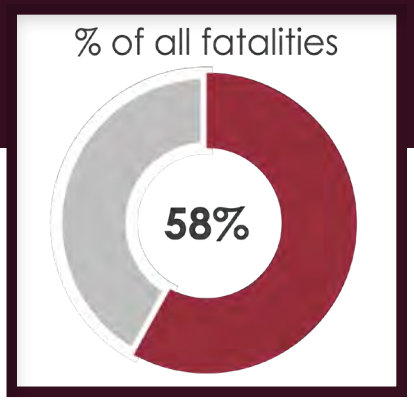
High Risk Behavior

Driver behavior is a factor in a majority of fatal and serious injury crashes. 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 to be dangerous, such as speeding or driving while impaired by alcohol or drugs. Others are relatively newly recognized, such as distracted driving. This chapter will evaluate which behaviors are likely to result in fatal and serious injury crashes, and how to address those behaviors and their effects to get to Target Zero.

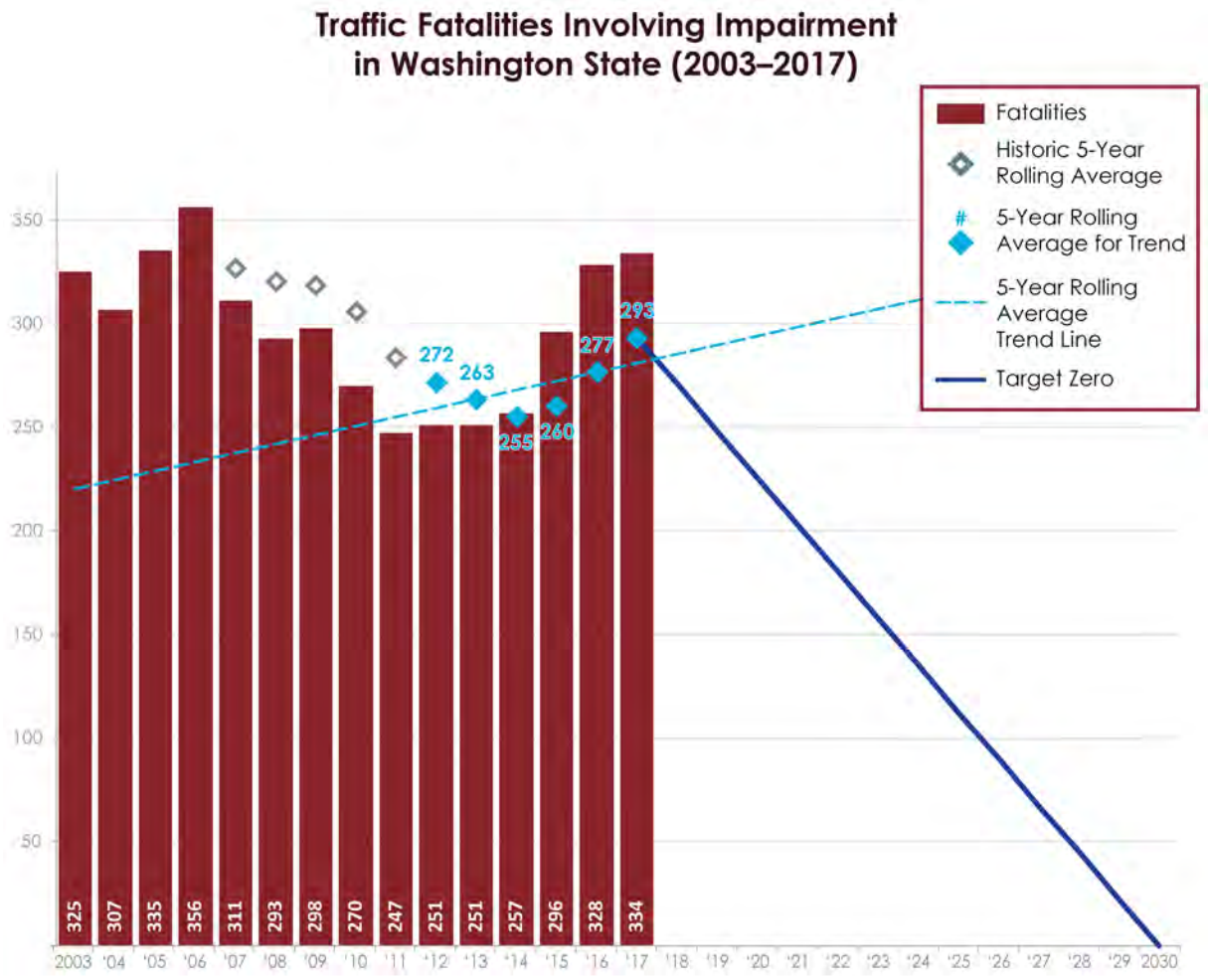
Impairment

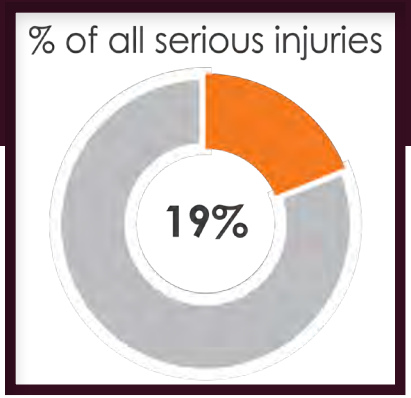


Washington has been combating impairment in motor vehicles crashes for decades and has made good progress. Despite this, impairment continues to be the main factor in 58% of fatal crashes in Washingto.

