluation.

Law Enforcement training in alcohol and drug detection

The Drug Evaluation and Classification Program (DEC), established in February 1996, trains law enforcement officers to become Drug Recognition Experts (DREs). Officers complete a rigorous training course and certification process. This enables them to recognize the signs and symptoms of impairment related to seven different categories of drugs, using a 12-step standardized and systematic process. The WSP provides DRE training to both WSP troopers and local law enforcement officers. Since the program's inception, the number of trained DREs in Washington has risen from 16 to over 196 in 2015, representing 66 law enforcement agencies.

Reducing excessive drinking

About 50% of people arrested for DUI were drinking at a licensed establishment; further, data show that 70–89% of bars will serve alcohol to intoxicated persons, in violation of the law. The Liquor and Cannabis Board's Enforcement and Education Division identifies establishments with the greatest number of reported DUIs and focuses resources on these establishments through a program called Locations of Strategic Interest.

Reducing underage drinking

Parental influence is an important factor in helping keep children from drinking and drug use. WTSC partners with the Liquor and Cannabis Board and MADD to educate parents with the "Power of Parents" curriculum. This curriculum, developed by MADD and Pennsylvania State University, provides parents with guidance for talking with teens about the dangers of drinking before age 21, and is based on research proven to reduce underage drinking by up to 30%.



Strategies for reducing impaired driving (IMP) fatalities and serious injuries

Objective	Strategies	Implementation areas
IMP.3. Prosecute, sanction, and treat DUI offenders	IMP.3.1 Expand use of ignition interlocks. (P, CTW)	Leadership/Policy
	IMP.3.2 Suspend driver license administratively upon arrest. (P, CTW)	Leadership/Policy
	IMP.3.3 Support the Traffic Safety Resource Prosecutor Program. (R, NHTSA)	Education
	IMP.3.4 Conduct alcohol/drug assessments on all DUI offenders and enhance treatment and probation when warranted. (P, CTW)	Leadership/Policy
	IMP.3.5 Match treatment and rehabilitation to the diagnosis. (P, NIH)	Leadership/Policy
	IMP.3.6 Require stronger penalties for BAC test refusal than test failure. (R, CTW)	Leadership/Policy
	IMP.3.7 Encourage attendance at DUI Victim's Panels. (U)	Leadership/Policy
	IMP.3.8 Place limits on plea agreements. (R, CTW)	Leadership/Policy
	IMP.3.9 Establish 24/7 sobriety program. (R, CTW)	Leadership/Policy
	IMP.3.10 Provide prosecution of DUIs as part of the Target Zero Teams. (U)	Education
IMP.4. Control high-BAC and repeat DUI offenders	IMP.4.1 Monitor DUI offenders closely. (P, CTW)	Leadership/Policy
	IMP.4.2 Require ignition interlock as a condition for license reinstatement. (P, NCHRP)	Leadership/Policy
	IMP.4.3 Incarcerate offenders who fail to comply with court-ordered alternative sanctions (P, NCHRP)	Leadership/Policy
	IMP.4.4 Support and establish DUI Courts. (P, CTW)	Leadership/Policy
IMP.5. Foster leadership to facilitate impaired driving system improvements	IMP.5.1 Continue to build partnerships designed to reduce impaired driving. (P, NCHRP)	Leadership/Policy
	IMP.5.2 Encourage laws that will allow the state to utilize sobriety checkpoints. (P, CTW)	Leadership/Policy
	IMP.5.3 Implement the corridor safety model in high-crash locations where data suggests a high rate of impaired driving. (P, NCHRP)	Leadership/Policy
	IMP.5.4 Encourage laws that use any money collected from DUI fines in excess of \$101 to support impaired driving reduction efforts. (R, GHSA)	Leadership/Policy
	IMP.5.5 Lower the per se BAC limit from .08 to .05 (P, META)	Leadership/Policy
	IMP.5.6 Establish and support the Judicial Outreach Liaison program. (R, NHTSA)	Leadership/Policy
	IMP.5.7 Monitor ignition interlock manufacturers and installers to ensure a continued viability and validity of program. (P, CTW)	Leadership/Policy
	IMP.5.8 Monitor reports from ignition interlock manufacturers on alcohol failures on ignition interlocks and conduct compliance checks. (P, CTW)	Leadership/Policy
	IMP.5.9 Investigate ignition interlock circumvention attempts. (P, CTW)	Leadership/Policy

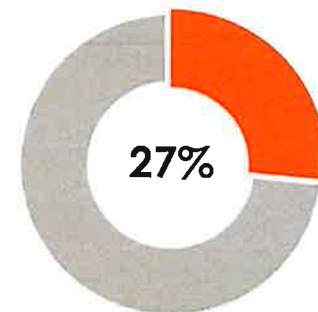
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Overview

Speeding involves drivers traveling either above the posted speed limit or too fast for conditions. Both types of speeding are represented in this data. In Washington, speeding is the third-most common factor contributing to fatal and serious injury crashes, after impairment and lane departure. Our laws require drivers to comply with a posted speed limit and to adjust their rate of speed based on the conditions.

Compared with 2009–2011, speeding-involved fatalities have declined 5% and serious injuries have decreased 24% in 2012–2014. Between 2012 and 2014, 508 (38%) fatal crashes involved excessive speed; for serious injury crashes, 1,622 (27%) involved speeding.

% of all serious injuries

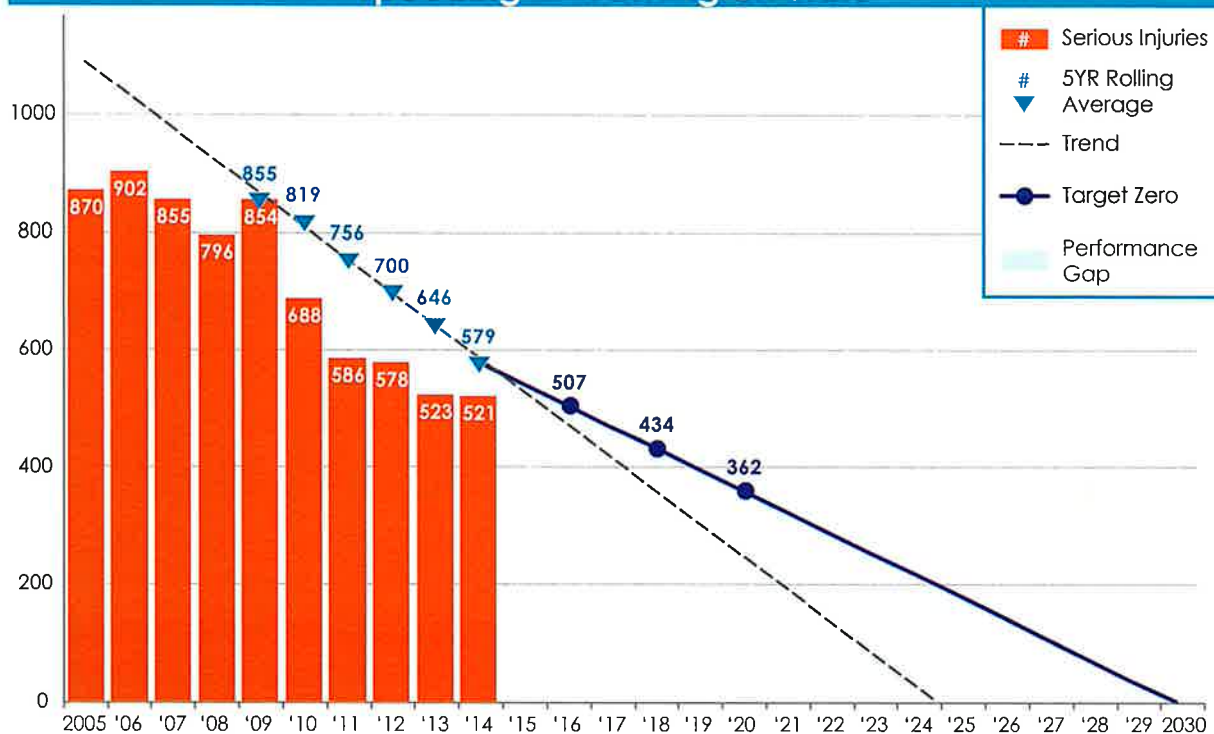


What's New

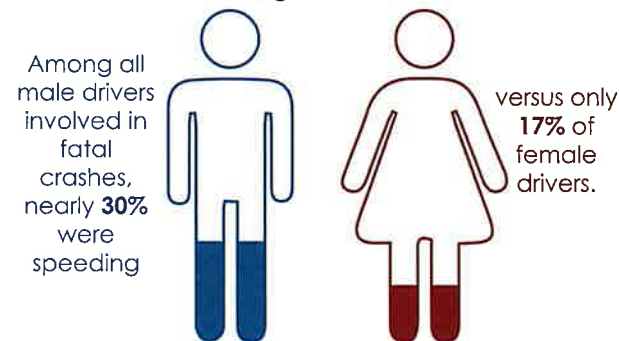
Compared with 2009–2011, speeding-involved fatalities have declined 5% and serious injuries have decreased 24%.

The WTSC has recently funded four community-level pilot projects aimed at identifying high risk areas and implementing interventions that hold promise for reducing speed-involved fatal and serious injury crashes. The selected sites for these projects include Thurston County, Kitsap County, Auburn, and Wenatchee.

Traffic related serious injuries resulting from crashes involving speeding in Washington State



Men are more likely to be speeding than women in Washington State's fatal crashes.



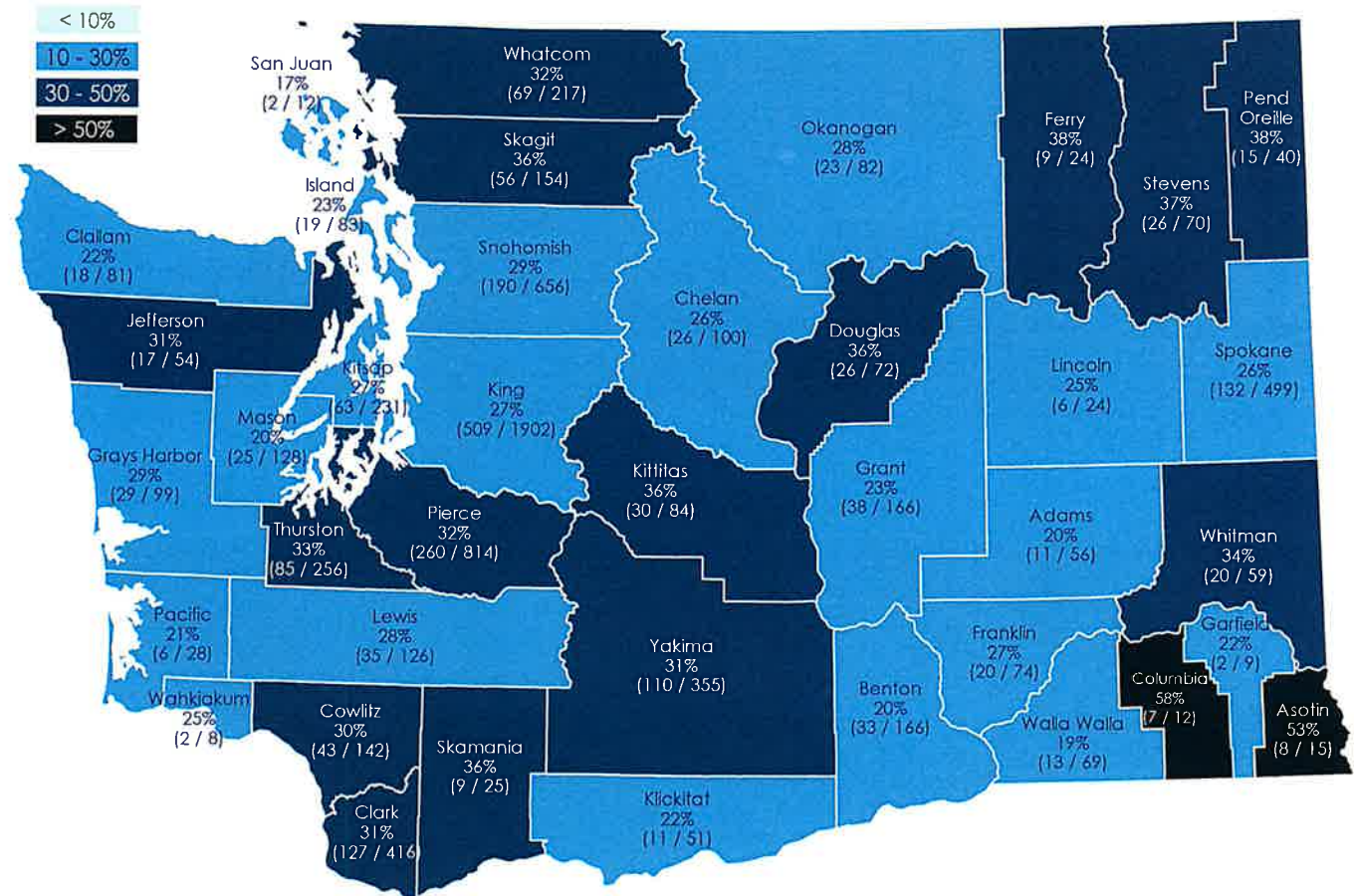
Contributing circumstances and factors

While speeding may be the only contributing factor in some fatal and serious injury crashes, often it is combined with other Target Zero factors, such as impairment, lane departure, and younger drivers. Of all drivers aged 16–25 involved in fatal crashes, 43% (171 of 401 drivers) were speeding. One in five speeding drivers was aged 21–25, the age group with the highest rates of speeding.

Almost half of all speeding involved fatalities occurred Friday–Sunday (230 of 465). More than one-third (36%) occurred between the hours of 10 p.m. and 5 a.m. One-third of speeding related crashes occurred during just three months of the year: May (12%), August (12%), and September (10%).

Men are more likely to be speeding than women in fatal crashes. Among all male drivers involved in fatal crashes, nearly 30% were speeding (385 of 1,321) versus only 17% (81 of 468) of female drivers.

Percent of all fatal and serious injury crashes involving speeding, by county (2012–2014)



High Risk Behavior

Risk increases as speeds rise

The risk of death and injury increases substantially as speed increases, because the amount of energy generated increases exponentially as a result. For example, crashing into a wall at 80 mph generates four times as much kinetic energy (the harmful force in a crash) as hitting the same wall at 40 mph. Vulnerable road users are especially at risk: research has shown that bicyclists and pedestrians who are hit by a vehicle traveling at 40 mph have an 85% chance of being killed; at 20 mph, the fatality rate is only 5%.

Tools to prevent deaths and injuries from speeding

Global perspective, community engagement, roadway engineering, vehicle technology, accurate data, high visibility patrols, and targeted media continue to impact our speed-related fatal and serious injury crashes. As we look to the future, Target Zero partners will dig deeper into data analysis, increase collaborative efforts, and expand innovation by engaging our partners and the public we serve.

Programs and successes

High visibility enforcement (HVE) campaigns have been effective in changing driver behavior

WTSC, along with state and local agencies, participates in collaborative HVEs throughout the year. These HVE patrols target priorities such as impaired driving, occupant safety, distracted driving, and speeding. In order to support and direct HVEs, agencies scrutinize and collect data, primarily from the Police Traffic Collision Report (PTCR).

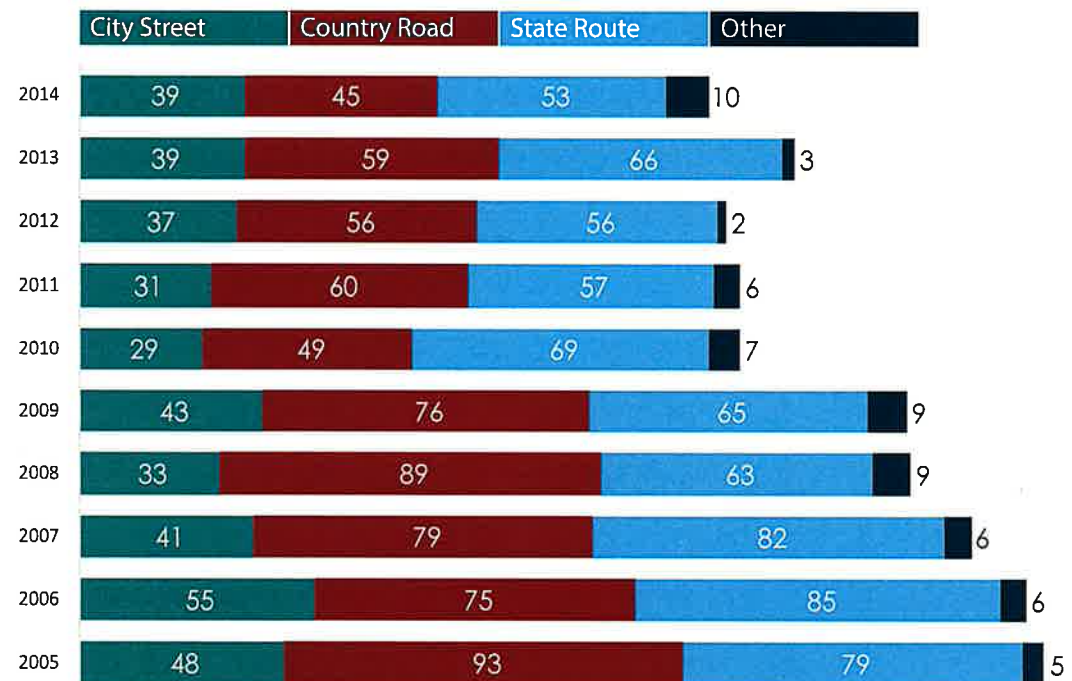
Traditionally, HVE campaigns such as “Slow Down or Pay Up” have been effective in changing driver behavior. Emphasis patrols are most effective when conducted in areas identified as having a high number of speed related crashes while being supported with relevant, impactful media. Continued compliance requires a balanced, consistent, and sustained enforcement effort.

HVEs targeting these behaviors are scheduled to take place throughout the duration of this Target Zero update.



High Risk Behavior

Fatal crashes involving speeding, by road type Washington State 2005–2014



Strategies for reducing speeding (SPE) fatalities and serious injuries

Objective	Strategies	Implementation areas
SPE.1. Reduce speeding through enforcement activities	SPE.1.1 Increase use of speed enforcement. (P, CTW)	Enforcement
	SPE.1.2 Conduct high visibility enforcement efforts at locations where speeding-related crashes are more prevalent. (P, NCHRP)	Enforcement
	SPE.1.3 Increase penalties for repeat and excessive speeding offenders. (R, CTW)	Leadership/Policy
	SPE.1.4 Equip law enforcement officers with appropriate equipment for speeding enforcement. (R, WSP)	Enforcement, Leadership/Policy
	SPE.1.5 Establish and enforce lower speed limits for commercial vehicles on higher-speed roads. (R, NCHRP)	Engineering, Enforcement
	SPE.1.6 Increase use of aerial speed enforcement. (U)	Enforcement
SPE.2. Use engineering measures to effectively manage speed	SPE.2.1 Set speed limits which account for roadway design, traffic, and environment, including traffic volume, modal mixed-use, and local and regional function. (R, NCHRP)	Engineering
	SPE.2.2 Use traffic-calming and other design factors to influence driver speed. (R, NCHRP)	Engineering
	SPE.2.3 Design and maintain speed limit and ensure warning signs are visible and installed at appropriate intervals. (R, NCHRP)	Engineering
	SPE.2.4 Use electronic variable speed limit signs that change according to conditions such as weather and congestion. (R, NCHRP)	Engineering
	SPE.2.5 Support the limited use of speed feedback signs to warn motorists that they are exceeding the speed limit; continue to research the most effective locations for these signs. (R, NCHRP)	Engineering, Education
	SPE.2.6 Separate motorized traffic from non-motorized traffic using shared-use paths, sidewalks, bridges, etc. (R, NCHRP)	Engineering
	SPE.2.7 Implement timed and coordinated traffic signals to improve traffic flow, reduce red-light running, and manage speeds. (R, NCHRP)	Engineering
	SPE.2.8 Set consistent speed limits based on existing operation considering for road design, traffic flows, traffic mix and other environmental factors. (R, NCHRP)	Engineering
P: Proven R: Recommended U: Unknown		

High Risk Behavior

Continued on next page

SPEED
LIMIT
60

SPEED
LIMIT
45

SPEED
LIMIT
45

SPEED
LIMIT
45

SPEED
LIMIT
45

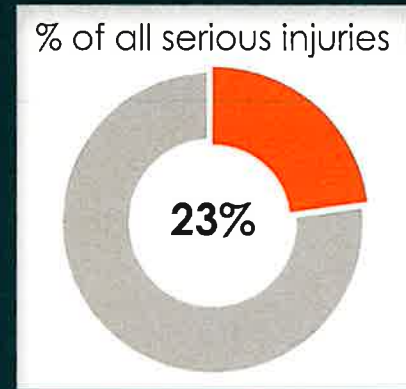
REDUCE SPEED

EXIT 163
W Seattle Br
Columbian Way
EXIT ONLY



Overview

From 2012–2014, 395 people died in crashes involving distraction on the part of the driver, non-motorist or both. Target Zero partners believe that these numbers are underreported, especially for smart phone use. While phone-involved distraction currently gets a lot of attention, it is rarely reported as a contributing factor in crashes when distractions are noted. For instance, in the 2012–2014 period, driver phone use was noted as a contributing factor in only 3% of all fatality and serious injury crashes.



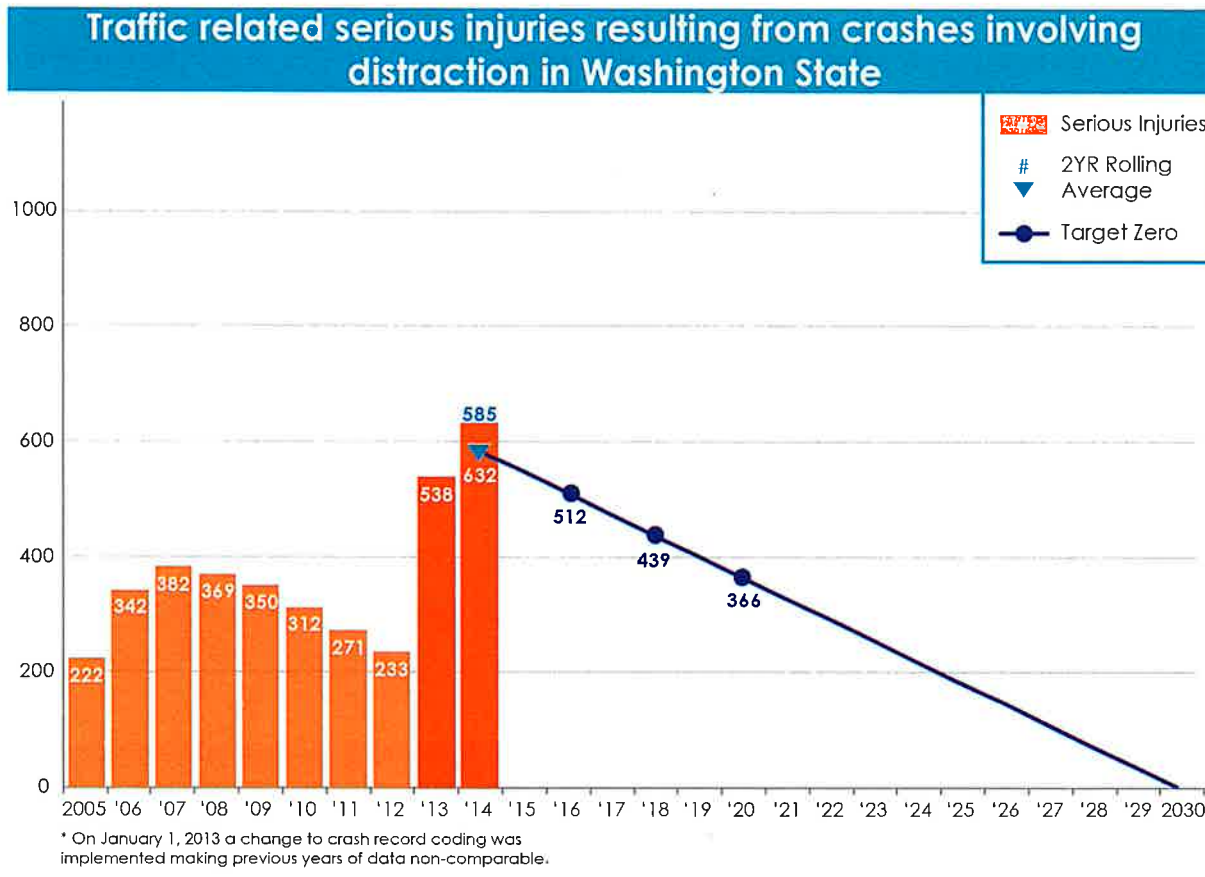
What's New

The WTSC is working with a stakeholder group to strengthen the Washington State laws that address phone and smart phone use while driving.

Washington now has a [distracted driving video for law enforcement](#). It is hosted on WTSC's YouTube channel.

In 2014, Washington launched an annual high visibility enforcement campaign to reduce phone distraction. Over 100 law enforcement agencies participate every year in an effort to crack down on drivers who use their phone on the road. Despite this effort, laws for distracted driving remain difficult to enforce.

In 2013, researchers at Harborview Injury Prevention and Research Center observed that nearly one in 10 drivers was using a phone or texting behind the wheel. Among those driving distracted, nearly half (47%) were texting. The WTSC will conduct a statewide survey of driver phone use in summer 2016.



Research on phone use makes clear links to dangerously distracted driving

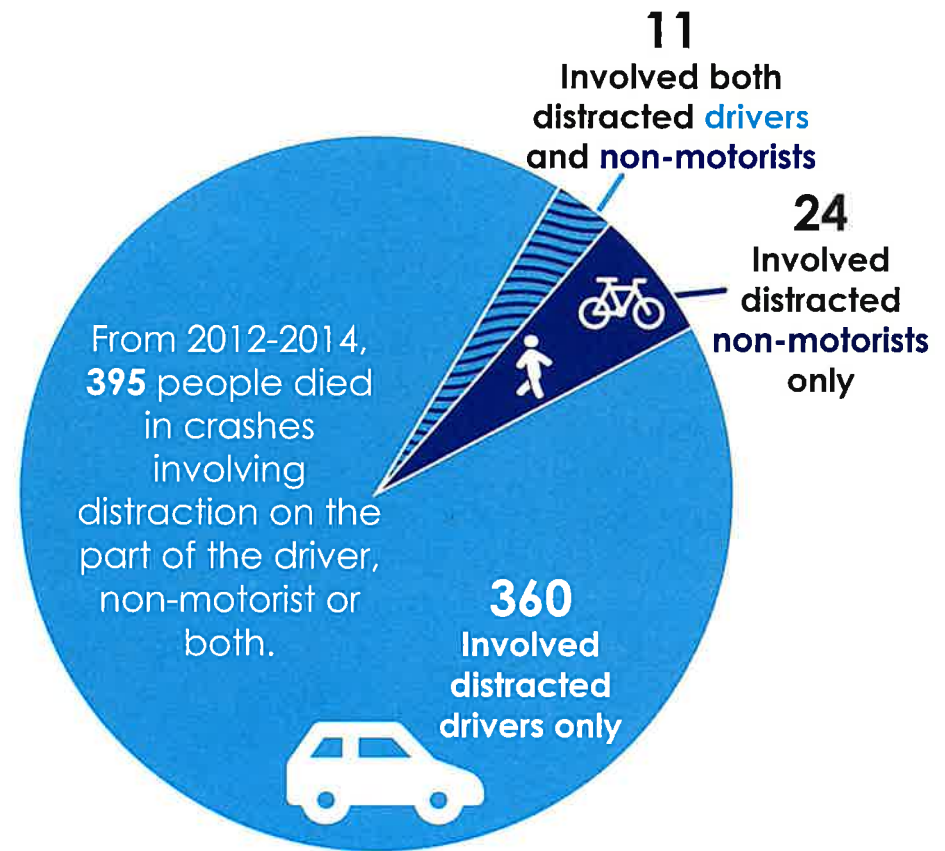
Because the distracted driving data for serious injury and fatal crashes is unreliable, much of what we can infer about distracted driving comes from observational studies, as well as studies of human distraction. These studies make a clear link between phone use and dangerous driving.

The first thing that we can tell from the studies is that distraction is in fact a common factor in crashes. The NHTSA National Motor Vehicle Crash Causation Survey collects on-scene information about the events leading up to crashes. In their most recent survey, the critical reason for the crash – the last event in the crash causal chain – was assigned to the driver in 94% of the crashes. Analysis of crashes investigated by these on-scene researchers concluded that recognition errors, which include driver inattention, internal and external distraction, and inadequate surveillance, accounted for 41% of crashes (Singh, 2015.)

The next thing the studies tell us is phones are nearly universal, and frequently used by drivers. The Pew Research Center reports that 61% of Americans own a smart phone, and 91% of the adult population total owns some sort of mobile phone.

Meanwhile, in 2013, researchers at Harborview Injury Prevention and Research Center (University of Washington Medicine) performed an observational study that found that nearly one in ten Washington State drivers is using a phone or texting behind the wheel. Among those driving while distracted by a phone, nearly half (47%) were texting. Another recent national study by the AAA Foundation for Traffic Safety analyzed video recordings of 1,691 crashes involving young drivers (aged 16–19). These recordings revealed that, in 58% of those crashes, the drivers were engaging in some type of potentially distracting behavior.

Although drivers have faced distractions since cars became a common form of transportation in the 1920s, the phone has been shown to be a distraction that significantly increases crash risk.



In their analysis of 206 empirical studies on distracted driving, Ferdinand and Menachemi (2014) found that phone use, which in this study collapsed all phone interactions into a single variable, was more highly predictive of poor driving performance than any other potential distraction. Similarly, a 2011 meta-analysis of phone use and crashes showed that dialing, talking, and listening on a phone increased a driver's risk of crash by almost three times (Elvik, 2011).

The reason that phones, including smart phones, create a higher crash risk for drivers than other distractions is because of the ways in which they distract. Phones are not just a physical or visual distraction, like eating food or changing a radio station; they take our minds away from the task of driving by connecting us to complex social and informational interchanges.

Case filings for driving violations: Handheld phone use and text messaging while driving violations Washington State 2008–2014



Data Source: Administrative Offices of the Courts (AOC), Number of cases filed under RCW 46.61.667 (using wireless telecommunications device while driving) and RCW 46.61.668 (sending, reading, or writing a text message while driving) by WSP and local law enforcement. Does not include cases filed in Seattle Municipal Court (SMC).

High Risk Behavior



Recent AAA research has shown test subjects needed up to 27 seconds to fully restore their mental focus on driving after ending a call or texting from voice controlled systems in their cars.

Additionally, the study showed that:

- One out of every three teens cited for distraction was later involved in a police-reported crash.
- The earliest driving period for young drivers is the most dangerous, distraction-wise. Drivers ages 16–17, for whom even hands-free phone use is banned, had the strongest link between distraction citations and crash risk.
- The association between texting citation and crash rate is higher for women.

Picking up where the 2013 UW study left off, in Summer 2016 the WTSC will conduct its first biannual statewide survey of driver phone use. This will establish a baseline number for the percentage of drivers using devices while driving.

With this research showing that phones create a major, dangerous distraction for drivers, Target Zero partners will continue to focus efforts to prevent phone use during driving, and will also encourage bicyclists and pedestrians to put down their phones.

Contributing circumstances and factors

Other high-risk behaviors are also often coupled with distraction involved crashes, as seen in the infographic. In addition, age and gender are also factors in distracted driving.

Younger and older drivers

Distraction also shows up notably for younger and older drivers. Sixteen to 17 year old, 18–20, and 70+ drivers are involved in the highest number of distraction-related fatal and serious injury crashes, as seen in the bar graph on the following page. Inexperience and immaturity combine to make young drivers especially at-risk in relation to distraction. Their risk is especially heightened under specific conditions, such as at night, after consuming alcohol or drugs, and with passengers in the car.

Distraction increases pedestrian vulnerability

It is not just drivers who suffer the cognitive effects of cell phone distraction. A Harborview study from 2012 evaluated the impact of technological and social distraction on cautionary behaviors and crossing times in pedestrians. Nearly one third of all pedestrians performed a distracting activity while crossing. Distractions included listening to music (11%), text messaging (7.3%), and using a handheld phone (6.2%). The study concluded that distracting activity is common among pedestrians, even when crossing intersections. Technological and social distractions increase pedestrian crossing times. Pedestrians who were text messaging displayed the highest risk of all distracted walkers, with slower crossing times and failure to display cautionary crossing behaviors.

In general, male drivers across all age groups engage in high risk behaviors such as impairment and speeding more often than female drivers of comparable ages. However, female drivers in fatal crashes are slightly more likely to be distracted than their male counterparts.

From 2012–2014, male drivers outnumbered female drivers by roughly 3-to-1 in all fatal crashes statewide. However, a greater proportion of female drivers (21%) were identified by investigators as distracted than their male counterparts (19%).

Programs and successes

High visibility enforcement campaigns enforce Washington's law prohibiting phone use while driving

In 2014, Washington launched an annual high visibility enforcement (HVE) campaign to reduce phone distraction. Over 100 law enforcement agencies participate in this national effort to crack down on drivers who use their smart phones on the road.

