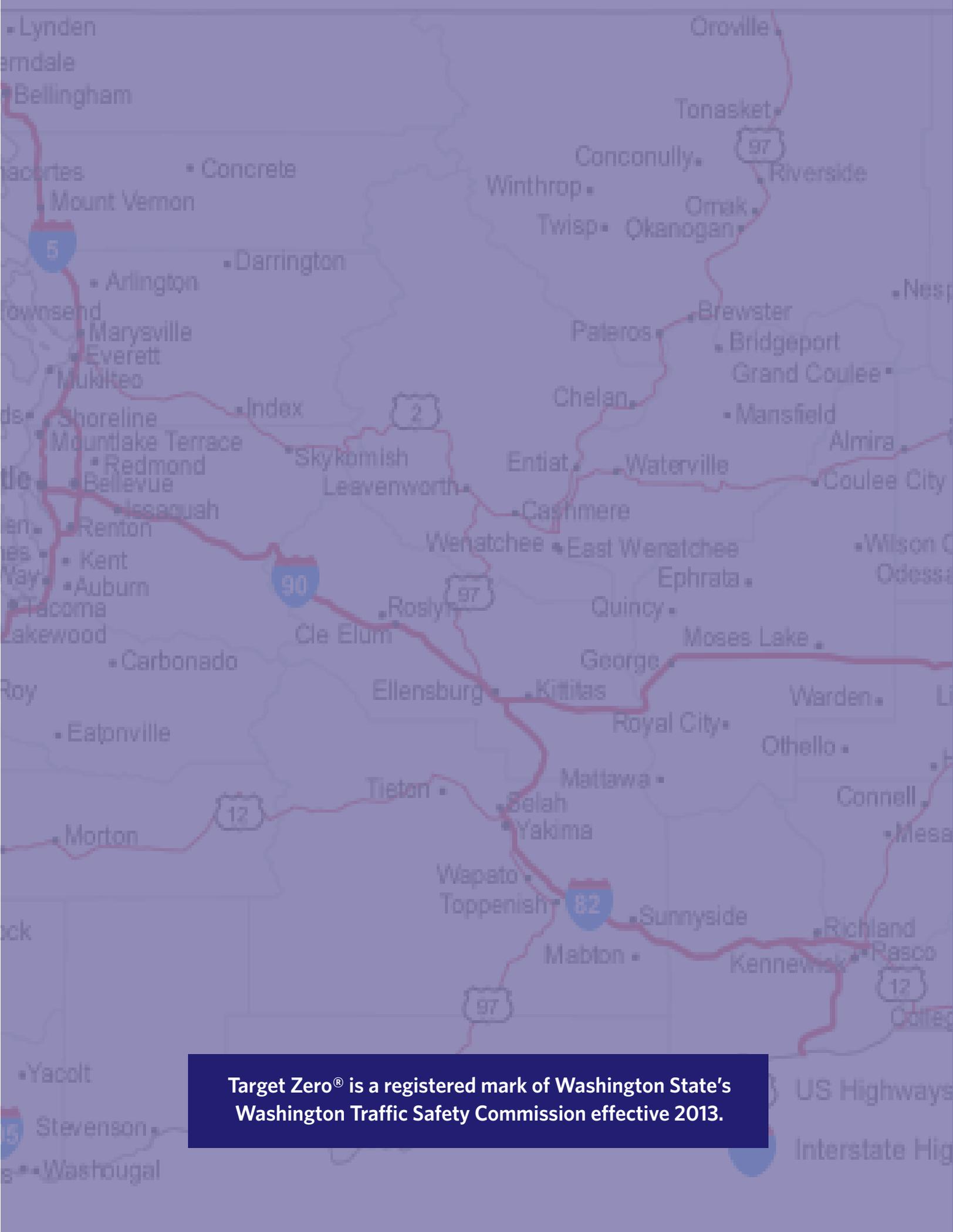


Washington State Strategic Highway Safety Plan 2013

Zero Deaths & Zero Serious Injuries
by 2030





Target Zero® is a registered mark of Washington State's Washington Traffic Safety Commission effective 2013.

US Highways
Interstate Hig

JAY INSLEE
Governor



STATE OF WASHINGTON
Office of the Governor

December 13, 2013

To the Citizens of Washington State:

In 2000, Washington was the first state in the nation to set a very aggressive goal for ourselves: zero traffic deaths and serious injuries by 2030. We call this vision Target Zero®. Many people thought it could not be done but, as we inch closer and closer to 2030, the trend lines tell us that we really are on our way to achieving our goal! Since setting this aggressive goal, Washington State has become a national leader in traffic safety through innovative new strategies and new partnerships such as Target Zero Teams.

Our recent progress has been impressive. Washington traffic fatalities have fallen every year since 2005 – down to 437 in 2012 – still, *too many* people dying on our roadways. To continue this decline, we will need to implement new strategies and more breakthrough programs in the next five years. This Target Zero Plan identifies some of those programs.

This collaborative plan was created through the work of many people, representing state agencies, city and county law enforcement, Tribal transportation planners and law enforcement, and private organizations. Over 120 extended partner organizations from all over Washington also participated in the development of the Plan during a Target Zero Plan Partner's meeting.

The resulting Target Zero Plan is a detailed roadmap that coordinates the efforts and funding of all traffic safety organizations across Washington State, uses the most effective strategies, and tracks our progress toward our ultimate goal – Target Zero.

I encourage you to read this Target Zero Plan, implement the strategies, and join me as a member of the Washington Target Zero Team. As a unified and committed team, we can reach our Target Zero goal by 2030!

Very truly yours,

Jay Inslee
Governor



Washington Traffic Safety Commission



Governor Jay Inslee • Commission Chair



Lynn Peterson • Department of Transportation



Chief John Batiste • Washington State Patrol



Pat Kohler • Department of Licensing



John Wiesman • Department of Health

District & Municipal
Court Judges
Association

Judge James P Swanger • Clark County District Court



Randy Dorn • Superintendent of Public Instruction



Kevin Quigley • Department of Social and Health Services



Sharon Dillon • Washington State Association of Counties



Jon Snyder • Association of Washington Cities



Darrin T. Grondel • Washington Traffic Safety Commission

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Overview



A white SUV is driving on a bridge over a forested valley. The bridge has a metal railing and a concrete deck. In the background, there are more cars and a truck on the bridge. The surrounding area is a dense forest of evergreen trees under a clear blue sky.

**Zero by 2030:
Ambitious...
yes!
Doable...
absolutely!**

The federal Moving Ahead for Progress in the 21st Century Act (MAP-21), 23 USC 148, requires each state to have a Strategic Highway Safety Plan. This document meets that federal requirement for Washington State.

About Target Zero®

Why a Goal of Zero?

The Target Zero plan reflects the collective, the “many.” It is filled with data driven analysis, shining a light on the big picture of where our limited resources of time, talent and treasure will have the most impact.

But our goal – of zero deaths and serious injuries in 2030 – is about the “one”... the individual. It’s about the Washington State Trooper struck by a truck. It’s about the child who went through the front window of a car because she wasn’t buckled in. It’s about the recent high school graduate who left the road and hit a tree. It’s about our colleagues, friends and family. How many of them are we okay with being killed or seriously injured in a crash? The answer is obvious: zero. So our goal, for every citizen in the state of Washington, is zero.

Ambitious...yes! Doable...absolutely! Look at the data in this plan and see the progress that’s already been made, the areas that need more focus and our strategies for reaching zero deaths and serious injuries by 2030.

Target Zero is a high-level strategic plan which:

- Sets statewide priorities for all traffic safety partners over the next three to four years
- Provides a resource for potential strategies to address each of the priority areas
- Monitors outcomes at a statewide level for each of the priority areas

Target Zero is intended to be incorporated into the plans and programs of key state traffic safety agencies, as well as Tribes, cities, counties and private organizations. State agencies are required to follow Target Zero and it is strongly recommended for all other organizations and individuals involved in traffic safety.

Target Zero identifies strategies for implementation over the next three to four years. The specific projects that implement Target Zero strategies and measures for their success are formulated in each organization. They are documented in agencies and organizations’ strategic and operational plans throughout the state, wherever the strategies are being implemented. In the process of evaluating the effectiveness of Target Zero, scheduled to begin in 2014, there will be an examination of individual organizations’ projects and their measures.

The first Target Zero plan was created in 2000. It set this ambitious goal and we have made significant progress. Since the 2007 revision we have seen positive trends in almost every area, with the strengthening of DUI laws, increased enforcement of impaired

driving, improvements in automotive safety equipment, significant roadway/engineering improvements, and implementation of anti-texting and cell use laws.

We must do everything in our power to eliminate traffic deaths and serious injuries. However, if Washington State is to reach Target Zero by 2030, we must have help from others beyond our borders.

In the last several decades the auto industry has given us air bags, more crash resistant vehicles and roll-over protection technology. Organizations such as the National Comprehensive Highway Research Program, MADD, the United States Department of Transportation (USDOT), the Governor’s Highway Safety Association, and the Insurance Institute for Highway Safety have provided tools to make our roads safer.

Reaching our Target Zero goal will only be accomplished through partnerships leveraging innovation, research and commitment to complement our state’s efforts. Together we will realize zero traffic deaths and serious injuries by 2030.

What is the Strategic Highway Safety Plan?

Each state must have a Strategic Highway Safety Plan (SHSP) and Washington’s is called Target Zero. It is created through a collaboration of traffic safety professionals and activists from many different organizations and disciplines: engineers from WSDOT and local public works; Tribal and city police, county sheriffs’ deputies, and troopers from State Patrol; medical professionals from hospitals and public health agencies; and other people from every corner of the state dedicated to making our roads safer.

Target Zero is a “practitioner’s plan” intended to unite the contributing organizations as well as traffic safety organizations statewide. The plan will help us coordinate traffic safety programs, better align priorities and strategies, and have a common language and approach to traffic safety efforts across Washington State. The plan is data driven, identifying the factors contributing to fatal and serious injury collisions on Washington roads, as well as listing proven and recommended strategies for reducing traffic deaths and serious injuries.

Executive Summary

**The Target Zero vision is:
Washington State will reduce traffic fatalities and serious injuries to zero by 2030.**

Every Person Counts

Each year from 2009 to 2011, an average of 469 people died and 2,421 people were seriously injured on Washington's roadways.