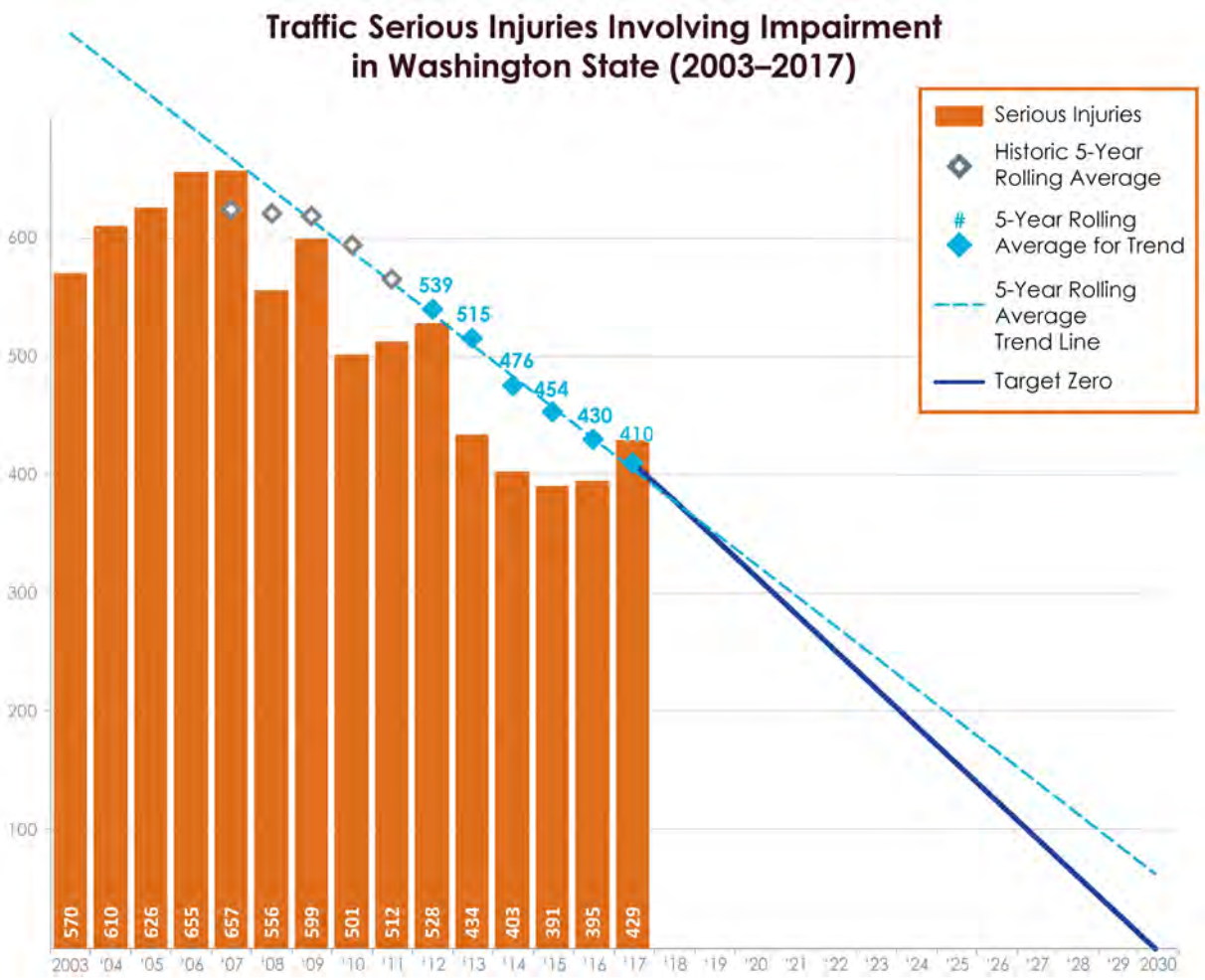
Key Issues in Impairment

- The impacts of two Washington state initiatives continue to bring new challenges: Initiative 1183, which privatized liquor sales and distribution, and Initiative 502, which legalized the production, possession, delivery, and distribution of cannabis. The number of stores with hard liquor licenses increased from 328 in 2010 to 7,976 in 2019. Meanwhile, cannabis is easily accessible with over 500 retail stores statewide, and more licenses are being sold monthly.
- Polydrug use – combining two or more drugs, or one or more drugs mixed with alcohol – is becoming more prevalent in fatal crashes. In Washington, the most common polydrug in fatal crashes is alcohol combined with cannabis. During the last five years, polydrug impaired drivers involved in fatal crashes have increased 15% per year.





Priority 1



Key Areas of Concentration for Impairment Include:

- Public awareness and education
- Prevention
- Treatment/rehabilitation
- Law enforcement and training
- Toxicology
- Prosecution
- Adjudication and probation
- Driver licensing
- Legislation
- Data and traffic records for impairment

BETWEEN 2015–2017 THERE WERE

958 FATALITIES AND

1,215 SERIOUS INJURIES

INVOLVING IMPAIRMENT

FATALITIES INVOLVING IMPAIRMENT OFTEN INVOLVE OTHER FACTORS

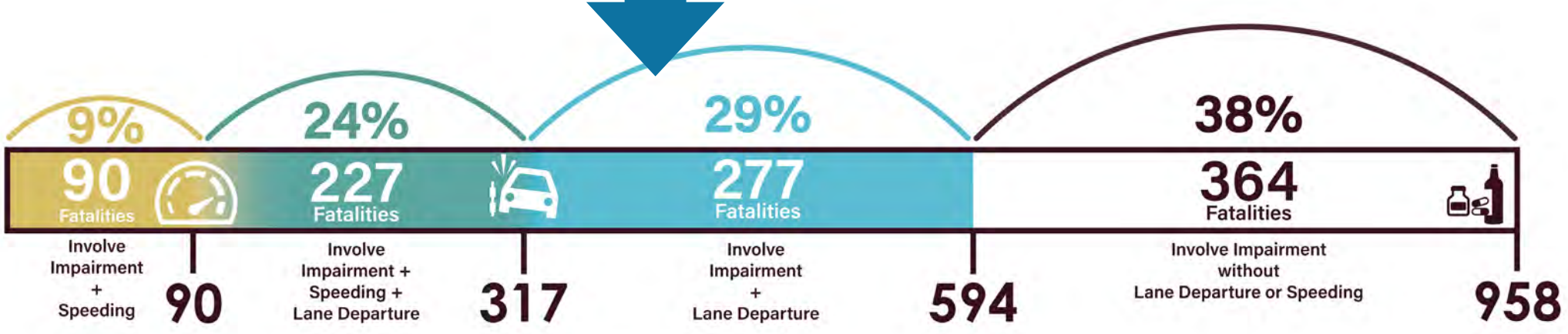
The top two factors that overlap with Impairment are **SPEEDING** and **LANE DEPARTURE**

OUT OF **958 FATALITIES**:

33% also involved SPEEDING

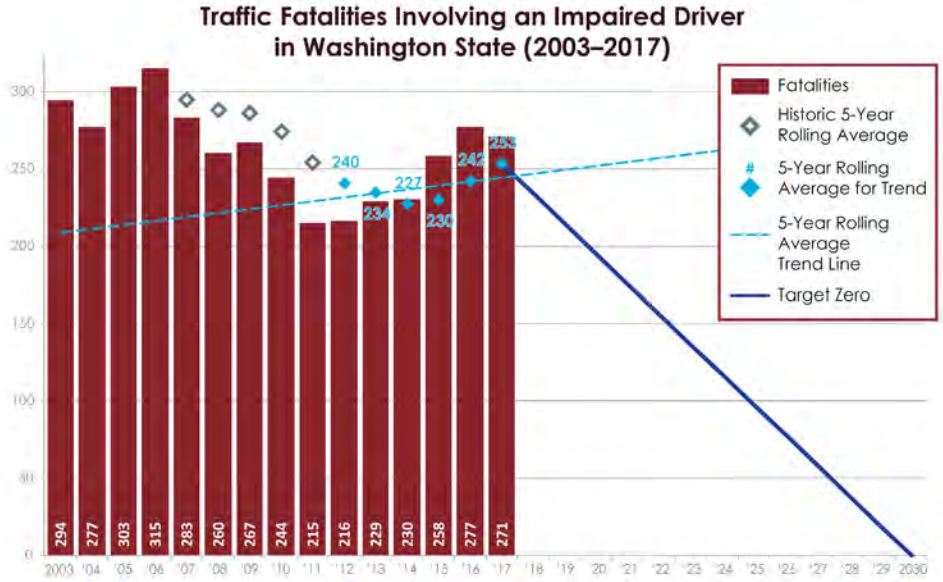
53% also involved LANE DEPARTURE

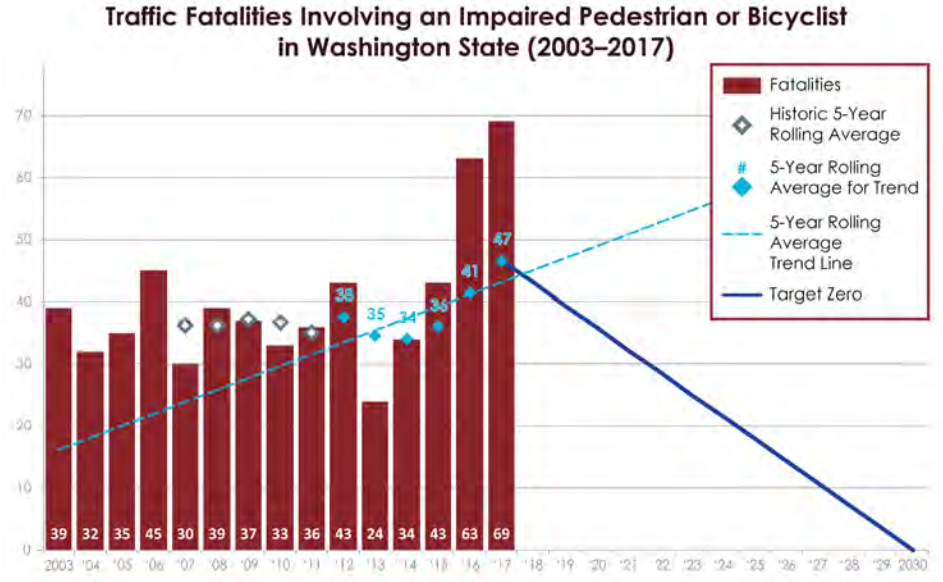
and 24% involved a combination of both

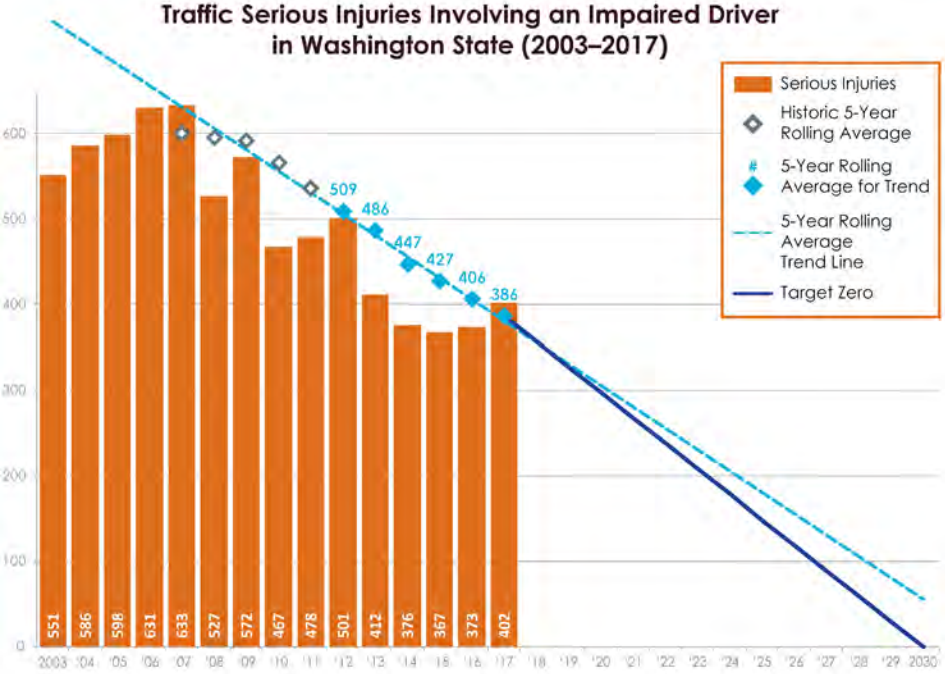


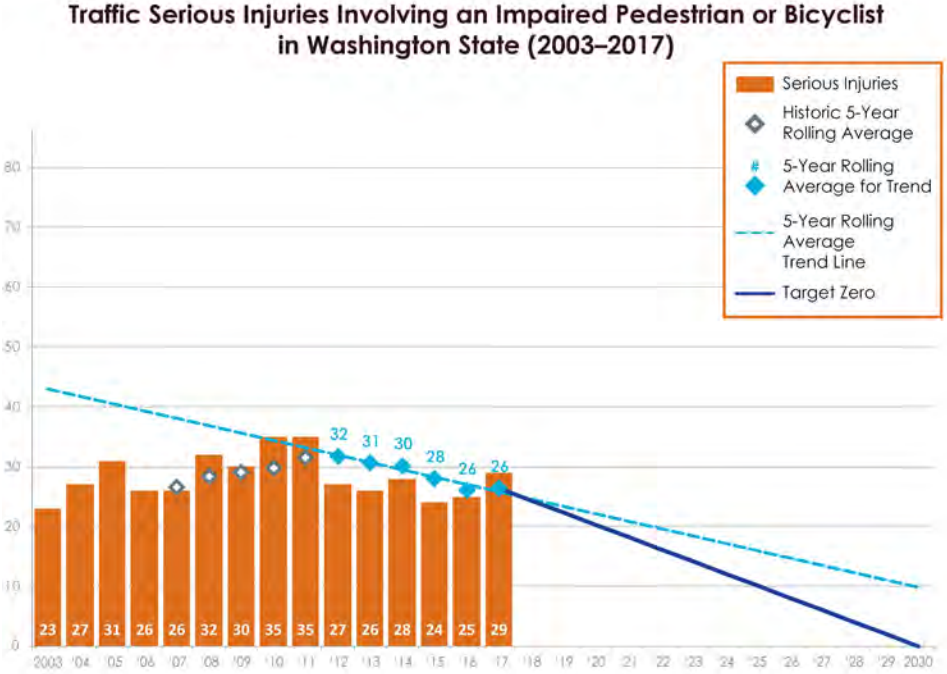
Impairment in Pedestrians and Bicyclists

Target Zero impairment data includes drivers, pedestrians, and bicyclists who tested positive for alcohol or drugs. The Pedestrians and Bicyclists chapter (page 120) explores ways to address contributing factors for all people who are walking and biking, including those who are impaired. Simply, we believe that the consequences of walking or bicycling while impaired should not be serious injury or death.

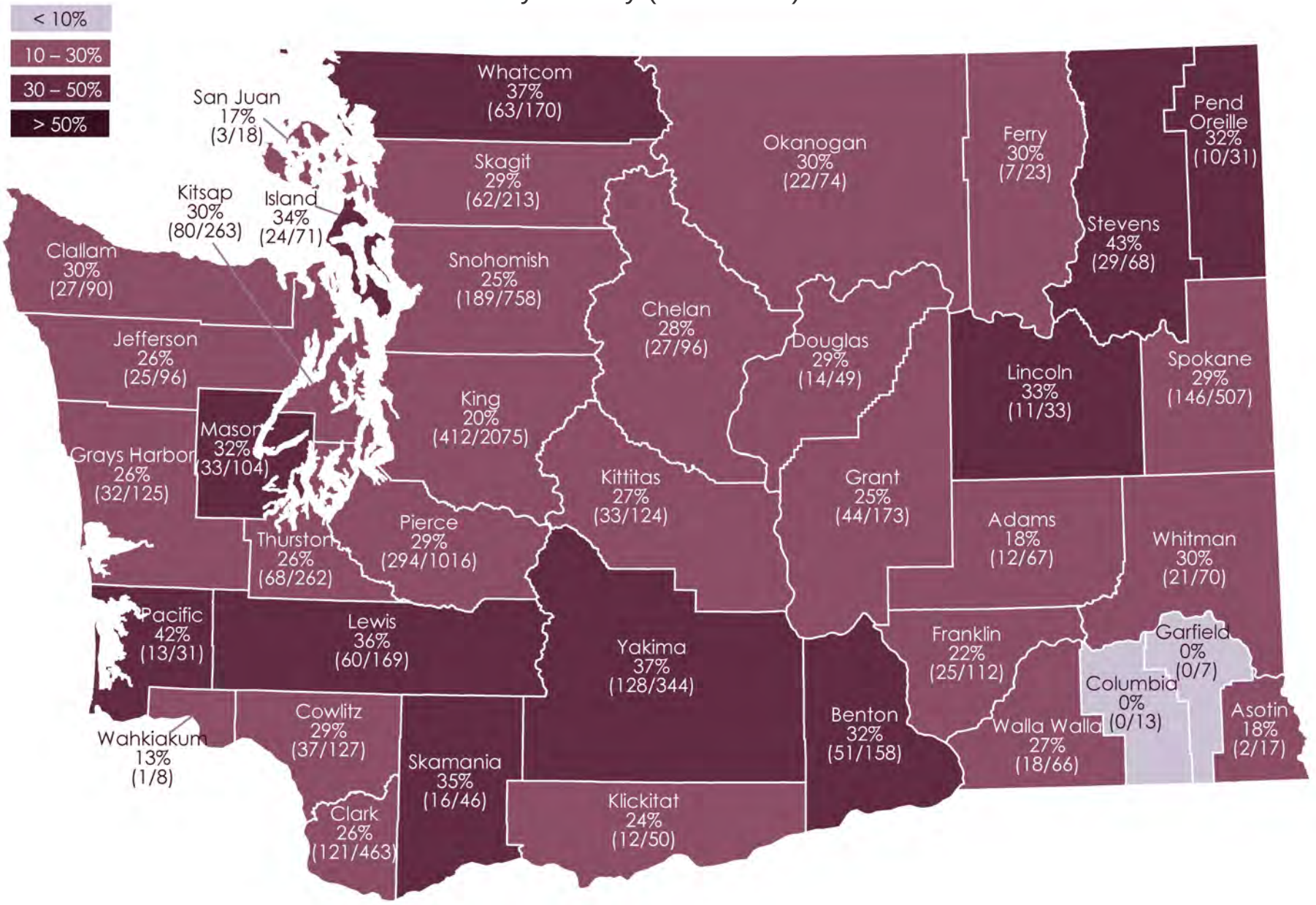

Traffic Fatalities Involving an Impaired Driver
in Washington State (2003–2017)
Fatalities
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Rolling Average Trend Line
Target Zero
294 277 303 315 283 260 267 244 215 216 229 230 258 277 271
240 234 227 230 242 253
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030