Strategies for reducing distracted driving (DIS) fatalities and serious injuries

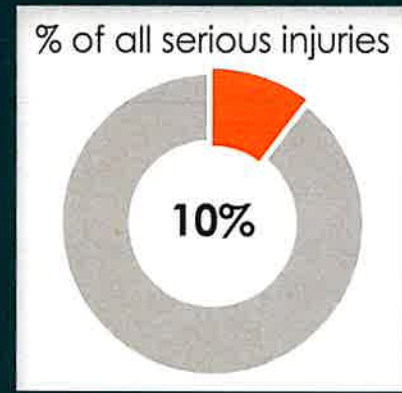
Objective	Strategies	Implementation areas
DIS.1. Increase driver awareness of the risks of distracted driving	DIS.1.1 Conduct statewide distracted driving high visibility enforcement (HVE) campaigns. (R, CTW)	Enforcement, Education
	DIS.1.2 Conduct statewide education campaign focused on the dangers of electronic device use while driving/walking. (U)	Education
DIS.2. Increase/strengthen fines and assist in improved adjudication of distracted driving citations	DIS.2.1 Visibly enforce existing statutes to deter distracted driving. (U)	Enforcement, Leadership/Policy
DIS.3. Strengthen distracted driving laws/ordinances	DIS.3.1 Pass a state law that would prohibit drivers from using hand-held personal electronic devices at all times while the car is on the road. Apply the prohibition even while a driver is temporarily stopped because of traffic or at a stoplight. Ensure violations are reportable to insurance and employers.	Leadership/Policy
	DIS.3.2 Enact local ordinances that allow officers to cite drivers for distracted driving for using hand-held personal electronic devices, including smart phones. Apply the prohibition even while a driver is temporarily stopped because of traffic or at a stoplight.	Leadership/Policy

P: Proven R: Recommended U: Unknown

High Risk Behavior

Overview

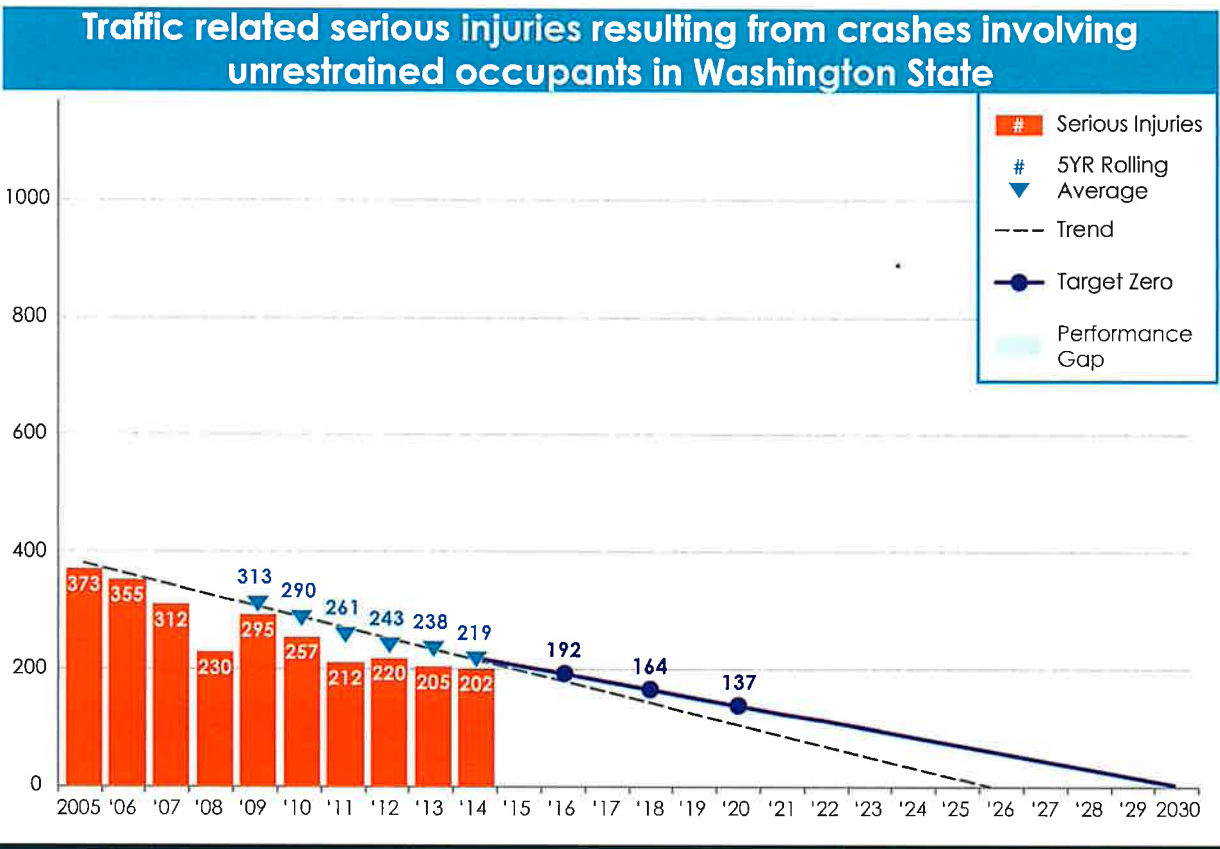
Washington has consistently been a national leader on seatbelt use. Since the adoption of the Click It or Ticket program and the primary enforcement seatbelt law in 2002, Washington has had one of the highest rates of seatbelt use in the country. Strong support from the law enforcement community, aggressive efforts to publicize seatbelt patrols, and assistance from Target Zero managers (TZMs) in 17 regions provide the backbone of this success. The use of child restraint systems such as car seats and booster seats is supported by a statewide network of car seat technicians. Nevertheless, as the infographic shows, unrestrained occupants are very likely to engage in other high risk behaviors.



What's New

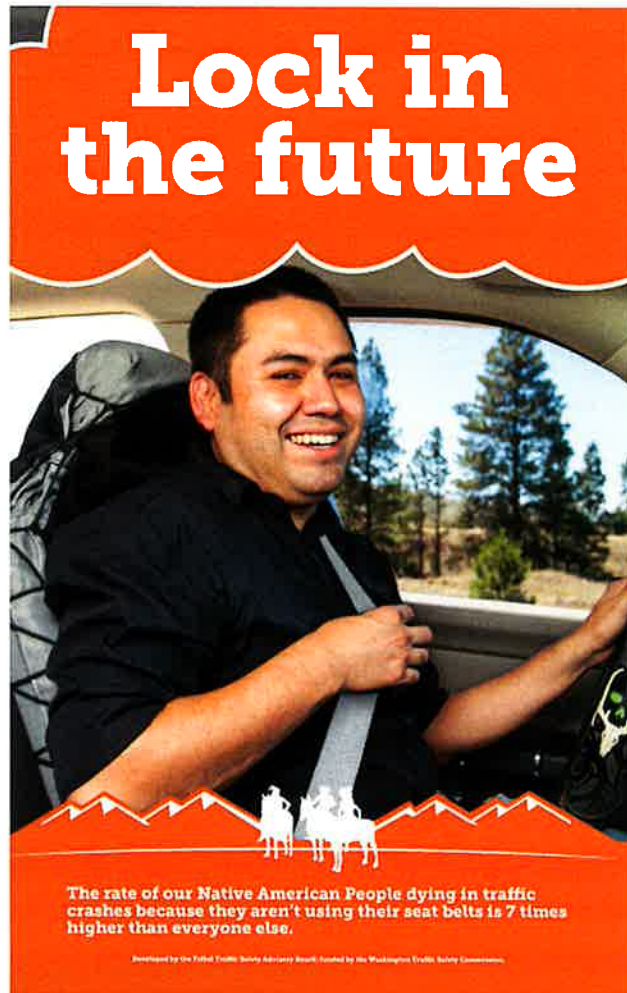
WTSC published their Online Car Seat Awareness Training for Law Enforcement. This one-hour curriculum is intended to improve enforcement of the laws around seatbelts, car seats, and booster seats.

Washington State changed the methodology for its annual seatbelt use survey in 2013 due to new federal rules. This change prevents us from comparing the seatbelt use rate to other states from 2012–2014, as methodologies were changing in every state.



43% of American Indians and Alaskan Natives who died in crashes were not buckled up

Traffic fatality rates of American Indians and Alaskan Natives (AIANs) are higher than for the AIAN population in several counties, and the most disproportionate rate is for seatbelt use. The fatality rate for unrestrained vehicle occupants is 7.3 times higher for AIAN than for non-AIAN populations. Of the AIAN people who died in 2012–2014 traffic crashes, 43% were not buckled at the time they crashed.



Child safety seats reduce the risk of death

Correctly used child safety seats reduce the risk of death in passenger vehicles by 71% for infants and by 54% for toddlers (Safe Kids WorldWide). Washington State crash data show that children who incur either minor injuries or none at all in crashes were appropriately restrained at least 86% of the time. Despite the effectiveness of properly used child restraints, and widespread adherence to Washington's strong child restraint law, many children are still either not restrained or are incorrectly restrained. These children are at higher risk for injury or death.

High Risk
Behavior

Changes to the observational seatbelt survey

Washington's observational seatbelt survey, which determines what our state's seatbelt use rate is, has been repeated every year since 1986. All states were required to change to a more precise methodology, and Washington switched to the new methodology in 2013. The new methodology uses continually updated information on population, Vehicles Miles Traveled (VMT), and roadway function class.

With this change, seatbelt use rates that were determined under the new methodology cannot be compared to use rates determined under the old methodology. In Washington State, traffic safety data experts are confident the new methodology is solid because of the consistency in seatbelt use rates for the three years:

- 2013: 94.5%
- 2014: 94.5%
- 2015: 94.6%

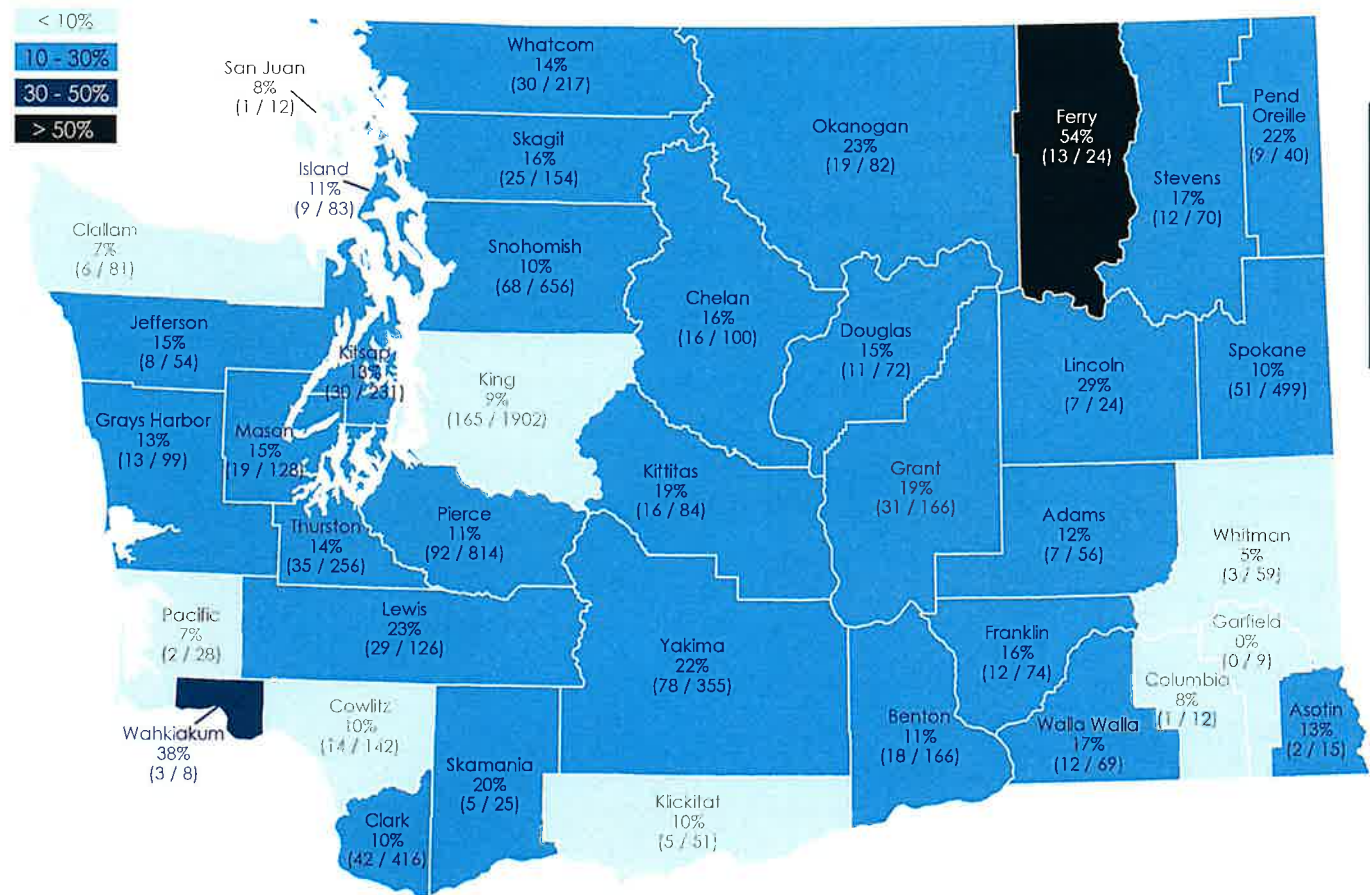
In Washington, between 2012 and 2014, 21 children age 12 and under died in traffic crashes while inside cars. Two of these children were not sitting in the back seat, the safest place for a child under age 12. Only nine of these 21 children were confirmed to have been seated in a child restraint, and seven were not restrained at all — not even a seatbelt. Over 80% (17 out of 21) of the fatalities were children two years and older.

From 2012–2014, an additional 116 children age 12 and under suffered serious injuries inside passenger vehicles. Nineteen of these children were illegally riding in the front seat. Only 34 of these children were seated in a child car seat or booster, and 19 were not restrained at all.

Washington conducted a observational survey at elementary schools across the state. This study found:

- An estimated one in five children were illegally riding in the front seat.
- 80% were restrained by seatbelt; however, less than one-third of those children were properly restrained.
- Continued educational outreach and enforcement is needed.

Percent of all fatal and serious injury crashes involving unrestrained occupants, by county (2012–2014)



High Risk Behavior

Occupant protection definition

Occupant protection refers to safety features designed to protect occupants of motor vehicles in the event of a crash. While the manufactured component parts of motor vehicles are the responsibility of the federal government, states are tasked with encouraging the use of seatbelts by adults and the use of child restraint systems such as car seats and booster seats.

while Washington's CPS Program provided educational tools and resources. Observation results found an average 12.3% increase (pre-intervention to post-intervention) in the number of children correctly riding in the back seat.

This media campaign continues to be used throughout Washington State and has had materials translated to Spanish.

Child Passenger Safety Program funds efforts to improve child safety in vehicles

Washington's Child Passenger Safety Program provides direct support to an active network of local leaders providing child passenger safety education and resources. This network is made up of 17 Target Zero managers, 15 SafeKids coordinators, and six community child passenger safety leaders. The program provides grant funding to:

- Increase visibility of child passenger safety issues in Washington.
- Maintain and support the statewide network of child passenger safety technicians and inspection stations.
- Strengthen efforts to increase compliance, enforcement, and adjudication of the seatbelt and child restraint law.

In order to obtain current data on child restraint use to guide outreach and educational efforts, Washington established a statewide observational survey of child occupants. Results of the 2014 surveys of child occupants provided guidance for media and awareness campaigns for increased booster seat use and child occupants under age 13 in the back seat.

Washington State laws relating to unrestrained vehicle occupants

RCW 46.61.687 covers all passengers under 16 years of age:

- A child must be restrained in a child restraint system.
- A child who is 8 years or older, or 4'9" tall or taller, shall be properly restrained with a seatbelt or an appropriately fitted child restraint system.
- Children under 13 must ride in the back seat in a vehicle where it is practical to do so.
- Does not apply to: 1) for-hire vehicles, 2) vehicles designed to transport 16 or less passengers operated by transportation companies, 3) vehicles providing shuttle service, and 4) school buses.

RCW 46.61.688 covers passengers over 16 years of age:

- People driving or riding in a motor vehicle shall wear a seatbelt. Drivers are responsible for ensuring all child passengers under the age of sixteen years either wear a seatbelt or use an approved child restraint device.

Improving law enforcement understanding of car seats

Law enforcement officers determine if a child restraint system is appropriate for the child's individual height, weight, and age.

Because of the duration of time required for a formal certification training in child seat use, in 2011 the WTSC supported the creation of a Car Seat Awareness training for law enforcement agencies. Based on popular request, the agency introduced an online version in 2015. Since May 2015, the online class has had 3,122 sessions, considerably more people than could be served in-person.

Strategies for reducing unrestrained vehicle occupant (UVO) fatalities and serious injuries

Objective	Strategies	Implementation areas
(continued from previous page) UVO.2. Promote legislative and policy efforts to promote restraint use	UVO.2.4 Strengthen child passenger safety laws with a legislative change to add \$25 administrative fee for violators to fund child passenger safety efforts, or allow local governments to initiate the change. (U)	Leadership/Policy
	UVO.2.5 Strengthen child passenger safety laws with a legislative change to require toddlers to remain rear-facing until the age of two or until they reach the maximum height and weight for their seat. Also require children to remain in a booster seat until a height of 4'9" and remove the 8 year old reference. (R, NHTSA)	Leadership/Policy
UVO.3. Maintain and support the statewide network of child passenger safety technicians	UVO.3.1 Explore options for gaining a measure of statewide child restraint use, such as expanding the annual seatbelt observation survey to include observations of child restraint use. (R, DDACTS)	Leadership/Policy
	UVO.3.2 Continuously monitor fatality and serious injury crash data involving unrestrained or improperly restrained child passengers to help direct geographic/demographic areas of focus. (R, DDACTS)	Education
	UVO.3.3 Convene a group of CPS stakeholders from different disciplines and areas of the state, including existing network of Washington's Target Zero managers, SafeKids Coalitions, and other local child passenger safety teams, to participate in product review, media efforts, trainings, and local project implementation. (U)	Leadership/Policy
	UVO.3.4 Support opportunities for child car seat inspection events, CPS Technician certification courses, and recertification of technicians. Work collectively with Washington's Target Zero managers, SafeKids Coalitions, and local child passenger safety teams. (R, NHTSA)	Education
	UVO.3.5 Establish a database to collect all of Washington's car seat inspection data. Analyze information received to determine major misuse issues; share with statewide CPS network; incorporate findings into media campaigns. (U)	Education
UVO.4. Increase visibility of child passenger safety issues in Washington	UVO.4.1 Provide access to appropriate information, materials, and guidelines for implementing media and programs to increase proper child restraint use. (U)	Education
	UVO.4.2 Develop and implement media campaigns targeting major misuse issues in Washington State, which are currently booster age children and riding in the front seat. (U)	Education
	UVO.4.3 Look for ways to offer positive reinforcement to parents correctly transporting children. (U)	Education

P: Proven R: Recommended U: Unknown

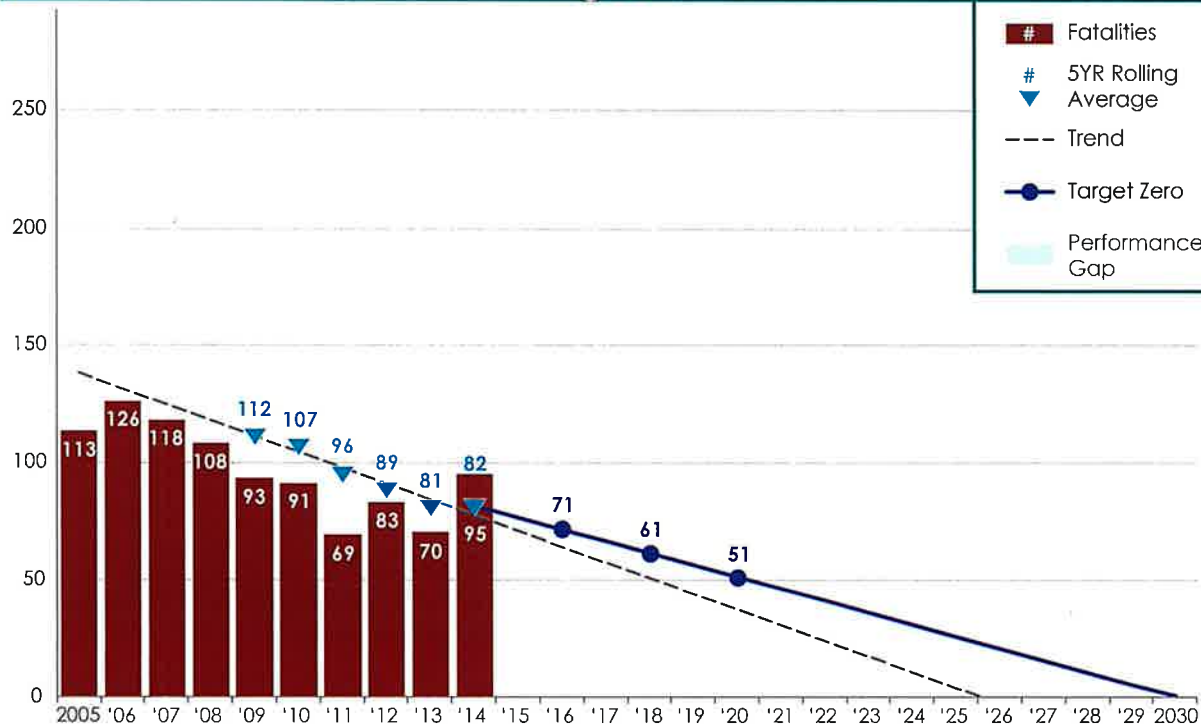
High Risk Behavior

Almost all unlicensed driver fatalities involve another risk factor

From 2012–2014, the 248 unlicensed driver fatalities were found to involve 485 instances of high risk behaviors, including impairment, speeding, unrestrained vehicle occupants, distraction, or drowsiness. Unlicensed drivers involved in fatalities clearly take many more risks beyond just driving without a valid license.

All these risk behaviors are avoidable, and all fatalities involving these behaviors are potentially avoidable. Therefore, proven strategies that reduce impairment, speeding, and other behaviors can be expected to reduce unlicensed driver involved fatalities as well.

Traffic fatalities resulting from crashes involving unlicensed drivers in Washington State



What's New

Starting in June 2013, legislation removed certain non-moving violations (such as failure to pay a ticket or appear in court) from causes for suspension. License suspensions quickly dropped by over 12,000 per month. This significant decrease in suspensions frees up law enforcement time for moving violations that pose risks to road safety.

This law change is considered a best practice by the American Association of Motor Vehicle Administrators. Target Zero partners agreed, finding that non-moving violators in Washington do not typically cause danger on the roads. Moving violators are nearly three times more likely to have a crash.

Although this change will not directly impact unlicensed driver fatalities, it could allow law enforcement to redeploy an estimated 71,000 hours of state trooper time each year. This means that officers can increasingly focus on high-risk behavior such as impairment and distracted driving, rather than on relatively low-risk behavior like driving with a suspended license for a non-moving violation.

Unlicensed driver definition

An unlicensed driver is a person who does not have driving privileges in Washington State. These include drivers who:

- Never obtained a license.
- Had their license suspended or revoked by DOL.
- Have an expired license.
- Voluntarily surrendered their license.
- Had their license invalidated by a court of law or another state's licensing agency.
- Have a valid out-of-state license but had a driving incident in Washington, resulting in Washington-based restrictions.

Other features of unlicensed drivers

Nearly one third of unlicensed driving fatalities occurred between 11 p.m. and 3 a.m., double what would be expected if all hours were equal. Also, more than three times as many males as females were unlicensed drivers involved in fatalities. However, these are merely correlating factors. The high risk behaviors noted previously caused the crashes.

Most unlicensed drivers at the time of their fatal crash had a suspended license. From 2012–2014:

- 75% (170) had a suspended license (Since 2006, this number has hovered between 62% and 78% of unlicensed drivers).
- 19% (43) had no license or license status history
- 6% (the remaining 13) included four revoked, eight expired, and one denied license

National research and strategies show around 19% of fatalities involve unlicensed drivers

Unlicensed drivers have been studied around the nation. The AAA Foundation for Traffic Safety found 19% of US traffic fatalities involved unlicensed drivers from 2007–2009. This is consistent with Washington's percentage, which has varied from 18% to 20% since 2006.

The California Department of Motor Vehicles studied 23 years of data (1987–2009), and found that unlicensed drivers were nearly three times more likely to cause a fatal accident than licensed drivers.

There are some strategies to prevent unlicensed driving, such as impounding an unlicensed driver's vehicle license plates, or providing access to alternative forms of transportation. But no strategies have been proven to be truly effective in reducing unlicensed driving. If proven strategies were found, even then they might not be as effective as the proven strategies to reduce the root causes of unlicensed driver involved fatalities — namely impairment, speeding, and unrestrained occupants, among others.

Focus on enforcement against risky behaviors

Unlicensed driving is hard to see. An officer has no idea if a person driving by has a valid license or not. By comparison, speeding, signs of impairment, and not wearing a seatbelt are relatively easy to see. Therefore, by focusing on enforcing against dangerous behaviors — the true cause of crashes — Target Zero partners will get the biggest return on investment for traffic safety.

Strategies for reducing unlicensed driver (UNL) fatalities and serious injuries

Objective	Strategies	Implementation areas
UNL.1. Restrict mobility of unlicensed drivers through administrative actions and vehicle modifications	UNL.1.1 Mandatory incarceration period for repeat unlicensed driving offenders. (P, NCHRP)	Enforcement
	UNL.1.2 Impose electronic monitoring of repeat unlicensed driving offenders. (P, NCHRP)	Enforcement
	UNL.1.3 Expand the use of ignition interlock for drivers suspended due to a DUI. (P, CTW)	Enforcement
	UNL.1.4 Impound or destroy license plates of vehicles registered to repeat unlicensed driving offenders. (P, NCHRP)	Enforcement
	UNL.1.5 Immobilize or impound vehicles registered to repeat unlicensed driving offenders. (P, NCHRP)	Enforcement
	UNL.1.6 Allow registrations of vehicles operated by unlicensed drivers to be canceled and license plates denoted with stickers. (P, NCHRP)	Enforcement
UNL.2. Educate public through public awareness initiatives	UNL.2.1 Provide alternative transportation and encourage reduced fares for persons without driving privileges. (P, NCHRP)	Leadership/Policy
	UNL.2.2 Emphasize administrative and criminal sanctions for unlicensed driving offenders and re-offenders. (R, NCHRP)	Education
	UNL.2.3 Increase public awareness of public transportation options. (U)	Education
UNL.3. Enhance enforcement	UNL.3.1 Standardize vehicle actions against unlicensed drivers with mandatory immobilization/impound. (P, NCHRP)	Enforcement
	UNL.3.2 Create and distribute hot sheets, frequently updated lists of current unlicensed drivers who live in the vicinity and distribute to area enforcement agencies. (R, NCHRP)	Enforcement, Education
	UNL.3.3 Enact laws to allow for stopping a vehicle registered to an unlicensed driver (without other cause for stop) to ensure unlicensed driver is not at the wheel. (U)	Enforcement
	UNL.3.4 Evaluate the impact of the removal of suspension for failure to appear on non-moving citations. (U)	Leadership/Policy
UNL.4. Enhancement of data gathering and reporting ability	UNL.4.1 Make system changes necessary at WSDOT and DOL to enable analysts to identify unlicensed drivers involved in serious injury crashes. (R, DDACTS)	Leadership/Policy
	UNL.4.2 Ensure routine linkage of citations to driver records so appropriate citations may be added to the crash being investigated. (R, NCHRP)	Leadership/Policy

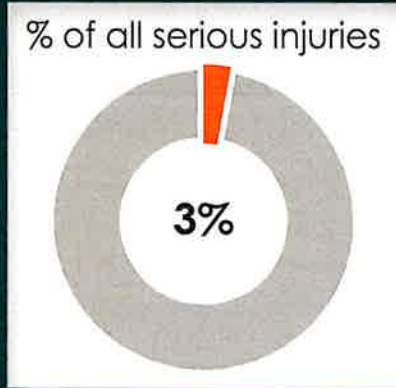
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High Risk Behavior

Overview

Drowsy driving was a factor in 39 traffic deaths and 194 serious injuries from 2012 to 2014. During that same time, drowsy driving accounted for roughly 3% of the state's total traffic deaths, and 3% of serious injuries. Data on drowsy driving are most likely underreported since drivers may be reluctant to admit they dozed off prior to a crash. A 2014 AAA study estimates that drowsiness was involved in one in five fatal crashes nationwide.

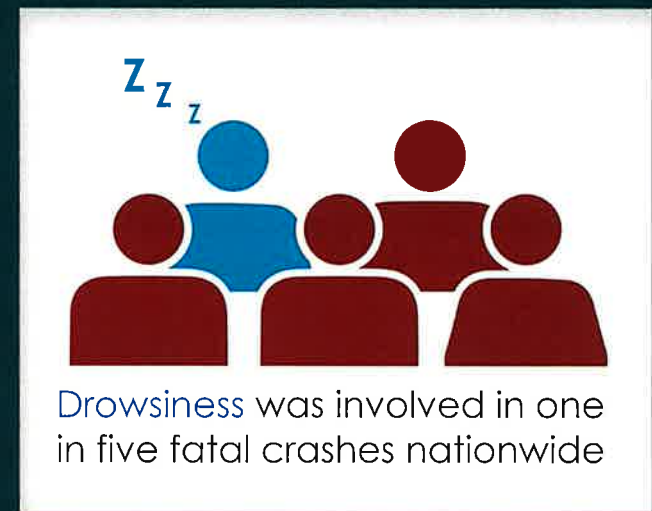
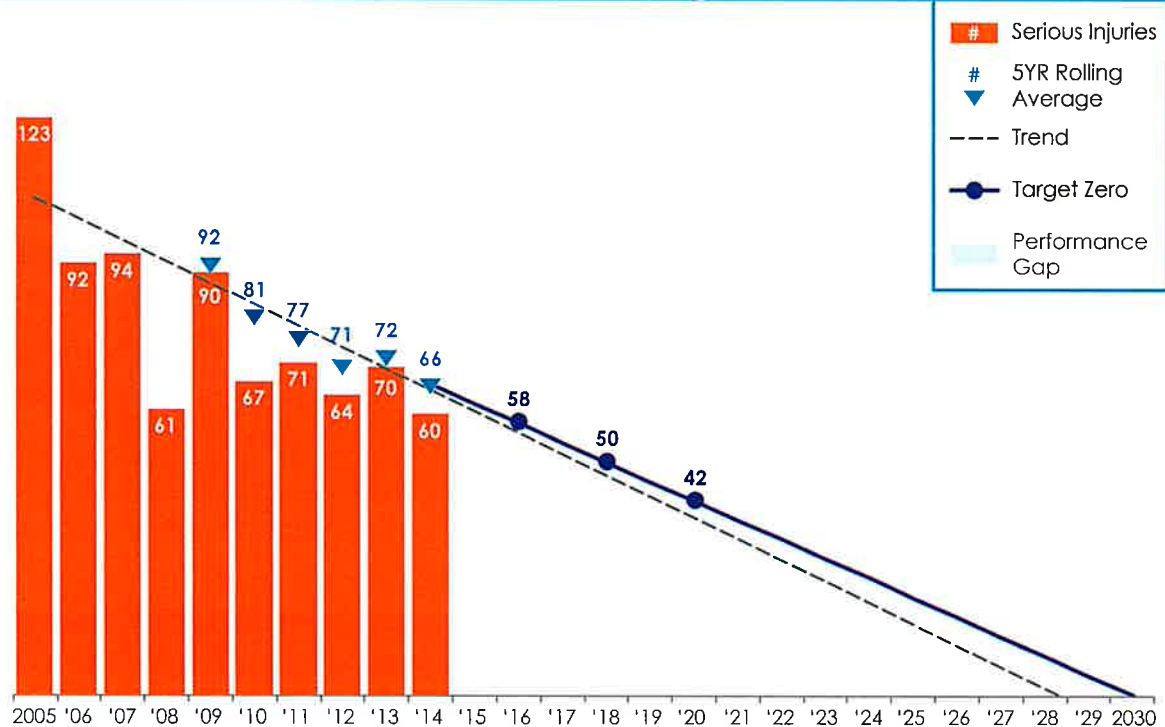
A driver who has been awake for 18 hours experiences cognitive impairment similar to that of a driver with a blood alcohol content (BAC) of .05. After 24 hours of being awake, a driver's impairment is similar to a BAC of .10 or higher.



What's New

Data on drowsy driving is most likely underreported since drivers may be reluctant to admit they dozed off prior to a crash. A 2014 AAA study estimates that drowsiness was involved in one in five fatal crashes nationwide.

Traffic related serious injuries resulting from crashes involving drowsy drivers in Washington State



Programs and successes

Engineering can prevent drowsy driving, or mitigate its effects

WSDOT is addressing drowsy driving crashes through several engineering interventions, including shoulder and centerline rumble strips, cable guard rails, and cable median barriers. In addition, WSDOT owns and operates 48 rest areas within the state to encourage drivers to stop and rest along their journeys. Most facilities are open 24 hours a day, seven days a week, and offer a free coffee program.

Drowsy Driving Prevention Week promotes education

The National Sleep Foundation's Drowsy Driving Prevention Week® is observed in November each year, just prior to annual heavy Thanksgiving travel. This campaign provides public education about the underreported risks of driving while drowsy, and advocates for countermeasures to improve safety on the road.

Washington State laws relating to drowsy driving

Washington has no laws specific to drowsy driving, but depending on the circumstances a drowsy driver may be charged with:

- **RCW 46.61.5249** Negligent driving
- **RCW 46.61.500** Reckless driving

High Risk
Behavior





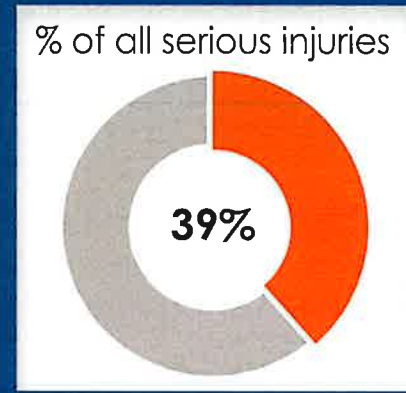
Certain types of vehicle crashes are more dangerous to drivers and other road users. The data show that crashes that involve lane departure and intersections are particularly perilous.

Meanwhile, Target Zero also focuses on work zones, wildlife, school buses, and vehicle-train collisions. While small, they also need to be reduced to meet the Target Zero goal.

Overview

Lane departure crashes have the second most number of fatalities and the highest number of serious injuries of any emphasis area in the 2016 Target Zero plan. There were 750 lane departure fatalities (56%) and 2,357 serious injuries (39%) from 2012–2014. Fatalities are currently on a long-term trend to achieve Target Zero by 2030. However, the number of fatalities has remained relatively constant since 2010.

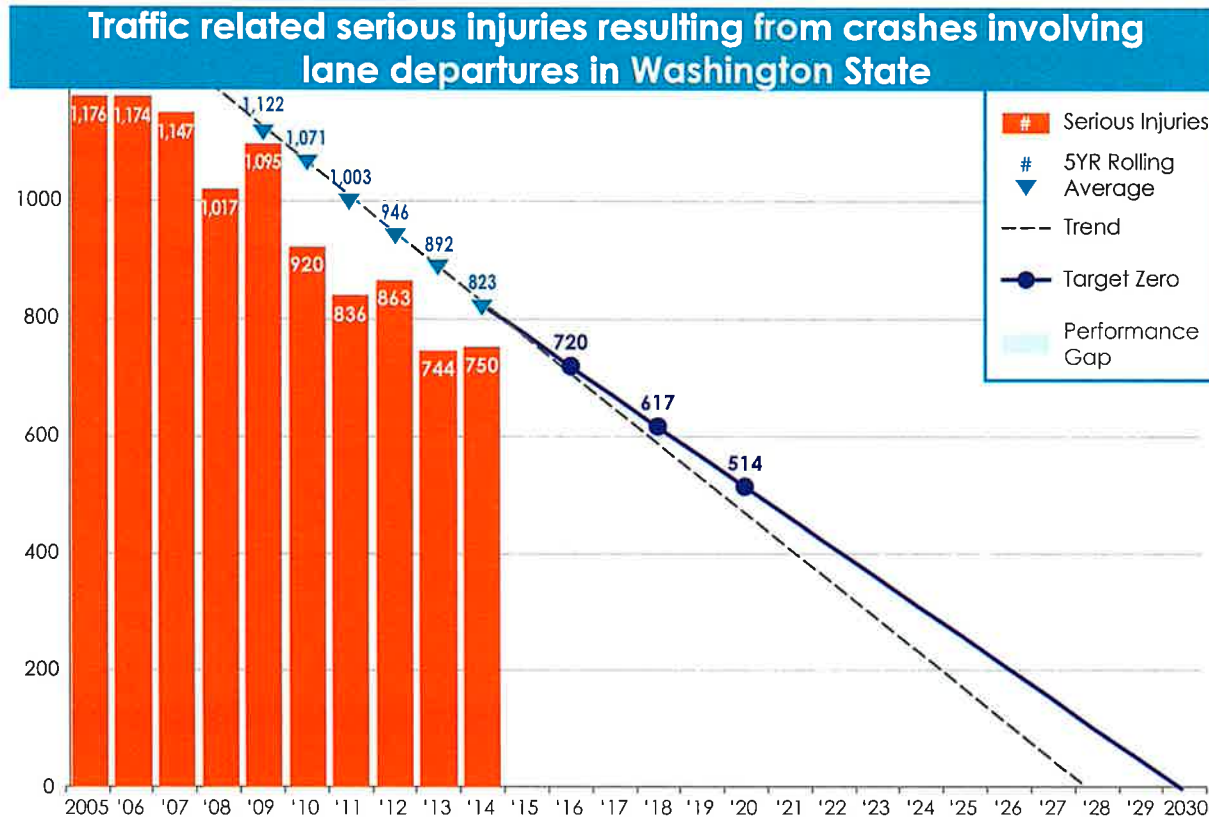
Serious injuries are not on a trend to achieve Target Zero by 2030, but the performance gap is small (one to two years).