To achieve Target Zero, Washington State must have an average of 24 fewer fatalities and 120 fewer serious injuries each year. 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 do more.

Target Zero Goals

We have identified near-term goals to achieve Target Zero for fatalities and serious injuries, in total and for each priority area of the plan. To reach the goal of zero by 2030, we need to be aggressive, and strive to reach at least the minimum annual reductions to stay on track. In some areas Target Zero goals seem easy to achieve, and in others the goals are incredibly aggressive.

In every area, as we get closer to 2030, the later years of decline will be the most challenging, as the remaining fatalities and serious injuries will likely be occurring among the most high-risk populations. Therefore, setting these ambitious, but achievable, Target Zero goals is crucial to maintaining momentum toward achieving the vision of zero deaths and serious injuries by 2030.

MAP-21 requires that our Strategic Highway Safety Plan (SHSP) is coordinated with the Highway Safety Plan (HSP), Commercial Vehicle Safety Plan (CVSP) and the Highway Safety Improvement Program (HSIP). This coordination will include harmonizing certain performance measures and targets. Performance measures and targets will not be required for the FHWA safety program until the FHWA Transportation Performance Management (TPM) regulations become effective. In the future, once the TPM regulations are adopted, the performance measures and targets common to the State's HSP and the State HSIP (total fatalities, fatality

rate and total serious injuries) shall be defined and reported identically, and coordinated through the state SHSP. The role of our SHSP will be to support the State's efforts to achieve these targets by establishing appropriate goals and objectives, emphasis areas and effective strategies. Once federal rulemaking is complete we will review Target Zero goals and may adjust or update the Target Zero Plan.

National and Statewide Trends

For the past couple of years, national traffic safety trends have shown significant improvement. Figures from the National Highway Traffic Safety Administration (NHTSA) show 29,757 people died in U.S. motor vehicle crashes in 2011, down 2% from 2010.

Washington State fatalities are also dropping, down 1.3% from 2010 to 2011 (from 460 to 454), with preliminary figures for 2012 showing another 3.79% decline in fatalities. Although far too many people are still dying on U.S. and Washington State roads, these recent drops are encouraging. The improvements made over time are particularly telling in the chart on page 4.

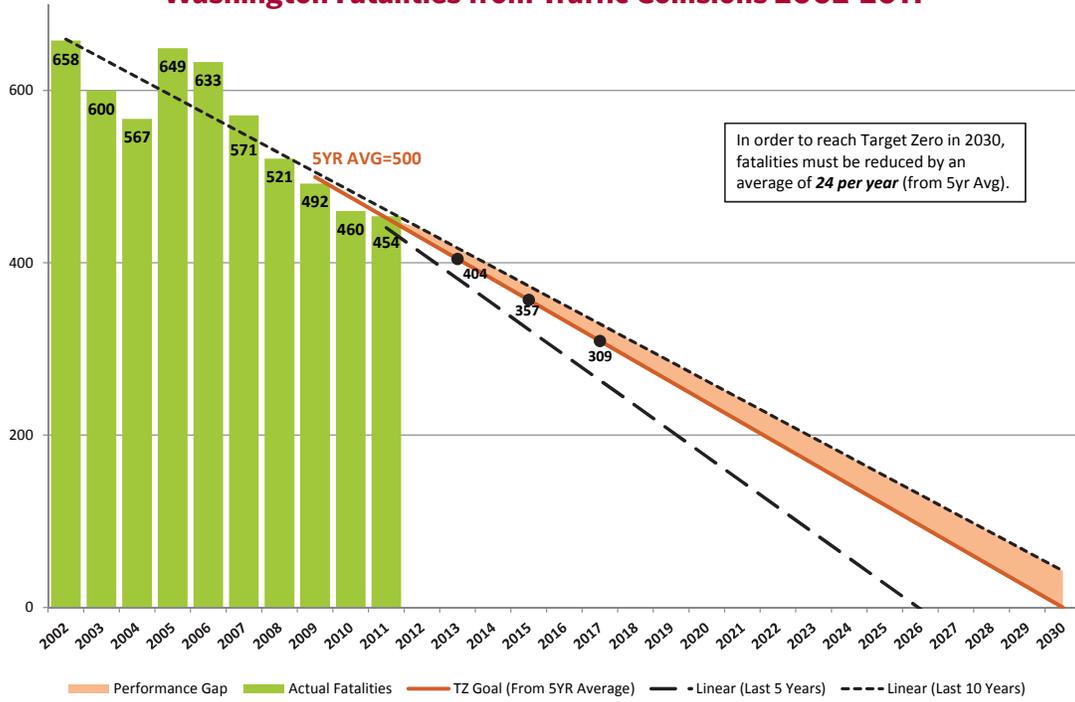
Throughout the Target Zero plan, traffic fatality and serious injury data are presented for each priority emphasis area. Fatalities are represented with the color green and serious injuries with purple.

The fatality and serious injury graphs throughout this plan display five-year and ten-year trend lines, and the Target Zero line. The Target Zero line is where we need

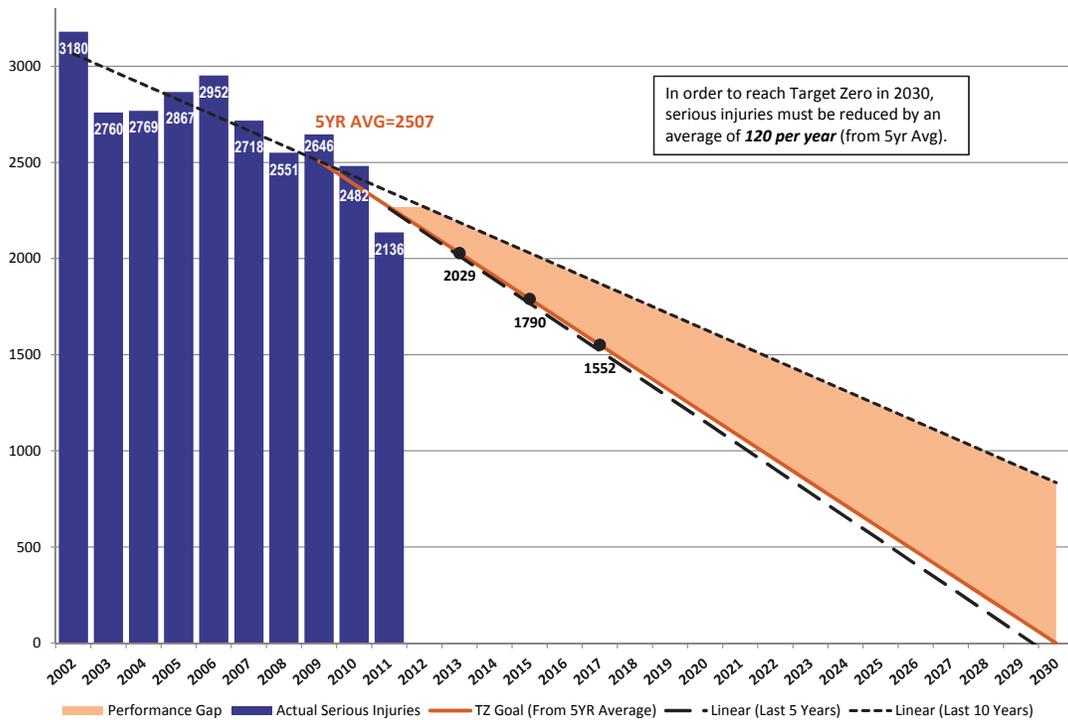
to be to achieve our vision of zero deaths by 2030. Many of the five-year trends show an impressive decline. However, most ten-year trends show we must push harder in order to reach zero fatalities and serious injuries by 2030. The area between the ten-year trend and the Target Zero line is our "Performance Gap" (shaded in light orange) and shows the improvement needed to achieve Target Zero.

In 2010, Washington had the 4th lowest traffic fatality rate in the nation, up from #11 in 2005.