Traffic Fatalities Involving an Impaired Pedestrian or Bicyclist
in Washington State (2003–2017)
Fatalities
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Rolling Average Trend Line
Target Zero
39 32 35 45 30 39 37 33 36 43 24 34 43 63 69
38 35 34 36 41 47
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030


Traffic Serious Injuries Involving an Impaired Driver
in Washington State (2003–2017)
Serious Injuries
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Rolling Average Trend Line
Target Zero
551 586 598 631 633 527 572 467 478 501 412 376 367 373 402
509 486 447 427 406 386
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030


Traffic Serious Injuries Involving an Impaired Pedestrian or Bicyclist
in Washington State (2003–2017)
Serious Injuries
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Rolling Average Trend Line
Target Zero
23 27 31 26 26 32 30 35 35 27 26 28 24 25 29
32 31 30 28 26 26
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030

Percent of All Fatal and Serious Injury Crashes That Were Impairment Related, by County (2015–2017)



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

Comprehensive Approach

Reducing the rates at which people are killed or seriously injured in impaired-driving car crashes must become a priority across the social ecology. Washington State has implemented various best practices and strategies with great success, but these strategies alone are not enough to prevent impaired-driving deaths and serious injuries. The number of impaired-driving deaths and serious injuries in Washington continues to climb without a significant decrease in decades.

Public and private sector partnerships need to retool current approaches in order to unravel the complex knot of impaired driving. Washington is in a unique position because our state has access to a rich body of subject matter experts who make up the Washington Impaired Driving Advisory Council (WIDAC). The WIDAC includes public and private partners who are well acquainted with every facet of the impaired-driving problem. They have identified nine areas of concentration to guide the coordination and prioritization of this difficult work, and coordinate together to implement the related countermeasures.

While maintaining focus on current successful strategies, WIDAC supports new approaches such as:

- Implementing proactive traffic safety such as bystander intervention, and promoting positive community norms messages around sober driving. See the Traffic Safety Culture chapter on page 28 and Impairment Areas of Concentration for 2019 on page 46 for more information.
- Rural directed strategies.
- Substantive policy changes that have the potential to create more meaningful change, such as sobriety checkpoints. See the Legislation and Policy chapter on page 206 for more information.

Additionally, in the next few years, partners will be challenged to develop better ways to aggregate and distill all available data from across the different disciplines, with the goal of gaining a comprehensive understanding of the impaired driver.

Washington Impaired Driving Advisory Council

The Washington Impaired Driving Advisory Council (WIDAC) serves as an advisory body to the Washington Traffic Safety Commissioners. It includes approximately 20 organizations. The WIDAC representatives seek to enhance traffic safety through coordinated planning, training, programs, and research to reduce the incidence of impaired driving in line with the Target Zero goal of zero deaths and serious injuries.

Impairment Areas of Concentration for 2019

Public Awareness and Education

The main focus for public awareness and education is to provide factual information promoting sober driving. This information includes:

- Impairment is not always easy to detect, and the signs can be subtle.
- Using multiple drugs (polydrug use) – including cannabis, illicit substances, over-the-counter drugs, and/or prescription medications – can cause interactions that create greater impairment than one drug on its own.
- Mixing alcohol with other drugs can cause interactions that create greater impairment than one drug or only alcohol on its own.
- Prescription medications and over-the-counter medicines can cause impairment.
- Most people do not drive impaired.

Approaches to sharing this information include:

- Peer-to-peer outreach to young drivers addressing the impairing effects of cannabis.
- Promote positive community norms (see page 28 for more on Traffic Safety Culture).
- Encourage bystander intervention to prevent people from driving impaired.

Traffic Safety Culture: Impairment

In 2018, WTSC worked with the Center for Health and Safety Culture (CHSC) to study the increase in drivers who are involved in deadly crashes testing positive for multiple substances. The most common combination is alcohol and cannabis. CHSC developed surveys to examine the culture associated with driving under the influence of cannabis and alcohol of a representative sample of adults in Washington State.

Most adults (91%) reported not driving within two hours of consuming alcohol and cannabis, have a negative attitude about such behavior (81%), and believe it is unacceptable (83%).

Those drivers who Drive Under the Influence of Cannabis and Alcohol (DUICA) (9%) are more likely to have very different beliefs. Based on the results of this survey, the following should be emphasized:

- Consuming cannabis does not make it safer to drive (it increases crash risk).
- Consuming cannabis after drinking does not make it safer to drive (it increases crash risk).
- Most people agree that driving after consuming alcohol and cannabis is unacceptable.
- Most people do not drive under the influence of alcohol and cannabis.
- Most people agree that impairment begins as soon as an individual consumes alcohol or cannabis.

Interventions to change these beliefs could include a variety of strategies including updated education in secondary school health classes, information on the impairing effects of alcohol and cannabis in driver's education programs, universal media campaigns, updating impaired driving programs to address misperceptions about cannabis, or information provided though cannabis retailers.

Universal media campaigns are a common strategy to influence behavior. As people who DUICA are more likely to value power, it may be important that messaging efforts on DUICA frame messages in such a way as not to threaten an individual's sense of power as these messages may be more likely to elicit psychological reactance and be rejected. When messaging about DUICA, using language that fosters an individual's choice and sense of autonomy is recommended.

Prevention

The best way to reduce impaired driving deaths and serious injuries is primary prevention: prevent impaired driving, period.

Education of young Washingtonians. Programs must reach out to elementary school-aged children to warn them about the overall dangers of substance abuse, with impaired driving as an aspect of that education. Education should continue through middle school and high school. Parental influence is also an important factor in helping keep children from drinking and drug use.

Promote public awareness and positive community norms around sober driving. Drivers need more awareness that driving after taking drugs – whether illicit, prescription, or over-the-counter – is a safety risk that can amount to a violation of the law. Additionally, promoting positive community norms – such as 91% of drivers do not drive while under the influence of alcohol or drugs – is another approach to preventing impaired driving.

Enforce to prevent over-serving. 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. Identifying and enforcing at those locations is a key to success.

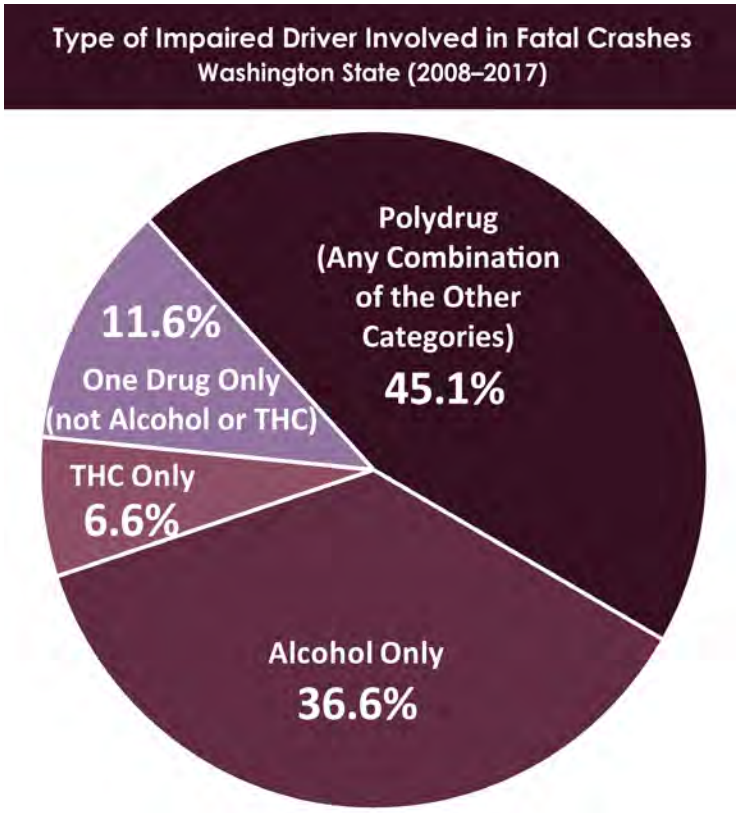
Treatment/Rehabilitation

A key part of reducing impaired driving is to identify substance use/mental health disorder DUI offenders early, and encourage immediate treatment.