What's New

Thirty-one of Washington's 39 counties have developed local road safety plans.

Engineers are implementing High Friction Surface Treatment (HFST) projects on state and county roads after a 2014 demonstration project.



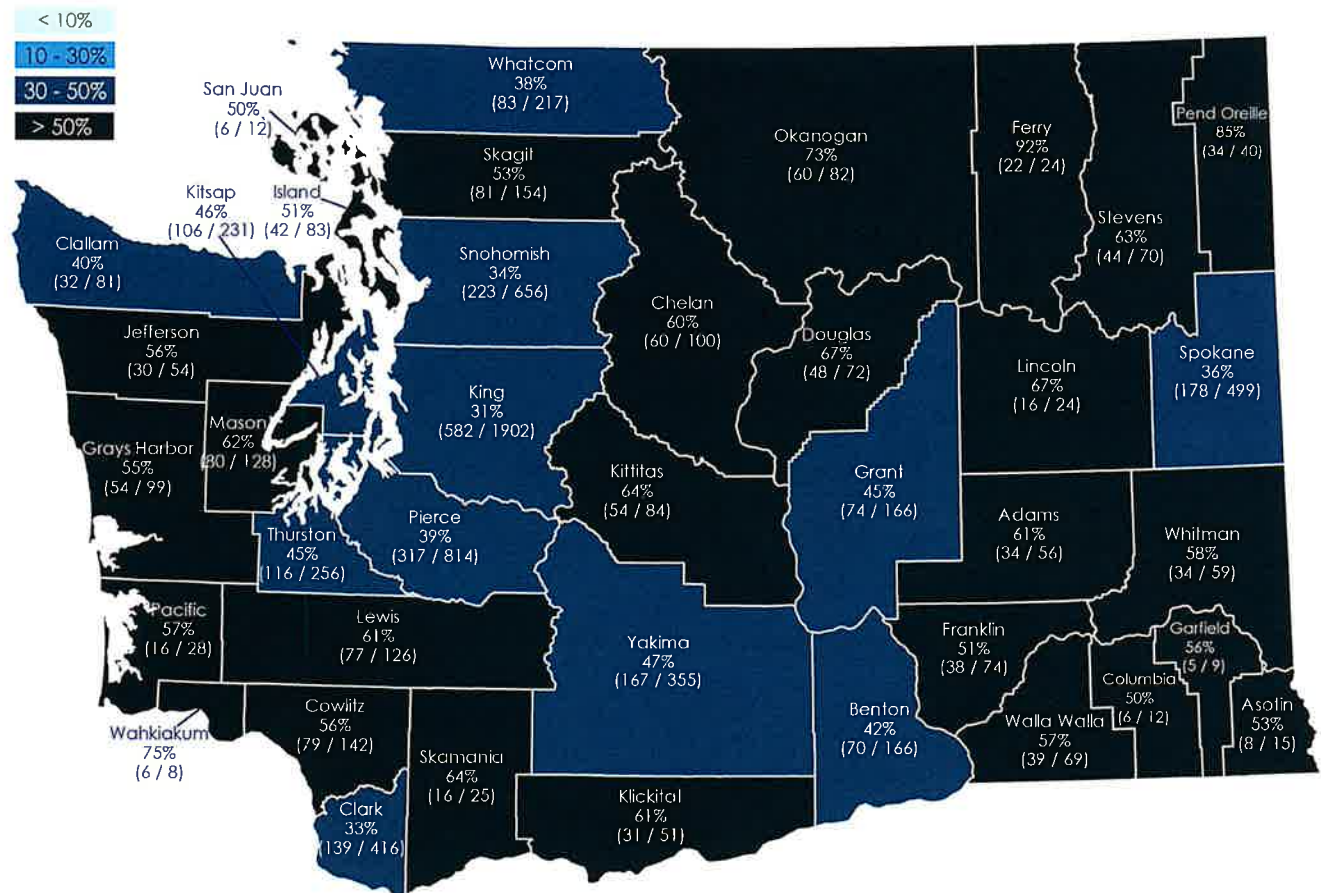
Since the 2013 Target Zero plan, there has been a 10% drop in lane departure fatalities and an 18% drop in lane departure serious injuries. This is twice the decrease in statewide fatalities (5%) and slightly better than the decrease in statewide serious injuries (15%). It is not certain at this time why these types of crashes have seen a more substantial decrease than the overall rate. Target Zero partners will be watching these numbers closely to see if the decrease continues, and hope to have analysis in the future if the trend continues.

Contributing circumstances and factors

Lane departure crashes have a substantial overlap (over 30%) with impairment involved crashes, speeding involved crashes, and young driver involved crashes. Lane departure crashes are over-represented in each of these crash types, as well as in unrestrained vehicle occupant crashes and drowsy driver involved crashes.

These crashes are also spread across all types of jurisdictions, but are over-represented on county roads (33% of lane departure fatalities, 29% of lane departure serious injuries) compared to all fatalities and serious injuries (29% and 24%, respectively).

Percent of all fatal and serious injury crashes that were lane departure related, by county (2012–2014)



Crash Type

Strategies for reducing lane departure (LDX) fatalities and serious injuries

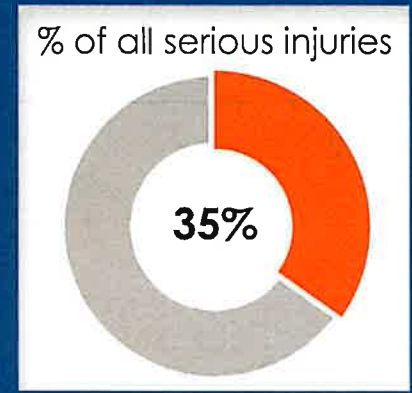
Objective	Strategies	Implementation Areas
LDX.1. Reduce opposite direction crashes	LDX.1.1 Install centerline rumble strips. (P, WSDOT)	Engineering
	LDX.1.2 Add raised medians or other access control on multilane arterials. (P, CMF)	Engineering
	LDX.1.3 Install median barriers for narrow-width medians on multilane roads. (R, NCHRP)	Engineering
	LDX.1.4 Improve centerline delineation by adding raised pavement markers or profiled center lines. (R, NCHRP)	Engineering
	LDX.1.5 Increase the widths of center medians where possible. (U)	Engineering
LDX.2. Reduce the number of vehicles leaving the roadway	LDX.2.1 Improve roadway signing and shoulder delineation, especially in curves. (P, NCHRP)	Engineering
	LDX.2.2 Improve roadway geometry. (P, NCHRP)	Engineering
	LDX.2.3 Increase road surface skid resistance (higher friction factor) using high friction surface treatments. (P, NCHRP)	Engineering
	LDX.2.4 Install center and/or edge line rumble strips. (P, WSDOT)	Engineering
	LDX.2.5 Install/increase illumination at locations with night time crashes. (R, FHWA)	Engineering
	LDX.2.6 Install optical speed markings at curves. (R, LIT)	Engineering
	LDX.2.7 Install delineation on fixed objects that cannot be removed from the clear zone. (U)	Engineering
	LDX.2.8 Install profiled center and edge lines. (U)	Engineering
	LDX.2.9 Install wider edge lines. (U)	Engineering
	LDX.2.10 Install dynamic curve warning signs. (U)	Engineering
LDX.3. Minimize the consequences of leaving the roadway	LDX.3.1 Install/maintain roadside safety hardware such as guardrail, cable barrier, concrete barriers, crash cushions, and others. (P, NCHRP)	Engineering
	LDX.3.2 Design safer slopes and ditches to prevent rollovers. (P, NCHRP)	Engineering
	LDX.3.3 Remove/relocate objects, such as trees and utility poles, in high risk locations in the clear zone. (P, NCHRP)	Engineering
	LDX.3.4 Implement safe urban street designs. (P, NACTO)	Engineering
	LDX.3.5 Implement roadway design to be consistent with the surrounding context. (R, NCHRP)	Engineering
	LDX.3.6 Remove or replace existing barrier that is damaged or non-functional. (R, FHWA)	Engineering
	LDX.3.7 Locate and inventory fixed objects inside the clear zone to support development of programs and projects to reduce the severity of run-off-the-road crashes. (R, WSDOT)	Leadership/Policy

P: Proven R: Recommended U: Unknown

Overview

Intersection related crashes are involved in 21% of statewide fatalities (276) and 35% of statewide serious injuries (2,129) from 2012–2014. Both fatalities and serious injuries have a performance gap, meaning they are not on pace to achieve Target Zero by 2030. The number of intersection related fatalities has remained relatively constant for most of the past decade. Serious injuries are on a steadier decline, but are not at a pace to achieve Target Zero on schedule.

Since the 2013 Target Zero plan, intersection related crashes have seen a 5% drop in fatalities and a 14% drop in serious injuries. This nearly mirrors the overall statewide numbers, which experienced a 5% drop in fatalities and a 15% drop in serious injuries.

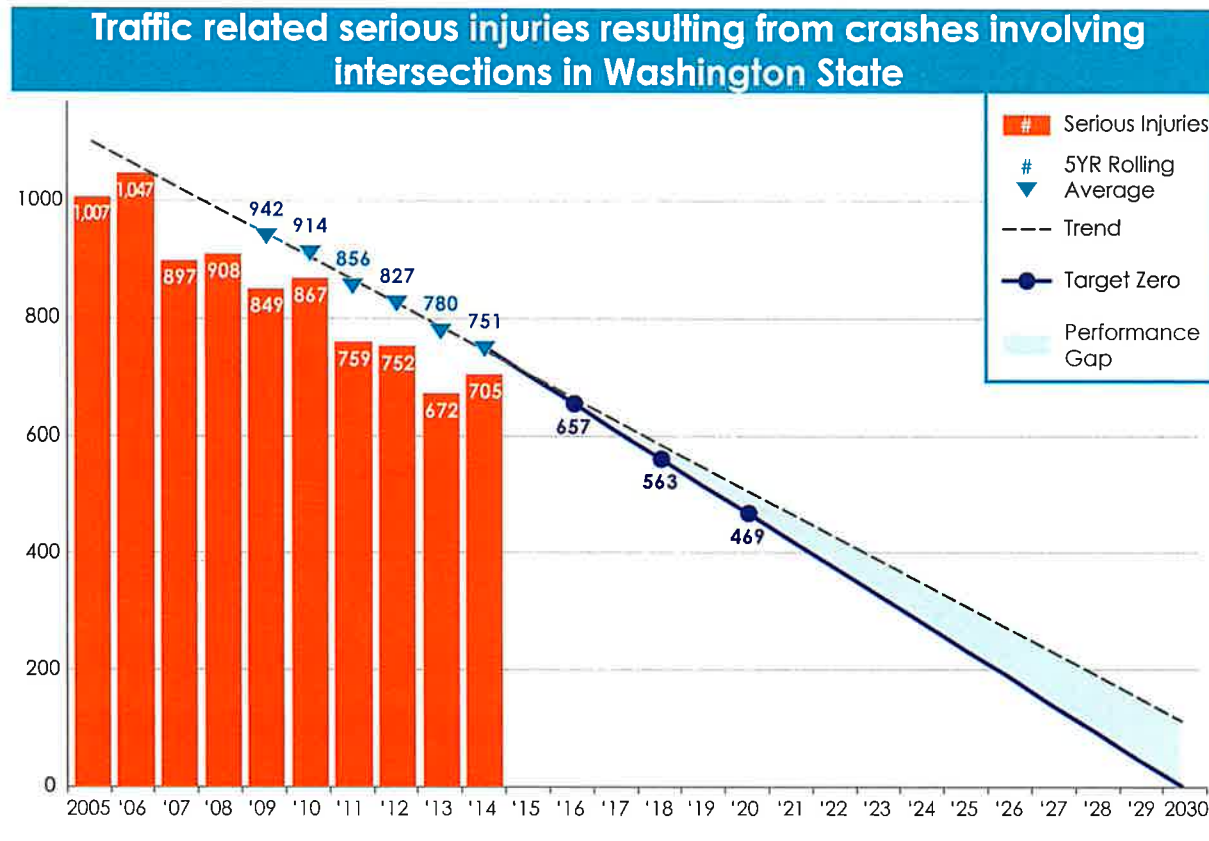


What's New

State, local, and Tribal governments are using retroreflective borders on traffic signals. This results in greater visibility for signals, especially in busy urban environments.

State, local, and Tribal governments all continue to install roundabouts, including the first few urban compact roundabouts in the state.

WSDOT has installed the first dynamic intersection warning systems in the state, providing real-time warnings to drivers at intersections with stop signs.



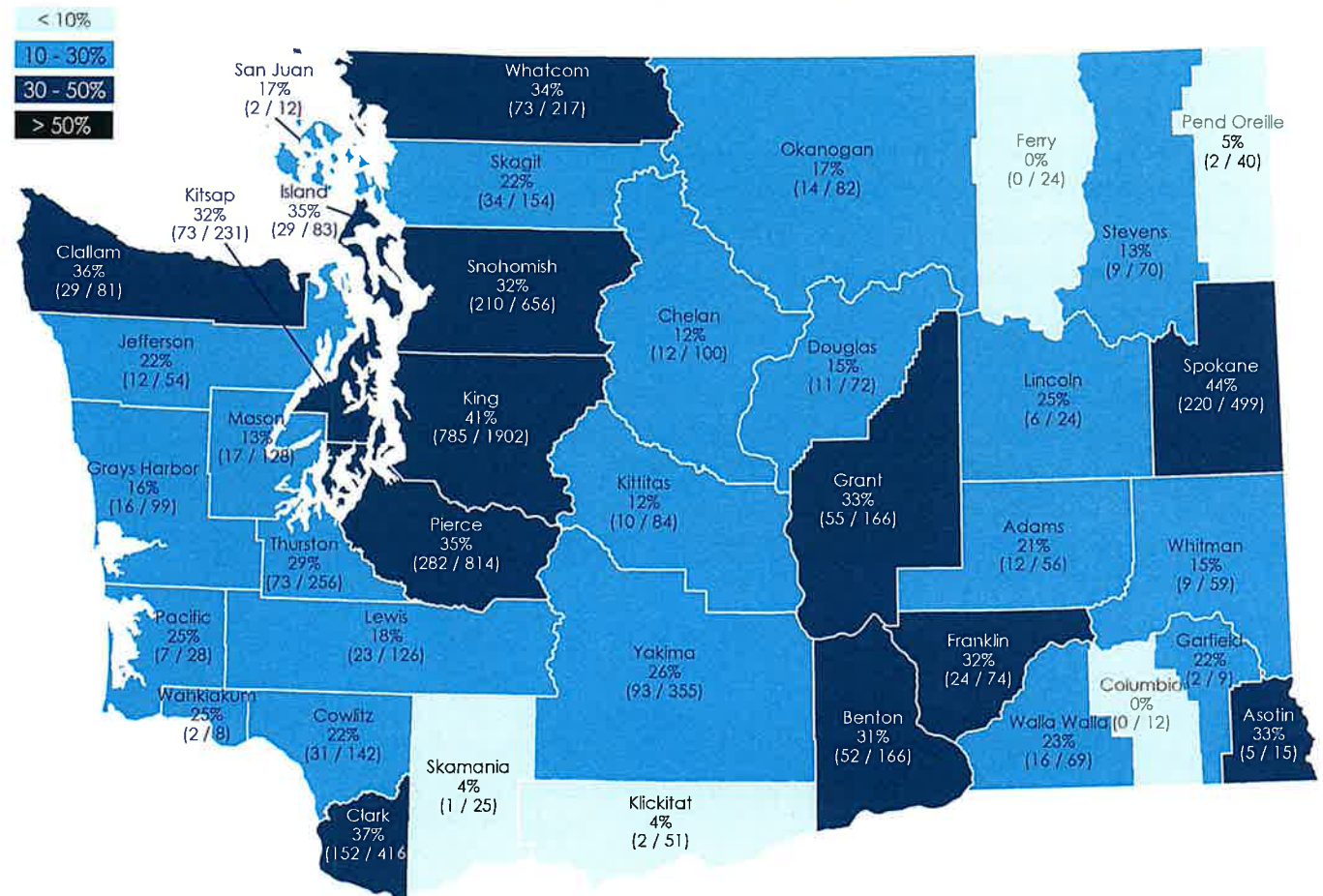
Contributing circumstances and factors

Intersection related crashes do not have a high overlap with other high priority emphasis areas in the 2016 Target Zero plan. The only emphasis areas that represent more than 1/4 of intersection related crashes are impairment, distraction, and young drivers, as seen in the infographic. When looking at the overlap of other factors with crashes, impairment is below the statewide proportion of fatalities (which is at 57%), distraction is slightly above at the statewide average of 29%, and young drivers are slightly below statewide averages of 32% of fatalities and 34% of serious injuries. This lack of overlap makes this emphasis area more independent to address and improve than most other emphasis areas in this plan.

Intersection related crashes are mostly found within cities, which from 2012–2014 had 64% of all fatal and serious injury crashes within their jurisdictions. State routes (outside cities) had 21% of these crashes, while county roads had 15%.

It is also worth noting that pedestrians, bicyclists, and older drivers are all overrepresented in their overlap with intersection related crashes. Intersections are one of the most likely places for pedestrian and bicyclist fatal or serious injury crashes. For both pedestrians and bicyclists, more than 1/3 of fatalities and more than 1/2 of serious injuries occur at intersections.

Percent of all fatal and serious injury crashes that were intersection related, by county (2012–2014)

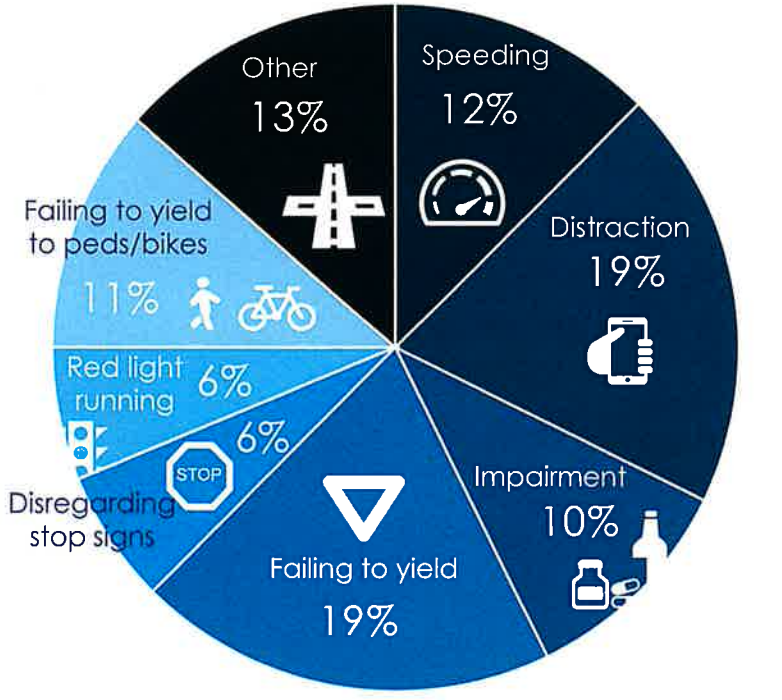
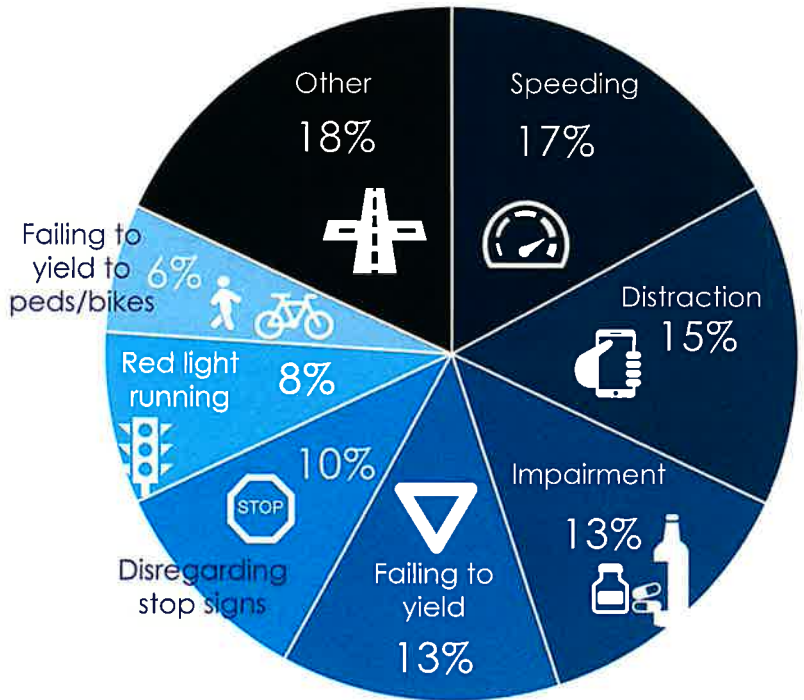


Crash Type



Intersection related fatalities
 (% of driver contributing circumstances)
 Washington State 2012–2014

Intersection related serious injuries
 (% of driver contributing circumstances)
 Washington State 2012–2014



The information in these charts represents the top driver contributing circumstances that led to the crash, as noted by the responding officer. This is similar information to the infographic on page 100, but it includes all possible contributing circumstances, not just Target Zero factors. This includes other factors such as failing to yield, disregarding stop signs, and red light running. This helps partners to better identify what it is we're trying to combat to reduce serious intersection crashes.

Strategies for reducing Intersection (INT) related fatalities and serious injuries

Objective	Strategies	Implementation Areas
INT.3. Improve driver awareness of intersections	INT.3.1 Redesign intersection approaches to improve sight distances. (P, NCHRP)	Engineering
	INT.3.2 Add back plates with retro-reflective borders to signals. (P, CMF)	Engineering
	INT.3.3 Provide advance warning of intersections using dynamic signal warning flashers or actuated advance warning dilemma zone protection systems at high-speed signalized intersections. (P, CMF)	Engineering
	INT.3.4 Improve visibility of intersections on approaches. (R, NCHRP)	Engineering
	INT.3.5 Improve visibility of signals and signs at intersections. (R, NCHRP)	Engineering
	INT.3.6 Install transverse rumble strips on intersection approaches. (R, NCHRP)	Engineering
	INT.3.7 Provide targeted public information and education about safety problems found at specific intersections. (R, NCHRP)	Education
INT.4. Reduce vehicle crashes involving pedestrians and bicyclists at intersections	INT.4.1 Improve safety at pedestrian crossings by installing refuge islands, scale lighting, and shortening crossing distances. (R, CMF)	Engineering
	INT.4.2 Expand targeted crosswalk enforcement and education for both vehicles and pedestrians. (R, CTW)	Enforcement, Education
	INT.4.3 Improve sight distances and/or visibility between motor vehicles and pedestrians at high risk and high volume pedestrian crossings. Move the stop bar farther back from the intersection, clear vegetation, extend crossing times, and implement pedestrian lead intervals. (U)	Engineering
	INT.4.4 Upgrade pavement markings using high visibility crosswalks and bicycle lanes. (U)	Engineering
	INT.4.5 Install bicycle lanes and bicycle boxes. (U)	Engineering
	INT.4.6 Implement Complete Streets to provide for all modes of transportation. (R, NCSC)	Leadership/Policy, Engineering

P: Proven R: Recommended U: Unknown

Crash Type

School Bus Involved

In Washington State 2012–2014, there were zero fatalities that involved a school bus. During this same time frame, school bus crashes accounted for 15 serious injuries, three of which were school-aged children: one school bus occupant, one automobile occupant, and one pedestrian. Although serious crash events involving school buses are rare, the state continuously monitors school bus involved crashes.

The Office of Superintendent of Public Instruction (OSPI) has overall responsibility for school bus safety. Statewide, five regional transportation coordinators liaison between OSPI and local school districts. The transportation coordinators assist with school bus driver certification, initial and continuing driver training, and development of guidance documents for school districts. The OSPI and regional liaisons also collaborate with the WSP's Commercial Vehicle Division (CVD) for executing annual, high-quality, and thorough school bus safety inspections.

In considering students' traffic safety, Target Zero partners are not just concerned with school bus riders. In February 2015, WSDOT, in collaboration with the WTSC, OSPI, and Department of Health (DOH), updated the state's School Walk and Bike Routes guide. This guide is used by school districts to develop, modify, and maintain safe school walk and bike routes.



Vehicle-Train

From 2012–2014, trains were involved in two traffic fatalities and five serious injuries. Highway-rail grade crossings are intersections involving two very different modes of transportation, with different sizes and speeds. In addition, these intersections are multi-jurisdictional, involving both highway and railroad authorities responsible for different aspects of design and maintenance. The Washington Utilities and Transportation Commission (UTC) has regulatory authority over public safety at these intersections.



The train involvement data in Target Zero is limited to fatal and serious crash events involving trains that also involved a motor vehicle and occurred at crossings accessible to the public. The UTC monitors all fatalities and injuries involving trains, including those occurring at private crossings, such as crossings at residential driveways or service roads, or on industrial properties.

The UTC's Rail Safety Program implements engineering, education, and compliance programs that reduce deaths, injuries, and property damage on or around railroads. The program oversees rail operations, protects railroad crossings, resolves complaints, ensures railroad employee safety, and funds rail safety projects. It also promotes public awareness in partnership with the national Operation Lifesaver Program.

WSDOT is also involved in vehicle-train safety. In March 2014, WSDOT published the *Washington State Rail Plan 2013–2035* to serve as a strategic blueprint for future public investment in the state's rail transportation system, including safety at crossings. The integrated plan provides short- and long-term funding strategies and meets federal and state requirements.

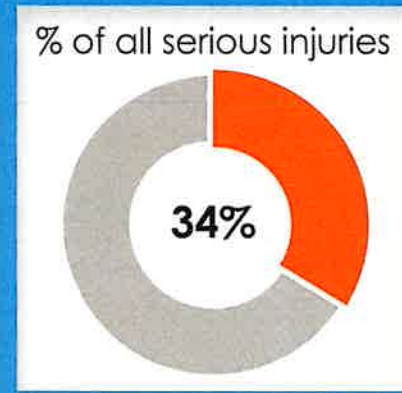


Certain road users are more susceptible to vehicle collisions. Some are types of drivers, such as younger and older drivers. Others are non-drivers who are inherently vulnerable in vehicle collisions, such as pedestrians and bicyclists. In this section of the Target Zero Plan, we analyze who these users of our roadways are, why they are more likely to be involved in fatalities and serious injuries, and how to safeguard them.

Overview

Young drivers fall into three distinct groups:

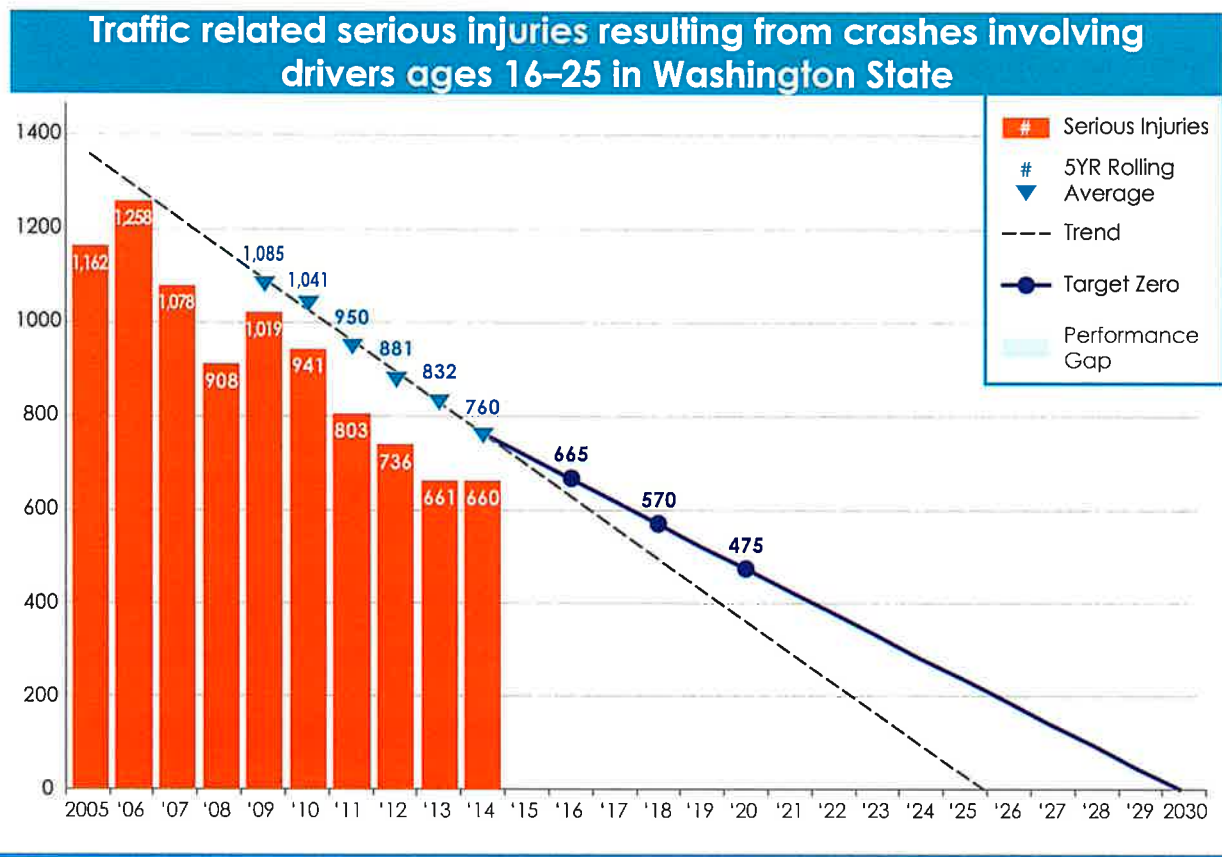
1. Newly licensed teen drivers under age 18. This group represents the largest number of newly licensed drivers annually in Washington.
2. Newly licensed drivers aged 18–20. These drivers often have not taken a traffic safety education course, which is not required for new drivers over 18.
3. Drivers aged 21–25, who often have driving experience but require special attention because they are of legal drinking age and are more likely to drive impaired.



What's New

DOL and WTSC created a new Action Council on Young Drivers to build on the successes of the Young Driver Task Force, develop legislative proposals, and increase public outreach.

DOL, in partnership with WTSC, driver training schools, and other traffic safety partners, is working to improve driver training and testing — an effort that will better prepare young drivers to handle hazards on the road and make safe driving decisions.

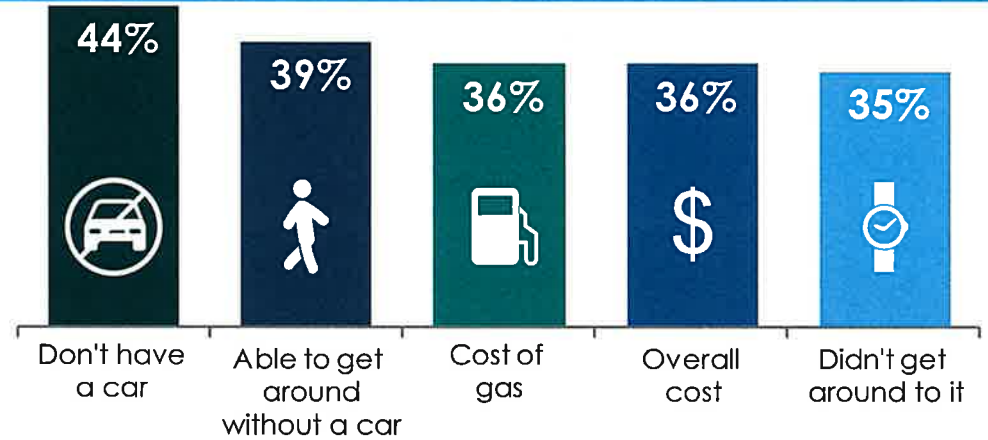


Drivers are waiting until age 18 to get their license

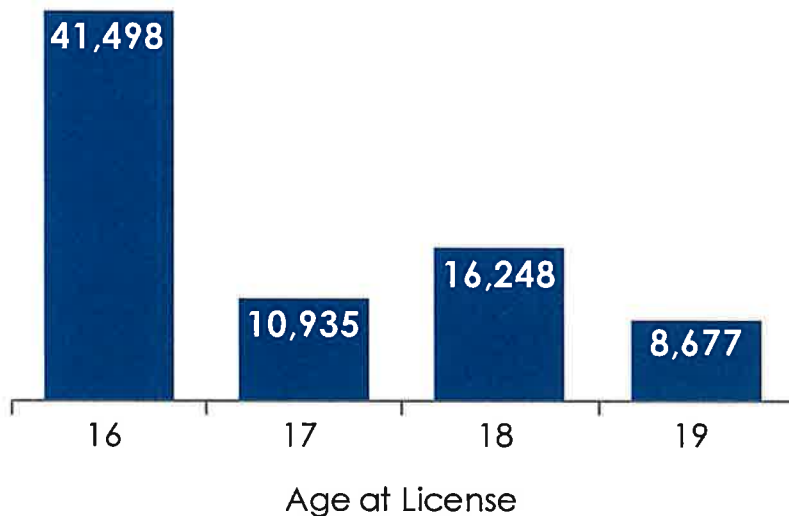
Continuing a trend noted in the 2013 Target Zero, a significant number of newly licensed drivers are waiting until age 18 to get their license. In Washington, intermediate driving restrictions and driver training requirements do not apply to drivers once they turn 18. Approximately 41,000 16-year-olds, 11,000 17-year-olds, and 16,000 18-year-olds obtain a first time license annually. About 9,000 19-year-olds obtain first time licenses each year.