Washington Fatalities from Traffic Collisions 2002-2011

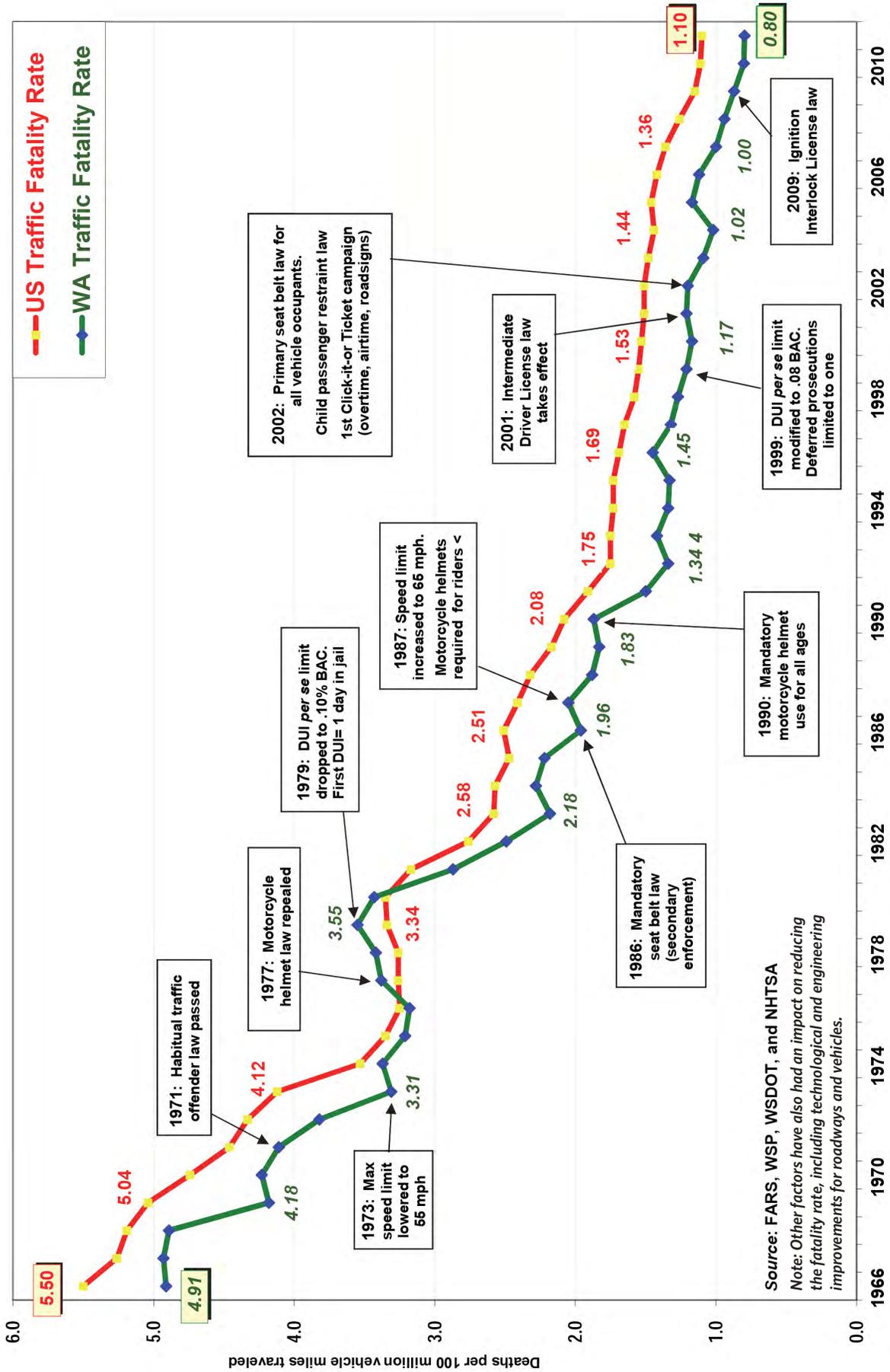


Washington Serious Injuries from Traffic Collisions 2002-2011



Key Washington State Traffic Safety Laws and Policies Impacting Traffic Fatality Rates, 1966 - 2011

Traffic fatalities per 100 million VMT



Source: FARS, WSP, WSDOT, and NHTSA
 Note: Other factors have also had an impact on reducing the fatality rate, including technological and engineering improvements for roadways and vehicles.



Successful traffic safety education programs, tougher legislation, improved roadways, faster emergency response times, and strategically focused enforcement efforts have contributed greatly to the continuing decline in traffic deaths. Washington State's traffic safety partners have worked in close collaboration to bring about the changes that contributed to our state's record low 2011 traffic fatality rate.

However, we also acknowledge that there are factors outside the control of the Target Zero partners. Trends in the driving population, such as the number of people on the road (and therefore exposed to the risk of traffic collisions), can affect the number of traffic fatalities. In a down economy, we may see few high-risk drivers on the roadways. This could affect the number of traffic fatalities.

Meanwhile, technological improvements and medical advances can reduce the risk of fatalities. All of these factors and more will influence our ability to reach zero fatalities and zero serious injuries by 2030.

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 Age 16-25** (see pages 51-66 for more information). Fatalities involving younger drivers aged 16-25 have seen significant reductions since 2007. Current projections based on the 10-year trend show zero fatalities in 2023 and zero serious injuries in 2027. The decline in young driver involved fatalities over the last five years is even more promising, showing that if the most recent five-year decline continues, we could reach zero fatalities as early as 2020. This success reflects effectiveness of the implementation of intermediate driver licenses, high visibility enforcement and programs such as the Party Intervention Patrol. Another factor may be youth postponing getting their driver license.
- **Unrestrained Vehicle Occupants** (see pages 92-99 for more information). 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 2018 and zero serious injuries in 2019. 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 seat belt use.

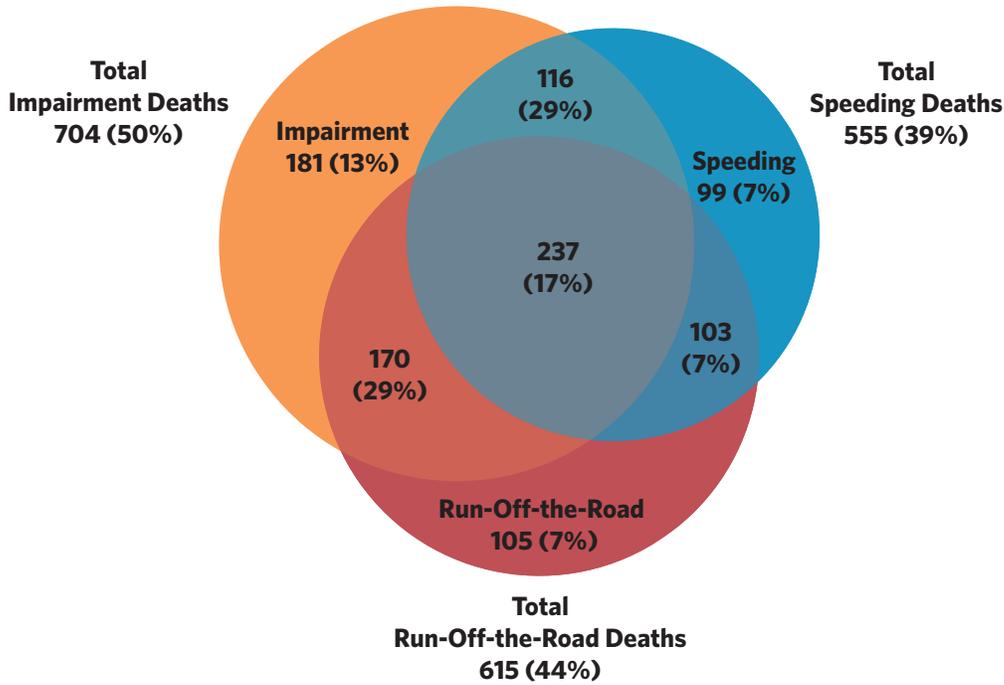
- **Opposite Direction** (Head-on) Collisions (see pages 106-111 for more information). Fatalities and serious injuries resulting from head-on collisions have seen dramatic reductions. Current 10-year trends show zero head-on fatalities by 2027, and zero head-on serious injuries by 2029. The reductions in head-on fatalities and serious injuries in the most recent five years have been dramatic and, if we continue on the current five-year decline, we will reach zero head-on fatalities in 2018, and zero serious injuries in 2020. This success is a reflection of various engineering improvements and safety enhancements made to Washington roads.

Areas for Improvement

There are other areas where we are not seeing these positive trends. We are not seeing the declines we need to achieve Target Zero.

- **Pedestrians** (see pages 120-127 for more information). Despite numerous engineering improvements and other strategies, current trends for pedestrian fatalities and serious injuries indicate that they are on the rise. Although the total fatal and serious injury numbers are lower than other traffic safety priorities, the trends show that more must be done to provide opportunities to implement strategies that may inform other traffic safety priorities as we near 2030.
- **Motorcyclists** (see pages 112-119 for more information). The 10-year trends in motorcyclist fatalities indicate that both fatalities and serious injuries are on the rise. The five-year trend for fatalities shows we are closing this gap and reversing the upward trend to more of a neutral one, but still not declining. The declines in motorcyclist serious injuries are more promising, showing that if we can maintain our current five-year decline, we could be on track to reach zero serious injuries in 2024. Consistent helmet use is critical to progress. Despite Washington's primary law requiring all motorcyclists wear helmets, nearly 25% of seriously injured motorcycle riders are not wearing helmets.

Most Common Factors Involved in 1,407 Washington Fatalities (2009-2011)



Overlap for the top three contributing factors, 2009-2011. Percentages are based on total traffic fatalities (1,407) during that time period.

Impaired driving was involved in 50% of fatalities between 2009-2011, run-off-the-road in 44% and speeding in 39%. In 29% of fatalities, both impairment and run-off-the-road were factors. In another 29%, both impairment and speed were involved. When combined, 17% of fatalities involved all three factors. Impairment was the only contributing factor in 13% of fatalities. Run-off-the-road and speeding, each by themselves, were the only contributing factor in 7% of fatalities. In another 7% of fatalities, run-off-the-road and speeding were both involved.

Largest Contributing Factors

Target Zero sets statewide traffic safety priorities based upon the most frequently cited contributing factors. During the 2009 to 2011 period, the top three factors were:

- **Impaired Drivers** – contributing to 50% of total traffic fatalities
- **Run-Off-the-Road** – indicated in 44% of fatal traffic fatalities
- **Speeding** – involved in 39% of fatal traffic fatalities

Overall, 72% of traffic fatalities involved at least one of these top three traffic safety priorities, and 17% involved all three.

Significantly reducing impaired driving, controlling speeding, and keeping vehicles from leaving the roadway (or reducing collision severity when vehicles do leave the roadway), is needed to make Washington State’s vision of zero traffic fatalities and serious injuries a reality.

To that end, the contribution of driver impairment and speeding is shown for each Priority Level One and Priority Level Two factor in subsequent chapters. For impairment and speeding, the contributing factor of run-off-the-road is displayed.

Target Zero Strategies

This plan includes specific strategies for further reducing traffic fatalities and serious injuries. These strategies were developed using national-level research, existing pilot programs, and input from many statewide stakeholders. Each of the strategies in Target Zero has been given one of the following effectiveness ratings:

- **(P) Proven** effective through professional evaluation in Washington or in other states or countries
- **(R) Recommended** based on documented best practices or federal recommendations
- **(U) Unknown** strategies that are new or with limited evaluations

These effectiveness ratings are indicated by the initial – P, R, or U – at the end of each strategy. The best strategies are **Proven** or **Recommended**, but it’s also important to experiment with some **Unknown** strategies. In those cases, it’s critical to have a properly designed evaluation component as part of the project.

When determining effectiveness of the strategies in this document, three main sources were used:

- *Countermeasures That Work* (CTW), A Highway Safety Countermeasure Guide for State Highway Safety Offices by the Governors’ Highway Safety Association for NHTSA and the USDOT
- *National Cooperative Highway Research Program* (NCHRP) Report 500, Volumes 1-23
- Crash Modification Factors (CMF) Clearinghouse

The majority of the Target Zero strategies focus on the four Es. To make it easy to find the kind of strategies you are looking for, we have indicated which area the strategies fall into:

Education - Give drivers the information to make good choices, such as not driving while impaired, wearing a seatbelt, and avoiding distractions while in their vehicles.