Provide alternatives to incarceration that promote treatment. In deferred prosecution, the prosecutor grants amnesty in exchange for substance use/mental health disorder defendant meeting certain requirements during two years of treatment and an additional three years of monitoring. These requirements can include total abstinence monitoring, education, and group and individual sessions. DUI courts are another way to encourage treatment. Increasing access to strategies such as these can create more opportunities for drivers prone to impairment to address underlying issues and access rehabilitation services.

Address first-time offenders. A first DUI arrest in an ideal crisis point at which to intervene and change behavior. For the crisis to be used as a successful intervention point, the action, including legal consequences and/or legal incentives to enter treatment or required education, should be swift. Once the crisis has passed, that opportunity has been lost.

An assessment to determine medical necessity for treatment and following treatment recommendations *immediately* will result in a better treatment outcome. To that end, changes to the current law are needed to result in a quicker process. An additional change would be to give first-time DUI offenders with substance use/mental health



disorders the option of treatment, along with *a legal incentive to enter treatment*. For first-time DUI offenders who do not have a significant substance use/mental health disorder, consequences and education such as alcohol and drug classes will be most beneficial if immediate.

A brief intervention and screening by a substance use/mental health professional in the jail prior to arraignment would also be effective.

Law Enforcement and Training

Around Washington, over 10,000 commissioned officers at the state, local, and tribal levels enforce DUI and DUID laws (Driving Under the Influence of Drugs). A subset of these officers are Drug Recognition Experts (DREs).

High Visibility Enforcement (HVE) campaigns for alcohol impairment are a highly effective national model of law enforcement patrols supported with relevant and impactful media. Data show that where a high number of fatal and serious crashes occur, law enforcement agencies can work together in those locations to stop drivers from committing violations that cause these crashes.

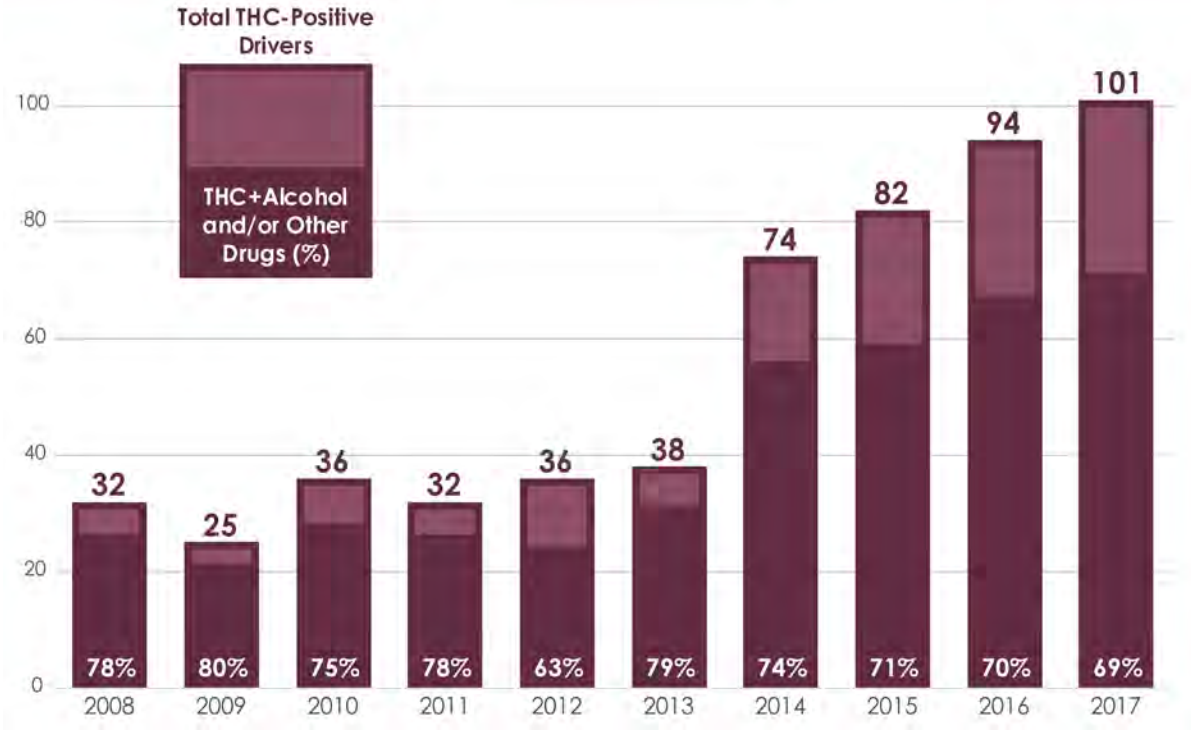
The Washington Traffic Safety Commission (WTSC) funds quarterly statewide DUI patrols called "Drive High Get A DUI." Over 150 law enforcement state, local, and tribal agencies participate in these campaigns. Partners fund media campaigns to inform the public of the increased enforcement. A combination of HVE patrols, with information campaigns in advance and follow-up reporting of the results, has proven an effective combination, as documented in Countermeasures that Work.

A 2016 survey of members of law enforcement in Washington showed that there are some key areas that challenge an agency's level of participation in proactive traffic enforcement, which applies to impaired driving.

The top concerns include:

- Insufficient staffing.
- Competing overtime/lack of interest in overtime.
- Traffic enforcement is a low administration priority.
- Inadequate training on DUI investigation.
- Complexity of DUI investigation.
- Personnel motivation challenges.
- Conflicts with responding to calls for service.

THC-Positive Drivers Involved in Fatal Crashes and Proportion Combining Alcohol and/or Other Drugs with THC
Washington State (2008–2017)