A 2012 AAA Foundation study found that less than half of all teens were licensed within 12 months of the minimum age in their state, while 54% were licensed before their 18th birthday. Survey respondents gave several reasons for why they delayed getting their license.

Reasons drivers delay licensure until age 18 Washington State 2014



Newly licensed drivers Washington State 2014



Washington citation data shows that newly licensed drivers ages 18–20, who are not required to undergo the same training as 16–17 year olds, are some of the riskiest on the road. They are far more likely to receive traffic infractions within six months of driving, often the predictor of a future crash.

There are similar differences for those young drivers that die in a fatal crash within their first year of licensure.

Contributing circumstances and factors

Impairment is the greatest contributing factor in young driver fatalities.

Impairment was a factor in nearly 57% of all young driver involved fatality crashes in 2012–2014.

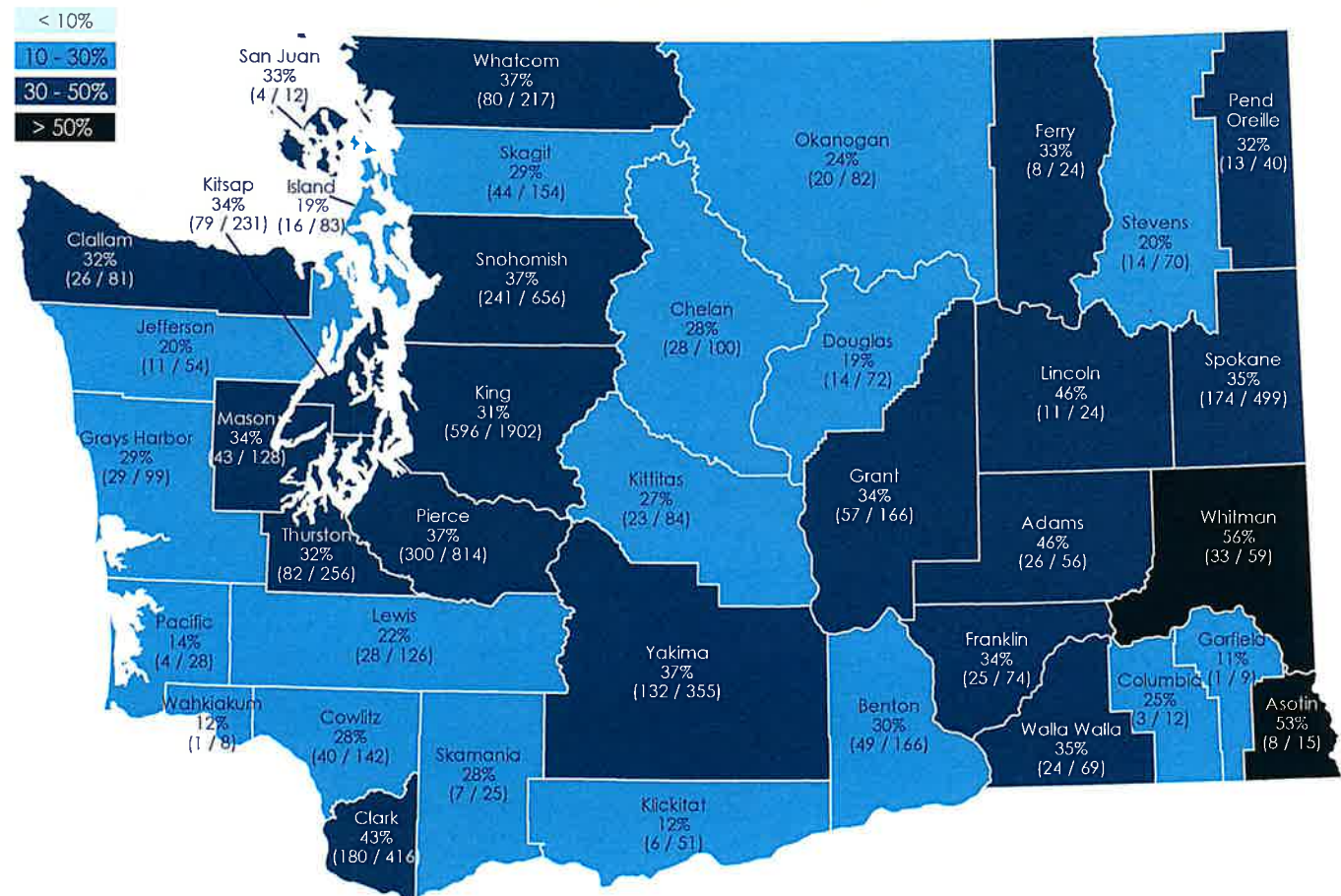
Male drivers 16- to 25-years old in particular are more than twice as likely to be impaired in fatal crashes as compared to 36- to 45-year-old men.

A closer examination of 2014 young driver fatalities reinforces the role impairment plays. As shown on the graph in the graph on the facing page, of those young drivers who died, the average age at death was 21, the legal drinking age, regardless of age at licensing.

Distracted driving also plays a significant role in young driver crashes

Distraction is another factor present in a significant number of young driver involved crashes. Just under a third of all their fatality crashes involved distraction, and just over 20% of all young driver involved serious injury crashes involved distraction. Even though the rates of distraction aren't as high as impairment or speeding, studies suggest that it's prevalent, as discussed in the distracted driving chapter. In a recent Washington Healthy Youth survey conducted in 2014, 59% of high school seniors reported riding in the car with a driver who was texting or emailing.

Percent of fatal and serious injury crashes involving young drivers, by county (2012–2014)

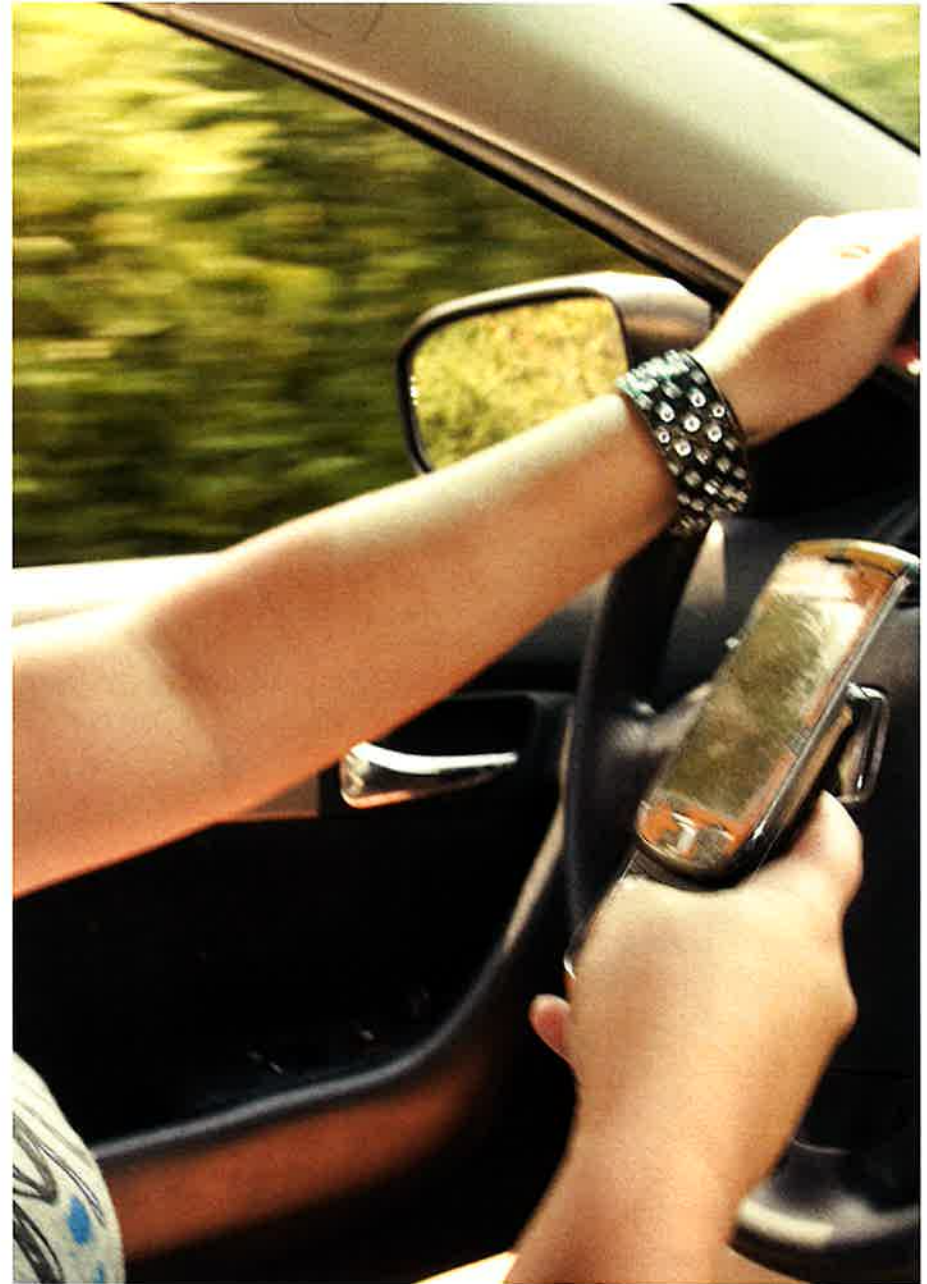


Young men are more likely to be impaired, and young women are more likely to be distracted, in fatal crashes

Gender differences are stark in young driver involved fatalities. Even though licensed drivers are about 50/50 male/female, just over 75% of all young drivers who died in 2012–2014 were male.

Gender differences are particularly prevalent when it comes to impairment. Both 16- and 17-year-old males and 18- to 20-year-old males were over three times more likely to be impaired in fatal crashes than their female counterparts. An even greater disparity exists with 21- to 25-year-old males, who are over five times more likely to be impaired than their female counterparts.

Female young drivers, on the other hand, drive distracted at a greater rate than their male counterparts. Sixteen- to 17-year-old female drivers involved in fatal crashes were more than twice as likely to have been driving distracted as their male counterparts.



Young passengers in the car pose a risk for young drivers

There is a direct correlation between the number of young passengers in a vehicle and crash risk. A 2012 study by the AAA Foundation found that having young passengers in the car with a young driver is a significant risk factor in crashes. That study found that just one passenger under age 21 increases a 16- or 17-year-old driver's risk per mile driven of being killed by 44%. Under current law, a driver under age 18 cannot drive with passengers who are under 20 years old during their first six months of driving, and they cannot drive with more than three passengers who are under 20 years old during the next six months of driving.

Programs and successes

Improving driver training and testing

Driver training sets the stage for a lifetime of safe driving. Nearly 60,000 people take driver training each year in Washington State. Since traffic safety education funding was decreased dramatically in 2001, a large majority of driver training in Washington has been conducted by private driver training schools. DOL regulates private driving schools, and the Office of Superintendent of Public Instruction (OSPI) regulates public school programs.

In 2013, DOL evaluated its curriculum, driver education, and testing standards relative to the Target Zero plan. Through this work as well as grant funding from WTSC, DOL has increased coverage of key subjects in its model driver training curriculum, expanded content in the Washington Driver Guide, and added new questions to the written knowledge test to ensure drivers have the knowledge they need to make safe driving decisions.

Washington State laws relating to young drivers

RCW 46.20.055 Instruction permit

RCW 46.20.075 Intermediate license

RCW 46.20.267 Intermediate licensees

Early warning letters are reducing subsequent infractions and crashes

In March of 2011, DOL began sending letters to all drivers aged 18–21 receiving their first moving violation. DOL implemented this program because data show a driver's chances of crashing doubles after receiving their first violation. Intermediate driver license holders already receive similar letters after violations or crashes.

The early warning letter is sent on the first day of the month the violation shows on the driver's record. The letter is intended only to provide advice and is not punitive. The goal of the letter is to make young drivers realize the risks associated with continued violations and reduce repeat offenses.

The data show the letter is making a difference. After a 22-month review involving more than 100,000 drivers, DOL found that the Early Warning Letter Program reduced secondary violations by 13%, which translates to 15,126 fewer infractions. DOL is continuing to evaluate the effectiveness of the program and is working to identify additional opportunities to reach high risk drivers.

Party Intervention Patrol addresses impairment and young drivers

Pierce and Thurston Counties have implemented Party Intervention Patrol (PIP) projects that use multi-jurisdictional law enforcement teams to locate underage drinking parties. This project uses the core components of successful intervention programs: alcohol screening and motivational interviewing.

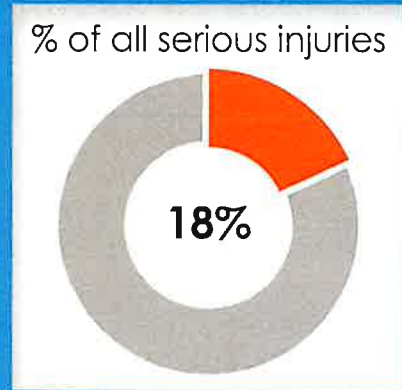
Immediate volunteer and professional support is provided to youths and their parents through an alcohol screening process known as brief intervention. Alcohol screenings and brief interventions, at a location other than the party, have been shown to successfully reduce future underage drinking (D'Onofrio and Degutis, 2004). Youth have the opportunity to meet one-on-one with chemical dependency professionals and receive referrals to relevant resources.

In advance of the PIP patrols, projects use media campaigns and news media outreach to publicize the patrols to both teens and their parents, in an effort to deter the behavior before it happens. Mass media campaigns are a proven countermeasure when combined with program activities. Alcohol compliance checks using underage decoys, citations, and rechecks of offending stores are also a part of the PIP program.

Strategies for reducing young driver involved (YDI) fatalities and serious injuries		
Objective	Strategies	Implementation areas
YDI.4. Improve enforcement of high risk behaviors among young drivers	YDI.4.1 Conduct statewide high visibility enforcement and media campaigns focused on young drivers. (U)	Enforcement, Education
YDI.5. Enforce compliance with the state's underage drinking law	YDI.5.1 Conduct well-publicized enforcement aimed at underage drinking parties. (R, CTW)	Education, Enforcement
	YDI.5.2 Publicize and enforce underage drinking and driving laws. (R, CTW)	Education
P: Proven R: Recommended U: Unknown		

Overview

The fatality 2030 trend line is flat, which means we're not on track to achieve our Target Zero goal. Declines among seriously injured motorcyclists are more promising; however, they are not quite on track to reach zero in 2030. One positive note: in 2014, the rate of fatalities relative to registered motorcycles was at its lowest point since 2005. This means that while the total volume of registered motorcycles — and likely ridership and exposure — has increased over time, the number of fatalities has stayed the same.



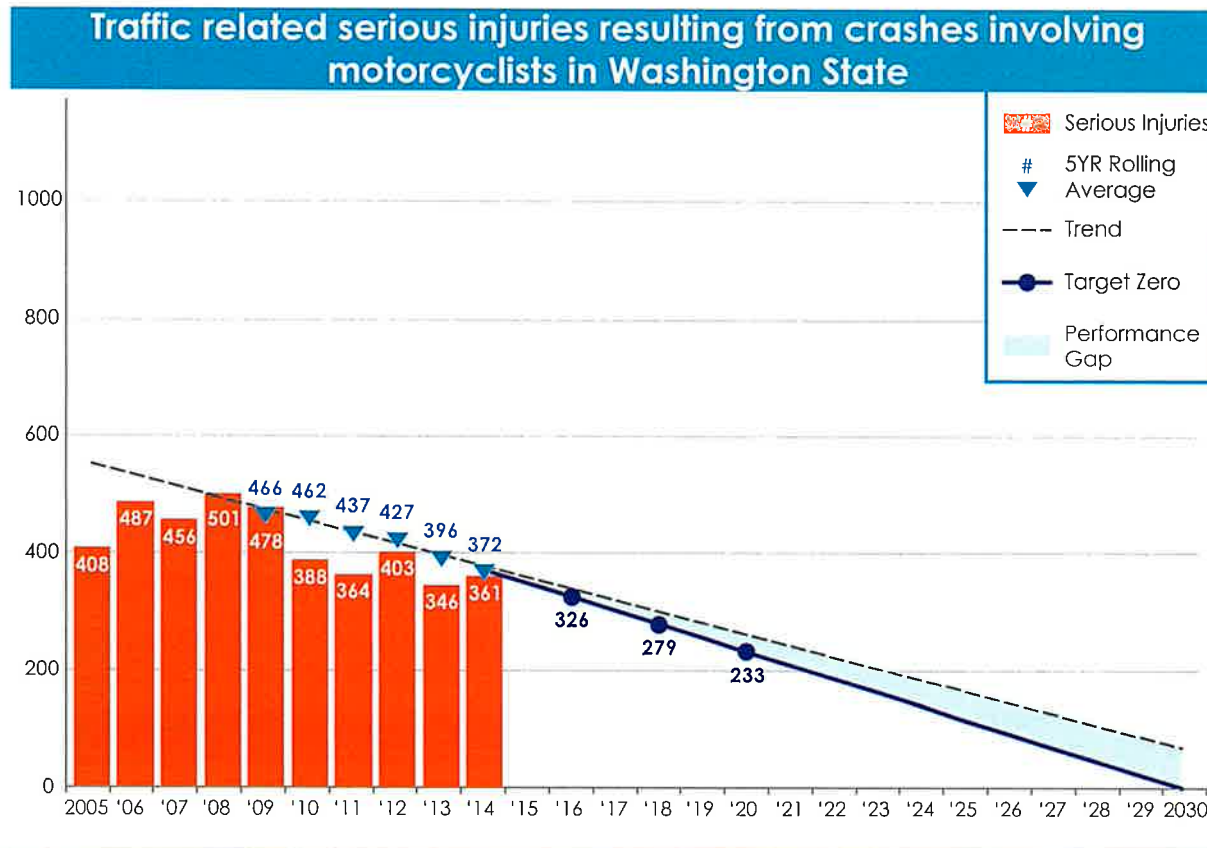
What's New

Sport bikes have increased in their proportion of fatal crashes. They are primarily ridden by younger operators who are more likely to be unendorsed riders.

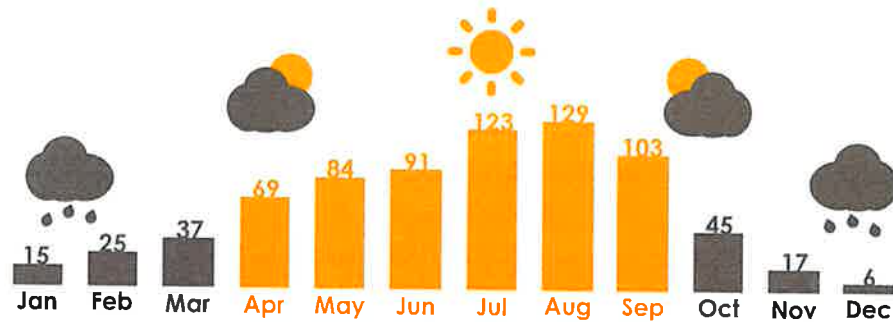
DOL recently produced a high-quality video "[Training is Everything.](#)" This video targets motorcycle riders and promotes the importance of initial and ongoing training.

The video makes a parallel between motorcycle riders and boat racers, athletes, and pilots, emphasizing the need for training to develop and maintain physical and mental skills.

Since 2012, DOL has been sending letters to registered motorcycle owners who lack endorsement, explaining that they need to obtain endorsement before riding. In the most recent letter mailing campaign in June 2015, the results showed that 1,743 (12% of those contacted) riders got permits and 918 (6.5%) became newly endorsed.



Motorcycle fatalities by month of year Washington State 2005–2014



This predictable pattern can be helpful in targeting messaging to riders about preparation for riding after long winters, as well as cautioning other drivers to watch for motorcycles in the busy summer months. The day of the week when most fatalities occur, Saturday, again shows us the recreational nature of most motorcycle riding. The time of day most common for motorcycle crashes are the rush hours of 5–6 p.m. — again posing important messaging opportunities for riders to take extra precautions and watch their riding during these especially dangerous times.

Criteria for inclusion in motorcycle fatality and serious injury data

- Motorcycle must have been riding on a state roadway, not off-road riding.
- Not competing in sanctioned races.
- Must have died as result of a crash— not other circumstances (heart attack, standing in traffic and being hit after crash, etc.).

Types of motorcycle rider certifications

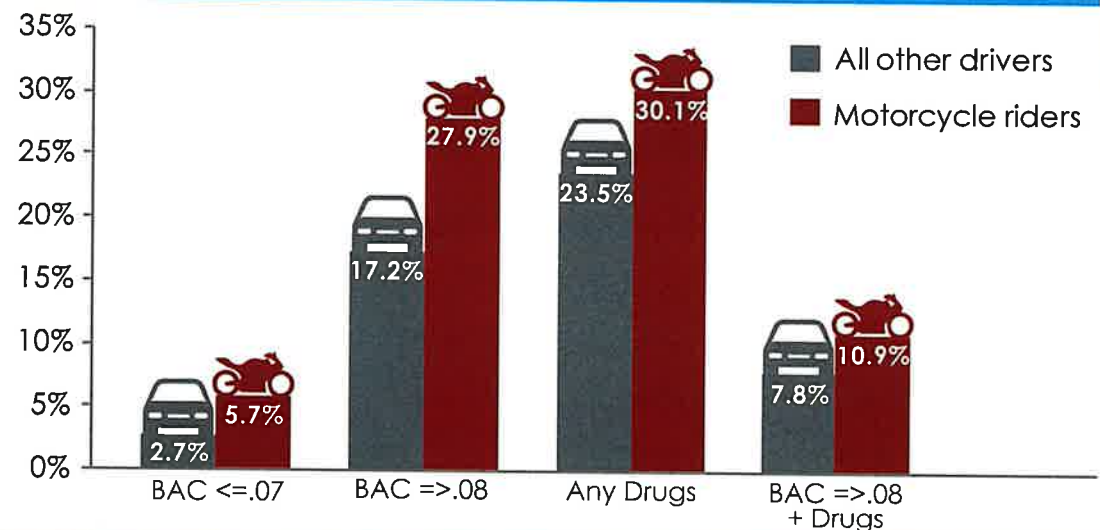
Certifications include either an endorsement or a permit. There are two ways to get a motorcycle endorsement:

- Successfully complete a motorcycle safety course at an approved motorcycle training school. The safety course includes the knowledge and riding skills tests.
- Pass the knowledge and riding skills tests without taking a safety course.

Preceding the endorsement is an optional three-month permitting step, to provide novice riders practice time prior to receiving the full endorsement.

Three-wheeled vehicles such as a sidecar or trike require a similar, separate endorsement process.

Impaired motorcycle riders compared to all other impaired drivers Washington State 2005–2014



Contributing circumstances and factors

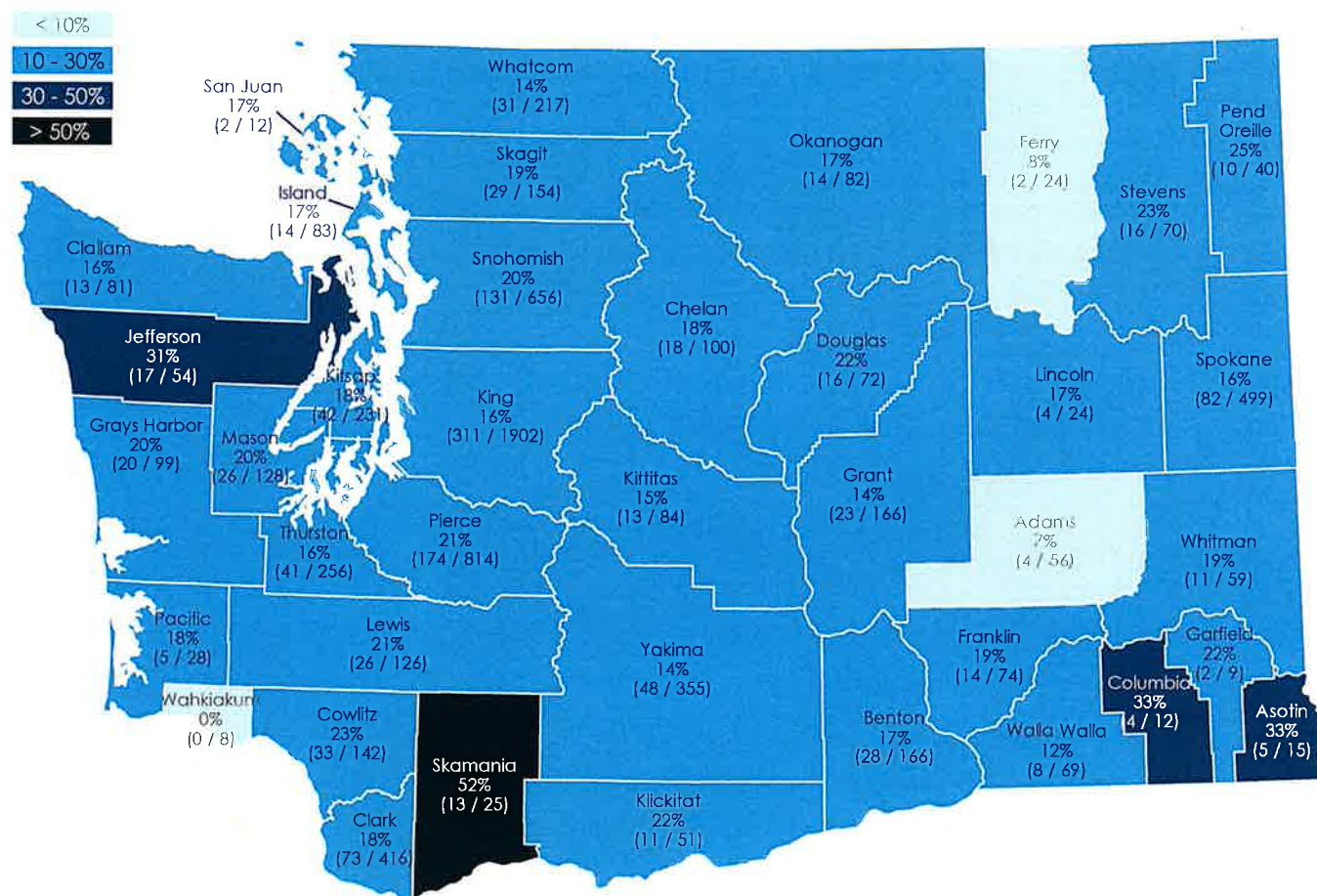
In this 2012–2014 review, motorcycle riders were more prone to both alcohol impairment and drug positivity than all other drivers. Clearly substance abuse is a larger problem for the motorcycle community and efforts to address that should be a priority.

Endorsement is legally required in Washington. Despite this, 36% of the fatal crashes involved unendorsed motorcyclists who chose to ride without the proper credential and without any formal training.

To gain the motorcycle operator endorsement on one's Washington State driver license, a rider can either pass a test by a licensed tester, or take a training course and receive a certificate of completion. Training is universally recognized as producing safer motorcycle operators, and the Motorcycle Safety Program at DOL strives to promote the training avenue for endorsement applicants. About 75% of fatal motorcycle crash victims have no record of a training program completion.

Washington has a strict law that requires all riders, regardless of age or motorcycle type, to wear a DOT compliant helmet. Only 8% of the riders involved in fatalities were not wearing helmets. Helmets are about 37% effective in preventing motorcycle deaths and about 67% effective in preventing brain injuries. This is important because there are annual challenges to Washington's helmet laws by advocates wishing the law repealed. To reach zero fatalities and serious injuries, it is important that this law stay in place.

Percent of all fatal and serious injury crashes involving motorcyclists, by county (2012–2014)



Road Users

Strategies for reducing motorcyclist (MCX) fatalities and serious injuries		
Objective	Strategies	Implementation areas
MCX.1. Reduce numbers of unendorsed and untrained riders	MCX.1.1 Collaborate with dealers and manufacturers to promote motorcycle training and endorsement. (R, NCHRP)	Education
	MCX.1.2 Increase number of riders participating in safety training. (U)	Education
	MCX.1.3 Provide training tuition incentives for riders' completion of training. (U)	Education
	MCX.1.4 Conduct targeted safety/endorsement media outreach and education. (U)	Education
	MCX.1.5 Conduct outreach to motorcycle registration owners who are not endorsed. (U)	Education
	MCX.1.6 Place emphasis on impoundment policy and education; change RCW 46.55.113 (2) from "officer <u>may</u> " to "officer <u>will</u> " impound. (U)	Education, Leadership/Policy
	MCX.1.7 Increase opportunities for motorcyclist field training. (U)	Education
MCX.2. Reduce numbers of impaired, unskilled, and unsafe riders	MCX.2.1 Lower the per se BAC limit for motorcycle riders from .08 to .05. (P, META)	Leadership/Policy
	MCX.2.2 Increase motorcyclist awareness of the risks of impaired motorcycle operation. Promote self-policing within the motorcycle community by expanding existing prevention programs, including at specific motorcycle events. (R, NCHRP)	Education, Leadership/Policy
	MCX.2.3 Re-establish a tiered endorsement program with specific endorsements based on motorcycle engine size. (U)	Leadership/Policy
	MCX.2.4 Implement re-testing for endorsement every five years. (U)	Enforcement, Leadership/Policy
	MCX.2.5 Require novice rider training (including knowledge and skills testing) to obtain permit. (U)	Leadership/Policy
	MCX.2.6 Implement mandatory on-street training and testing. (U)	Leadership/Policy
MCX.3. Increase rider safety awareness	MCX.3.1 Educate motorcyclists to increase their visibility to drivers by wearing bright reflective clothing. (P, CTW)	Education
MCX.4. Increase rider safety awareness	MCX.4.1 Support specialized law enforcement training in motorcycle DUI detection and motorcycle crash investigation. (R, CTW)	Education, Enforcement
	MCX.4.2 Increase use of WSP aviation for enforcement of high risk behaviors. (U)	Enforcement
	MCX.4.3 Mandatory motorcycle impound if riding without an endorsement. (U)	Enforcement
	MCX.4.4 Maintain resistance to proposals to law changes that work to repeal MC helmet safety standards. (U)	Education, Enforcement
P: Proven R: Recommended U: Unknown		

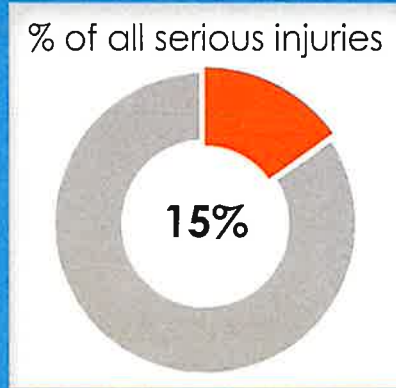
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Training saves lives: about 60% of endorsed riders take a training course prior to riding on their own; these trained riders are far less likely to be involved in fatalities, representing only 25% of those killed in motorcycle crashes.

Overview

Almost all Washingtonians walk on a daily basis, even if it's just between a parked car and a door. For the estimated 25% to 30% of Washington's population who do not drive, however, walking is a necessary means of transportation. This includes children, people with disabilities, the elderly, and those who either cannot afford a vehicle, or choose not to own one.



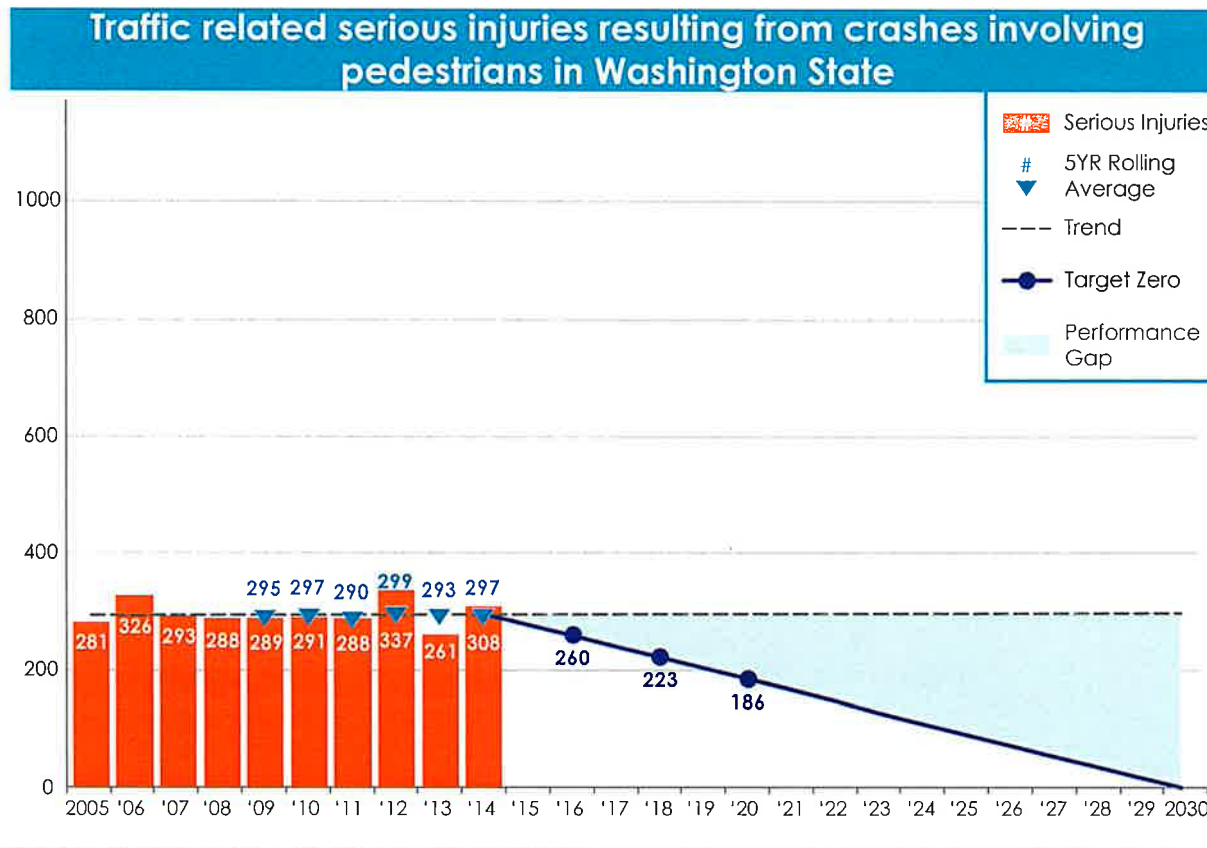
What's New

In 2015, the legislature passed a law to create a pedestrian fatality and serious injury review panel charged with using data to find pedestrian crash patterns that Target Zero partners can address.

WSDOT awarded \$30.2 million to 73 Pedestrian and Bicycle and Safe Routes to School projects for the 2015–2017 biennium, part of an all-time high for walking and biking safety investments in Washington. WSDOT plans to contribute another \$37.5 million in the 2017–2019 biennium for these programs.