Enforcement - Use data-driven analysis to help law-enforcement officers pinpoint locations with a high number of fatal and serious-injury collisions related to driver behaviors, such as speeding and impairment.

Engineering - Design roads and roadsides using practical, near term solutions to reduce collisions, or severity of collisions if they do occur.

Emergency Medical Services (EMS) - Provide high-quality and rapid medical and emergency response to injury collisions.

Leadership/Policy – Not an “E”, these are strategies that involve laws, agency rules, or policy changes.

Even in an era of shrinking resources and economic recession, our downward decline toward zero fatalities and serious injuries has not only maintained momentum but gained, making Washington roads some of the safest in the nation.





Target Zero Priorities

In any endeavor, addressing the biggest issues first will provide the most favorable results. Eliminating deaths and serious injuries on our roadways is no different. To focus efforts, the primary factors in fatal and serious traffic collisions have been grouped into three Priority Levels. The levels are based on the percentage of traffic fatalities and serious injuries associated with each factor.

Priority Level One includes the factors associated with the largest number of fatalities and serious injuries in the state. Each of these factors was involved in at least 30% of the traffic fatalities or serious injuries between 2009 and 2011. Traffic Data Systems, while not a cause of fatalities, is considered a Level One priority because of the potential for better data to significantly improve our analysis of traffic fatalities and serious injuries.

Priority Level Two factors while frequent, are not seen as often as Priority Level One items. Level Two factors were seen in at least 10% of traffic fatalities or serious injuries. Emergency Medical Services (EMS) is included here due to the significant impact effective EMS response has on preserving life and minimizing injury.

Priority Level Three factors are associated with less than 10% of fatalities and serious injuries. There is less discussion of these areas in the Target Zero plan. However, we believe if we address the more common factors in Priority Levels One and Two – such as impairment, speeding, and run-off-the-road collisions – Level Three factors will see numbers go down as well. The roads will be safer for all users.

In past editions of Target Zero, priorities have been set based on fatalities only. For the first time, the priorities have now been set considering both fatality and serious injury numbers. The numbers are based on the contributing circumstances identified by specially-trained law enforcement personnel on collision reports. However, as with any large-scale system, there is always the opportunity to improve the accuracy of the data.

The Traffic Data Systems chapter details an important project that brings together separate databases to improve serious injury data. But even with the current limitations of serious injury data, considering both fatalities and serious injuries in setting priorities broadens the scope of Target Zero to include serious injuries, while still giving appropriate emphasis to fatalities.

Washington State 2009-2011	Fatalities		Serious Injuries	
	# of People	% of Total	# of People	% of Total
Priority Level One				
Impaired Driver Involved	704	50.1%	1,519	21.0%
Run-Off-the-Road	615	43.7%	2,156	29.7%
Speeding Involved	555	39.5%	2,126	29.3%
Young Driver 16-25 Involved	487	34.6%	2,763	38.0%
Distracted Driver Involved	426	30.3%	868	11.9%
Intersection Related	290	20.6%	2,474	34.1%
Traffic Data Systems	**	**	**	**
Priority Level Two				
Unrestrained Vehicle Occupants	348	24.8%	764	10.5%
Unlicensed Driver Involved	253	18.0%	n/a	n/a
Opposite Direction	221	15.7%	702	9.7%
Motorcyclists	206	14.7%	1,230	17.0%
Pedestrians	193	13.7%	869	12.0%
EMS and Trauma Care Systems	**	**	**	**
Priority Level Three				
Older Driver 75+ Involved	126	9.0%	378	5.2%
Heavy Truck Involved	115	8.2%	341	4.7%
Drowsy Driver Involved	45	3.2%	258	3.6%
Bicyclists	26	1.8%	339	4.7%
Work Zone	9	0.6%	132	1.8%
Wildlife	8	0.6%	78	1.1%
School Bus Involved	3	0.2%	18	0.2%
Vehicle-Train	2	0.6%	3	0.0%
Total*	1,406		7,247	

* More than one factor is commonly involved in fatalities and serious injuries. Therefore, each fatality and serious injury tallied in "Total" may be represented in multiple factors in the table.

This Target Zero update reflects data for 2009-2011, and the previous Target Zero plan was reflective of 2006-2008 data. Nearly all comparisons, unless otherwise noted, will be between these two periods.

Local Agencies and Target Zero

The success of the Target Zero plan is dependent on local participation, both in creating the plan and using it. Washington’s continued progress toward our goal of zero deaths and serious injuries is due in large part to work by local agencies and organizations.

Assisting, working with, and sometimes being led by local partners is most effective when guided by state and local data. It is critical to get the message out about Target Zero to share with:

- Local Target Zero Managers
- Police Departments
- Public Works Departments
- Sheriffs’ Offices
- Community Organizations
- Emergency Medical Organizations
- Schools
- Anyone interested in traffic safety

Local Data Available

The data presented in Target Zero is at the statewide level. But comparison data broken down by local areas – Regional Transportation Planning Organizations (RTPOs), counties and many cities’ data – is available. This can be very useful for prioritizing resources and programs at the local level using the same data-driven approach.

An important component of the Target Zero plan is that the information highlights which factors locally are contributing to the most fatalities and serious injuries.

This information is updated regularly and can be found on the Research and Data page of the Washington Traffic Safety Commission website (<http://www.wtsc.wa.gov/statistics-reports/>), or can be requested from WSDOT’s Highways and Local Programs division.

The community specific data will help local and regional agencies prioritize safety projects and programs, as well as assist them in developing localized Target Zero plans. Using data-driven approaches to problem identification and prioritization provides local-level justification for allocating funds and resources.

The Washington Traffic Safety Commission (WTSC) will consider local data-determined priority areas in evaluating grant requests. Local priorities can vary significantly from statewide priorities, based on the data, as illustrated below:

Target Zero Managers

Washington State is known for strong state and local partnerships in traffic safety efforts. For over 30 years we have invested in a coordinated network of local traffic safety professionals. This network has evolved over time as the traffic safety picture has changed at the local, state and national levels. Even the name of the network has

Statewide Priorities - Top 5			Okanogan County Priorities - Top 5			City of Kent Priorities - Top 5		
	FAT	SI		FAT	SI		FAT	SI
Impaired Driver Involved	50%	21%	Run-Off-the Road Involved	66%	45%	Impaired Driver Involved	50%	20%
Run-Off-the-Road	44%	30%	Impaired Driver Involved	55%	25%	Intersection Related	45%	51%
Speeding Involved	40%	29%	Speeding Involved	45%	32%	Young Driver Age 16-25 Involved	45%	32%
Young Driver Age 16-25 Involved	35%	35%	Unrestrained Vehicle Occupants	45%	25%	Unrestrained Vehicle Occupants	35%	5%
Distracted Driver Involved	30%	12%	Distracted Driver Involved	35%	10%	Unlicensed Driver Involved	30%	N/A

FAT = Fatalities **SI** = Serious Injuries

adapted to reflect our goals. We now have Target Zero Managers (TZMs) across Washington State.

Each TZM guides a local task force represented ideally by engineering, enforcement, education, emergency medical services, as well as other community agencies and organizations with an interest in traffic safety. The task forces coordinate traffic safety local efforts and resources at the local level by tracking data, trends, and issues in their area. They provide a variety of programs, services and public outreach throughout their communities by working with local partners.

Local Partnerships with Cities and Counties

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 and the Association of Washington Cities, and a local judge, to the WTSC so they can work with state agency directors involved in traffic safety. The WTSC commissioners oversee and approve the work and grant funding recommendations of WTSC staff.

Funding for Local Organizations

Funding is available for local governments and organizations through two statewide grant programs, one from the Washington Traffic Safety Commission and one from the Washington State Department of Transportation (WSDOT). The WTSC Federal Grant process funds behavioral change projects.

The WTSC process now closely mirrors the WSDOT Federal Highway Safety Improvement Program (HSIP) funding program. The HSIP program is managed by WSDOT's Highways and Local Programs division, and awards funding for local traffic safety engineering improvements.



Target Zero managers are located in the dark blue counties and Tribal reservation lands.

Target Zero Manager Network members



Local Program Examples

Emergency Medical Services (EMS) and Trauma Services

– Local EMS and Trauma programs play a significant role in prevention efforts. Examples include the Chelan-Douglas Safe Kids coalition with their distracted pedestrian program, and the Okanogan/North Douglas EMS Council’s work on a child car seat distribution program.

Target Zero Teams, Full-time DUI Patrols

– Target Zero Teams is a project highlighted in the impaired driving section of this document on page 32. TZMs provide mission-critical project coordination at the local level. (<http://www.wtsc.wa.gov/wp-content/uploads/downloads/2010/08/tztrackcard2010.pdf>)

– **Corridor Traffic Safety Program** – Through this locally-led program, WSDOT and WTSC fund low-cost, near-term projects to address engineering, education, enforcement and emergency medical service needs. These projects aim to improve safety on short stretches of roadway with a higher than average number of fatalities and serious injuries. (www.corridorssafetyprogram.com)

– **Local Target Zero plans** – Development of a local Target Zero plan, with priorities and strategies developed from community-specific fatality and serious injury data, can be an effective way to expand partnerships with area agencies and develop a common vision. The city of Seattle was one of the first local jurisdictions in Washington to adopt a goal of eliminating traffic fatalities and serious injuries. Their plan can be found at <http://www.seattle.gov/transportation/docs/SDOTRoadSafetyActionPlan.pdf>

For Target Zero to remain a viable program at the local level, agencies need to:

- *Connect with their county’s Target Zero Manager*
- *Develop their own local Target Zero plan*
- *Understand the benefit of Target Zero and the role they can play*

Coordinated High Visibility Enforcement Campaigns

– Currently, an important focus of the TZM network is coordination of statewide high visibility DUI and seatbelt campaigns. These managers work with city and Tribal police departments, county sheriffs’ offices, and the Washington State Patrol to ensure patrols happen in the right places, at the right times, and show drivers a united force of all law enforcement agencies working together. High visibility enforcement involves educating the public about the issue of upcoming patrol, and then

coordinating multiple agencies to create a very visible enforcement presence on the roads. Deterrence is the main goal, with swift and sure penalties when caught.