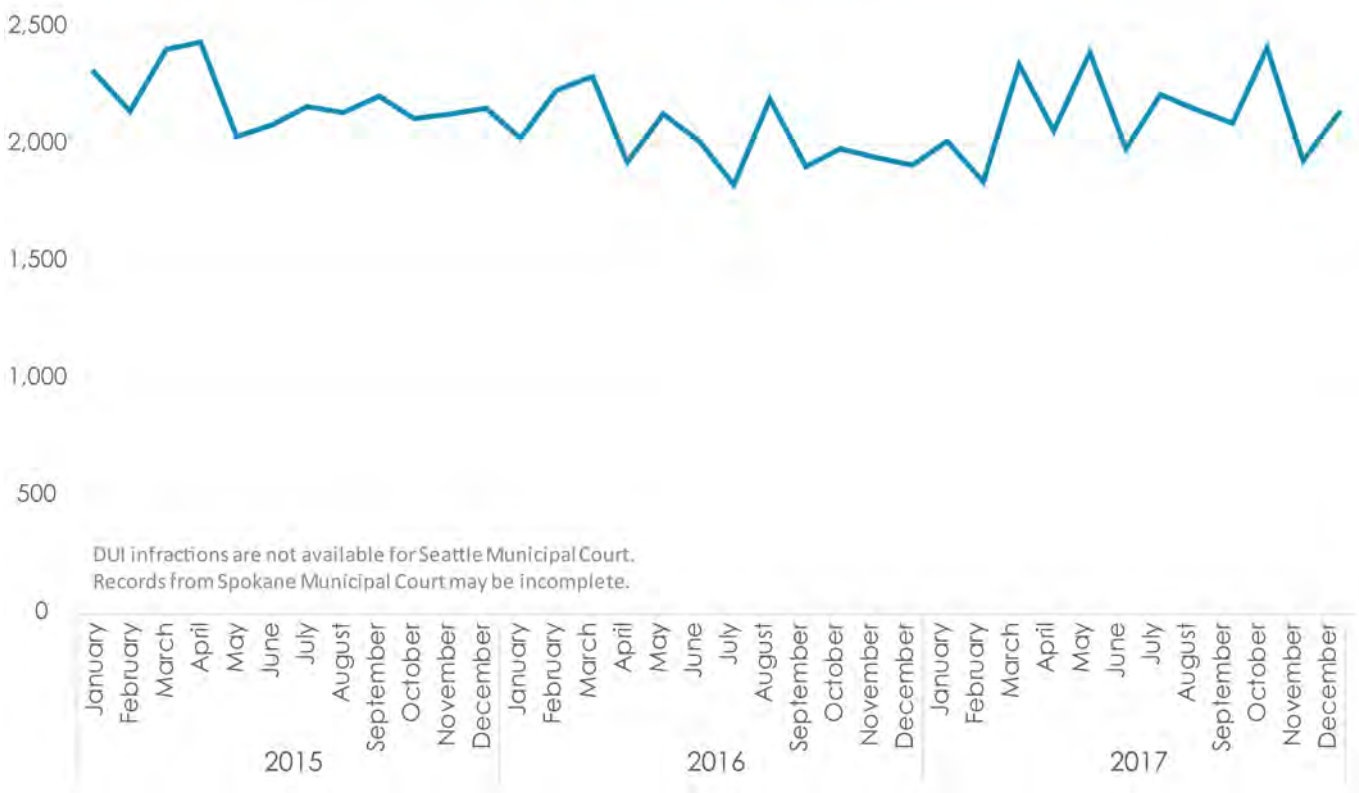
Departments are now working on filling officer vacancies. WIDAC is addressing the lack of training of law enforcement in DUI investigations and making strides to reduce redundancy in DUI reports and forms.

Washington also offers programs in some areas for local law enforcement to address the need for impaired driving enforcement training. For instance, the Seattle Police Department has used these trainings to make impaired driving enforcement an increasingly important part of their culture.

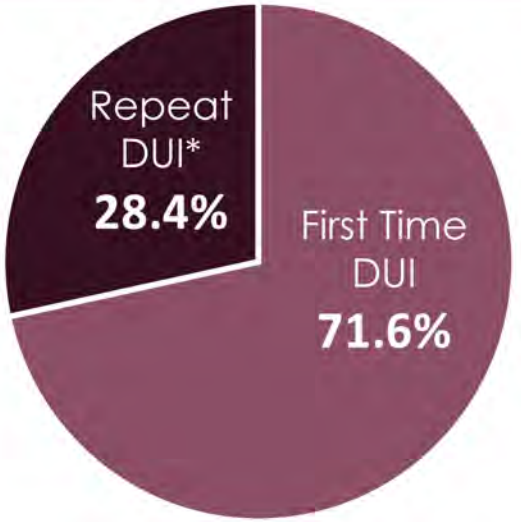
Toxicology

The Washington State Patrol (WSP) Toxicology Laboratory Division (TLD) is a centralized laboratory system that performs testing for all suspected impaired driving cases and death investigations in the state. The centralized laboratory design provides consistency in testing and reporting for all submitted casework. Reports generated by TLD are used by numerous entities, including law enforcement, the judicial system, medical examiners/coroners, public health organizations, and the WTSC.

Administrative Office of the Courts DUI Case Filings
(Filed under RCW 46.61.502 or 46.61.504)



Drivers Recieving a DUI
Washington State (2008–2017)
Source: DOL Driver DataMart



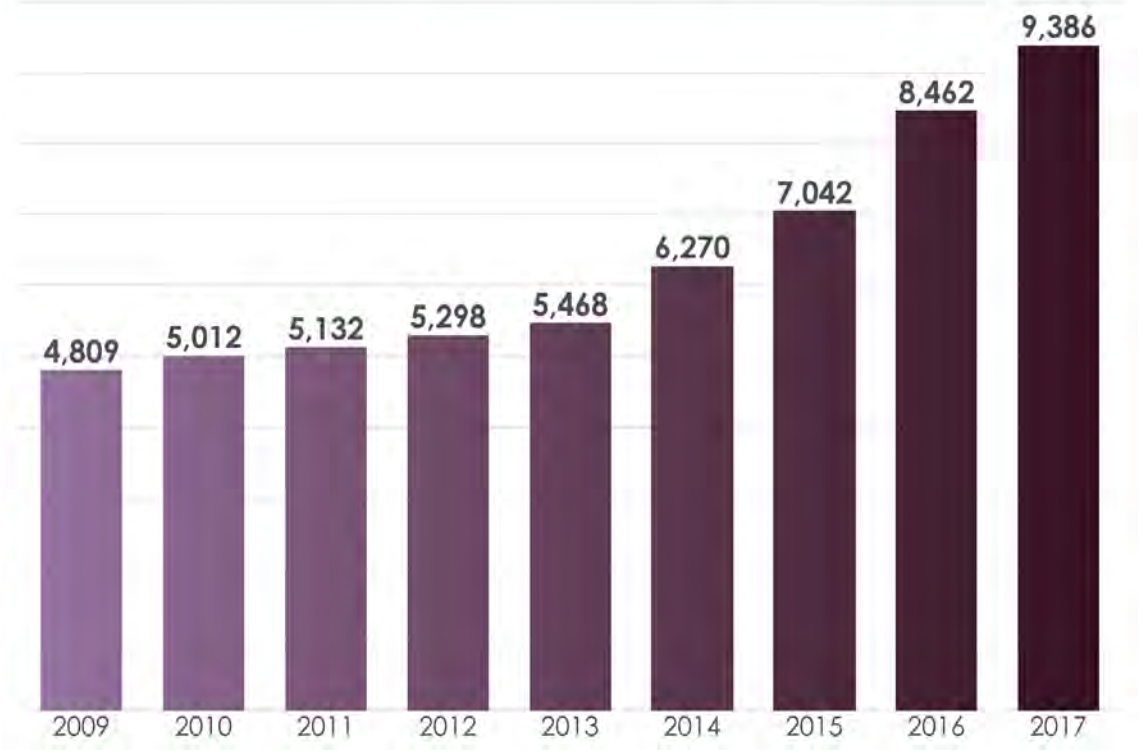
*A repeat DUI is an administrative DUI charge appearing on a driver's record where they also had a previous administrative DUI on the driver record. Not all administrative DUIs occurring in other states are captured, but that is improving over time. A criminal discharge of a DUI to a lesser charge may still appear as an administrative DUI on the driver record.

Toxicology case submissions increase every year; funding needs to be available for the TLD to accommodate the increase in staff, equipment, and space that will be needed to test these cases in a timely manner.

Approximately 90% of people who die in fatal crashes, whether driver, occupant, pedestrian, or bicyclist, receive a toxicology screen for drugs and alcohol. Drivers suspected of vehicular homicide could have their blood drawn even if they weren't suspected of being impaired.

However, for serious injury crashes, law enforcement officers don't always interpret events as rising to the level of vehicular assault, a designation which allows for a blood draw. Therefore, blood testing to confirm impairment in serious injury cases is much lower. As a result, both alcohol impairment and testing positive for drugs are significantly underreported as a factor in serious injury crashes. Increasing drug testing is the most important goal for this area of concentration. In order to provide timely and comprehensive testing in these fatality or serious injury cases, it's imperative for the toxicology lab to have adequate resources.

Blood Sample Submissions for DUI Investigation
Washington State (2009–2017)
Source: Washington State Patrol Toxicology Laboratory



Prosecution

Prosecution helps enforce the existing impairment laws. However, budgetary concerns, time constraints, and fragmented focus can reduce the effectiveness of DUI prosecutions.

The addition of a felony DUI offense law in July 2007 has increased the focus of prosecutors and judges on DUI. Unfortunately, they are often expected to handle hundreds of cases at a time, and may lack the experience necessary to effectively prosecute a scientifically and legally complex caseload of DUIs. In smaller cities and towns, criminal prosecution may only be covered by a part-time assistant city prosecutor.