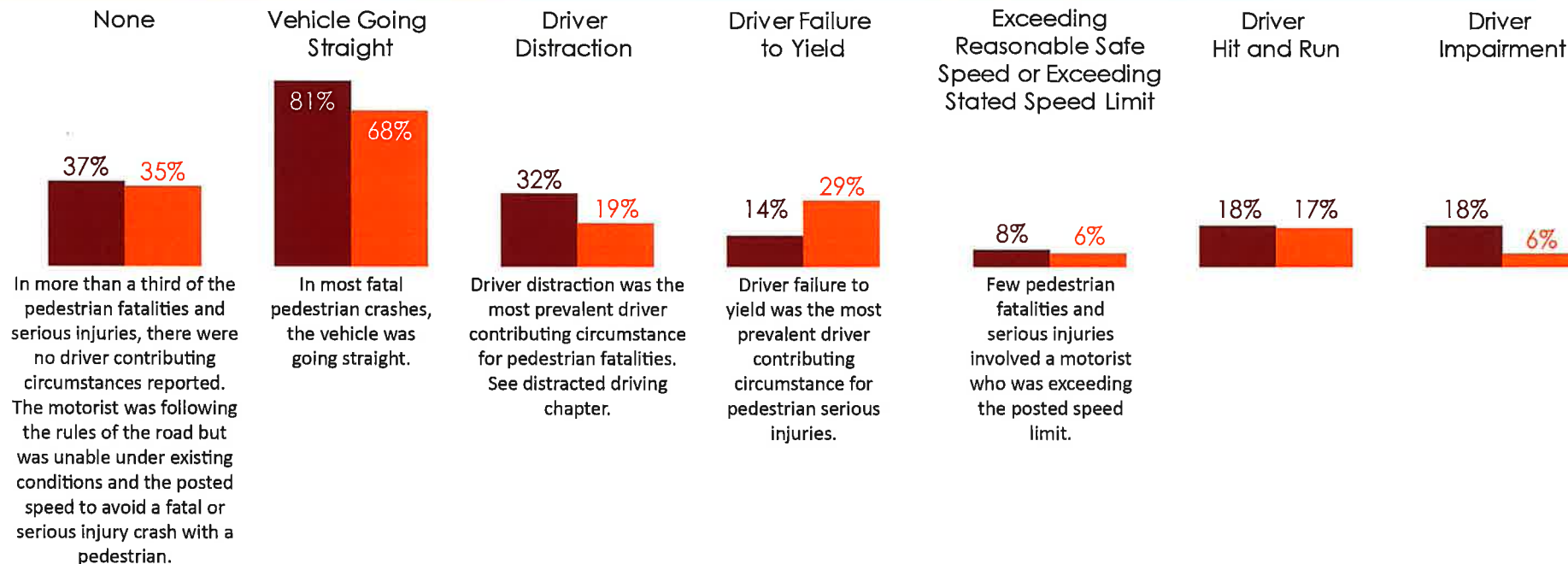
WSDOT has endorsed the Urban Streets and Bikeway Design Guides developed by the National Association of City Transportation Officials (NACTO). Work continues to expand multi-modal networks and reduce the design speed of roads, consistent with WSDOT's Strategic Plan.

WSDOT revised its design manual in November 2015, part of a formal policy change which embraces the NACTO guides. This included updates allowing for changes to our roads based more on the context and modal needs of the locations they pass through, rather than on a strict application of pre-determined design criteria. This makes it easier to take speeds into account for all road users.

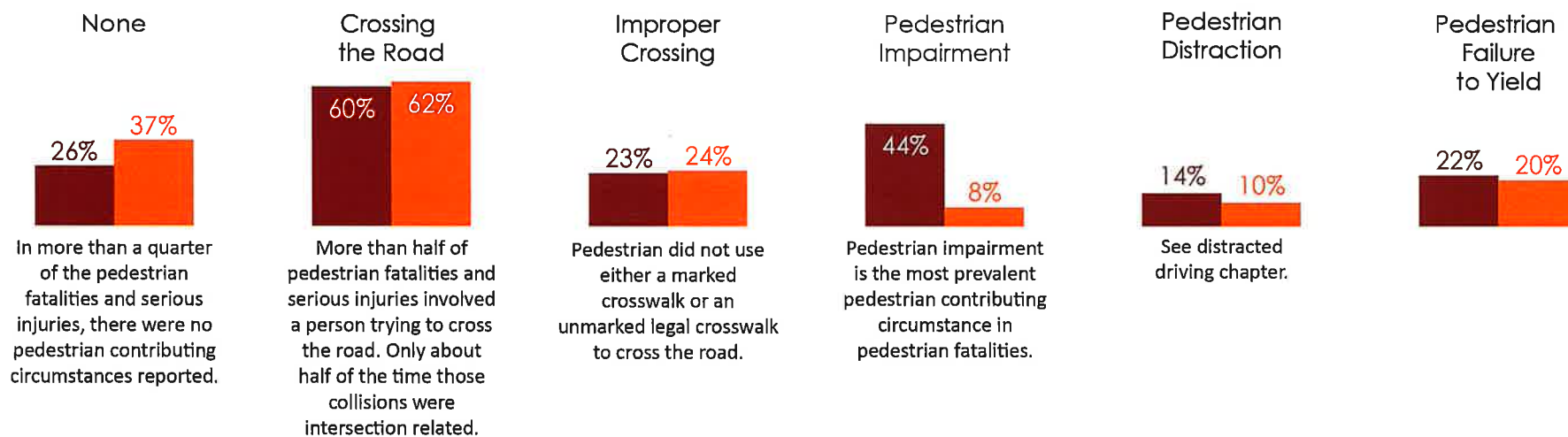


Driver actions and contributing factors (2012–2014)

Fatalities Serious Injuries

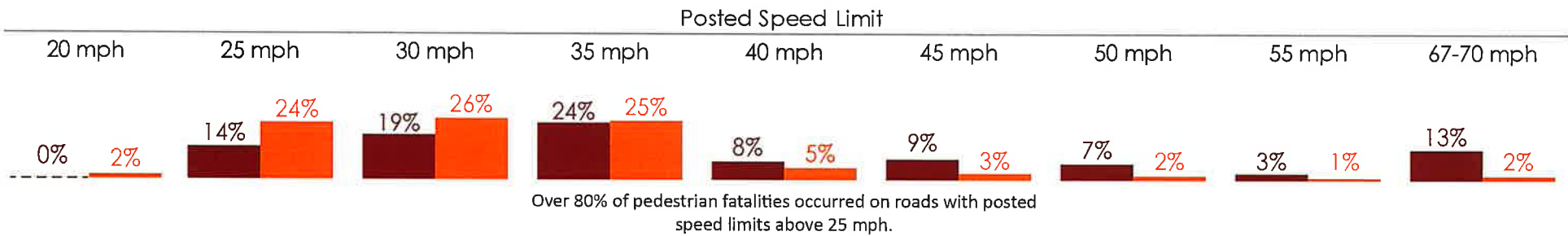


Pedestrian contributing circumstances, action or factors (2012–2014)



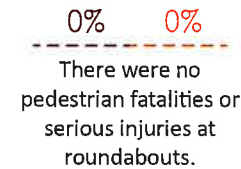
Roadway characteristic (2012–2014)

Fatalities Serious Injuries

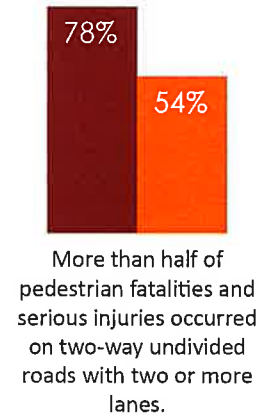


More investigation is needed to better understand how traffic control at the crash location is recorded, the role of traffic control at pedestrian crashes and how best to use the information to determine the types of places where more traffic control is needed.

Roundabout



Two-way Undivided Roadways



Road Users



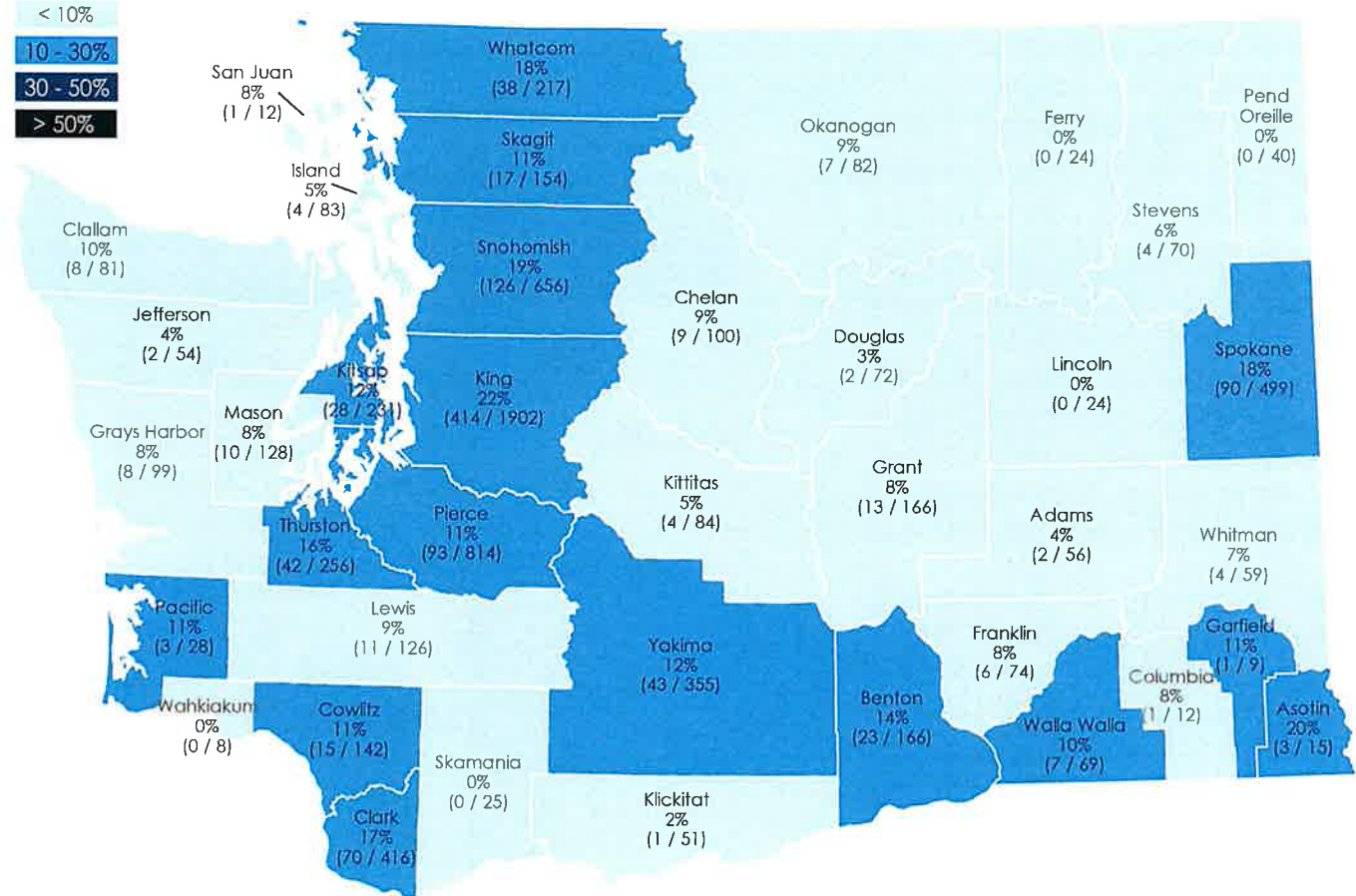
Contributing circumstances and factors

There are many variables involved in pedestrian fatal and serious injury crashes. The most common road characteristics of these crashes are a posted speed above 25 mph, and a lack of traffic control (no signals, stop signs, yield signs, or flashing beacons) at the location. The most common road type is a two-way undivided road with two or more lanes. The most common driver action is traveling straight ahead, and the most common pedestrian action is crossing the street. Other important contributing behavioral factors most often cited when there were pedestrian fatalities are driver distraction and pedestrian impairment.

Getting to zero pedestrian fatalities and serious injuries requires engineering that emphasizes how speeds, visibility, and roadway/roadside traffic features affect pedestrians. The challenge is in providing engineering improvements for pedestrian safety while meeting the needs of other road users and transportation priorities. A zero-based strategy will also:

- Use enforcement and education.
- Focus on those locations based on land use context where people are most likely to walk.
- Include consideration for an emphasis on countermeasures that reduce the likelihood of a pedestrian's death in the event of a vehicle/pedestrian crash. Ideally if a pedestrian makes a mistake, the consequences would not result in death or serious injury. A safe system approach does not place blame on the individual making the mistake; rather the system should attempt to address the potential consequence should error occur.

Percent of fatal and serious injury crashes involving pedestrians, by county (2012–2014)



For roads with speed limits above 40 mph, the most critical first steps are addressing the issues of separation, exposure, and reduction in conflicts. Addressing pedestrian crash and injury reduction on roads with posted speeds between 45–50 mph would include a more iterative approach, beginning with an emphasis on pedestrian/vehicle separation. For roads with posted speeds higher than 50 mph, other techniques to reduce the possibility of conflicts may be needed. Separate countermeasures will need to be developed for limited access roads. This is an area for further investigation to help pinpoint solutions. All of these efforts will be most successful if done in combination with education and enforcement to highlight the importance of lower speeds and to achieve compliance with the target speed limit.

Addressing road crossings for pedestrians

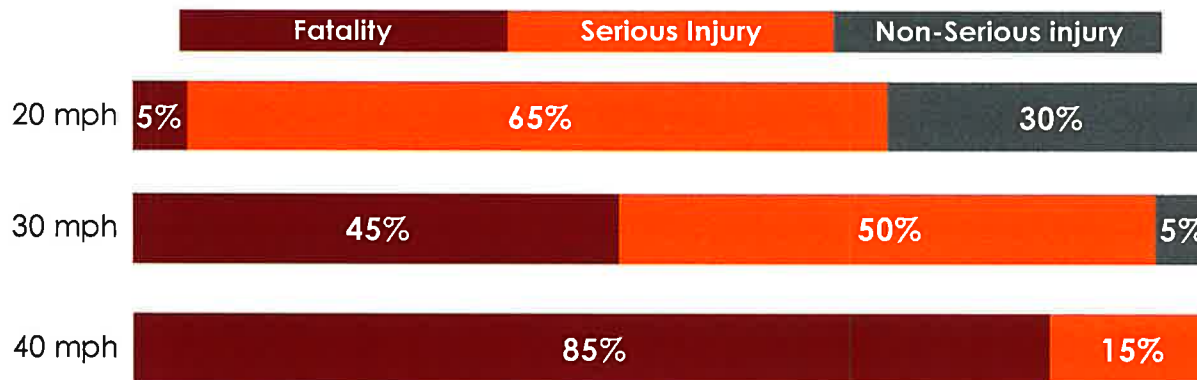
More than half of fatal and serious injury pedestrian crashes occurred while the pedestrian was crossing the street. Many of these were not at marked crossings. An increase in the frequency of crosswalks and increasing the frequency of use of these crossings by pedestrians will help to address these crashes.

Enhanced crosswalk treatments include:

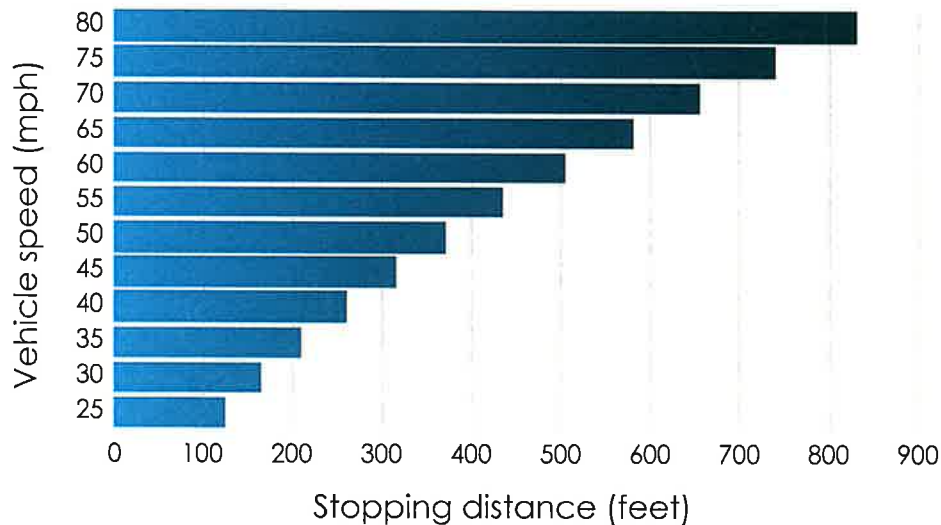
- Median islands.
- Rectangular rapid flashing beacons.
- Roundabouts are highly effective as they are designed to lower entering and exiting speeds, reduce pedestrian exposure with crossing islands, and provide clear views of pedestrians entering the roundabout. There were no pedestrian fatalities or serious injuries at roundabouts from 2012-2014.
- A traffic signal pedestrian phase leading interval, which allows for the pedestrian to get a head start into the intersection before the light turns green for the motor vehicles.
- A pedestrian “scramble” phase, which allows for the pedestrian to cross the street while all other traffic is stopped.
- Curb extensions.

Road re-configurations (also known as road diets, which reduce the number and/or width of travel lanes), reductions to turning radii, and right-turn-on-red restrictions are other measures that have been shown to reduce vehicle speeds and improve pedestrian crossing safety.

Vehicle Impact Speed and Pedestrian Injury Severity



Stopping sight distance based on vehicle speed



Source: Manual on Uniform Traffic Control Devices (MUTCD) - FHWA

Pedestrian visibility also affects likelihood of crashes

More than two-thirds (69%) of crashes involving pedestrians occur when visibility is less than optimal, such as during nighttime or dusk. The motorist must be able to perceive the pedestrian, recognize the importance of what she is seeing, and take action in time to avoid a crash.

Increasing visibility and conspicuity (the ease at which a thing is recognized) requires a combination of factors. Again, speed is critical: at slower speeds, pedestrians are better able to judge how long it will take for a vehicle to get to them and motorists are more likely to perceive and react to pedestrians in the roadway in time to stop. When traveling at a higher rate of speed, the eye needs to focus more, and a driver's ability to register what is happening in her peripheral vision wanes, as seen in the images on page 144. Visibility becomes more complicated in urban environments at higher speeds where there are more things to see, greater distractions, and more movement choices.

Pedestrians could lower their crash risk by better understanding what the motorist can see and by wearing reflective, higher visibility clothing. Educational efforts to make that shift have been ongoing for decades, but with little result.

Engineering efforts to increase visibility and conspicuity include the installation of more high visibility pedestrian crossing options and pedestrian scale illumination on the sidewalk and at those crossings. Traditional street lights do not always sufficiently illuminate pedestrians, making it difficult for motorists to anticipate pedestrians crossing the street. In addition, it is important that motorists and pedestrians are aware that street lights provide no improvement in visibility at dusk and dawn. Awareness efforts should be used to help all road users understand visibility limitations and what they can do to avoid a crash. As discussed in the vehicle technology chapter, future enhancements to vehicles will likely include pedestrian detection technologies, which could also have a significant effect in reducing crashes.



Programs and successes

Seattle school zone photo enforcement is convincing drivers to ease off on the pedal

The City of Seattle has invested in the installation of 14 school zone speed enforcement cameras. They selected sites based on speed and volume of traffic. Average violations cited per camera per day have steadily declined between December 2012 and December 2014.

Plus, 90% of people who were ticketed by these cameras never got another ticket, which means that the cameras are working to change behavior and make school zones safer. Revenue from violations was reinvested in additional school zone safety improvements.

“Stickman Knows” campaign improve traffic safety in Spokane

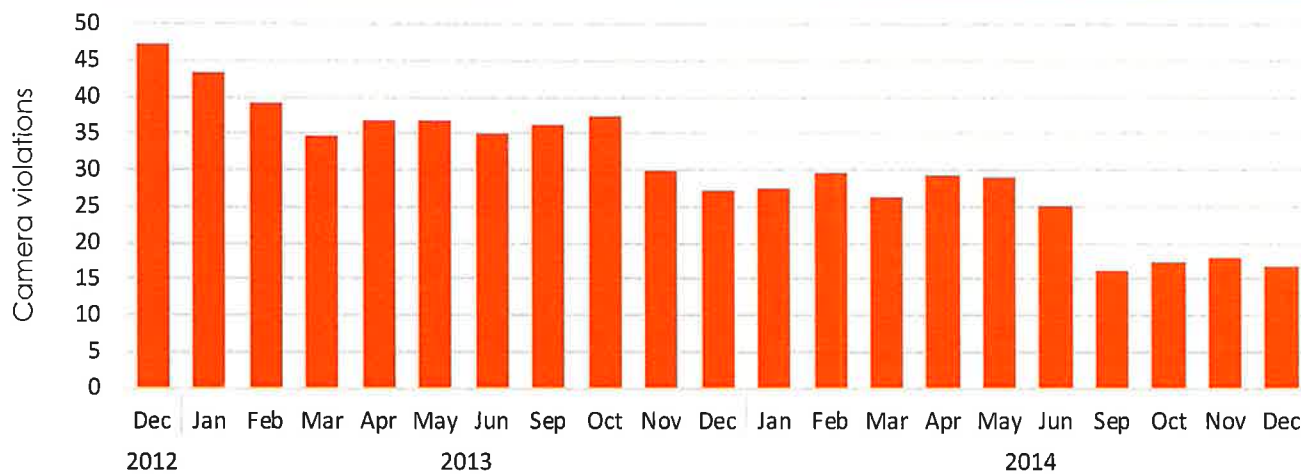
Spokane Regional Health District implemented the “Stickman Knows” safety education campaign, targeted to pedestrians, bicyclists, and motorists. The campaign emphasized traffic safety rules and tips for all users of the road to increase personal safety behaviors and reduce crashes. The media component included:

- TV commercials.
- Billboard and bus advertising.
- Print ads.
- Promotional items.
- Earned media.
- The presence of Stickman Knows at community events, in neighborhoods, and in school.

School zone speed safety camera program

Seattle, WA 2012–2015

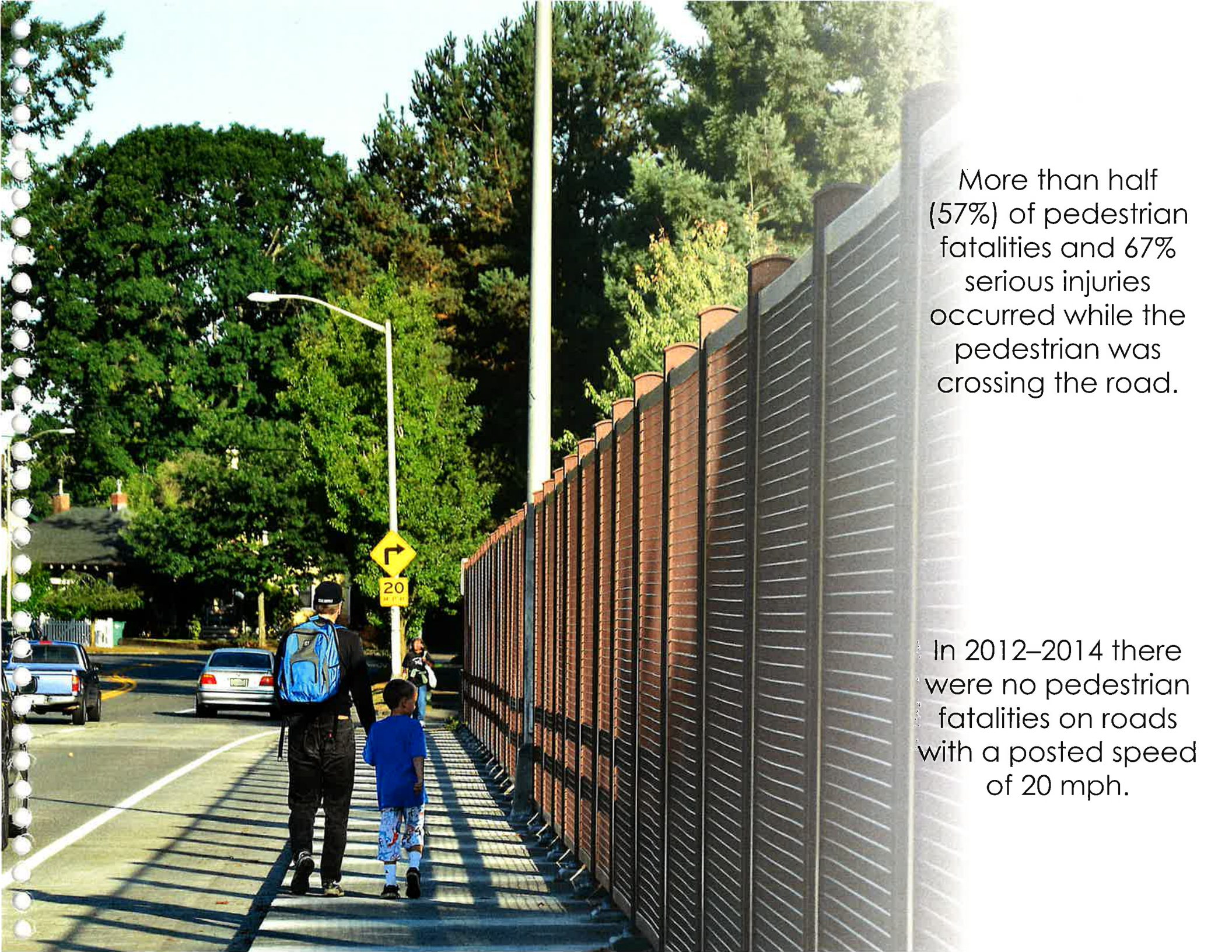
Average number of camera violations per camera, per day



Overall, the campaign was successful, with evaluations showing that residents who were exposed to the campaign know more about pedestrian, bicyclist, and motorist traffic safety. <http://www.stickmanknows.org/>

Strategies for reducing pedestrian (PED) fatalities and serious injuries

Objective	Strategies	Implementation areas
PED.1. Align vehicle speeds with the adjacent land use and context to reflect the needs of all users.	PED.1.1 Revise design practices to emphasize context and target speed to reflect the needs of all road users. (R) (P, AASHTO)	Engineering/Policy
	PED.1.2 Use roadway design features to change operating speeds to support reduction in posted speeds. (P, NCHRP)	Engineering
	PED.1.3 Use enforcement and speed feedback signs to help motorists change speeding behavior. (R, NCHRP)	Enforcement
PED.2. Improve pedestrian safety awareness and behaviors	PED.2.1 Promote the use of reflective apparel among pedestrians. (R, CTW)	Education
	PED.2.2 Educate pedestrians about the risks of distracted walking. (U)	Education
	PED.2.3 Conduct communication and outreach efforts, including using the proven Brief Intervention and Screening approach to contact crash-involved impaired pedestrians, as well as with law enforcement agencies, alcohol servers, social and health service providers to reduce impairment as a factor in pedestrian-involved crashes. (U)	Education
	PED.1.4 Increase public awareness of the significance of speed on pedestrian injury severity. (R, CTW)	Education
PED.3. Increase enforcement of laws pertaining to pedestrians	PED.3.1 Implement pedestrian safety zones, targeting geographic locations and audiences with pedestrian crash concerns. (P, CTW)	Education, Enforcement, Engineering
	PED.3.2 Expand targeted crosswalk enforcement and education for both motorists and pedestrians. (R, CTW)	Education, Enforcement
	PED.3.3 Improve training on pedestrian laws for law enforcement officers at state, Tribal, and local levels. (R)	Education
P: Proven R: Recommended U: Unknown		

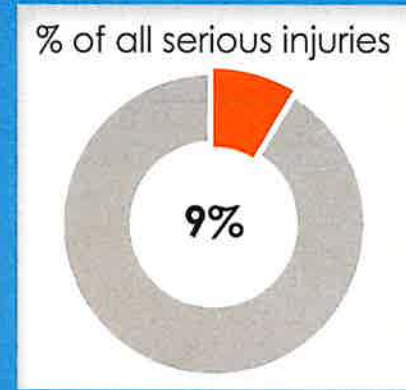


More than half (57%) of pedestrian fatalities and 67% serious injuries occurred while the pedestrian was crossing the road.

In 2012–2014 there were no pedestrian fatalities on roads with a posted speed of 20 mph.

Overview

Washington State will see an unprecedented growth in the 70+ age population over the next fifteen years. The expected 94% increase in citizens over 70 is going to impact the traffic safety community in many ways. Despite media alarm over increased fatalities and injuries, and amplified risks to all motorists on the road due to the graying of America, there is actually a great degree of nuance to the experience of older drivers.

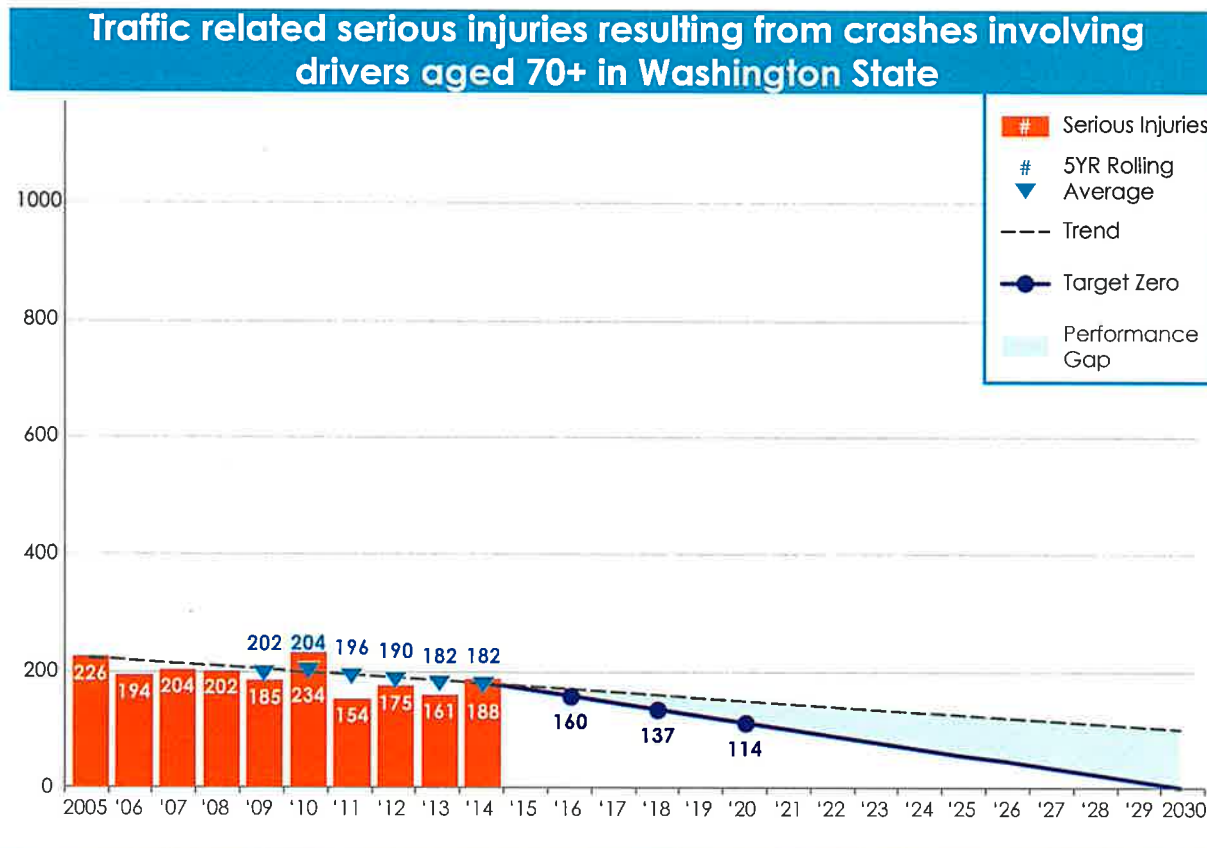


What's New

Target Zero partners changed the older drivers road user group from age 75+ in the last Target Zero plan to 70+ in this plan. The research shows that drivers 70 and older have elevated risk levels under conditions including driveways, alleys, and at intersections controlled by stop or yield signs. This age change moves the older drivers road user group from previous priority three to priority two in this plan rewrite.

The most recent national data indicate that the injury and fatality rate has improved for elderly drivers in recent years. Turning to the state level data, the trend is the same. While the older driver population has increased year after year, the number of older driver fatalities has been flat.

This is likely due to a host of factors including better assessment at license renewal, improved equipment in vehicles, ongoing outreach efforts to help elderly drivers improve their skills, improved emergency response, better road engineering, and improved average health standards.

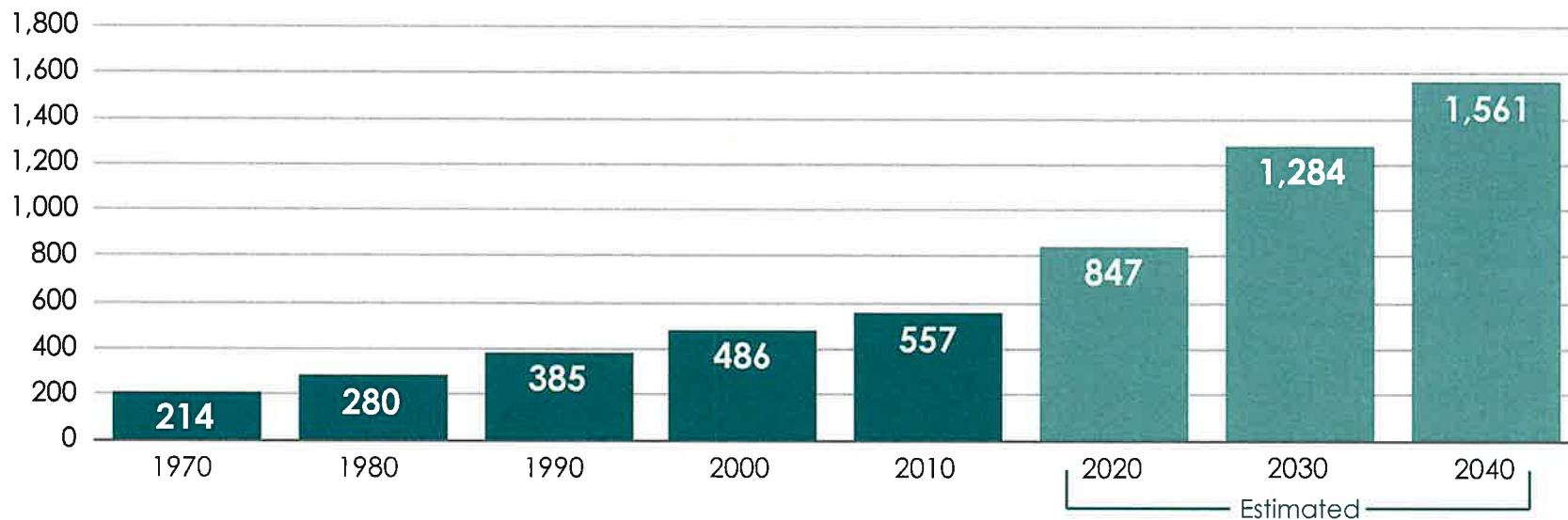


Elderly drivers choose to limit their own driving

As drivers age, they routinely opt not to drive. In Washington, drivers over 70 must renew their license in person at a licensing office instead of online. This gives Department of Licensing (DOL) staff an opportunity to see firsthand whether a driver's ability to operate a vehicle should be evaluated more closely. Although Americans are healthier and living longer than ever before, seniors are outliving their ability to drive safely by an average of seven to ten years. Most older drivers recognize and avoid situations where their limitations put them at risk. They drive less after dark, during rush hour, or in bad weather, and avoid difficult locations such as highways and intersections.