Additional Resources

Target Zero Manager Network: <http://www.wtsc.wa.gov/programs-priorities/task-forces/>

Washington Traffic Safety Commissioners : <http://www.wtsc.wa.gov/about/overview/commissioners/>

Local data at WTSC Research and Data web page: <http://www.wtsc.wa.gov/statistics-reports/>

Target Zero Plan Development

The partners who developed Washington State’s Strategic Highway Safety Plan (SHSP), Target Zero, intend for it to coordinate traffic safety programs across the state, align priorities and strategies, and provide a common language and approach to traffic safety efforts.

The 2013 update of Target Zero is the fourth update of the plan since its inception in 2000. Although this is a revision of an existing plan, we took a completely fresh look at the data and strategies. This created extra work, but has resulted in a plan that is effective and useful for a wide range of Washington’s citizens, government policy makers and traffic safety professionals.

We started by bringing together the data experts from the state agencies that hold the critical traffic safety data: Collisions (WSDOT), Fatalities (WTSC), Driver and

Vehicle Licensing (DOL), and EMS/Hospital/Trauma data (DOH). This group coordinated updating of the fatality and serious injury data and made recommendations – based on the latest data – on what factors were the biggest contributors to people dying and being seriously injured on our roadways.

With this latest data in hand, all of the key players were brought together in a formal multi-organizational project structure to create the Target Zero Project Team and Steering Committee. Key players included representatives from the agencies that form the WTSC, Tribal organizations, regional planning organizations and private traffic safety organizations. There were engineers, law enforcement officers, collision data managers, epidemiologists, program managers and communication specialists.



Roles

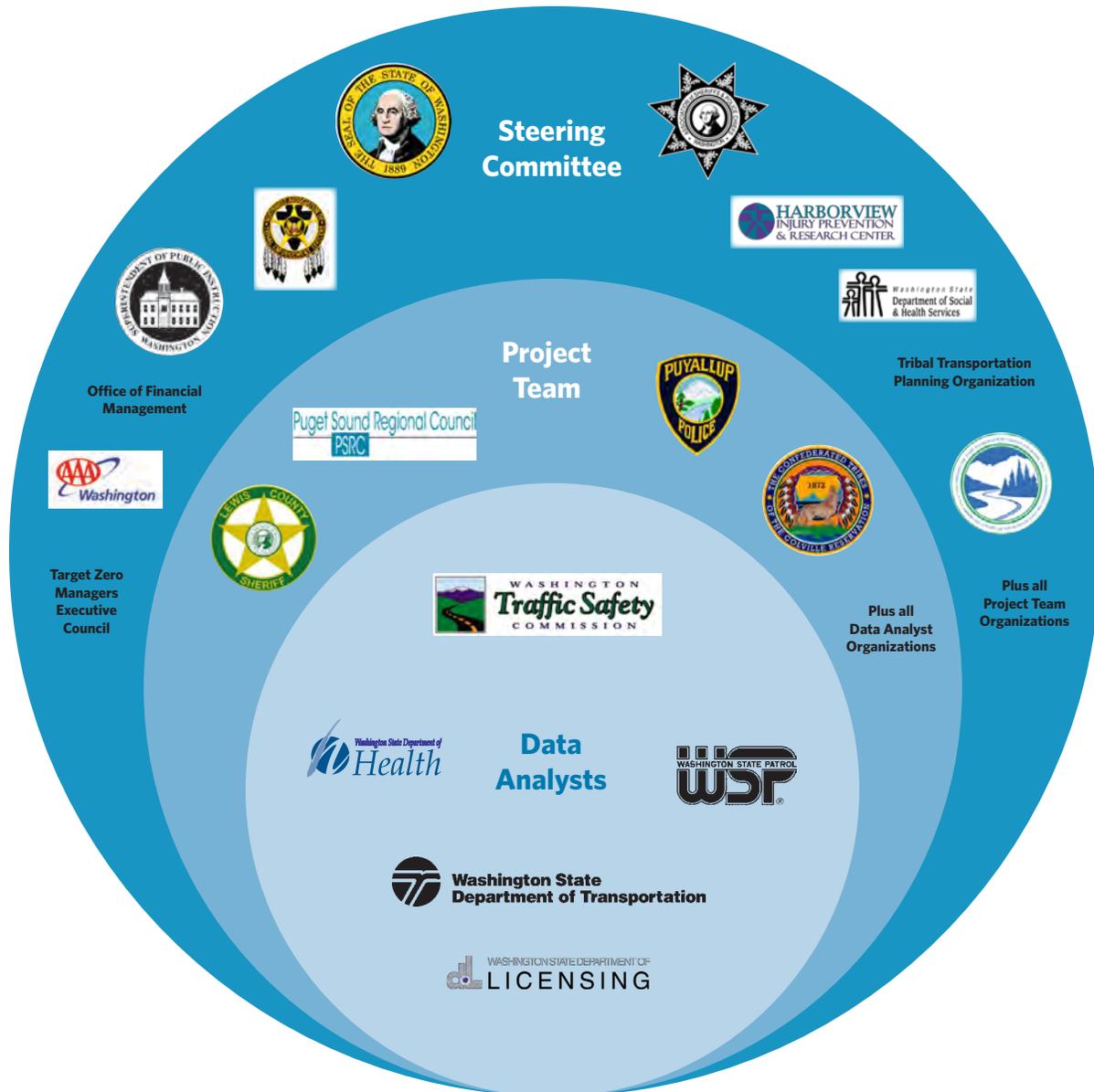
There were three project groups that were instrumental in re-writing the Target Zero plan.

- The Data Analyst Group consisted of data experts from the agencies responsible for maintaining traffic safety related data systems. They carefully analyzed 2009-2011 data for priority setting, calculated trends, and developed charts and graphs.
- The Project Team consisted of manager-level representatives. They coordinated the work, made tactical level decisions, wrote the content and evaluated strategies.
- The Steering Committee consisted of senior level management. They provided strategic direction and ensured appropriate resources.

To gather input from a broader stakeholder group, a Target Zero Partners’ meeting was held in March 2013. There, more than 150 additional people involved in traffic safety across the state provided feedback and input on strategies for addressing the priority areas. In August 2013, a draft of the plan went out for external review by Tribes, partners, and stakeholders.

Each project group provided recommendations to the next, with the Steering Committee recommending the Plan to the WTSC Commissioners (see page prior to the Table of Contents), who ultimately recommended Governor Inslee approve the plan.

Target Zero Plan Project Members



Target Zero Data Sources

Many databases make up Washington’s Traffic Data System, which contains data on collisions, citations and adjudication, drivers and registered vehicles, motor carriers, injury surveillance (including emergency medical services, hospital emergency departments, trauma centers, hospital inpatient and death records), and roadway information (including traffic volume, features inventory, and geometrics).

These databases serve as the critical link in identifying problems, selecting appropriate strategies and countermeasures, and evaluating the performance of

these programs. The Traffic Data Systems process is itself a priority area in Target Zero. To read more about the system and strategies for its development, please visit pages 85-91.

Most of the Washington State traffic data contained in this plan comes from WSDOT Collision Location and Analysis System (CLAS) and the WTSC’s Fatality Analysis Reporting System (FARS). The latest data available is from the three-year span of 2009 to 2011. This 2009-2011 span is generally compared to 2006-2008 (the three-year span referenced in the 2010 Target Zero plan) when determining changes in a specific measure or area.

MAP-21

On July 6, 2012, the President signed into law the Moving Ahead for Progress in the 21st Century Act (MAP-21). This law created some specific requirements that all states' SHSPs must follow. During the development of Washington's 2013 SHSP, Target Zero, some of the details of these requirements were still uncertain. However, the requirements that were clear have been incorporated accordingly. Specifically:

1. The SHSP needs to coordinate with other plans, including the Highway Safety Improvement Plan (HSIP), Highway Safety Plan (HSP) and Commercial Vehicle Safety Plan (CVSP). Representatives from the agencies that created these plans also authored the associated sections in Target Zero, ensuring coordination.
2. The Special Rule for Older Drivers required there be continuing improvement in the safety outcomes for older drivers and pedestrians. To ensure our focus and compliance with this, the Road Types and Vulnerable Road Users section contains a measure of combined fatalities and serious injuries for road users over the age of 65. This is different from the Older Drivers section, which pertains to drivers 75 years old or older.
3. The Special Rule for High Risk Rural Roads (HRRR) safety states: "If the fatality rate on rural roads in a state increases over the most recent 2-year period for which data are available, that state shall be required to obligate in the next fiscal year for projects on high risk rural roads an amount equal to at least 200% of the amount of funds the state received for fiscal year 2009 for high risk rural roads." The Washington State definition of High Risk Rural Roads is included in the Road Types and Vulnerable Road Users section.

Next Steps

The development of the Target Zero plan lays the foundation for achieving the vision of zero fatalities and serious injuries. However, it can only become a reality if intentional steps are taken to implement and evaluate the plan on an ongoing basis.

SHSP Implementation

To successfully implement Target Zero, Priority Area Leadership Teams should coordinate (at a minimum) all Priority Level One areas. These teams meet regularly to develop and coordinate action plans. Action plans provide a road map to give stakeholders and partners specific direction and ensure continuous focus on implementation. They contain measurable objectives, specific projects, action steps, tracking measures and funding sources.

Washington already has many of these teams established and actively working. Groups such as the Washington Impaired Driving Advisory Committee (WIDAC) and the Traffic Records Committee (TRC) provide an excellent model for interagency coordination and project prioritization and tracking.

SHSP Evaluation

Target Zero will be evaluated regularly. Safety improvements depend on a program of data driven priorities and proven effective strategies. Evaluation analyzes SHSP process and performance and helps determine whether current activities deserve enhancement, revision, or replacement. Evaluation will also help:

- Determine progress in meeting our SHSP safety goals and objectives
- Validate emphasis areas and strategies, or reveal the need to revise them
- Uncover challenges in prioritizing or implementing programs and strategies
- Identify opportunities for greater efficiencies and improvements to the SHSP
- Demonstrate our SHSP's contribution to Washington's transportation safety

SHSP evaluation helps us answer: 1) what are we trying to do; 2) how well are we doing it; and, 3) how can we improve?