To improve filings and successful prosecution of these cases, elected prosecutors must be educated about expert testimony and scientific evidence. This includes how to establish a DRE's expert background and qualify such an individual to give testimony in court, how to conduct a proper examination of a toxicologist, and how to read a toxicology report.

Adjudication and Probation

Washington State's court system imposes a sentence (consequences) for a defendant's choice to drive impaired. As part of a sentence, many judges will order a defendant to acquire a chemical dependency evaluation and comply with the recommendations.

Washington State has a decentralized court system: generally there are county courts; however, some cities have their own municipal courts. Each county court or municipal court will have guiding state laws to provide some consistency, but a great deal of discretion is provided to each court to apply the law to each adjudication. This system makes standardizing impaired driving adjudications and probation challenging across Washington State.

Target Zero partners support and promote prioritization of impaired driving cases in the following ways:

- Provide a dedicated DUI prosecutor to manage charging and disposition of impaired driving cases:
  - Modeling or providing support to other prosecutors
  - Prosecuting DUI cases that are within the prosecutor's capacity to handle
- Encourage best practice DUI prosecution by relying upon properly trained staff for impaired driving cases.
- For efficiency, encourage and fund centralized services for prosecutors though the Traffic Safety Resource Prosecutors (TSRP) program or other centralized program (including brief banks, jury instructions, and motions in limine).
- Regularly, and at every hearing or appearance, confirm the defendant's compliance with all conditions of release.
- Promote sentencing DUI defendants to appropriate terms, recognizing that mandatory minimums should be reserved for those deserving the maximum leniency.

Impairment in Older Drivers

In 2018, the American Automobile Association (AAA) performed a survey of older drivers (by AAA's definition, ages 65–79) to determine their prescription drug use. This study found that older drivers took a median number of seven medications. The findings also showed:

- 10% took two or fewer.
- 25% took four or fewer.
- 25% took 11 or more.
- 10% took 16 or more.
- 1% took 26 or more medications.

The most frequently-used medications were cardiovascular medications, central nervous system agents, electrolyte pills, hormones, and vitamins. The study noted that previous research has found that only 17.6% of drivers 55 and older had been counseled by a health care provider about how their medications might affect their driving.

AAA proposes the following strategies for prescription medication and older drivers:

- Drivers, their families, and their prescribers need to increase their vigilance to improve medication safety in older drivers.
- Drivers and their families can help facilitate communication between treating clinicians by keeping a list of medications, and not adding new medications without having their physicians and pharmacists check for drug interactions.
- Physicians should prescribe the fewest medications necessary and the lowest dose needed to achieve therapeutic results, and keep track of the all medications taken by a given individual, irrespective of prescriber. Physicians and pharmacists should alert drivers about potentially impairing side effects.

The Roadwise Rx program (www.roadwiserx.com) can also help drivers determine how their prescription drugs might affect their driving.

- Enforce the requirement in RCW 10.05 that defendants promptly request and petition for deferred prosecution, thereby encouraging early treatment and maximum benefit.
- Require good cause to continue DUI cases, encouraging prompt resolution of cases.
- Encourage judges, prosecutors, and defenders to attend regular training focusing on impaired driving issues, treatment, and probation.
- Tier the prosecution of DUI cases: assign alcohol-only to younger, inexperienced prosecutors, and drugged driving prosecutions to more experienced prosecutors.
- Participate in therapeutic courts (DUI Court).
- Establish pre-trial release conditions that include: ordering abstinence from possessing or consuming alcohol, non-prescribed controlled drugs, and cannabis, and one of the following to require compliance:
    - Random urinalysis (for drugged driving cases).
    - The installation of an ignition interlock device.
    - Participation in the 24/7 sobriety monitoring program.
    - The filing of a sworn statement with the court that the individual will not operate a motor vehicle without an ignition interlock device.

Probation is the post-conviction monitoring and supervision of defendants. The intensity of supervision is based on the nature of offense, the defendant's criminal history, and other relevant factors, such as treatment requirements and risk to self or others. Effective probation reduces risky behaviors by requiring the defendant to comply with appropriate sentencing conditions, producing long-term behavioral change and reducing recidivism.

To promote successful probation for impaired driving cases, Target Zero partners support:

- The use of active and supervised probation in all courts.
- Training and staffing probation offices to work collaboratively with treatment agencies monitoring impaired driving defendants.
- Verifying the documents provided to prove compliance (AA, NA, 24/7, treatment) through routine in-depth audits.
- Promoting the use of standardized probation conditions ordering the defendant to do the following, including but not limited to:
    - Do not drive a motor vehicle without a valid license and proof of insurance.
    - Do not drive a motor vehicle with a BAC of .08 BAC or 5 ng/mL or higher of THC.
    - Submit to breath or blood alcohol testing upon reasonable request.
    - Apply for and install an ignition interlock as required by the Department of Licensing (DOL) (or if a discretionary interlock is imposed, monitor that as well).
    - Do not commit any criminal law violations or alcohol or drug related offenses.
    - Obtain a proper chemical dependency evaluation and comply with all required treatment.
    - Attend an in-person victim impact panel.
    - Do not use or possess any alcohol, non-prescribed drugs, or cannabis.
    - Notify probation of any change in address.
    - Do not refuse any alcohol or drug-related testing request (PBT, UA, BAC).

    - Do not use or possess any drug paraphernalia, including cannabis paraphernalia.
    - Pay any restitution owing to the victim, if any.
- Expanding community-based probation.
- Addressing understaffing issues in probation offices, and in some instances, the lack of a probation office.
- Providing on-going training to probation staff on effective oversight of impaired drivers, substance abuse, and treatment resources.

Target Zero partners recognize that these practices may not work in every jurisdiction due to staffing, caseloads, and courtrooms. However, where possible, they would ideally be imposed as described or with minor adjustments, to increase prosecutor confidence, competency, and positive prosecution outcomes.

Driver Licensing

DOL has three main roles with regard to impaired driving. To address impaired driving, DOL:

- Takes action against drivers, including suspension and revocation for drivers who refuse a breath test, or who are over the legal limit per notification of conviction from the courts.
- Conducts hearings to provide drivers with a fair and independent review of their driving privilege sanctions initiated by DOL.
- Manages the Ignition Interlock Device (IID) Program in conjunction with WSP's Impaired Driving Unit. The IID program issues restricted licenses to individuals with IID requirements. The program also manages an IID subsidy program for indigent Washington residents, to help cover their costs and prevent cost from limiting their access to this important tool.

Some of DOL's greatest challenges for preventing impaired driving include:

- Getting timely information for hearings.
- Closing loopholes that allow individuals to circumvent IID requirements. An example is someone having an active and functioning device in one car receiving credit toward compliance, but driving another car without a device in it.
- Misuse of financial assistance. Some individuals allow their devices to go out of compliance by not going to calibration appointments or by attempting to drink and drive. Once an individual has been granted indigent status for the year, DOL pays for the device regardless of driver compliance with the law.

To tackle these challenges, DOL supports:

- Taking actions to prevent IID circumvention, such as:
    - An audit program.
    - Creating a data exchange between WSP's Impaired Driving Unit and DOL that will identify individuals with restrictions who do not have IIDs installed.
- Tying IID compliance to the continuation of subsidy funding for IID financial assistance.
- Developing a more robust approval process surrounding employer exemptions.

Legislation

WIDAC plans to form an impaired driving policy sub-committee. This group will monitor and review legislation related to impaired driving. They will develop recommendations to reduce impaired driving based on best practices in traffic safety.

The following legislative strategies are high priority for the WIDAC:

- Explore the feasibility of sobriety checkpoints.
- Research reducing the legal driving BAC level from .08 to .05.
- Seek funding for integrating and modernizing data systems that hold impaired driving data. See Data and Traffic Records for Impairment on page 55 for more information.
- Seek solutions so WSP's Toxicology Lab is able to reduce wait times for toxicology reports. See Toxicology on page 49 for more information.
- Continue to provide excellent local training to all interested law enforcement, prosecutors, judicial officers, and other traffic safety stakeholders to address the latest trends in impaired driving and best practices in investigation and prosecution.
- Study the latest impaired driving data and propose legislative fixes when needed to address changes in data trends, including drug-DUI and polydrug DUI.
- Continue to monitor, review, and update legislation related to public safety to address best practices in traffic safety, promote public safety, and decrease impaired driving on our roadways.
- Clarify the law as it pertains to physical control of a vehicle to improve public safety.