However, the proportion of the 70+ population who drives is likely to grow in the future. National-level research from University of Michigan's Transportation Institute (UMTRI) indicates for age group 16–44, there was a continuous decrease in the proportion of people with a driver's license from 1983 through 2014. For the age 70+ group, however, there was an increase in the proportion of persons with a driver's license from 1983 to 2011 — though followed by a slight decrease from 2011 to 2014 — due to better general health among that group. Washington State data shows a similar pattern. So not only will the total 70+ population of our state grow substantially in the next decade, members will be more likely to retain their driver's license than in the past.

Washington State population age 70 and over (in thousands)



Rates of older driver involved crashes have dropped

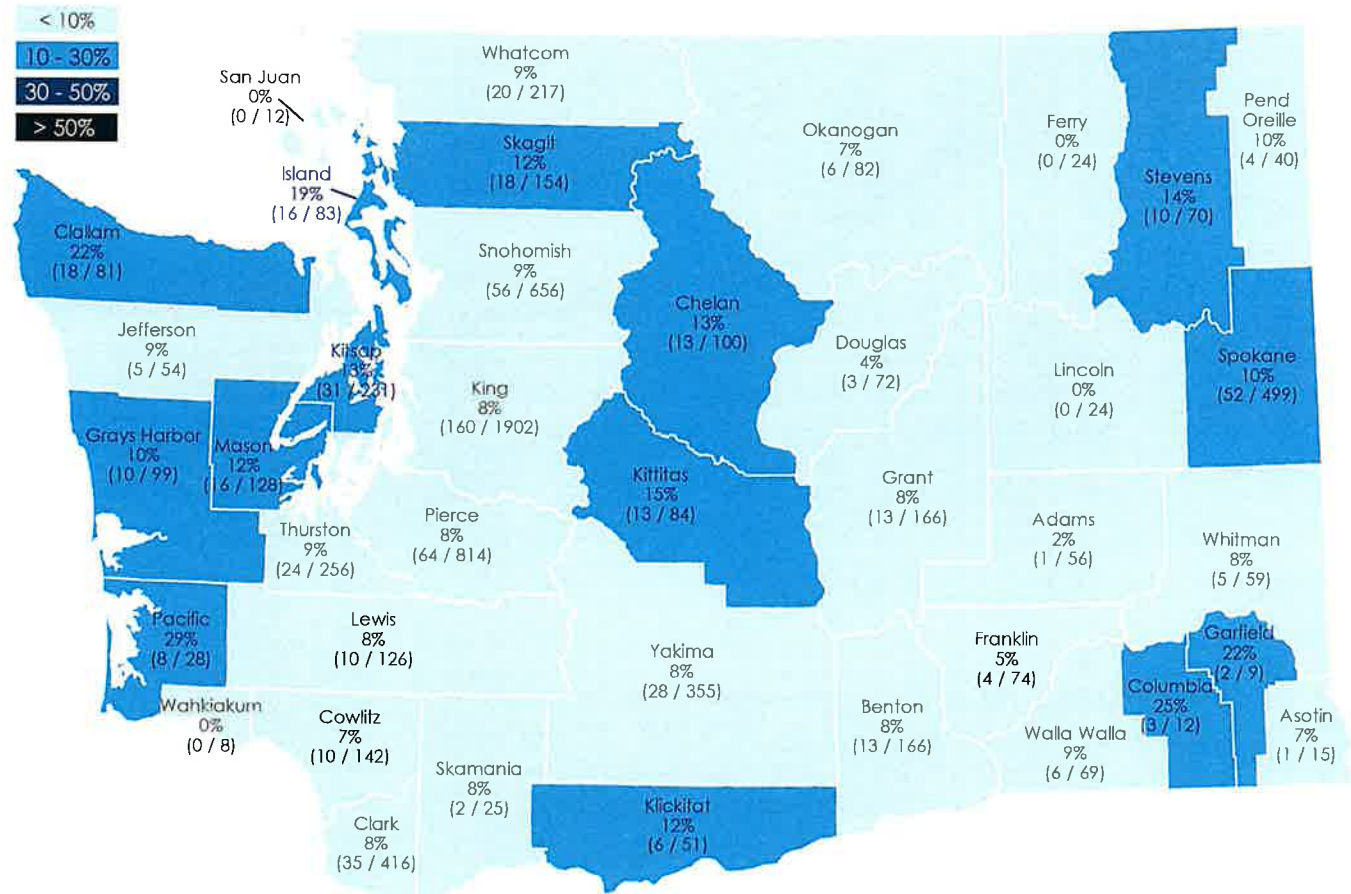
Along with voluntary surrender of their licenses, elderly drivers have reduced their number of fatal crashes in recent years, by both number of licensed drivers and by miles driven. A recent report from the Insurance Institute for Highway Safety (IIHS) compared trends for drivers ages 70+ with those for drivers aged 35–54 for national fatal passenger vehicle crash involvement. No matter how they looked at the fatal crash data for this age group — by licensed drivers or miles driven — the fatal crash involvement rates for drivers 70+ declined, and did so at a faster pace than the rates for drivers ages 35–54.

Contributing circumstances and factors

Yielding maneuvers, intersections in general, and left turns are especially problematic for the elderly. Distraction is also a big issue among older drivers: 24% were distracted in fatality crashes, and 17% were distracted in serious injury crashes. Further, the physical condition of elderly drivers makes them as much as five times as likely to die in a crash than younger drivers.

In the end, what we have is a population that is more often at fault in a crash, gets in relatively fewer of them than younger counterparts, has difficulty with recognition of danger due to diminished cognitive skills, and who is far more prone to be injured or killed compared to others.

Percent of all fatal and serious injury crashes involving older drivers, by county (2012–2014)



Road Users

Programs and successes

Highway design and traffic control for older drivers

Statewide, partners are implementing changes that can help the growing older driver population, among others. First, with the installation of roundabouts, road designers are working to remove the need to make left turns, a common source of fatal and serious injury crashes for older drivers. Further, converting permitted left turns from green circles to flashing yellow arrows helps avoid driver confusion that might lead some to assume they can go on the green without yielding. Finally, engineers are increasing sign sizes to make their messages clearer, especially those with diminishing vision such as older drivers.

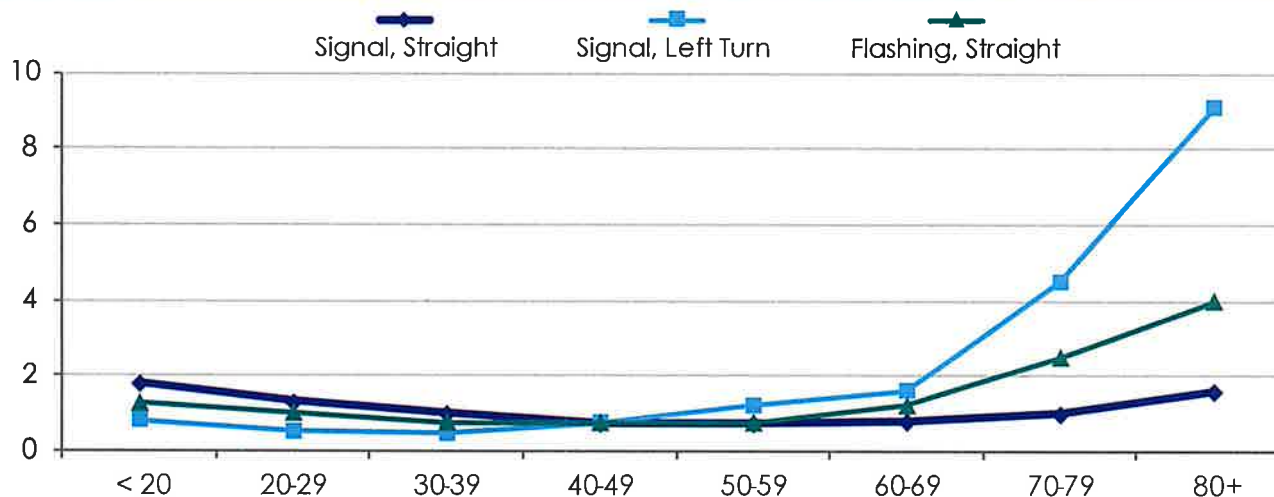
New defensive driving classes for older drivers

Older drivers may enroll in educational classes through programs such as AAA's "Senior Defensive Driving Program." These programs focus on high-risk situations all drivers face, as well as providing tips and techniques for addressing factors more typical with age. These include changing vision, reduced response times, and effects of various prescription medications.

Research on licensing for older drivers

DOL researched elderly driver crash data and policy approaches in other states. Based on this research, DOL has identified a series of recommendations that the agency can focus on to address the impacts of our growing elderly driver population. These include training DOL representative to watch for medical red flags, offering no-cost IDs for drivers over 65 who wish to surrender their license, and implementing shorter renewal cycles for elderly drivers, instead of the regular six-year cycle.

Fatality risk at intersections for two-vehicle crashes
National Crash Involvement Ratio (CIR) by age and vehicle maneuver

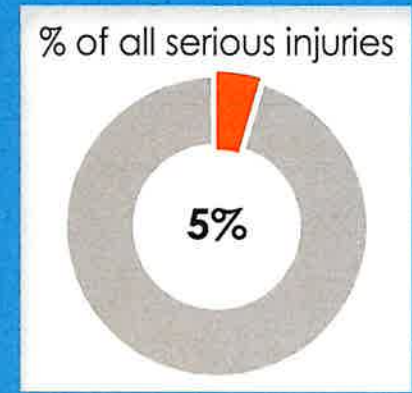


Source: NHTSA Office of Behavioral Safety Research



Overview

In 2012–2014, heavy trucks were involved in 122 (9.1%) of Washington’s traffic fatalities and 318 (5.2%) of the serious injuries. Analysis of fatal crashes involving heavy trucks during this time period showed that 59% of the crashes were caused by passenger cars and motorcycles. Heavy trucks accounted for 30%, and the remaining 11% were due to other causes. Fatalities increased by 21% during 2012–2014 when compared to 2009–2011, likely due to an increase in heavy trucks on the road.

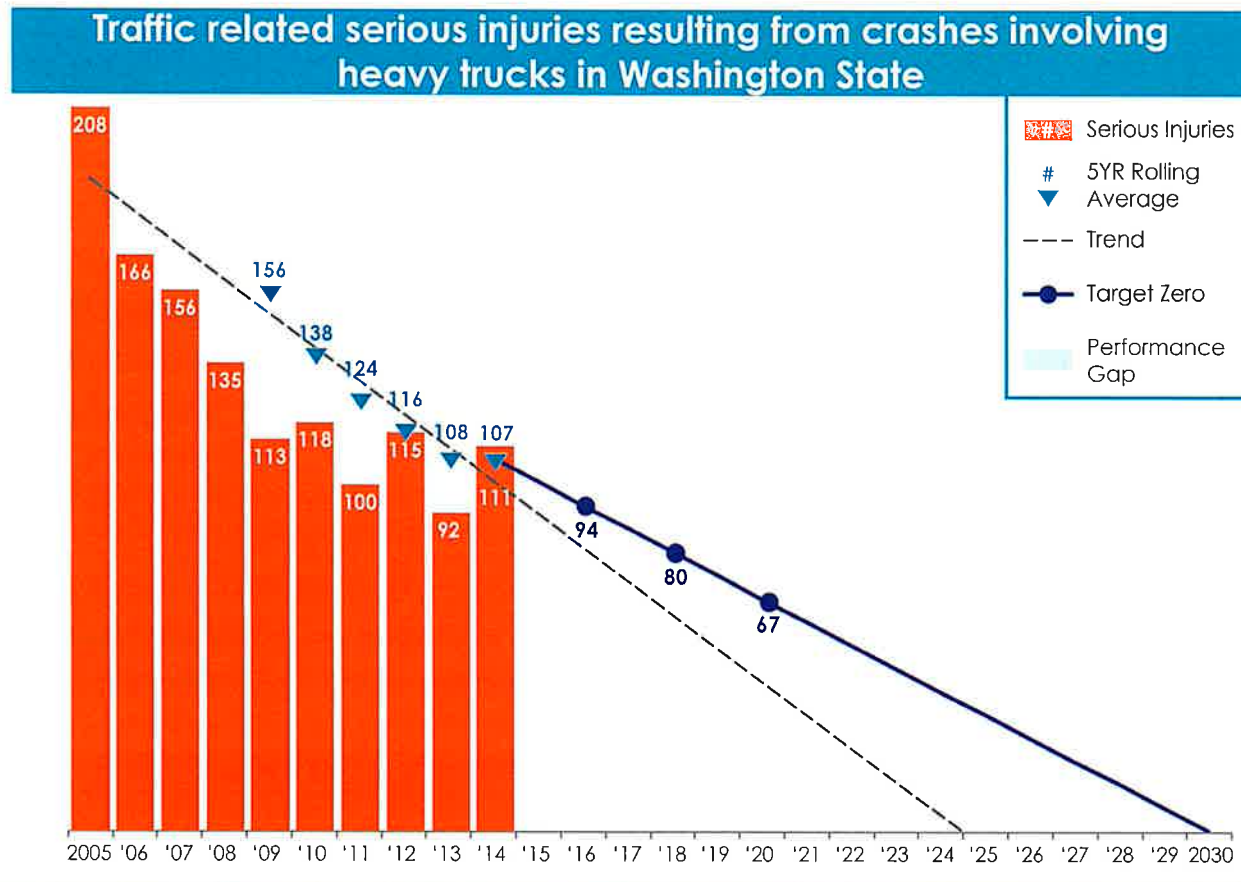


What's New

WSP has taken steps to reduce the number of heavy truck crashes in the state through the use of a data-driven deployment model.

The model analyzes crash data and uses this information to identify high crash areas, which allows for the deployment of law enforcement resources to focus efforts on crash-causing violations, such as aggressively driven passenger cars and heavy trucks, in order to reduce the number of fatalities.

For this edition of Target Zero, the data definition of heavy trucks was revised to be more inclusive of all types of commercial motor vehicles. The heavy truck numbers now also include any commercial vehicle classification for vehicles reported through a commercial vehicle supplement to the Police Traffic Collision Report (PTCR).





Fatigued driving emphasis on heavy truck drivers

Drowsiness makes drivers less attentive, slows reaction time, and affects a driver's ability to make decisions.

Although the known rate of drowsy heavy truck drivers in Washington State fatal crashes was 2%, we believe that this is underreported. The Large Truck Crash Causation Study (LTCCS) produced by the Federal Motor Carrier Safety Administration reported that 13% of heavy truck drivers nationwide were fatigued at the time of their crash. NHTSA has found a similar underreporting in their research. WSP focuses enforcement on fatigued heavy truck drivers by participating in four statewide fatigue driving campaigns each year. In addition, at the local level, officers use heavy truck crash data to develop location-specific efforts that focus on heavy truck drivers exhibiting driving behaviors such as inattention and fatigue.

Ticket Aggressive Cars and Trucks (TACT) Program

In 2005, the WTSC, in cooperation with WSP, the Washington Trucking Association (WTA), the Washington Association of Sheriffs and Police Chiefs (WASPC), and many other stakeholders, implemented a pilot project called Ticket Aggressive Cars and Trucks (TACT) in Washington. The TACT program uses education and enforcement to help car and heavy truck drivers share the road safely and reduce heavy truck related crashes. This successful program has now been implemented nationwide. In 2014, the nine WSP TACT officers assigned to the statewide TACT program contacted 12,176 drivers of all vehicle types, who committed the following moving violations:

- 2,614 driving aggressively
- 6,899 speeding
- 278 not wearing seatbelts
- 26 driving negligently
- 14 arrested for DUI
- Eight arrested for drug violations
- Five driving recklessly

In addition, TACT officers completed 872 roadside heavy truck inspections.

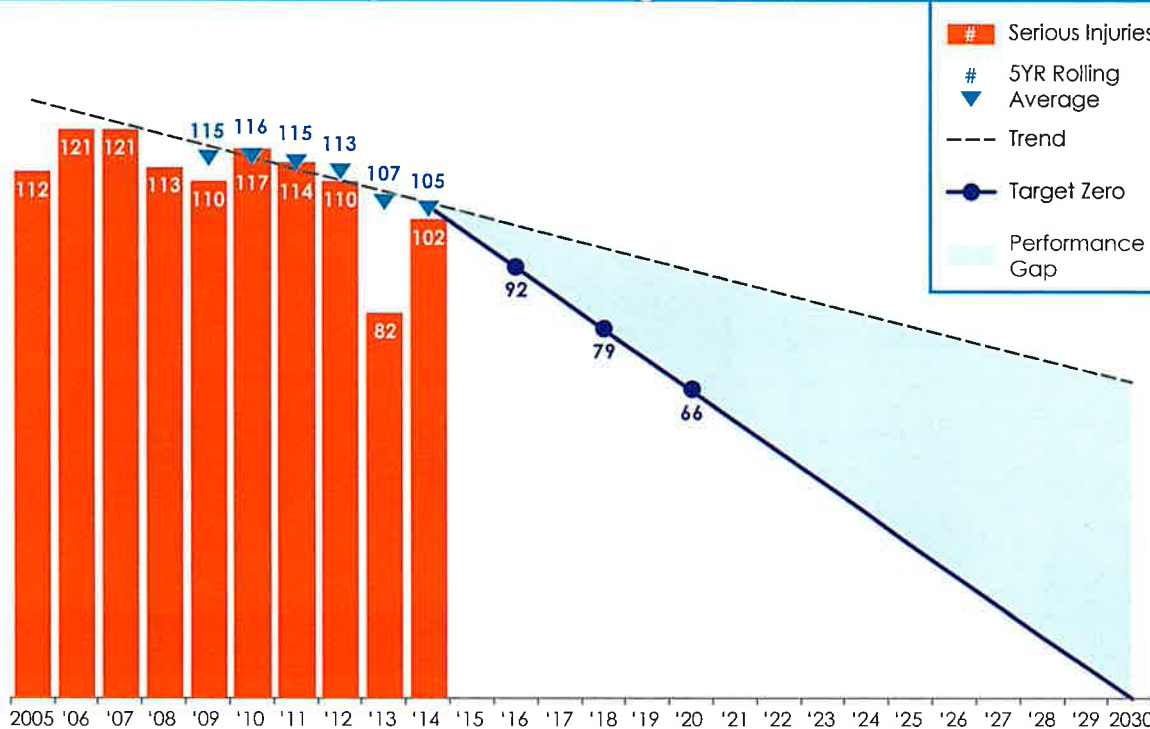


Overview

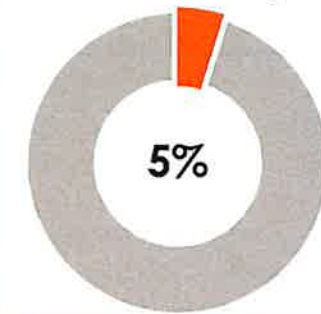
Like pedestrians, people who bicycle are more vulnerable than motorists. Due to the mass and speed differentials between bicycles and motor vehicles, bicyclists are much more likely to suffer severe injuries as motor vehicle speeds increase, regardless of the contributing circumstances.

Between 2012–2014 in Washington, there were 29 bicyclist fatalities and 294 bicyclist serious injuries in crashes with motor vehicles. Bicyclist fatalities represent 2.2% of total traffic deaths for this time period, an increase from 1.8% in 2009–2011. The number of bicyclists seriously injured decreased by 14%, from 339 in 2009–2011 to 294 in 2012–2014.

Traffic related serious injuries resulting from crashes involving bicycles in Washington State



% of all serious injuries



What's New

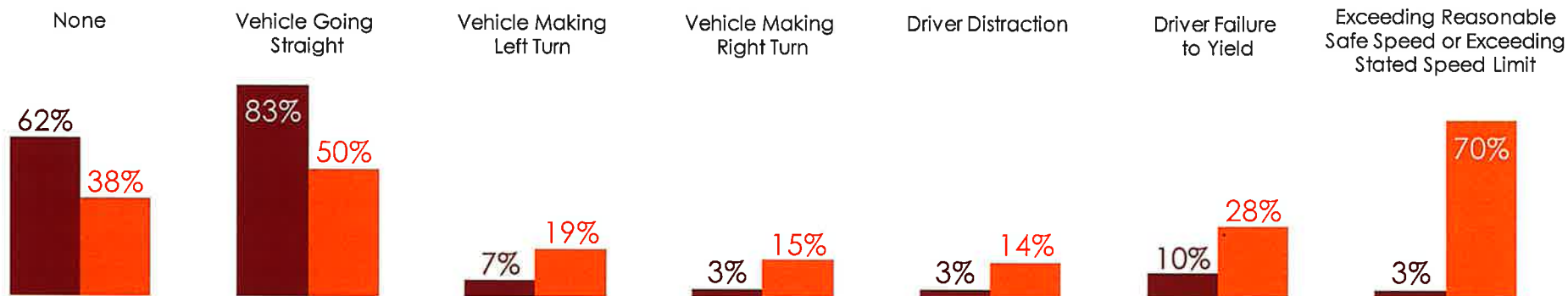
As part of Connecting Washington, the legislature has committed \$220 million over the next 16 years to improve conditions for bicyclists and pedestrians.

In implementing Practical Solutions, WSDOT became the first state DOT to endorse the *Urban Streets and Urban Bikeway Design Guides* from the National Association of City Transportation Officials (NACTO). Consistent with this, WSDOT updated the *WSDOT Design Manual* to allow for greater flexibility in designing facilities for bicyclists and their safety needs.

Through the *Safer People – Safer Streets* initiative, WSDOT, in collaboration with Target Zero partners and USDOT, is using a comprehensive approach to reduce bicycle fatal and serious injury crashes. This approach addresses infrastructure safety, education, vehicle safety, and data collection.

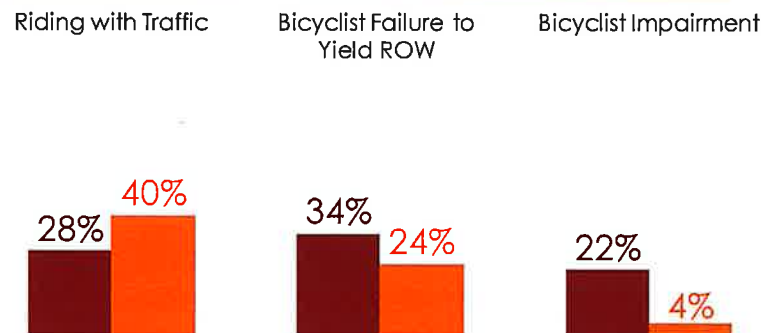
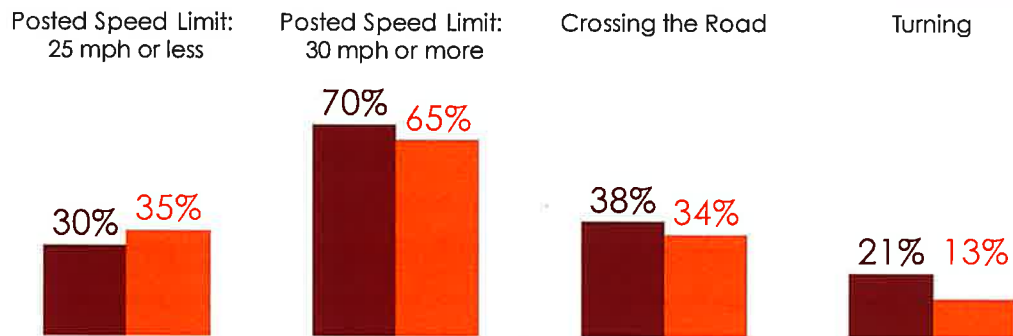
Driver actions and contributing factors

■ Fatalities ■ Serious Injuries



Roadway characteristic

Bicyclist contributing circumstances, action or factors



Road Users



Engineering treatments to reduce speed for vehicles near bicycles



Source: WSDOT

Narrower travel lanes reduce vehicle speeds, reduce crossing distances, and allow for the repurposing of roadway space for other users (e.g., create space for bicycle lanes).



Medians create a pinchpoint for traffic in the center of the roadway and can reduce crossing distances for pedestrians and bicyclists.



Chokers or pinchpoints restrict motorists from operating at high speeds on local streets.



A horizontal lane shift (also known as a chicane) deflects a vehicle and may be designed with striping, curb extensions, or parking.



Vertical traffic calming treatments vertically deflect vehicles and may be combined with a midblock crosswalk, including speed humps, speed cushions, speed tables, and raised intersections.



Traffic diverter islands built at residential street intersections prevent certain through and/or turning movements by motor vehicles while maintaining through-movements for pedestrians and bicyclists.



Roundabouts reduce traffic speeds at intersections by requiring motorists to move with caution through conflict points.



Two-way streets, especially those with narrower profiles, encourage motorists to be more cautious and wary of oncoming traffic.



Trees narrow a driver's field of vision, which encourages slower speeds.



Tighter curb radii reduce the speed of turning vehicles.

Photos on this page Courtesy of [NACTO](#) unless otherwise noted

Engineering treatments for bicyclists at intersections and crossings



Intersection crossing markings indicate the intended path of bicyclists. They guide bicyclists on a safe and direct path through intersections, including driveways, and ramps.



Green-colored pavement within a bicycle lane increases the visibility of the facility, identifies potential areas of conflict, and reinforces priority to bicyclists in conflict areas.



Bike boxes are designated areas at the head of traffic lanes at signalized intersections. They provide bicyclists with a visible way to get ahead of queuing traffic during the red signal phase.



Two-stage turn boxes offer bicyclists a protected way to make left turns at multi-lane signalized intersections from a right side separated or standard bicycle lane.



Bicycle signals are traffic signals used specifically for bicycle movements at intersections. They are used in combination with existing conventional traffic signals or hybrid beacons, and can operate with a leading bicycle interval.



Median refuge islands are protected spaces placed in the center of the street to facilitate bicycle and pedestrian crossings.



Active warning beacons are user-actuated amber flashing lights that supplement warning signs at unsignalized intersections or mid-block crossings. **Rectangular Rapid Flashing Beacons** are examples of such traffic control devices.



Hybrid beacons are special types of beacons used to warn and control traffic at unsignalized locations. They assist pedestrians and bicyclists in crossing roadways at marked crossing locations.

Strategies for reducing bicyclist (BIC) fatalities and serious injuries		
Objective	Strategies	Implementation areas
BIC.1. Improve bicyclist and driver safety awareness and behavior	BIC.1.1 Promote the use of reflective apparel and bicycle lights among bicyclists. (R, CTW)	Education
	BIC.1.2 Increase the number of people bicycling to achieve safety in numbers. (R, LIT)	Leadership/Policy, Education
	BIC.1.3 Increase use of Safe Routes to School Pedestrian and Bicycle Safety Education curriculum in schools. (U)	Education
	BIC.1.4 Provide bicycle safety awareness as part of driver education programs. (U)	Education
BIC.2. Enact policies/laws to improve bicycle safety	BIC.2.1 Encourage bicycle helmet use for children and adults. (U)	Leadership/Policy, Education
	BIC.2.2 Improve training on bicycle laws for law enforcement officers at state, Tribal, and local levels. (R, WSDOT)	Education
BIC.3. Improve bicyclist facilities	BIC.3.1 Implement traffic calming techniques. (P, NCHRP)	Engineering
	BIC.3.2 Implement speed management using target speeds and context sensitive solutions. (P, AASHTO)	Engineering
	BIC.3.3 Utilize road reconfigurations/diets to improve safety for all roadway users. (R, CMF)	Engineering
	BIC.3.4 Follow national guidelines on the use of reflective markings and sign materials. (R, FHWA)	Engineering
	BIC.3.5 Construct more bike lanes, separated bicycle lanes, and separated bicycle facilities, especially in urban areas. (R, CMF)	Engineering
	BIC.3.6 Create bicycle boulevards on low volume, low speed streets. (R, CMF)	Engineering
	BIC.3.7 Implement Complete Streets policies to provide for all modes of transportation. (R, NCSC)	Leadership/Policy, Engineering
	BIC.3.8 Install colored bicycle boxes at intersections. (U)	Engineering
BIC.4. Improve safety for children bicycling to school	BIC.4.1 Expand high visibility speed enforcement in school zones, including automated speed photo enforcement. (R, CTW)	Education, Enforcement
	BIC.4.2 Distribute and encourage the use of "School Walk and Bike Routes: A Guide for Planning and Improving Walk and Bike to School Options for Students" to assist schools in creating school biking route maps. (R, WSDOT)	Education, Engineering
	BIC.4.3 Encourage school districts to implement the Safe Routes to School program. (U)	Education, Engineering
BIC.5. Improve data and performance measures	BIC.5.1 Collect Bicycle Miles Traveled (similar to collecting Vehicle Miles Traveled); continue to track bicycle counts through Washington's Pedestrian and Bicycle Documentation Project (R, DDACTS)	Leadership/Policy

P: Proven R: Recommended U: Unknown

To address this complex mix of jurisdictions and experts, Tribes have multiple forums that meet regularly for transportation and traffic safety issues. The Tribal Traffic Safety Advisory Board is dedicated to Tribal traffic safety issues. The Board meets monthly to discuss Tribal traffic safety concerns and partnership opportunities, and to implement projects identified through its strategic planning. Its members include Tribal leaders, planners, law enforcement, and representatives from WTSC and WSDOT. Other, more general forums that occasionally address Tribal traffic safety issues include:

- The Washington Indian Transportation Policy Advisory Committee (WITPAC)
- Tribal Transportation Planning Organization (TTPO)
- The Northwest Association of Tribal Law Enforcement Officers (NATEO)
- Northwest Tribal Technical Assistance Program (NWTTAP)

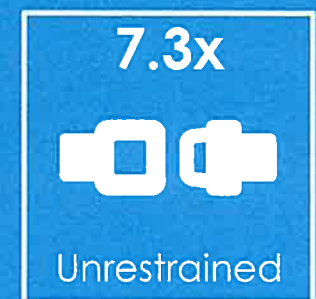
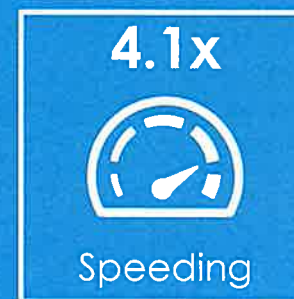
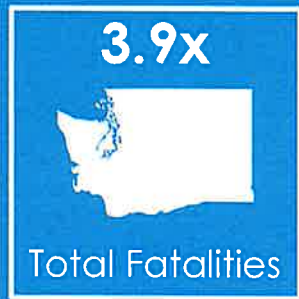
Fatalities and serious injuries on reservations

Through a partnership with the BIA and using US Census data, WSDOT was able to include reservation boundaries in its data collection and reporting program. Of the 63 AIAN crash deaths from 2012–2014, 21 (32%) occurred on reservations. Target Zero partners suspect that this number is underreported due to gaps in data sharing between the State and Tribes. Additionally, several Tribal representatives have shared that the number of fatalities and serious injuries occurring on their reservations in the recent past exceeded what has been reported to the state.

The table below shows the over-representation of American Indians and Alaskan Native fatalities by county. These counties reflect higher AIAN proportion of traffic fatalities compared to the proportion of AIAN population.

County	Percent American Indian and Alaskan Native Population	Percent American Indian and Alaskan Native Traffic Fatalities
Clallam	5.3%	13.7%
Ferry	17.6%	25.0%
Grays Harbor	4.9%	9.2%
Jefferson	2.4%	5.1%
Kitsap	1.7%	4.0%
Lincoln	1.7%	7.1%
Okanogan	12.0%	26.4%
Pierce	1.6%	3.7%
Spokane	1.5%	4.1%
Stevens	5.7%	8.0%
Walla Walla	1.1%	8.2%
Whatcom	3.0%	5.7%
Whitman	0.8%	3.6%
Yakima	5.3%	24.1%

American Indian and Alaskan Natives have higher death rates involving high risk factors than other races. For example, the rate of AIAN unrestrained vehicle occupant deaths per 100,000 population are more than seven times higher than other races combined.



Data challenges: how different data sources tell different stories

Target Zero partners used three data sets in order to tell the most complete story possible about American Indian and Alaskan Native (AIAN) traffic fatalities and serious injuries in Washington:

- **Statewide fatality rates for AIANs.** This data is based on ethnicity derived from state death certificates and provides traffic fatality data for the entire State of Washington, regardless of jurisdiction. This data is captured using the Fatality Analysis Reporting System (FARS).
- **On-reservation fatalities.** This data is captured by focusing on crashes occurring on roadways located within reservation boundaries. This data set includes all recorded fatalities and serious injuries occurring on these lands, regardless of the race/ethnicity of the people involved.
- **Fatality proportion compared to population proportion.** The population data estimates of race/ethnicity are produced by the US Census Bureau.

Data gaps continue to exist, and in some cases the data sources tell a conflicting story. Pedestrian fatalities are a prime example. Fatality information that considers ethnicity based on death certificates from crashes occurring both on and off reservations is in alignment with national data and anecdotal information from Tribal representatives: pedestrian safety is a significant issue among American Indian and Alaskan Native people. That data source shows that the pedestrian fatality rates are five times higher for AIANs than non-AIANS.

However, crash information that considers the location of crashes on reservations, regardless of ethnicity, indicates that pedestrian safety is a lower priority. Pedestrian fatalities occurring on reservation lands comprised just 7.6% of the fatalities and serious injuries. Target Zero partners believe that this demonstrates significant under-reporting of fatalities and serious injuries occurring on non-state roadways within reservations. This interpretation (under-reporting) is in alignment with information from WSDOT on the identity of reporting law enforcement agencies.