We will develop an evaluation plan to guide our SHSP evaluation. It will detail specific evaluation objectives (questions), outline the data needed to address the objectives, and identify the resources needed and the roles and responsibilities for the various evaluation tasks. The plan will also highlight how we plan to use our evaluation results.

Looking to the Future

The Target Zero plan uses *today's* circumstances to develop strategies for reducing traffic deaths and serious injuries.

However there's recognition of the need to consider future developments. As deaths and serious injuries continue to decline, meeting the challenge of achieving Target Zero



requires that we look ahead and ask key questions about the next generation of strategies as they begin to emerge.

An expanding multimodal transportation system and rapid advancements in technology are two areas we are watching closely.

Increased Use of Alternative Modes of Transportation

The transportation system of the future will include expanded use of alternatives to single or low occupant vehicle travel. Walking, biking, transit and rail have already seen significant growth. Undoubtedly just over the horizon are others as well.

Recognizing challenges to full utilization of an integrated multimodal transportation system will likely be an important consideration in reaching our Target Zero goal. As agencies consider the best ways to overcome obstacles to full utilization, additional data will be needed to develop and test new strategies in the future.

Technological Enhancements and Safety

Emerging technology has also impacted the broader transportation system. At one time the primary safety features of the roadway consisted of guardrails, rumble strips and lane striping. Today technological advancements are providing new roadway vehicle safety mechanisms once thought impossible.

Vehicle Crash Avoidance Systems

Technology already exists in newer, high-end vehicles that assist drivers by alerting or actually performing car operations to ensure safe operations. Examples include:

1. **Frontal Crash Avoidance Systems (FCAS)** that warn the driver if they are too close to an object in front of the car, and even automatically apply brakes if the driver does not, to avoid a collision
2. **Adaptive headlights** that shift the headlights in the direction the driver steers
3. **Lane departure alert** systems that sound an alarm or flash to alert the driver that they are leaving the lane of travel without a signal

Connected Vehicles

Mobile data technologies have introduced Intelligent Transportation Systems (ITS), including vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communications. These are commonly referred to as connected vehicles.





Driver Alcohol Detection System for Safety (DADSS)

The DADSS program was launched to research, develop and demonstrate non-invasive in-vehicle alcohol detection technologies that can quickly and accurately measure a driver's blood alcohol concentration (BAC). These advanced technologies offer the potential for a system that will prevent a vehicle from being driven when the driver's BAC exceeds the U.S. legal limit of 0.08. Two methods at the forefront of research are touch-based and breath-based approaches.

Connected vehicles are those with the ability to communicate wirelessly with other connected vehicles and roadway equipment in order to reduce collisions. This technology is just beginning to make its way into the marketplace, including in light, heavy and transit vehicles.

Connected vehicle technology is designed to alert drivers – based on signals received from other vehicles and roadside infrastructure – when there is a risk of collision. Warnings could be for potential danger when: changing lanes, approaching an intersection, approaching a stationary or parked vehicle, another driver loses control, or traffic patterns are changing. Devices may send warning messages to a driver and other nearby vehicles when pedestrians or bicyclists are detected. Even head-on collisions might be avoided if vehicles approaching from opposite directions were communicating with each other, and their drivers warned.

The concept may also be applied to aftermarket devices. Drivers may bring devices into their vehicles. They may also be carried by vulnerable users like pedestrians, motorcyclists, cyclists and transit users, making these users more visible to surrounding traffic.

Autonomous Vehicles

Autonomous vehicles – also known as self-driving or robotic cars – sense their environment through various methods and navigate without human input. The autonomous car provides an override allowing a human driver, who sits in the driver's seat, to take control of the car through such actions as stepping on the brake or turning the wheel.

Road-Side Drug Testing

In the not-too-distant future, handheld devices could be used to check for drug use in drivers. These devices would allow officers to test for drug impairment on the side of the road, much in the same manner as an officer using 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. Washington State agencies are tracking progress in this area, engaging in national dialog, and considering opportunities to demonstrate and apply new safety solutions as they develop.

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.



Traffic Safety Partnership List

The following organizations were consulted in the development of Washington State's Strategic Highway Safety Plan (SHSP), Target Zero, 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 & Staff
State Patrol
State Senate Members & Staff
Transportation Policy Office
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-Wahkiakum Council of Governments
Lummi Nation
Muckleshoot Indian Tribe
Nooksack Indian Tribe
Quinalt Indian Nation
Samish Indian Nation
Shoalwater Bay Tribe
Spokane Tribe of Indians
Swinomish Indian Tribal Community
Tulalip Tribes
Yakama Nation
Bureau of Indian Affairs
Northwest Association of Tribal Enforcement Officers
Northwest Tribal Communications
Northwest Tribal Transportation Assistance Program -
Eastern Washington University
Tribal Transportation Planning Organization
Washington Indian Transportation Policy
Advisory Committee



Local Law Enforcement

Bellingham Police Department
 Bonney Lake Police Department
 Centralia Police Department
 Clark County Sheriff's Office
 Cowlitz County Sheriff's Office
 Ferndale Police Department
 Grays Harbor County Sheriff's Office
 Island County Sheriff's Office
 Kent Police Department
 Kirkland Police Department
 Kitsap County Sheriff's Office
 Lewis County Sheriff's Office
 Lynnwood Police Department
 Mason County Sheriff's Office
 Puyallup Police Department
 Renton Police Department
 Seattle Police Department, DUI Unit
 Shelton Police Department
 Skagit County Sheriff
 Thurston County Sheriff's Office
 Yakima Police Department

Private and Non-Profit Organizations

AAA Washington
 Affordable Ignition Interlock
 American Traffic Safety Services Association
 The Blairs
 DKS Associates
 DN Traffic Consultants
 Driver Training Group
 Driving 101
 Eco Resource Management Systems
 Feet First
 Governor's Highway Safety Association
 HDJ Design Group
 Ignition Interlock of Washington
 IvS Analytics
 Kittitas County Community Network
 LifeSafer, Inc.
 Margo's Safety-1 & Arlington High School
 Mothers Against Drunk Driving
 Progressions
 Project Imprint
 Tacoma Pierce County Community Connections
 Washington Road Riders Association
 Washington Trucking Association
 Western Systems

Community, Local and Regional Agencies/Organizations

22 Target Zero Community Traffic Safety Task Forces representing Counties, Cities, and Tribes
 Association of Washington Cities
 Bicycle Alliance of Washington
 Cooper Jones Bicycle & Pedestrian Committee
 City of Bellevue
 City of Everett
 City of Gig Harbor
 City of Kirkland
 City of Mountlake Terrace
 City of Pasco
 City of Spokane
 City of Tacoma
 Educational Service District #113
 Institute of Transportation Engineers Washington State Section
 King County Metro Transit
 King County Public Health
 Kitsap County Public Works
 Lewis County Public Health & Social Services
 Operation Lifesavers
 Puget Sound Regional Council
 Reduce Underage Drinking (RUaD) Coalition
 Seattle Children's/Safe Kids South King County
 Seattle Department of Transportation
 Spokane City Council
 Spokane County Prosecutor's Office
 Thurston County Prosecuting Attorney's Office
 Thurston County Public Works
 Thurston Regional Planning Council
 Traffic Records Committee
 University of Washington Transportation Services
 Washington Association of Counties
 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
 Young Driver's Group

Native American Tribes and Target Zero

Photo credit: Portland Area Health Board, CCT Tribal Health and Native Cars Program



Tribal Involvement in the 2013 Target Zero Update

Representatives of the Tribes and state agencies have met a number of times during the past two years to discuss traffic safety concerns and partnership opportunities. Dedicated forums included the annual Affiliated Tribes of Northwest Indians (ATNI) and Northwest Tribal Technical Assistance Program (NWTAP) Transportation Symposium and the 2012 Tribal/State Transportation Conference.

Traffic safety discussions highlighted meetings of the Tribal Transportation Planning Organization, Washington Indian Transportation Policy Advisory Committee (WITPAC), and Northwest Association of Tribal Enforcement Officers (NATEO).

Tribes participated at all levels of the Target Zero update structure: Steering Committee, Project Team and Writing Team. Twelve Tribal members, representing six Washington Tribes, participated in the 2013 Target Zero Partners Meeting. A preliminary version of the Target Zero plan was released for formal Tribal review before presenting it to Governor Inslee for endorsement.

Twenty-nine federally recognized Tribes are located within the borders of Washington State. Through the Centennial Accord, the state of Washington and Tribes have formally committed to working together on a government-to-government basis to address a number of common problems, including traffic safety issues.

Native American reservations in Washington often include a mix of Tribal, state, county and city roads, which creates jurisdictional complexities with law enforcement, collision reporting, road maintenance, and capital safety projects.

Reservation roads are an important focus of traffic safety in our state, and the Tribes are partners in the Target Zero effort. The active, professional and committed efforts by the Tribes to improve the quality and usefulness of Target Zero helps all of us move closer to zero traffic deaths and serious injuries.



Disproportionate Impacts to Native Americans

In Washington, the traffic fatality rate for Native Americans is 3.9 times higher than for non-Native Americans.

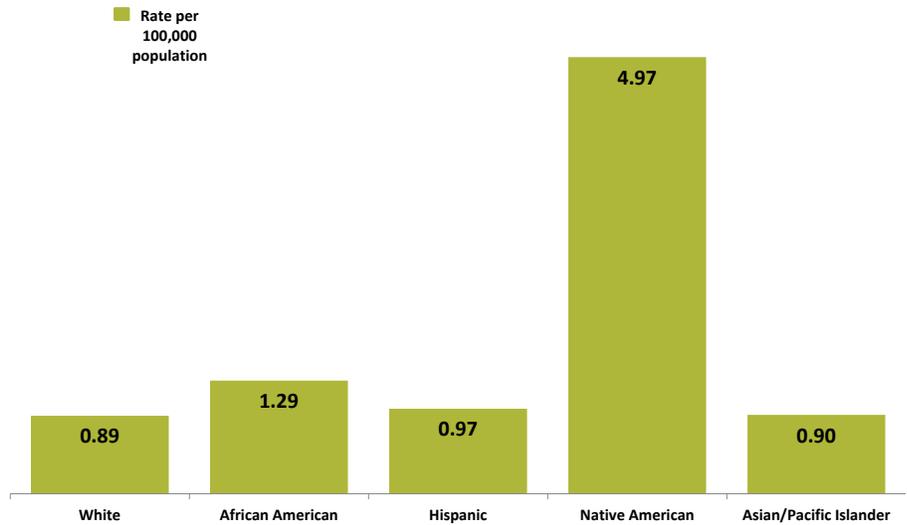
FARS data from 2002 through 2011 shows Native American fatalities are high across all types of motor vehicle collisions. One example is the pedestrian fatality rate, which is 5.4 times higher for Native Americans than for non-Native Americans.