Tribal Target Zero Priorities

Given the disproportionately high rate of American Indian and Alaskan Native fatalities in Washington, it's important that the priorities in Target Zero are tailored to meet Tribal needs. Recently, several Tribes throughout Washington State received funding under the federal Tribal Transportation Program in MAP-21 and the FAST Act to develop their own Traffic Safety Plans for their reservations. The unique priorities of individual tribes are reflected in those plans. Based on fatalities and serious injuries that have occurred on reservation roads statewide, the overall Tribal Priorities are as follows:

Fatalities and serious injuries occurring on reservation roads in Washington State 2012–2014	Fatalities			Serious Injuries		
	# of People	% of total for all fatalities on reservations	% of this emphasis area for fatalities on all Washington State roads	# of People	% of total for all serious injuries on reservations	% of this emphasis area for serious injuries on all Washington State roads
Priority Level One						
Impairment Involved	42	63.6%	56.6%	46	24.6%	22.3%
Lane Departure	39	59.1%	56.1%	85	45.5%	38.5%
Unrestrained Vehicle Occupants	28	42.4%	22.2%	81	43.3%	10.2%
Intersection Related	14	21.2%	20.7%	59	31.6%	34.8%
Young Driver Aged 16–25 Involved	21	31.8%	31.7%	54	28.9%	33.6%
Speeding Involved	21	31.8%	38.0%	45	24.1%	26.5%
Unlicensed Driver Involved	20	30.3%	18.6%	-	-	-
Priority Level Two						
Distraction Involved	19	28.8%	29.5%	43	23.0%	22.9%
Motorcyclists	8	12.1%	16.8%	19	10.2%	18.1%
Heavy Truck Involved	6	9.1%	9.1%	25	13.4%	5.2%
Pedestrians*	5	7.6%	15.3%	14	7.5%	14.8%
Priority Level Three						
Older Drivers 70+ Involved	3	4.5%	12.1%	15	8.0%	8.6%
Drowsy Driver Involved	3	4.5%	2.9%	10	5.4%	3.2%
Bicyclists	0	0.0%	2.2%	5	2.7%	4.8%

* Data based on the ethnicity of the fatal person show that 21% of American Indian and Alaskan Native fatalities (occurring anywhere in the state) are pedestrians.

Data challenges and improvements for American Indians and Alaskan Natives and traffic data

Having accurate data is key to identifying safety problems, selecting appropriate countermeasures, and evaluating performance. Without data, the evaluation, analysis, and diagnosis of traffic safety becomes more difficult. It's also more difficult for Tribes to compete for safety funding and justify their needs if they lack supporting data.

Given the disproportionate impact of traffic crashes on Tribal communities, it is critical that we close these gaps and use data to help identify and address problems. Some of these challenges are described below.

Reporting

It's important for Tribes and the state to share data on traffic crashes, fatalities, and serious injuries. It will allow both Tribes and state agencies to have a comprehensive picture of traffic safety issues. Tribal attorneys, law enforcement, WSP, and WTSC are working together to resolve concerns with data sharing across jurisdictions. Notably, eTRIP managers and Tribal representatives with expertise in jurisdictional and contractual law, policing procedures, and information technologies are working to remove obstacles to data sharing through contractual and computer programming remedies.

Roadway Jurisdiction

Through a partnership with the BIA, WSDOT was able to include reservation boundaries in its data collection and reporting program, and can now identify whether a crash occurred within a specific reservation. Additional information is still needed regarding roadway ownership. Target Zero partners want to work with Tribes to identify tribally owned road networks.

Nooksack Mobility and Safety Education Program

Thirty percent of fatalities or serious injuries occurring on reservation roads in 2012–2014 involved an unlicensed driver. Tribal representatives report limited access to driver education programs on or near their reservations. To help address several traffic safety needs, the Nooksack Tribe is developing a Safety Mobility Education Program. The goal of this project is to establish a holistic approach to educating communities about all modes of transportation. The program includes instruction in operating a vehicle, walking, biking, and busing. A component part of the Mobility Safety Education Program will be a public awareness program that will address:

- Impaired driving
- Unlicensed driving
- Occupant protection
- Distracted driving
- Sharing the road and with motorcyclists, pedestrians, and bicyclists
- Bicycle Safety
- Water/land foot traffic safety

It will also cover alternative transportation services, designated driving programs, and alternative ride programs. The Nooksack Tribe plans to begin offering classes in Spring and Fall 2016.

Eastern Washington University (EWU) study leads to sharing best practices across tribes

In 2014–2015, the Northwest Tribal Technical Assistance Program (NWTAP) and participating tribes, funded by WTSC, conducted traffic safety assessments on six reservations:

- Confederated Tribes of the Colville Reservation
- Kalispel Tribe of Indians
- Lummi Nation
- Spokane Tribe
- Swinomish Indian Tribal Community
- Confederated Tribes and Bands of the Yakama Nation

For the assessments, NWTAP used Eastern Washington University (EWU) faculty and graduate students who were working on Executive Tribal Planning Graduate Certificates. The assessments collected data from several sources including WSDOT, WTSC, Tribal police departments, and EMS organizations. The assessments found significant variation in data collection and ease of accessing data. Each Tribe, however, was using a best practice in at least one area of traffic safety. The study found that Tribes could benefit from sharing information on successful programs.

Based on the assessment, EWU developed a concept of an interdisciplinary Tribal traffic safety committee that could be adapted to meet the needs of any Tribe — large or small, rural or urban. EWU staff and students have made several national and regional presentations on the highly regarded project. WTSC Commissioners have approved funding a second phase of implementing the assessments on a portion of the participating reservations.

The experience of traffic safety specialists has shown that it takes a wide variety of efforts to reduce fatalities and serious injuries on roadways; enforcement, engineering, and education are only part of the effort.

To really achieve Target Zero, it will require a concerted effort on many fronts. This includes a robust evaluation of the Target Zero Plan implementation, along with a meaningful analysis of the diagnostics of our traffic safety systems. Improved EMS and trauma systems are another element of the plan.

In addition, local agencies and Tribal governments play a key role in establishing a network of projects, systems, and strategies that will take the Target Zero philosophy and efforts to areas that will have significant impact across our state.

The chapters in this section describe how the state's data, EMS, and locally based implementers improve the entire decision-making process, and bring us closer to Target Zero.



Many systems hold traffic safety data

Washington's traffic information and support data systems are comprised of hardware, software, and accompanying processes that capture, store, transmit, and analyze a variety of data. The following systems makes up Washington's traffic data system:

- Driver (DOL)
- Vehicle (DOL)
- eCitation and eCrash (WSP)
- Crash
 - WSDOT
 - WSP
- Roadway
 - WSDOT
 - CRAB
- Adjudication (AOC)
- Injury surveillance
 - EMS (DOH)
 - Emergency Department (DOH)
 - Hospital data (DOH)
 - Trauma Registry (DOH)

Linking crash and health records to better understand injury severity

State agencies and other traffic safety partners continue to improve data linking and sharing. A dedicated data integration specialist at the WTSC is making significant progress in linking crash records from Washington State law enforcement agencies with hospital records DOH. Ultimately, the goal is to improve the understanding of injury severity for crashes.

Linking local and state roads for better engineering data analysis

WSDOT and CRAB are working to improve the quality, efficiency, and accessibility of systems that support safety engineering improvement decision making:

- WSDOT launched the Crash Data Portal to provide easily accessible crash data reports and maps for state and local engineers, as well static maps for the public.
- CRAB implemented an application, Systemic Safety Project Selection Tool, to help county engineers improve their selection of safety improvement projects based on roadway and crash characteristics.
- WSDOT and CRAB worked together to improve the tracking of changes in intersections, bridges, functional classification, lane width, traffic, and other aspects of the roadway.

Strategies for traffic data systems (TDS)		
Objective	Strategies	Implementation areas
TDS.2. Remove barriers to data sharing and integration	TDS.2.1 Derive a more accurate classification of injury severity based on clinical assessments from medical records to augment the investigating officer's assessment of traffic crash injury severity. (P, CODES)	Leadership/Policy, EMS
	TDS.2.2 Enhance the use of the ESSENCE system for using Emergency Department Data to enhance Injury Surveillance capabilities. Increase provider reporting to ESSENCE. (P, CODES)	Leadership/Policy, EMS
	TDS.2.3 Create a central repository for integrated, linked data records including crash records, health (EMS, Trauma, CHARS) records, court records, licensing records, and state toxicology records. (P, CODES)	Leadership/Policy, EMS
	TDS.2.4 Increase EMS reporting by first responders throughout the state to the Washington Emergency Medical Services Information System (WEMSIS). (R, DOH)	Leadership/Policy, EMS
	TDS.2.5 Implement Data-Driven Approaches to Crime and Traffic Safety (DDACTS) model in local law enforcements agencies statewide. (R, DDACTS)	Enforcement
	TDS.2.6 Educate data reporting agencies about state/federal fatal crash timeliness reporting statutes and increase enforcement of these statutes. (P, WTSC)	Leadership/Policy, Education
	TDS.2.7 Create connections for systems with similar or duplicate data to eliminate duplicate entry. (R, TRC)	Leadership/Policy
TDS.3. Sustain high levels of collaboration and acquired knowledge within the TRC	TDS.3.1 Provide more frequent and enhanced traffic safety trend reporting. Present data/trends in a manner that is easy to understand and is actionable. (R, DDACTS)	Leadership/Policy, Education
	TDS.3.2 Maintain a meaningful and valid set of traffic records performance measures to gauge the quality of traffic safety data. Ensure measures are accessible and periodically reviewed. (R, DDACTS)	Leadership/Policy
	TDS.3.3 Support training opportunities to enhance traffic safety data analysis and research skills. (U)	Leadership/Policy
TDS.4. Identify and secure targeted investments to sustain TRC initiatives	TDS.4.1 Create a maintenance and support model for SECTOR and JINDEX that further that improves operations, speeds change request implementation, and enhances user support. (R, eTRIP GT)	Leadership/Policy
P: Proven R: Recommended U: Unknown		

In addition to the speed of the response immediately following an injury, a patient's outcome also depends on other important facets of trauma care. These include prevention activities, hospital care, and rehabilitation resources. These components work together to reduce the death and disability of injured people throughout Washington.

EMS responders have been able to save more trauma patients involved in vehicle crashes by getting them to the right trauma center faster, where they receive trauma care appropriate for their level of injury. The death rate for trauma patients involved in traffic crashes decreased from 9.0% in 1995 to 5.2% in 2014. The Washington State Department of Health estimates this downward trend represents about 1,600 additional lives saved by Washington's EMS and trauma care system over those 20 years.

Washington's state trauma system saves the life of a car crash victim

Jerry was in a car crash in rural Chelan County, sustaining bone fractures and a traumatic brain injury. Witnesses called the 911 emergency response system. Emergency responders arrived and treated Jerry at the scene, then immediately took him to the closest designated trauma hospital. Doctors there took critical lifesaving steps to treat Jerry, who was bleeding internally and received a massive transfusion.

Jerry was then transferred to the state's highest designated Level I trauma hospital in Seattle, where specialists successfully cared for his additional injuries from the crash. The integrated trauma system that our state has created saved Jerry's life, as well as the lives of many others injured in car crashes.

What's New

Advances in medical equipment have improved patient care. Equipment such as video laryngoscopy, alternative airway devices such as multi-lumen airways, and capnography are all used to assist and monitor patient breathing. Additionally, the use of hydraulic gurneys has improved patient movement. Smart phone applications and electronic patient care reporting systems have improved the documentation of patient care and data collection.

Innovative programs known as Community Paramedic (or Mobile Integrated Health) are improving how EMS is deployed, ensuring efficient and available EMS resources when traumatic injuries require rapid response, treatment, and ambulance transport.

The recent collection and analysis of rehabilitation data demonstrates that trauma patients who receive inpatient rehabilitation care are more likely to survive and go home with increased functional ability.

These two databases will ensure that EMS realizes its full potential and continues to favorably impact the outcomes of injured people. They will help with the evaluation of:

1. The amount of time the patient remains on the scene after the arrival of EMS (on-scene time).
2. Whether the patient was transported to the appropriate level of trauma hospital (patient destination).
3. Whether the patient survived (patient outcome).

Together, the data in WEMIS and WTR capture a comprehensive picture of EMS and hospital care received by trauma patients. The state's Traffic Records Committee is exploring linking data from the WEMIS and the WTR, as well as hospital inpatient discharge records, with crash records. Linking these datasets will provide insights on how to best deliver care to those severely injured in crashes.

Two more data advances round out this work. First, EMS organizations have also implemented a new version of data collection software (Collector V5) which allows more accurate data. Second, new trauma registry software has improved the collection of data surrounding the point of injury, including place of injury, location, Mechanism of Injury (MOI), protective devices, outcomes, and Quality Improvement (QI).

Working together, these data systems will improve our understanding of crash-related trauma in our state, and improve our decision-making.





Evaluation: looking at the big picture

We start with a system-level evaluation of Washington's roads, looking at large amounts of traffic safety data. We begin by evaluating our performance at the system level — all fatalities and serious injuries, across all roads in the state — to get a big picture look at how we are doing.

Safety practice often focuses in three areas:

- The vehicle, such as operation and restraint systems.
- The driver, such as user capability and user behavior.
- The environment, such as the road system roadway conditions and weather.

These three areas allow for the development of high-level categories. In Washington, we have chosen to focus on how aspects of the vehicle, driver, and environment contribute to the serious and fatal injury crash and severity outcomes. We call these the contributing factors to crashes, and we look for the ones that are higher than we would expect.

Factors include behavior such as impairment and distraction, or crash types such as intersection or lane departure crashes, or road system issues such as congestion or speed differential between road users.

These factors help us to develop meaningful categories of data, evaluate them to determine the magnitude and nature of these outcomes, and ultimately to set priority areas (see table on page

Definitions for evaluation, analysis, and diagnosis of traffic safety

	Definition	Example
Evaluation	Assess the big picture or categories of data to evaluate performance against a pre-determined set of criteria. For Target Zero, this means looking at whether or not we met targets for traffic-related fatalities and serious injuries within our priority areas. Each agency may set individual targets or criteria that would indicate a need to take some action. If a location or factor is not meeting expectations, it is identified for analysis.	We find that a specific roadway has more crashes at intersections than we would expect for similar roads.
Analysis	Study the location of factor in depth, using different means or methods in order to interpret the data and understand why a factor or location is particularly high. For instance, using crash statistics to help us understand why crashes are reducing, staying the same, or increasing.	We analyze the data to determine that the majority of those crashes are related to impaired driving.
Diagnosis	Identify contributing factors or root cause leading to an increase or decrease in crashes, similar to the way that a doctor diagnoses a patient for the root cause of her symptoms. Done well, diagnostics help us understand the factors leading to a crash or series of crashes.	We diagnose that the problem is coming from numerous drinking establishments in a very localized area, with two locations in particular that are known to overserve.

Diagnosis: digging deeper into the data

Diagnosis focuses on the contributing factors or root causes of a crash, types of crashes, or the factors that are common in a series of crashes. This requires a more thorough and detailed review than the analysis, so that partners can make good decisions about how to address traffic safety concerns.

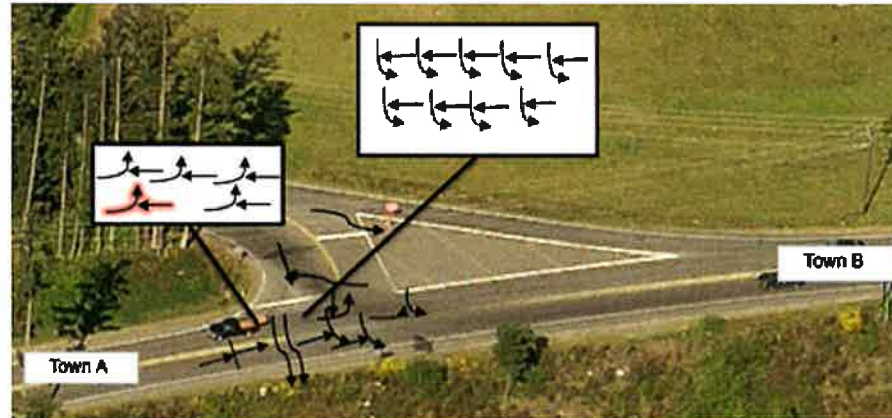
Good decision-making begins with an understanding of:

- What constitutes a safety concern?
- What we can do to address those concerns?
- What is causing or contributing to the concern in the first place? This is the most important aspect of good decision-making.

Why is diagnosis important? As an example, a doctor does not give a prescription without first understanding the symptoms and conditions that the patient is experiencing, and how these are different from normal expectations for health. Similarly, when we analyze the roadway, we first need to understand what is contributing to the crash risk, and whether or not the level of risk is in excess of what would be expected for that type of roadway. For instance, we will expect different crash numbers and types for a busy interstate highway with high speed and no pedestrians, compared to those of a quiet residential street with low speeds and many pedestrians.

Diagnostics involve a high level of detail to find crash patterns

This crash diagram and data table are examples of the level of detail involved in diagnosis.



Five years of crash data

First crash type	
Entering at angle	14
Left turn opposite direction	5
Run off the road	3
Rear end	1

Crash injury severity	
Fatal injury crash	1
Serious injury crash	2
Evident injury crash	4
Possible injury crash	5
Property damage only crash	11

Contributing circumstances	
Did not grant right of way to vehicle	12
Disregarded STOP sign	5
Exceeded reasonable safe speed	2
Improper turn	1
Inattention	2
Impaired by alcohol	1

Target Zero partners are working to analyze potential projects to increase the certainty of project selection by using more comprehensive analysis techniques and by using rigorous analysis methods in research and detailed analysis. For example, WSDOT is using The Highway Safety Manual and its associated tools to predict crashes given the characteristics of a highway. These tools use safety performance function and crash modification factors to determine the potential change in crash frequency or severity for the implementation of a given road change. They are very helpful in making decisions related to different alternatives. (AASHTO, 2010).

In addition, Washington's success in reducing fatalities has also brought a new challenge. As fatal and serious injury crashes occur further apart in time and less densely at particular locations or corridors, it becomes increasingly more difficult to identify patterns and specific locations with some level of certainty. Systemic, risk-based approaches such as predictive models, which focus on expected trends based on similar roadways, are necessary to overcome this challenge. WTSC and WSDOT have used these approaches successfully since the mid-1990s, and will continue to build on them for future analysis.

Choosing cost-effective safety investments that benefit the whole system

The value of safety investments must be considered at both the local and system levels. This is important because high costs on one project or program may prevent us from doing other projects and programs. For example, spending \$40 million to build an interchange at a single location, when a \$3 million roundabout would reduce the same amount of crashes, would not provide greater benefit for that location, and would in fact detract from improvements on the entire system. If we build the \$40 million interchange, then we forgo \$37 million in safety investments that we could have used to target other parts of the system.

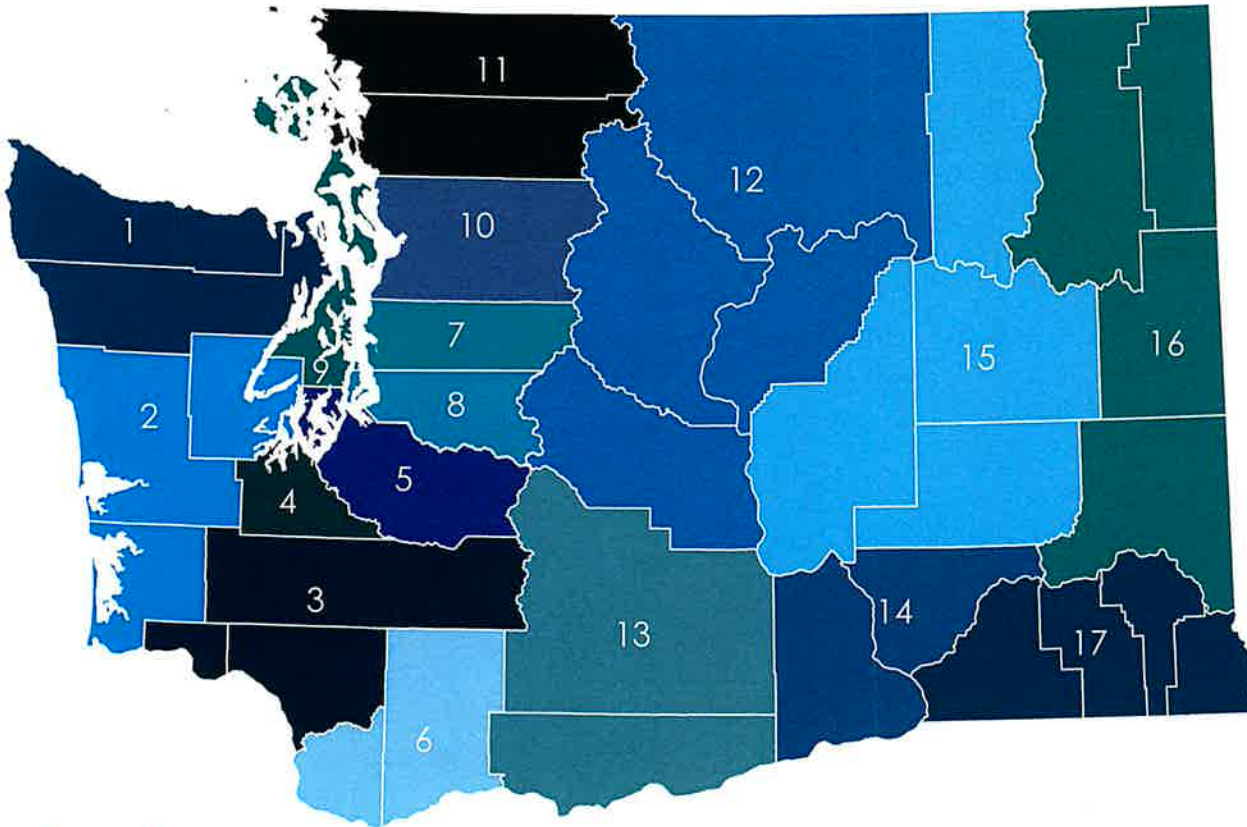
Expanding the evaluation, analysis, and diagnostic skills of Target Zero staff

To be most effective in the evaluation, analysis, and diagnosis of crash reduction opportunities, Target Zero partners must provide training and specialized staff members. We need this skilled workforce to provide services in the overlapping and increasingly complex field of highway safety education, enforcement, engineering, and EMS. Staff such as statisticians, epidemiologists, human factors experts, and roadway safety engineers are required to keep up with increasingly analytical and technical needs.

Making the data meaningful and useable for partners as our approaches evolve

With a more proactive, predictive, risk-based approach comes the need for data to be more integrated and accessible to users. Many Target Zero partners use information to identify and address their current safety business needs. In the past, organizations were able to develop effective programs and projects using their own data. Now, the need to develop collaborative approaches provides the opportunity for us to bring many different data sets, layers of GIS information, and multidisciplinary approaches to a single location.

In 2012, the federal MAP-21 legislation directed FHWA and NHTSA to require state and local safety partners to work collaboratively in the development and implementation of the Strategic Highway Safety Plans, such as Washington's Target Zero. MAP-21 requires federally funded state programs to develop a more integrated, multidisciplinary, and multiagency safety program, across different modes of transportation.



Counties and regions with an assigned Target Zero manager (TZM)

WTSC and WSDOT have highway safety funds for local organizations

Funding is available for local governments and organizations through four statewide grant programs, one from WTSC and three from WSDOT. The WTSC Federal Grant process funds behavioral change projects, and local data helps determine priority areas for funding grant requests each year. Meanwhile, WSDOT's federal Highway Safety Improvement Program (HSIP) program awards funding for local traffic safety engineering improvements and the Bicycle, Pedestrian, and Safe Routes to School programs.

Local representation on the WTSC

City and county government representatives are an important part of our state's traffic safety effort. The Governor appoints a member of the Washington State Association of Counties (WSAC), the Association of Washington Cities (AWC), and a local judge to the Washington Traffic Safety Commission so they can work with state agency directors involved in traffic safety. The WTSC commissioners oversee and approve the grant funding recommendations of WTSC staff.

In Yakima and Spokane counties, regional TZMs coordinate with local and county law enforcement agencies, and the Washington Liquor and Cannabis Board (WLCB), to supplement these efforts to reduce impaired driving. These efforts include:

- Conducting impaired driving high visibility enforcement campaigns.
- Alcohol retailer compliance checks
- Increased public outreach regarding impaired driving.

In coming years, Pierce, King, and Snohomish will pursue this work as well.

Coordinated high visibility enforcement (HVE) campaigns target dangerous behaviors

An important focus of the Target Zero manager (TZM) network is coordination of a number of statewide high visibility DUI, distracted driving, and seatbelt traffic safety campaigns. Deterrence is the main goal of the HVE campaigns, but enforcement of the laws also plays an important role. These campaigns are unique as multiple agencies often cross jurisdictional lines to collaborate for the enforcement patrols.

First, TZMs educate the public about the traffic safety issue and upcoming emphasis patrols through media campaigns. They then coordinate multiple agencies to create a broadened enforcement presence on the roads during the campaign. TZMs work with city and Tribal police departments, county sheriffs' offices, and WSP to plan and schedule patrols in high-risk areas and times identified by local crash data.

Local EMS and trauma services support enforcement and prevention efforts

Local EMS and trauma services programs play a significant role in enforcement and prevention efforts around the state, guided by the eight EMS and Trauma Regional Councils statewide. EMS participates in programs such as the Safe Kids project, recommending and funding injury prevention efforts. EMS also provides an important liaison between law enforcement agencies and Regional EMS and Trauma Care Councils, local hospitals, and fire departments, working to bridge the gap on issues that affect these professions. In King County, EMS has provided funding to local agencies and WSP for distracted driving prevention projects since 2012.

Appendices

Appendix A: Acronyms

Target Zero contains many acronyms for agencies, organizations, special programs, and other elements of traffic safety. One purpose of Target Zero is to create a common language for traffic safety practitioners in Washington State. This acronym list will help practitioners easily familiarize themselves with the acronyms used by the diverse groups — educators, engineers, law enforcement officers, academics, and many others — who are attempting to reduce traffic fatalities and serious injuries in our state.

AAA	American Automobile Association
AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ABACCL	American Bar Association Center on Children and the Law
ADA	Americans with Disabilities Act
AI/AN	American Indians and Alaskan Natives
AOC	Washington Administrative Office of the Courts
ARIDE	Advanced Roadside Impaired Driving Enforcement
AWC	The Association of Washington Cities
BAC	Blood Alcohol Content
BIA	Bureau of Indian Affairs
CDC	Centers for Disease Control and Prevention
CDL	Commercial Driver License
CFR	Code of Federal Regulations
CLAS	Collision Location & Analysis System
CMF	Crash Modification Factor
CMV	Commercial Motor Vehicle
CPS	Washington's Child Passenger Safety program
CRAB	County Road Administration Board
CTW	Countermeasures That Work
CVD	Commercial Vehicle Division

CVEB	Commercial Vehicle Enforcement Bureau
DADSS	Driver Alcohol Detection System for Safety
DDACTS	Data-Driven Approaches to Crime and Traffic Safety
DOH	Washington State Department of Health
DRE	Drug Recognition Expert
DUI	Driving Under the Influence
DWI	Driving While Intoxicated (term used in some other states, but not in WA)
EMS	Emergency Medical Services
eTRIP	Electronic Ticketing and Collision Reporting Program
EWU	Eastern Washington University
FARS	Fatality Analysis Reporting System
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
GHSA	Governors Highway Safety Association
GVWR	Gross vehicle weight rating
HFST	High Friction Surface Treatment
HPMS	Highway Performance Monitoring System
HRRR	High Risk Rural Roads
HSIP	Highway Safety Improvement Program
HSM	Highway Safety Manual
HVE	High Visibility Enforcement

Appendix B: Glossary

Target Zero contains many specialized terms related to traffic safety in Washington State. One purpose of Target Zero is to create a common language for traffic safety practitioners in Washington State. This glossary is intended to help explain the meanings of specific terms used by the diverse groups — educators, engineers, law enforcement officers, academics, and many others — who are attempting to reduce traffic fatalities and serious injuries in our state.

Alcohol-impaired Driver

Any driver with a BAC of .08 or higher.

Blood Alcohol Concentration

BAC is measured as a percentage by weight of alcohol in the blood (grams/deciliter). A positive BAC level (0 .01 g/dl and higher) indicates that alcohol was consumed by the person tested. A BAC level of 0.08 g/dl or more indicates that the person was intoxicated.

Contributing Circumstance

An element or driving action that, in the reporting officer's opinion, best describes the main cause of the collision. First, second, and third contributing causes are collected for each motor vehicle driver, bicyclist, and pedestrian involved in the collision.

Crash

An unintended event that causes a death, injury, or property damage, and involves at least one motor vehicle or bicyclist on a public roadway.

Death Certificate Records

Department of Health manages all of Washington's vital statistics, including death events. Death certificates include information about the primary and underlying causes of death as determined by medical examiners and coroners. This information is used to reconcile deaths involving traffic collisions to determine if the death was traffic-related (death as a result of injuries sustained in a collision) or non-traffic-related (death occurs and then the collision occurs, such as a heart attack while driving).

Distracted Driver

Any driver with the following attributes as recorded by the investigating officer: looked but did not see; distracted by vehicle occupant or object; while using a cell phone (talking, listening, dialing, etc.); adjusting vehicle controls; distracted by object/person outside the vehicle; eating, drinking, or smoking; emotional or lost in thought; other or unknown distraction.

Impairment Related Collision

Any driver, pedestrian, bicyclist, etc., with a BAC of .08 or greater and/or a positive result on a drug test.

Licensed Driver

A person who is licensed by any state, province, or other governmental entity to operate a motor vehicle on public roadways.

Motor Vehicle

Any motorized device in, upon, or by which any person or property is or may be transported or drawn upon a public roadway, excepting devices used exclusively upon stationary rails or tracks. This includes every motorized vehicle that is self-propelled or propelled by electric power (excluding motorized wheelchairs), including that obtained from overhead trolley wires but not operated on rails.

Non-motorist

Any person who is not an occupant of a motor vehicle in transport and includes the following:

4. Pedestrians
5. Bicyclists, tricyclists, and unicyclists
6. Occupants of parked motor vehicles
7. Others such as people riding on animals and persons riding in animal-drawn conveyances

Passenger

Any occupant of a motor vehicle who is not a driver.

Pedestrian

Any person not in or upon a motor vehicle or other vehicle but includes persons on personal conveyance devices, such as skateboards or wheelchairs.

Per se Alcohol Limit

No further proof is needed. When a person is found to have, within two hours after driving, an alcohol concentration of .08 or higher or a THC concentration of 5.00 nanograms per milliliter of blood or higher, that person is guilty “per se” of driving under the influence.

Restraint

A device such as a seatbelt, shoulder belt, booster seat, or child seat used to hold the occupant of a motor vehicle in the seat at all times while the vehicle is in motion.

Rural

All areas, incorporated and unincorporated, with a population of less than 5,000.

Serious Injury

Any injury other than a fatal injury that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred. This definition applies to traffic crash data only. This is not the legal definition or medical definition of serious injury.

Appendix C: Methodologies

This appendix explains the methodology we used in developing the Target Zero serious injury and fatality data. For information on the sources of data, please see Appendix D: Target Zero Data Sources.

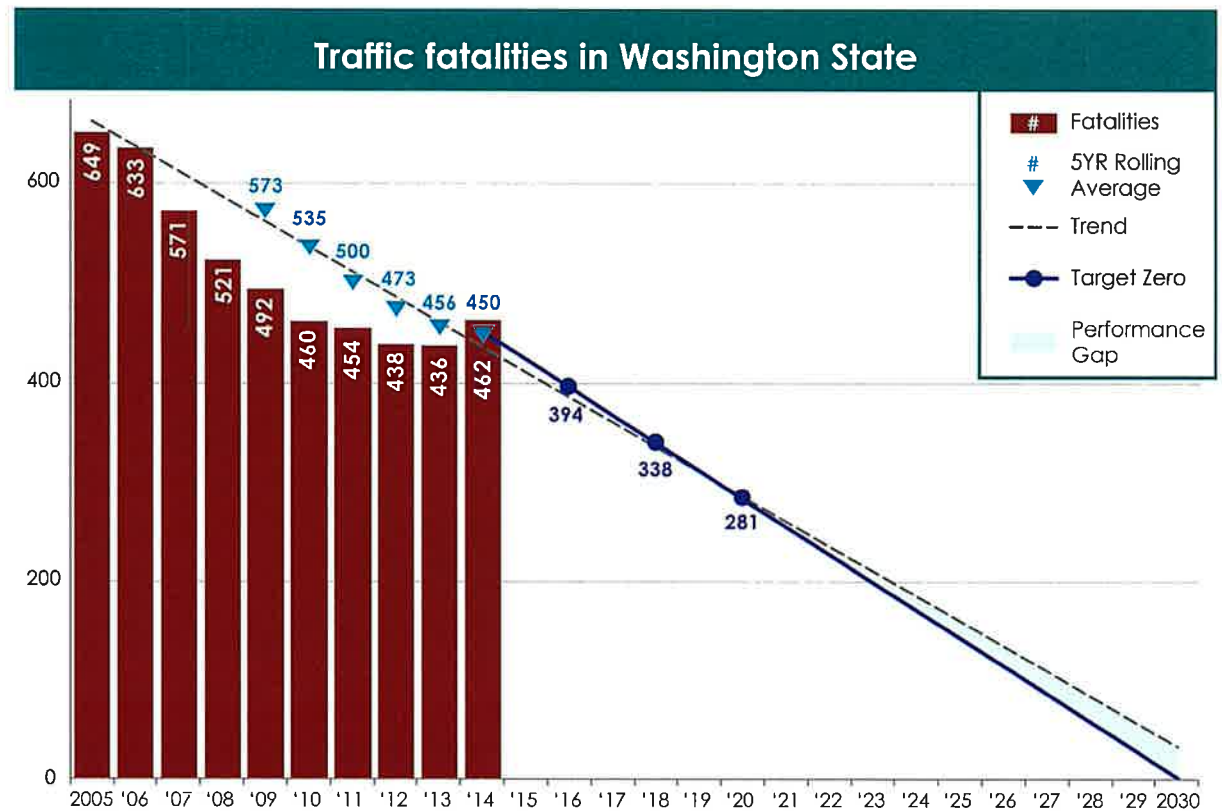
Five-year rolling averages and the performance trend line

Washington State formed its Target Zero vision in 2000: zero deaths and serious injuries by 2030. This edition of Target Zero provides the most recent ten years of traffic fatality and serious injury data for our state.

The vision of zero by 2030 itself is a linear concept: a direct relationship between the two variables of fatalities and time (or of serious injuries and time) converging at zero in 2030. Therefore, it makes sense to use a linear measure of progress to compare with a linear goal. The trend line may indicate a declining, flat, or increasing trend, depending on the average change among the series of five-year rolling averages.

Each average contributes equally to the average change driving the direction of the trend. The five-year rolling averages smooth the effect a single year fluctuation would have on a linear trend. The most recent ten years of data presented in this edition result in six five-year rolling averages on which the performance trend is based. Data years 2005–2014, represented by the blue triangles on the graph, result in rolling averages of 2005–2009, 2006–2010, 2007–2011, 2008–2012, 2009–2013, and 2010–2014.

Trend lines represent a future projection assuming all variation, fluctuation, and preventive measures stay at historic and current levels. In practice, by continuously implementing new strategies and enhancing and maintaining existing strategies, we can drive the trend downward, closer to the overall goal of zero by 2030.



As we get closer to zero fatalities and serious injuries, it gets harder to affect the trends

The traffic safety community recognizes there are factors related to traffic deaths and serious injuries outside the reach of listed strategies. Additionally, we recognize most strategies have immediate benefits that level off. As we look to the future, we also realize that as overall fatal and serious injury counts are driven downward, it will be harder to meet average annual reduction goals.

These recognitions are particularly true related to affecting fatality and serious injury trends among the more isolated, higher risk, and/or less receptive members of Washington's population.

As linear trends flatten and we get closer to 2030, we will need more sophisticated statistical methods to monitor and predict outcomes. Our challenge is to continue to accurately identify and monitor these changing trends, and keep ahead of them with new and expanded strategies.

The factors contributing to traffic fatalities and serious injuries are an intimate web of environmental, behavioral, and vehicular factors. Some factors are related to the triggering of the event, while others are related to the severity of the event. Using various facets of enforcement, education, engineering, emergency medical services, and evaluation, we will continue to prevent these crashes from happening in the first place, and to mitigate the harm incurred when they do happen.

While we may not be able to prevent all crashes, we can eliminate those that result in deaths and serious injuries, our vision for Washington State.



Appendix D: Target Zero data sources

To develop the data that drives Target Zero, practitioners draw data from multiple sources in Washington State. This appendix describes those sources.

The Fatality Analysis Reporting System

The Fatality Analysis Reporting System (FARS) is the source of Target Zero's fatality data. The Washington Traffic Safety Commission (WTSC) contracts with the National Highway Traffic Safety Administration (NHTSA) to provide FARS data for Washington State. FARS is a nationwide census of traffic fatalities that characterizes the crash, the vehicles, and the people involved in each reported fatal crash. FARS contains more than 100 coded data elements that are collected from official documents, including Police Traffic Crash Reports (PTCR), state driver licensing and vehicle registration files, death certificates, toxicology reports, and emergency medical services (EMS) reports.

To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway that is customarily open to the public, and result in the death of a person (either an occupant of a vehicle or a non-motorist) within 30 days of the crash. For more information about the parameters in FARS traffic fatality counts, visit WTSC's [Research and Data Division](#) page.

The collision locator analysis system

The collision location & analysis system (CLAS), a crash data repository, is the source of Target Zero's serious injury data. CLAS is housed at WSDOT. Most of the data in CLAS comes from law enforcement officers via the PTCR. Citizens may also submit non-police assisted reports of crash events via the Vehicle Collision Report.

CLAS stores all reportable traffic crash data for Washington State public roadways. A crash needs to meet at least one of the two following criteria to be considered "reportable": 1) a minimum property

damage threshold of \$1,000, and/or 2) bodily injury occurred as a result of the crash.

Target Zero uses CLAS crash data for counts of seriously injured people. However, there are sections within Target Zero that also use CLAS crash information for deriving counts of fatally injured people through record merging with FARS. Those sections are Lane Departure and Intersection. CLAS crash data were also used to reconcile jurisdictional assignment in FARS for road type/jurisdiction analysis.

It is widely acknowledged that serious injury classifications assigned by investigating officers are not as accurate as injury severity derived from health records. The serious injury data presented in this edition of Target Zero is classified by the investigating officer at the scene. However, Washington's Traffic Records Committee is making progress on a collaborative, multiagency effort to get more accurate injury severity data, particularly for serious injury crashes. For more information about the efforts of the Traffic Records Committee (TRC), see the Traffic Data Systems chapter.

Vehicle Miles Traveled estimates

Vehicle Miles Traveled (VMT) is a measure of the total number of miles traveled by all vehicles over a segment of road over a specific period of time, usually either a day or a year. WSDOT collects and reports several different types of road and street data to the Federal Highway Performance Monitoring System (HPMS) each year. WSDOT collects traffic data for state highways and relies on local jurisdictions to provide traffic data for their roads and streets.

Appendix E: Data Definitions

Target Zero draws its fatality data from the national Fatality Analysis Reporting System (FARS), housed at WTSC for Washington State's data. Its serious injury data comes from the state-level Collision Location & Analysis System (CLAS), housed at WSDOT. This appendix describes the specific definitions and codes used to determine which crashes are included in emphasis area data, and which are not.

MEASURES	FATALITY DEFINITION From FARS database	SERIOUS INJURY DEFINITION From CLAS database
PRIORITY LEVEL ONE:	Fatality resulting from a crash that involved:	Serious injury resulting from a crash that involved:
Impairment Involved	Any driver or non-motorist with a Blood Alcohol Concentration (BAC) of 0.08 or higher or a positive drug result as confirmed by the state Toxicology Laboratory.	Any driver or non-motorist in which the investigating officer or drug recognition expert (DRE) indicated that the person was impaired by drugs or alcohol and reported in contributing circumstances as "Under the Influence of Alcohol," "Under the Influence of Drugs," or "Had Taken Medication" or sobriety reported as "HBD – Ability Impaired" or "HBD – Ability Impaired (tox test)."
Drug Impairment Involved	Any driver or non-motorist with a positive drug result as confirmed by the state Toxicology Laboratory.	NOT APPLICABLE. Due to no confirmation by toxicology, drug impairment involved serious injuries are not reported.
Alcohol Impairment Involved	Any driver or non-motorist with a BAC of 0.08 or higher as confirmed by the state Toxicology Laboratory.	Any driver or non-motorist in which the investigating officer or DRE indicated that the person was impaired by alcohol and reported in contributing circumstances.
Drinking Involved	Any driver or non-motorist with a BAC of any value except zero, as confirmed by the state Toxicology Laboratory (also includes alcohol impaired persons).	Any driver or non-motorist for whom the investigating officer or DRE reported sobriety as "Had Been Drinking" or contributing circumstance of "Under the Influence of Alcohol."

MEASURES	FATALITY DEFINITION From FARS database	SERIOUS INJURY DEFINITION From CLAS database
PRIORITY LEVEL ONE:	Fatality resulting from a crash that involved:	Serious injury resulting from a crash that involved:
Speeding	Any driver exceeding the posted speed limit or driving too fast for conditions at the time of the crash as indicated by the investigating officer.	Any driver exceeding the posted speed limit or driving too fast for conditions at the time of the crash as reported by the investigating officer in contributing circumstances.
Young Driver Age 16-25 Involved	Any driver between the ages of 16 and 25 years.	Any driver between the ages of 16 and 25 years.
Intersection Related	Derived from CLAS and flagged in FARS. Uses the same criteria described in the "Serious Injury" column.	A junction relationship reported as at intersection and related; intersection related but not at intersection; at driveway within major intersection; entering roundabout; circulating roundabout; exiting roundabout; roundabout related but not at roundabout; or traffic calming circle.

MEASURES	FATALITY DEFINITION From FARS database	SERIOUS INJURY DEFINITION From CLAS database
PRIORITY LEVEL THREE:	Fatality resulting from a crash that involved:	Serious injury resulting from a crash that involved:
Heavy Truck Involved	Any vehicle coded as “step van >10,000lbs,” “single-unit straight/cab chassis, GVWR >10,000lbs or unknown,” “Truck-tractor,” “Medium/Heavy P/U >10,000lbs,” “Unk unit or combination >10,000lbs,” “Unk medium/heavy truck type,” OR “Unk truck (light, medium, heavy) with one or more trailers.”	Any vehicle that also has a vehicle classification of “trailer with GVWR of 10,001 lbs. or more, if GVWR of combined vehicle(s) is 26,001 lbs or more – CDL required,” “single vehicle with GVWR of 26,001 lbs. or more; or any school bus regardless of size – CDL required,” “single vehicle of 26,000 lbs. or less, designed to carry 16 passengers or more; or any vehicle regardless of size which requires HAZ MAT Placard -CDL required” or a commercial vehicle supplement to the collision report; OR a vehicle type reported as “truck (flatbed, van, etc.),” “truck and trailer,” “truck tractor,” “truck tractor and semi-trailer,” or “truck-double trailer combinations”; OR a vehicle usage classification reported as concrete mixer, dump truck, logging truck, refuse/recycle truck, vanette over 10,001 lbs., tanker truck, tow truck, or auto carrier.
Drowsy Driver Involved	Any driver with a driver related factor coded as “drowsy, sleepy, asleep, fatigued” (2009 and prior) or a driver condition coded as asleep or fatigued (2010 and later).	any driver apparently asleep or apparently fatigued as reported by the investigating officer in the contributing circumstances.
Bicyclists	A fatal person type coded as bicyclist or other cyclist.	A seriously injured person coded as pedcyc driver or pedcyc passenger (includes bicycles and tricycles).

MEASURES	FATALITY DEFINITION From FARS database	SERIOUS INJURY DEFINITION From CLAS database
OTHER MEASURES:	Fatality resulting from a crash that involved:	Serious injury resulting from a crash that involved:
Rural Roads	A federal functional roadway classification of rural principal arterial-interstate; rural principal arterial-other; rural minor arterial; rural major collector; rural minor collector; rural local road or street; or rural unknown.	NOT APPLICABLE. Federal functional class missing for crashes occurring within city limits.
Urban Roads	A federal functional roadway classification of urban principal arterial-interstate; urban principal arterial-other freeways or expressways; urban other principal arterial; urban minor arterial; urban collector; urban local road or street; or urban unknown.	NOT APPLICABLE. Federal functional class missing for crashes occurring within city limits.
State Routes/Jurisdiction	Derived from CLAS and flagged in FARS. Uses the same criteria described in the Serious Injury column.	A report classification of state route.
City Routes/Jurisdiction	Derived from CLAS and flagged in FARS. Uses the same criteria described in the Serious Injury column.	A report classification of city street, or a crash classified as state route with access control of limited access occurring within the city limits of a city having a population over 25,000.
County Roads/Jurisdiction	Derived from CLAS and flagged in FARS. Uses the same criteria described in the Serious Injury column.	A report classification of county road.
Miscellaneous Trafficways	Derived from CLAS and flagged in FARS. Uses the same criteria described in the Serious Injury column.	A report classification of miscellaneous trafficway.

Appendix F: Strategy Definitions and Criteria

Each emphasis area of Target Zero contains a list of strategies that practitioners can use to reduce traffic fatalities. This appendix describes how Target Zero analysts evaluate these strategies for inclusion in the plan.

Strategies listed in Target Zero are given a designation of proven, recommended, or unknown as described in the table below. For this review process, Target Zero evaluators chose three main resources to serve as the foundation for the designations:

- Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices (8th Edition 2016), which focuses on behavior.
- The National Cooperative Highway Research Program Report 500 Series, which focuses on both engineering and behavior.
- Crash Modification Factors Clearinghouse, which focuses on engineering.

Disagreement among these sources is rare, but when it happens, evaluators defer to the source that is most aligned with the type of strategy. Therefore, in general, Countermeasures That Work usually takes precedence for behavior/program strategies, Crash Modification Factors takes precedence for engineering strategies, and the NCHRP report prevails when a strategy is not present in either of the first two sources.

Strategy Effectiveness in Target Zero	Target Zero Definition	Countermeasures That Work	NCHRP 500 Report	Crash Modification Factors (CMF) Clearinghouse
Proven	Demonstrated to be effective by several evaluations with consistent results.	★★★★★ Demonstrated to be effective by several high-quality evaluations with consistent results.	Proven (P). Those strategies that have been used in one or more locations and for which properly designed evaluations have been conducted which show them to be effective.	★★★★★ = 14 quality points
Recommended	Generally accepted to be effective based on evaluations or other sources.	★★★★ Demonstrated to be effective in certain situations, or ★★★ Likely to be effective based on balance of evidence from high-quality evaluations or other sources	Tried (T). Those strategies that have been implemented in a number of locations, and may even be accepted as standards or standard approaches, but for which there have not been found valid evaluations.	★★★ = 7–10 quality points
Unknown	Limited evaluation evidence, or experimental.	★★ Effectiveness still undetermined; different methods of implementing this countermeasure produce different results. ★ Limited or no high-quality evaluation evidence.	Experimental (E). Those strategies representing ideas that have been suggested, with at least one agency considering them sufficiently promising to try them as an experiment in at least one location.	★★ = 3–6 quality points

Appendix G:

Federal Requirements and Target Zero

This appendix explains the federal requirements regarding establishing and updating the Strategic Highway Safety Plan (SHSP) for all 50 states. Target Zero is Washington's SHSP.

Two major federal laws influence the content and implementation of Target Zero: Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America's Surface Transportation (FAST) Act. Under these laws, the Federal Highway Administration (FHWA) sets policy that guides the implementation and evaluation of the SHSP.

FHWA published their Highway Safety Improvement Program (HSIP) Final Rules with an effective date of April 14, 2016. These Final Rules implement the HSIP requirements established in MAP-21 and the FAST Act, and establish clear requirements for updating the state's SHSP.

The HSIP is a core federal-aid program with the purpose of achieving a significant reduction in fatalities and serious injuries on all public roads. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. The HSIP regulation under 23 CFR 924 establishes the FHWA's HSIP policy, as well as program structure, planning, implementation, evaluation, and reporting requirements which state must follow to successfully administer the HSIP. The HSIP Final Rule updates HSIP requirements under 23 CFR 924 to be consistent with MAP-21 and the FAST Act, and clarifies program requirements. In addition to clarifying other programs, the HSIP Final Rule contains performance management requirements for SHSP updates.

FHWA has been working in partnership with key stakeholders for many years to prepare for these new rules. They will reinforce a data-driven approach to making safety decisions, improve collaboration across a wide range of safety partners, and provide transparency for the American public as states set goals, report on safety targets and, most importantly, save lives.

Meeting Federal Requirements for Target Zero

23 USC 148 requires all states to have an updated, approved SHSP which is consistent with specific requirements under section 148. The updated SHSP must be submitted to the FHWA Division Administrator, who will ensure that the state has followed a process that meets these requirements.

The FHWA provides an SHSP Process Approval Checklist, which is a tool to help Division Offices assess the process and completeness of the SHSP update. The requirements outlined in the Process Approval Checklist include detailed specific Indicators and Considerations which must be met by the state. Washington's plan has met all requirements in the past, and believes that it has met them with the 2016 update as well.



Appendix H: Target Zero Plan Development

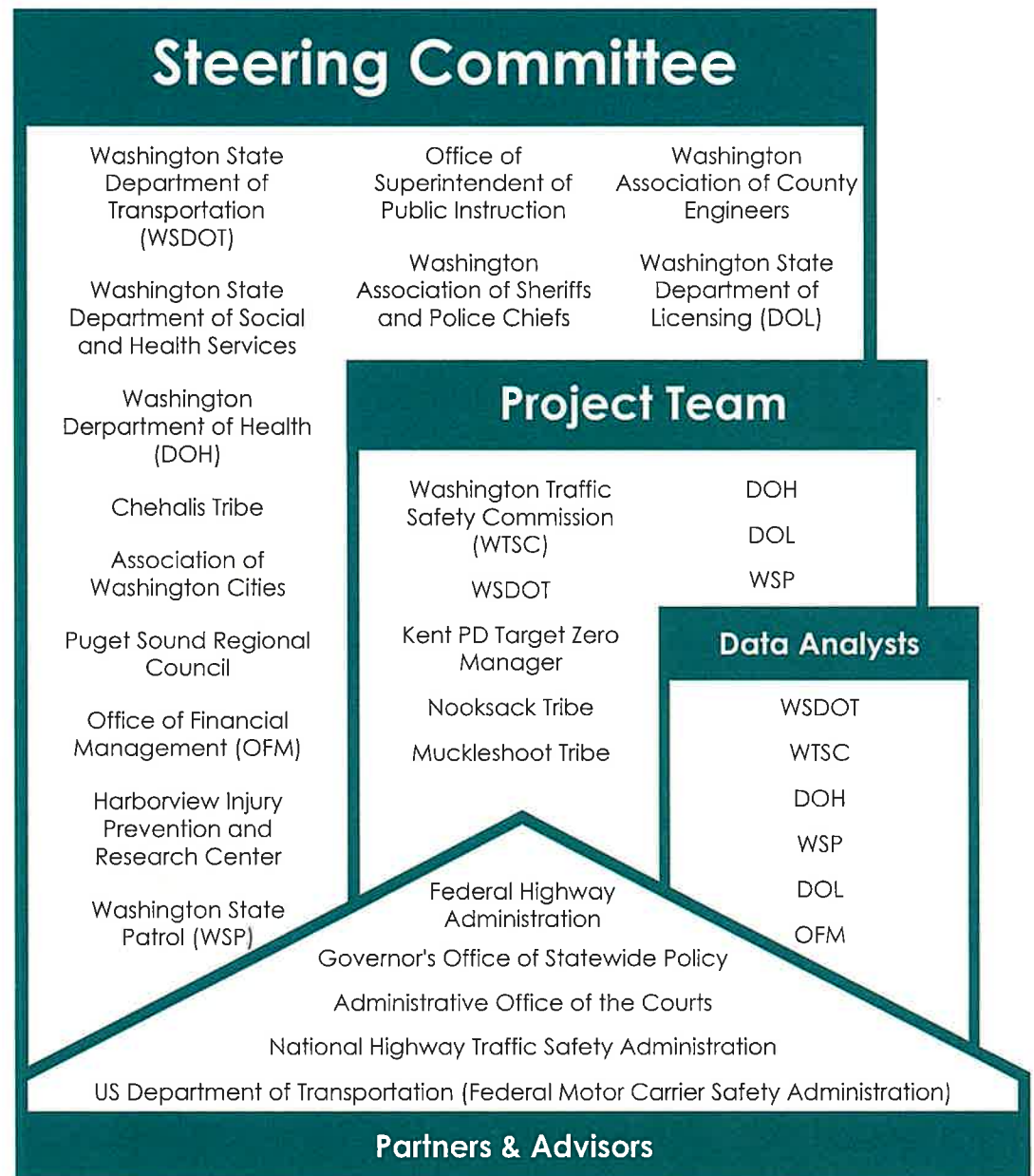
Developing and writing Target Zero is a multi-year process, and a collaboration across many groups. This appendix describes the process of developing the plan.

In 2015, the Washington Traffic Safety Commission (WTSC) and the Washington Department of Transportation (WSDOT) partnered together to develop the 2016 version of Washington State's Target Zero Strategic Highway Safety Plan (SHSP). Over 60 organizations directly contributed to the development of this new SHSP, and dozens of others advised the project along the way. These traffic safety partners intend for the plan to coordinate traffic safety programs across the state, align priorities and strategies among the various partners, and provide a common language and approach for traffic safety efforts.

The Target Zero plan has been revised and updated several times since the first edition in 2000. In the 2016 plan, we took a new look at the data, priorities, strategies, and format. We believe this has resulted in a plan that will be useful for a wide range of Washington's citizens, policy makers, and traffic safety professionals.

We began the project by establishing the Data Analyst Group, a partnership of data experts from the state agencies that manage Washington's critical traffic safety data systems. The Data Analyst Group coordinated the update of the fatality and serious injury data, made data-based recommendations on which factors were the biggest contributors to deaths and serious injuries on our roadways, and developed the new Priority Table (on page 11).

Along with the Data Analyst Group, a number of key partners came together in a formal, multi-disciplinary



Appendix I: Additional Resources

Impairment Involved

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 8th Edition, DOT HS 812 202, November 2015, “Chapter 1, Alcohol- and Drug-Impaired Driving”, (National Highway Traffic Safety Administration, NHTSA, Washington, DC), <http://www.ghsa.org/html/publications/countermeasures.html>

Drug-Impaired Driving: A Guide for What States Can Do, September, 2015, (Governor’s Highway Safety Association), <http://www.ghsa.org/html/publications/2015drugged.html>

NCHRP Report 500, “Volume 16: A Guide for Reducing Alcohol-Related Collisions”, (National Cooperative Highway Research Program, Transportation Research Board), http://www.trb.org/Publications/Public/Blurbs/A_Guide_for_Reducing_AlcoholRelated_Collisions_156343.aspx

NHTSA Traffic Safety Facts: Research Note, DOT HS 811 687, November 2012, “Washington’s Target Zero Teams Project: Reduction in Fatalities During Year One”, (National Highway Traffic Safety Administration, NHTSA, Washington, DC), www.nhtsa.gov/staticfiles/nti/pdf/811687.pdf

“The Guiding Principles of DWI Courts”, (National Center for DWI Courts), <http://www.dwicourts.org/learn/about-dwi-court/-guiding-principles>

“Washington’s Impaired Driving Advisory Council (WIDAC) Strategic Plan”, (Washington Traffic Safety Commission), <http://wtsc.wa.gov/programs-priorities/impaired-driving/>

Speeding Involved

“Speeding and Aggressive Driving”, Accessed January 26, 2015, (Governor’s Highway Safety Association), <http://www.ghsa.org/html/issues/speeding.html>

Toward Zero Deaths (TZD) Steering Committee, “Towards Zero Deaths: Strategy”, Accessed January 26, 2015, (TZD, National Strategy on Highway Safety), <http://www.towardzerodeaths.org/strategy/>

D. C. Richards, Transport Research Laboratory, September 2010, *Road Safety Web Publication No. 16*: “Relationship between Speed and Risk of Fatal Injury: Pedestrians and Car Occupants”, (Department for Transport, London), http://nacto.org/docs/usdg/relationship_between_speed_risk_fatal_injury_pedestrians_and_car_occupants_richards.pdf

Relationship of Traffic Fatality Rates to Maximum State Speed Limits, April 2016, Charles M. Farmer, Insurance Institute for Highway Safety

- Relationship of Traffic Fatality Rates to Maximum State Speed Limits, April 2016, (Insurance Institute for Highway Safety, Charles M. Farmer), <http://www.iihs.org/frontend/iihs/documents/masterfiledocs.ashx?id=2117>
- “Speed limit increases cause 33,000 deaths in 20 years”, Status Report, Vol. 51, No. 4, April 12, 2016, (Insurance Institute for Highway Safety, Highway Loss Data Institute), <http://www.iihs.org/iihs/news/desktopnews/speed-limit-increases-cause-33000-deaths-in-20-years>

increasing proportion of fatal-crash involved drivers who were unlicensed.

- Using 2007-09 national FARS data, 18.2% of the fatal crashes involved a driver who was unlicensed or invalidly licensed, resulting in the deaths of 21, 049 people.

Drivers involved in fatal crashes who had no valid license at time of crash (nationally)

- 13.8% in 1993-1997 (AAA)
- 11% of in 1998 (USDOT)
- 14% in 2007 (USDOT)
- 14.2% in 2007-2009 (AAA)

Drowsy Driver Involved

AAA Foundation for Traffic Safety, “Drowsy Driving”, <https://www.aaafoundation.org/drowsy-driving>

NCHRP Report 500, “Volume 14: A Guide for Reducing Crashes Involving Drowsy and Distracted Drivers”, (National Cooperative Highway Research Program, Transportation Research Board), page III-1, http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v14.pdf

Centers for Disease Control and Prevention, “Drowsy Driving: Asleep at the Wheel”, <http://www.cdc.gov/features/dsdrowsydriving/>

School Bus

School, Walk and Bike Route Guide, Feb. 2015, “School Walk and Bike Routes: A Guide for Planning and Improving Walk and Bike to School Options for Students”, (WA State Department of Transportation, WSDOT), <http://www.wsdot.wa.gov/LocalPrograms/SafeRoutes/GuideProject.htm>

Educational Service District 112, “Regional Student Transportation”, <http://web3.esd112.org/regionaltrans>

Washington Office of Superintendent of Public Instruction (OSPI), “Student Transportation”, <http://www.k12.wa.us/transportation/>

Vehicle-Train

Washington Utilities and Transportation Commission (UTC), “Rail Safety”, <http://www.utc.wa.gov/publicSafety/railSafety/Pages/default.aspx>

Operation Lifesaver, Inc., “Rail Safety Education”, <http://oli.org/>

“WSDOT State Rail Plan”, (Washington State Department of Transportation), <http://www.wsdot.wa.gov/Rail/staterailplan.htm>

Young Drivers 16–25 Involved

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 7th Edition, DOT HS 811 727, April 2013, “Chapter 6, Young Drivers”, (National Highway Traffic Safety Administration, NHTSA, Washington, DC), <http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf>

OECD Transport Research Centre, 2006, “Young Drivers: The Road to Safety”, (Organization for Economic Cooperation and Development, OECD, European Conference of Ministers of Transport), <http://www.itf-oecd.org/sites/default/files/docs/06youngdrivers.pdf>

“Promoting Parent Involvement in Teen Driving: An In-Depth Look at the Importance and the Initiatives”, 2013, (Governor’s Highway Safety Association), <http://www.ghsa.org/html/files/pubs/sfteens13.pdf>

“RUaD Coalition Strategic Plan 2011-2013”, (Washington State Coalition to Reduce Underage Drinking), http://docs.theathenaforum.org/sites/default/files/2011%20RUaD%20Annual%20Report%20_0.pdf

Gail D’Onofrio, M.D., M.S. and Linda Degutis, Dr.P.H., 2004, Alcohol Research & Health, “Screening and Brief Intervention in the

(Washington State Department of Transportation and University of Washington), <http://www.wsdot.gov/research/reports/fullreports/733.1.pdf>

Washington Department of Transportation, WSDOT, Published February 25, 2013, *The Gray Notebook, Edition 48*: “People Powered: Planning Ahead to Ensure the State’s Pedestrian and Bicycle Programs Succeed”, (Washington State Department of Transportation), <http://wsdot.wa.gov/publications/fulltext/graynotebook/Dec12.pdf>

Older Drivers 70+ Involved

IIHS HLDI, February 2014, *Status Report, Vol. 49*, No. 1: “Fit For the Road: Older Drivers’ Crash Rates Continue to Drop”, (Insurance Institute for Highway Safety, IIHS, Highway Loss Data Institute, HLDI), <http://www.iihs.org/iihs/sr/statusreport/article/49/1/1>

Stutts, J., Martell, C., Staplin, L., DOT HS 811 093, June 2009, “Identifying Behaviors and Situations Associated With Increased Crash Risk for Older Drivers”, (NHTSA Office of Behavioral Safety Research), <http://www.nhtsa.gov/NCSA>

Fabian Cevallos, Jon Skinner, Ann Joslin, and Tekisha Ivy, January 2010, “Attracting Senior Drivers to Public Transportation: Issues and Concerns”, (Federal Transit Administration), <http://www.aarp.org/content/dam/aarp/livable-communities/learn/transportation/Attracting-Senior-Drivers-to-Public-Transportation-Issues-and-Concerns-AARP.pdf>

NHTSA Technical Report, DOT HS 810 857, November 2007, “Characteristics of Crash Injuries Among Young, Middle-aged, and Older Drivers”, (National Highway Traffic Safety Administration, 2007), <http://www-nrd.nhtsa.dot.gov/Pubs/810857.pdf>

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 7th Edition, DOT HS 811 727, April 2013, “Chapter 7, Older Drivers”, (National Highway Traffic Safety Administration, NHTSA, Washington, DC), <http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf>

NHTSA Technical Report, DOT HS 811 152, June 2009, “Driving Transitions Education: Tools, Scripts, and Practice Exercises”, (National Highway Traffic Safety Administration), www.nhtsa.gov/DOT/NHTSA/Traffic%20Injury%20Control/Articles/Associated%20Files/811152.pdf

Washington State Office of Financial Management, *Forecast of the State Population*: “November 2012 Forecast”, (Washington Office of Financial Management), http://www.ofm.wa.gov/pop/stfc/stfc2012/stfc_2012.pdf

NCHRP Report 500, “Volume 9: A Guide for Reducing Collisions Involving Older Drivers”, (National Cooperative Highway Research Program, Transportation Research Board), http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v9.pdf

American Association of Motor Vehicle Administrators, “Grand Driver - Older Driver Safety and Mobility”, <http://www.aamva.org/GrandDriver/>

National Highway Traffic Safety Administration (NHTSA), “Older Drivers: Resources for People Around Older Drivers”, <http://www.nhtsa.gov/Senior-Drivers>

National Highway Traffic Safety Administration (NHTSA), “Drive Well Toolkit: Promoting Older Driver Safety and Mobility in Your Community”, <http://www.nhtsa.gov/Driving+Safety/Older+Drivers/Drive+Well+Toolkit:+Promoting+Older+Driver+Safety+and+Mobility+in+Your+Community>

Heavy Trucks

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 7th Edition, (National Highway Traffic Safety Administration), <http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf>

NCHRP Report 500, “Volume 13: A Guide for Reducing Collisions Involving Heavy Trucks”, (National Cooperative Highway Research Program, Transportation Research Board), <http://onlinepubs.trb.org/>

Municipal Rules relating to bicyclists:

- Bicycle Helmets – Currently, there is no state law requiring helmet use. However, some cities and counties do require helmets. See bicycle helmet requirements in Washington by municipality (<http://www.wsdot.wa.gov/bike/helmets.htm>).
- Roads Closed to Bicycles – Some designated sections of the state’s limited access highway system may be closed to bicycles for safety reasons. See state highway sections closed to bicycles (<http://www.wsdot.wa.gov/bike/closed.htm>) for more information. In addition, local governments may adopt ordinances banning cycling on specific roads or on sidewalks within business districts.

Tribes and Target Zero

Centennial Accord between the Federally Recognized Indian Tribes in Washington State and the State of Washington, August 4, 1989, (Governor’s Office of Indian Affairs), <http://goia.wa.gov/Government-to-Government/Data/CentennialAccord.htm>

Revised Code of Washington (RCW), RCW 43.376, Government-To-Government Relationship With Indian Tribes, <http://app.leg.wa.gov/RCW/default.aspx?cite=43.376&full=true>

Traffic Data Systems

“Washington Traffic Records Strategic Plan”, Updated June 2014, (Washington State Department of Licensing, Washington State Traffic Records Committee), <http://trafficrecords.wa.gov/wp-content/uploads/2014/09//2014-Traffic-Records-Strategic-Plan.docx>

Washington Traffic Records Committee Strategic Plan, 2016 Update, (Washington Traffic Records Committee), <http://trafficrecords.wa.gov/about-trc/trc-strategic-plan/>

EMS and Trauma Care System

Chiara, O. and S. Cimbanassi, *Current Opinion in Critical Care*, December 2003, 9(6), pp. 510-514, “Organized Trauma Care: Does Volume Matter and Do Trauma Centers Save Lives?” http://journals.lww.com/co-criticalcare/Abstract/2003/12000/Organized_trauma_care_does_volume_matter_and_do.8.aspx

Miller T.R. and D.T. Levy, *Archives of Surgery*, February 1995, 130(2), pp. 188-193, “The Effect of Regional Trauma Care Systems on Costs”, <http://archsurg.jamanetwork.com/article.aspx?articleid=596134>

Celso, B., J. Tepas, B. Languard-Orban, *Journal of Trauma*, February 2006, 60(2), pp. 371-378, “A Systematic Review and Meta-Analysis Comparing Outcomes of Severely Injured Patients Treated in Trauma Centers Following the Establishment of Trauma Systems”, http://personal.health.usf.edu/epracht/publications/celso_etal_2006.pdf

Mann, N. C., R. J. Mullins, et al., *Journal of Trauma*, September 1999, 47 (suppl. 3), S25-S33, “Systematic Review of Published Evidence Regarding Trauma System Effectiveness”, <http://www.ncbi.nlm.nih.gov/pubmed/10496607>

Mullins, R. J. and N. C. Mann, *Journal of Trauma*, September 1999, 47 (suppl. 3), S59-S66, “Population-Based Research Assessing the Effectiveness of Trauma Systems”, <http://www.ncbi.nlm.nih.gov/pubmed/10496613>

Mackenzie, E. J., *Journal of Trauma*, September 1999, 47 (suppl. 3), S34-S41, “Review of Evidence Regarding Trauma System Effectiveness Resulting From Panel Studies”, <http://www.ncbi.nlm.nih.gov/pubmed/10496608>

MacKenzie, E. J., F. P. Rivara, et al., *New England Journal of Medicine*, January 2006, 354(4), pp. 366-378, “A National Evaluation of the Effect of Trauma-Center Care on Mortality”, <http://www.nejm.org/doi/full/10.1056/NEJMsa052049>

Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 7th Edition, DOT HS 811 727,

Appendix J: Traffic Safety Partnership List

The following organizations were consulted in the development of Washington State's Target Zero Strategic Highway Safety Plan and are critical to achieving SHSP goals.

Washington State Government:

Governor Jay Inslee
Governor's Office
Administrative Office of the Courts
County Road Administration Board
Criminal Justice Training Commission
Department of Health
Department of Licensing
Department of Social and Health Services
Department of Transportation
Liquor Control Board
Office of Financial Management
Office of Indian Affairs
Office of Public Defense
Office of Superintendent of Public Instruction
Results Washington
State House of Representatives Members and Staff
Washington State Patrol
State Senate Members and Staff
Transportation Policy Office

Washington State University
Washington Traffic Safety Commission
Transportation Commission
Transportation Improvement Board
Utilities and Transportation Commission
UW Harborview Injury Prevention and Research Center

Federal Government:

National Highway Traffic Safety Administration, Region 10
Federal Highway Administration, Washington Division
Federal Highway Administration, Federal Lands
Federal Motor Carrier Safety Administration
Federal Railroad Administration, Region 8

Tribal Nations and Organizations:

Confederated Tribe of the Chehalis Reservation
Confederated Tribes of the Colville Reservation

Cowlitz Indian Tribe
Hoh Tribe
Jamestown S'Klallam Tribe
Kalispel Tribe
Lower Elwha Klallam Tribe
Lummi Nation
Makah Tribe
Muckleshoot Indian Tribe
Nisqually Tribe
Nooksack Tribe
Port Gamble S'Klallam Tribe
Puyallup Tribe
Quileute Nation
Quinault Nation
Samish Nation
Sauk-Suiattle Tribe
Shoalwater Bay Tribe
Skokomish Tribe
Snoqualmie Tribe
Spokane Tribe of Indians
Squaxin Island Tribe
Stillaguamish Tribe
Suquamish Tribe

Washington Association of County Engineers
Washington Association of Prosecuting Attorneys
Washington Association of Sheriffs and Police Chiefs
Washington Impaired Driving Advisory Committee
Washington Traffic Incident Management Coalition
Washington Traffic Safety Education Association
Washington Trucking Association

Private and Non-Profit Organizations:

3M Corporation
AAA Washington
Altus Traffic Management
American Traffic Safety Services Association
Cascade Bicycle Club
Center for Defensive Driving
CSL Consulting
DKS Associates
DN Traffic Consultants
Driver Training Group
Driving 101
Eco Resource Management Systems
Evergreen Safety Council

Feet First
Freedom Driving School
Governor's Highway Safety Association
HDJ Design Group
IvS Analytics
Kittitas County Community Network
LifeSafer, Inc.
Mothers Against Drunk Driving
Municipal Research and Services Center
Project Imprint
Rolland Associates
Tacoma Pierce County Community Connections
Washington Road Riders Association
Washington Trucking Association

Appendix K: Special Thanks

Hundreds of traffic safety partners across the state were involved in creating the final Target Zero plan. Their participation included everything from providing suggestions and recommendations on strategies, to contributing data analysis and document reviews. Dozens of dedicated experts rolled up their sleeves and got to work to bring the SHSP update project in on time. For over a year, these folks gathered data, created charts and graphs, met to discuss findings, wrote and edited text, and collaborated with partners both inside and outside their organizations to complete the plan. Their commitment to creating a clear, data-driven, and inspiring document was fueled by their desire to realize the goal of zero traffic deaths and serious injuries by 2030.

We deeply thank them all for their extra efforts and hard work!

Sincerely,

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