The FARS data shows two-thirds (66.7%) of Native American pedestrian fatalities within Washington boundaries occurred in rural areas. When all pedestrian deaths are combined, only 23.5% occur in rural areas.

Chronic underfunding of traffic safety initiatives and related programs plays a significant role in these disproportionate fatality rates. Inadequate or non-existent bus systems increase the number of pedestrians on Tribal lands. Some Tribes have non-contiguous lands with housing and services on separate assets. Many communities have few or no sidewalks, marked crosswalks or street lighting.

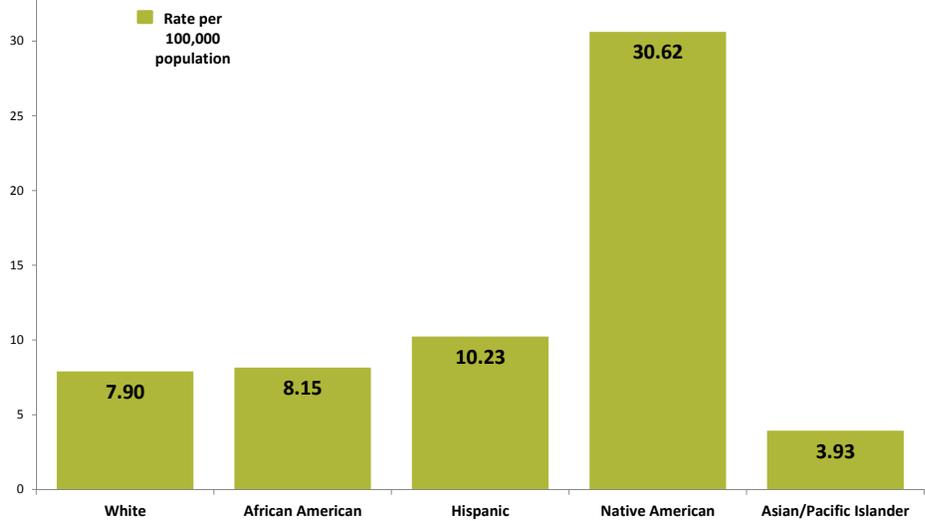
Additionally, many communities lack driver education on defensive driving and a high number of unlicensed drivers compounds the driver education issue. There is also a lack of pedestrian education covering topics such as reflective clothing and safe walking techniques.

Washington Pedestrian Fatality Rate 2002-2011



Source: FARS, OFM Population Unit
 Note: Classifications are per the U.S. Census Bureau and are mutually exclusive. Rates are based on average population 2000-2010.

Washington Traffic Fatality Rate 2002-2011



Source: FARS, OFM Population Unit
 Note: Classification are per the U.S. Census Bureau and are mutually exclusive. Rates based on average population 2000-2010.

Data Challenges and Improvements

Unfortunately, significant data gaps exist, making it difficult to analyze information specific to reservations in Washington. Data serves as the critical link in identifying safety problems, selecting appropriate countermeasures and evaluating performance. Without data, traffic safety and roadway engineering-related statistical analysis is difficult.

Incomplete data also makes it more difficult for Tribes to compete for safety funding and justify need. Many of the charts in Target Zero that display information by state, city, or county roads do not include data for reservation roads, unless those collisions were reported through a Washington Police Traffic Collision Report or through data outreach efforts. Given the disproportionate impact to Tribal communities, it is critical that we close these data gaps to help identify and address problems.

Geospatial Data

As mentioned previously, reservations in Washington often include a mix of Tribal, state, county and city roads. WSDOT has attempted to collect as many reservation maps as possible to determine whether or not a collision occurred within a reservation. More efforts are needed to gather maps, as only 11 of 29 Tribes had submitted maps as of July 2013.

As of this publication, a transformation is in progress. WSDOT recently developed the Incident Location Tool (ILT) to be implemented by the end of 2013. It is replacing the less productive method of using hardcopy map resources to associate collision locations with Tribal reservations. In addition to capturing a collision location's latitude and longitude information, the ILT is used to query map layers and automatically populates several database fields. This includes city, county, Tribal reservation name, roadway name, milepost, as well as the name, direction and distance to the nearest cross street where the collision occurred.

The availability of accurate Tribal collision location information will improve significantly with this development. This will make it easier to identify the most pressing safety problems, select the most appropriate countermeasures and evaluate performance. For more information about the ILT, see page 88.

A Success Story

The Confederated Tribes of the Colville Reservation have experienced phenomenal traffic safety successes in recent years by approaching traffic safety through the four Es: Education, Enforcement, Engineering and Emergency Medical Service. Two key elements of the successes have been:

- A collaborative approach in the community to leverage resources
- The supportive leadership by Colville Business Council, the elected legislative body

Traffic deaths on the Colville Reservation have been reduced from about 24 a year to two traffic deaths in 2011.

The documentary *Traffic Safety Successes on the Colville Reservation* relates this remarkable feat. The story received additional exposure from its official 2012 nominee selection for the American Indian Film Festival in San Francisco, where it was screened and received an award on the final evening of the festival. The video is available for web-viewing through [www.wtsc.wa.gov/Resources > Videos > Tribal](http://www.wtsc.wa.gov/Resources/Videos/Tribal)) or directly through this link: <http://vimeo.com/40528456>.



Rates, Road Types and Vulnerable Road Users

This section brings together and highlights several important traffic safety issues including a brief discussion on fatality rates, rural road safety, bicyclists, motorcyclists, pedestrians, and older road users. The fatality rate discussion is important because it is one of the ways our traffic safety progress will be compared with other states.



Safety issues surrounding rural roads, bicyclists, motorcyclists, pedestrians, and older road users are areas that don't rise to a Priority One issue but do bear monitoring. While some individual strategies exist to address individual transportation modes and population segments, these issue areas are best addressed through the behavioral and safety infrastructure strategies supporting higher priority areas. For example, implementing run-off-the-road strategies addresses many of the collisions involved with rural roads, motorcyclists and some older drivers. Intersections strategies can be used to address collisions involving pedestrians (including older pedestrians), bicyclists and motorcyclists.

Reasons for the decline are varied. Decreased driving, due to the high price of gasoline augmented by the economic recession that began in late 2008, has reduced people's exposure to the risk of traffic collisions. Improvements in roadway engineering, vehicle design and safety equipment have all helped save lives as well.

Road Types

Fatality Rate Greater on Rural Roads

Overall, Washington traffic fatality and serious injury rates have declined steadily since 2005. This decline is occurring in both urban and rural settings. However between 2002 and 2011, 61% (858 Rural vs. 548 Urban) of traffic fatalities occurred on rural roads, even though many more miles are traveled on urban roads. The chart on this page indicates the need for special attention to the rural road system.

Between urban and rural settings, differences in road design and development play a significant role in collision rates. Fifty percent (50%) of fatalities on rural roads involved run-off-the-road collisions, compared to 32% on urban roads; 23% of fatalities on rural roads were attributed to head-on collisions, compared to 11% on urban roads. Furthermore in rural areas, medical response times are generally greater

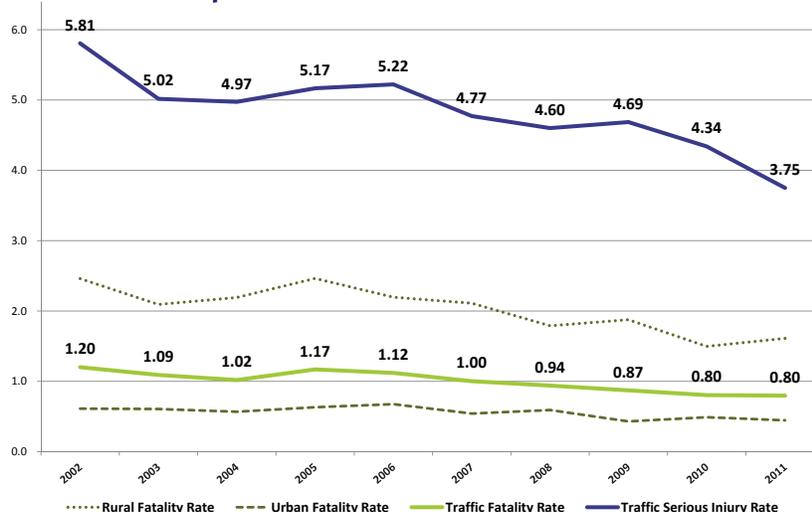
than in urban areas and access to emergency services is more limited.

The greatest challenge in addressing fatalities and serious injuries on rural roads is the geographic randomness of collisions scattered over tens of thousands of miles. There are few concentrations of serious crashes,

Rates

The Washington State traffic fatality rate is trending downward, dropping from 4.91 deaths per 100 million vehicle miles traveled (VMT) in 1966 to 0.80 deaths per 100 million VMT in 2011, the state's lowest traffic fatality rate on record. This is well below the 2011 national rate of 1.10 traffic fatalities per 100 million VMT calculated by the National Highway Traffic Safety Administration (NHTSA).

Traffic Fatality and Serious Injury Rates* 2002-2011
*per 100 million Vehicle Miles Traveled



unlike on urban roads, and the locations of crashes are not consistent from year to year. As a result, identifying the best locations for behavioral and safety infrastructure improvements can be difficult. Thus the most effective strategies to reduce fatal and serious rural crashes involve the use of widespread, low-cost engineering strategies to address as many miles of the rural road system as possible (such as those in the Run-Off-the-Road chapter), and strategies for changing individual high risk behaviors.

High Risk Rural Roads

The Moving Ahead for Progress in the 21st Century Act (MAP-21), signed into federal law in 2012, requires each state include its definition for High Risk Rural Roads (HRRR) and created a Special Rule for improvements in safety for HRRR.

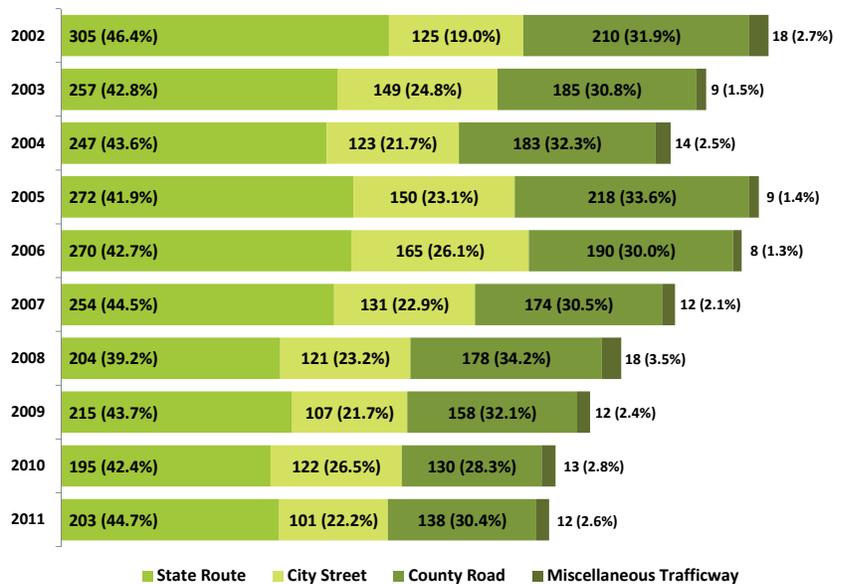
Washington State defined High Risk Rural Roads as any road with a functional classification of rural major or minor collector or rural local road that has a fatality and serious injury crash rate above the statewide average for similar functionally classed roads.

The HRRR Special Rule applies if “the fatality rate on rural roads in a state increases over the most recent two-year period for which data are available.” Five-year averages, rounded to one-tenth, separated by a two-year period, are compared in order to monitor HRRRs. In Washington, the rural road fatality rate from 2005-2009 was 2.1, compared to the 2007-2011 rate of 1.8. This trend mirrors the overall decline in fatalities observed on all roads in the state. In the case of Washington, the Special Rule does not apply for fiscal year 2014.

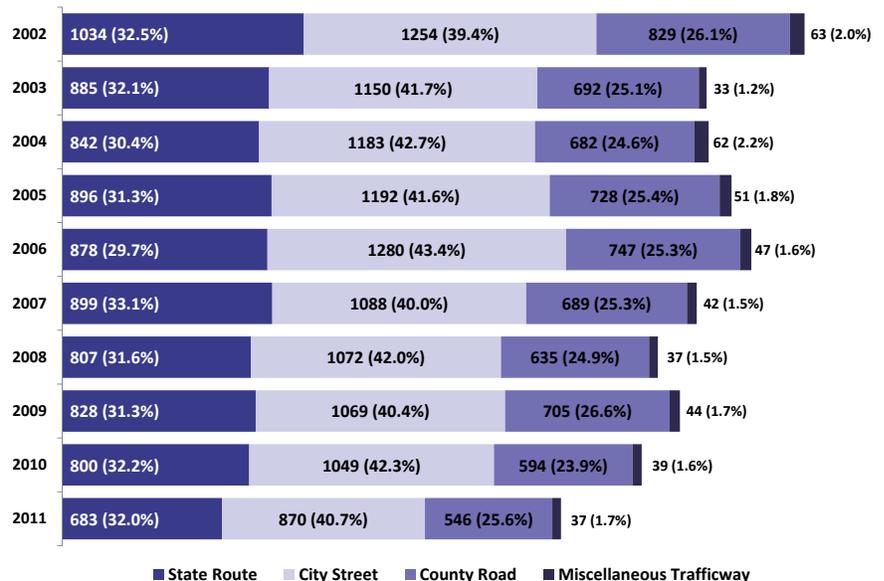
Fatalities and Serious Injuries by Jurisdiction

In 2010, there were 7,060 miles of state highways, while county roads accounted for more than five times that amount, with 39,748 miles of road. Comparing these two classes of roadways, state routes carry more traffic volume and county roads have narrower lanes and shoulders, fixed objects closer to the road, and steeper slopes beside the road. The majority of fatalities have occurred on state routes, followed by county roads. The majority of serious injuries have occurred on city streets, followed by state routes.

Total Fatalities by Jurisdiction 2002-2011



Total Serious Injuries by Jurisdiction 2002-2011



Vulnerable Road Users

Looking at the last 10 years (2002-2011), approximately 71% of traffic fatalities were occupants of passenger vehicles, 12% were motorcyclists, 12% were pedestrians and 2% were bicyclists (see figure below). Males accounted for 73% of traffic deaths, while females accounted for 27%.

Although the majority of fatalities involve passenger vehicle occupants, certain road user groups are at much greater risk of death and injury when they are involved in traffic collisions. Vulnerable road users include pedestrians, bicyclists, motorcyclists and older road users.

Pedestrians, Bicyclists and Motorcyclists

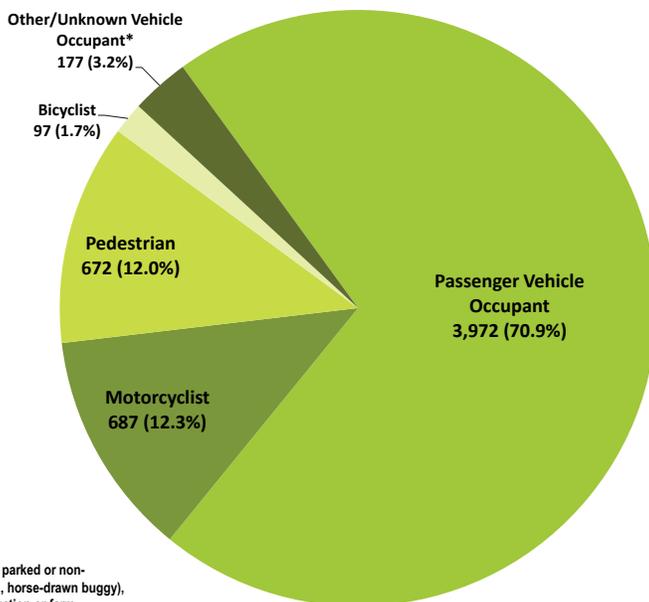
Vulnerable road users are persons who are at greater risk of death or injury when involved in traffic collisions. Passenger vehicle occupants comprise the majority of deaths and serious injuries overall because they are involved in the most collisions. However pedestrians, bicyclists and motorcyclists, when involved in collisions, are more likely to be seriously injured or killed than an occupant of a vehicle.

As shown in the chart on the next page, when a fatal or serious injury collision involves a pedestrian, bicyclist or motorcyclist, over 90% of these vulnerable road users are the persons seriously injured or killed in that collision. This compares to 45% of passenger vehicle occupants being killed or seriously injured when they're involved in a fatal or serious injury collision.

Beyond this type of comparison, the actual risk of death or injury among these vulnerable road users is unknown. For motor vehicles, we calculate risk by deriving the rate of death or injury per 100 million vehicle miles traveled (0.8 in 2011). Without similar measures for vulnerable road users (i.e. miles traveled by motorcyclists or older drivers, miles walked, and miles biked), a measure of overall risk based on exposure to roadways is not possible.

Current pedestrian, bicyclist and motorcyclist trends show that death and serious injury among these vulnerable road users is not declining like overall trends in our state. In some instances, these deaths and serious injuries are actually on the rise. Although the total numbers of deaths and serious injuries among these vulnerable road users are lower than other Target Zero priority areas, the flat or even increasing trends show that we must do more.

Traffic Fatalities by Person Type 2002-2011



*Includes occupants of parked or non-motorized vehicles (e.g., horse-drawn buggy), scooters, ATVs, construction or farm equipment, motorhomes, street sweepers, etc.

Compared to the overall fatality decline from 2006-2008 to 2009-2011 (18.5%), pedestrians, bicyclists, motorcyclists, and older road users are not experiencing the same declines. During this time period, pedestrian deaths declined 2.5%, bicyclist deaths 13.3%, motorcyclist deaths 8.4% and older driver involved deaths 8%.

We must carefully monitor these vulnerable road user groups to ensure the limited past progress is not lost and new progress is initiated in order to realize our vision of zero. How we approach safety among vulnerable road users may provide some early insight into future challenges and strategies to deal with flattening or reversing trends in traffic deaths and serious injuries.

Older Road Users

By 2030, the Washington population age 65 and older will be double what it is today and will comprise the largest vulnerable road user group. Physical vulnerability and frailty among older drivers puts them at higher risk for death and injury when involved in traffic collisions.

Improvements to the EMS and Trauma System have improved survivability outcomes among older drivers involved in collisions. However, with the dramatic growth of this vulnerable road user group over the next several decades, coupled with older drivers staying licensed longer and driving more miles than in the past, we must carefully monitor trends among older drivers to prepare for future challenges.

Target Zero currently defines older road users as age 75 and older. With new MAP-21 requirements, and in particular a Special Rule for older drivers, the definition

may be revised for the next edition. The Special Rule for older drivers applies if “traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a state increases during the most recent two-year period for which data are available.” Five-year average population rates, rounded to one-tenth, separated by a two-year period, are compared in order to monitor older road users age 65 and older. Traffic fatalities and serious injuries are combined for any road user (driver, passenger, pedestrian, bicyclist, etc.) age 65 and older.

In Washington, the older road user population fatal/serious injury rate from 2005-2009 was 0.36 per 1,000 population, compared to the 2007-2011 rate of 0.34 per 1,000 population. In the case of Washington, the Special Rule does not apply for fiscal year 2014. However, even if it were to apply, Washington fulfills the requirement by outlining strategies to address older road user traffic fatalities and serious injuries in Target Zero.

Comparison of Injury Severity of Vulnerable Road Users and Others Involved in Fatal or Serious Injury Collisions 2002-2011