For more on Legislation, see the Legislation and Policy chapter on page 206.

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 46.61.5055 Alcohol violators—Additional fee—Distribution
- RCW 46.61.506 Persons under influence of intoxicating liquor or drug—Evidence—Tests—Information concerning tests
- RCW 46.61.507 Arrest upon driving under the influence or being in physical control of vehicle under the influence, notation required if child is present—Arrest upon drug or alcohol-related driving offense, child protective services notified if child is present and operator is child's parent, guardian, or custodian
- RCW 46.61.508 Liability of medical personnel withdrawing blood
- RCW 46.61.517 Refusal of tests—Admissibility as evidence
- RCW 46.61.520 Vehicular homicide—Penalty
- RCW 46.61.522 Vehicular assault—Penalty
- RCW 46.25.110 Operating a commercial motor vehicle while having alcohol or THC in system

Data and Traffic Records for Impairment

Data and traffic records are covered in general on page 168. Currently, the three most important issues for impaired driving data and traffic records are:

Lack of comprehensive drugged driving information. Typically, there is no toxicology information available for non-fatal crashes, and driver drug testing rates in fatal crashes have decreased. Officers investigating a fatal or serious injury crash may get results for alcohol impairment, then stop the DUI investigation before testing for drugs. This reduces understanding of polydrug driving, because the officer only focuses on alcohol impairment.

Data integration. In addressing recidivism and the "lifecycle of the DUI," Washington needs data systems to link, such as:

Citation → Location → Arrest → Crash → Toxicology → Adjudication → Injury Surveillance → Mental/Physical Health → Treatment → Social Services → Corrections → Licensing

Further, partners must identify and prioritize which impairment data needs to be integrated, and focus on modernizing existing data systems.

Impaired roadways users. There is a lack of information regarding non-fatal, pedestrian, and bicyclist impairment. This data would help Washington State adopt the most effective countermeasures for these impaired road users.

RELATED AREA: Drowsy Driving

Drowsy driving is another form of impaired driving. It was a factor in 44 deaths and 236 serious injuries from 2015 to 2017, which reflect 13% and 8% increases, respectively, from 2012–2014. Data on drowsy driving are most likely underreported since drivers may be reluctant to admit they dozed off prior to a crash. A recent American Automobile Association (AAA) study reveals that drowsy driving is a factor in one of 10 fatal crashes nationally.

A driver who has been awake for 18 hours experiences cognitive impairment similar to that of 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. In addition to drowsiness from lack of sleep, factors such as alcohol, drugs, and over-the-counter and prescription medications can contribute to drowsiness.

Washington addresses drowsy driving through both engineering and education efforts:

- Shoulder and centerline rumble strips
- Rest areas
- Drowsy driving education campaigns targeting the general driving population
- Education regarding medical conditions and medications that increase a driver's risk of drowsy driving

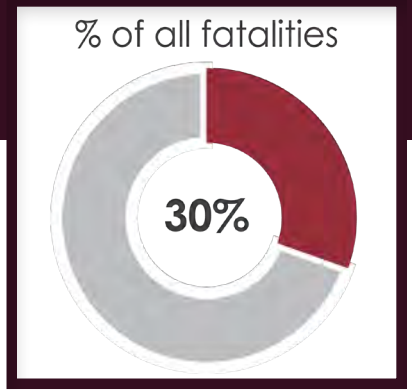
Strategies for Reducing Impairment (IMP) Fatalities and Serious Injuries		
Objective	**Strategies**	**Implementation Areas**
IMP.1. Prevent excessive drinking, underage drinking, and impaired driving.	IMP.1.1 Encourage parents to talk with their children about the risks of alcohol, cannabis, and other drugs. (R, WHY Coalition)	Education
	IMP.1.2 Continue mandatory alcohol server training and explore expanding responsible beverage service policies for alcohol retailers. (U)	Education, Leadership
	IMP.1.3 Continue and expand use of brief intervention and screening. (P, CTW)	Education, EMS, Leadership
	IMP.1.4 Conduct well-publicized compliance checks of alcohol retailers to reduce sales to underage persons. (R, CTW)	Enforcement
	IMP.1.5 Conduct well-publicized enforcement aimed at underage drinking parties. (R, CTW)	Enforcement
	IMP.1.6 Support transportation services such as transit (especially at night), designated driver programs, and other ride programs to help eliminate need for impaired individuals to drive. (U)	Education
	IMP.1.7 Support mandatory cannabis salesperson (budtender) training. (R, LCB)	Education, Leadership
	IMP.1.8 Continue statewide media campaigns to prevent underage use of alcohol and/or cannabis, prevent youth from riding with impaired drivers, and reduce overall misuse/abuse by adult consumers. (R, DOH)	Education
P: Proven R: Recommended U: Unknown		

Strategies for Reducing Impairment (IMP) Fatalities and Serious Injuries		
Objective	**Strategies**	**Implementation Areas**
IMP.2. Enforce and publicize DUI laws.	IMP.2.1 Continue statewide High Visibility Enforcement (HVE) and media campaigns to reduce impaired driving. (P, CTW)	Education, Enforcement
	IMP.2.2 Enforce and publicize zero tolerance laws for drivers under age 21. (R, CTW)	Enforcement
	IMP.2.3 Enhance law enforcement DUI training with Standard Field Sobriety Test (SFST) training and refresher training. (P, NHTSA)	Education, Enforcement
	IMP.2.4 Enhance law enforcement DUI training with Advance Roadside Impaired Driving Enforcement (ARIDE) training. (P, NHTSA)	Education, Enforcement
	IMP.2.5 Expand the use of Drug Recognition and Classification Program. (R, CTW)	Enforcement
	IMP.2.6 Support law enforcement phlebotomy programs. (U)	Enforcement
	IMP.2.7 Support strategies for simplifying and streamlining the DUI arrest process, such as electronic DUI case filing and electronic warrants. (R, NHTSA)	Enforcement
	IMP.2.8 Utilize the Mobile Impaired Driving Unit (MIDU) or additional testing stations for processing to support DUI enforcement. (R, WSP)	Enforcement
	IMP.2.9 Support local integrated and dedicated DUI enforcement. (R, CTW)	Enforcement
	IMP.2.9 Discourage expansion of access to alcohol, cannabis, and other drugs. (U)	Leadership
	IMP.2.10 Support the enhancement of the Liquor and Cannabis Board's enforcement ability to meet the needs of addressing impaired drivers during compliance checks.	Enforcement
IMP.3. Prosecute, sanction, and treat DUI offenders.	IMP.3.1 Expand use of ignition interlocks. Improve exchange of information between agencies regarding compliance. (P, CTW)	Enforcement, Leadership
	IMP.3.2 Support the Traffic Safety Resource Prosecutor Program. (R, NHTSA)	Enforcement
	IMP.3.3 Conduct alcohol/drug assessments on all DUI offenders and enhance treatment and probation when warranted. (P, CTW)	Enforcement, Leadership
	IMP.3.4 Match treatment and rehabilitation to the diagnosis. Emphasize screening for co-occurring conditions contributing to DUI behavior. (P, NIH)	Education, Leadership
	IMP.3.5 Require stronger penalties for BAC test refusal than test failure. (R, CTW)	Enforcement, Leadership
	IMP.3.6 Encourage attendance at DUI Victim's Panels. (U)	Education
	IMP.3.7 Place limits on plea agreements. (R, CTW)	Enforcement, Leadership
	IMP.3.8 Expand 24/7 sobriety program statewide. (R, CTW)	Enforcement, Leadership
	IMP.3.9 Support local dedicated DUI prosecutors. (R, WTSC)	Enforcement, Leadership
P: Proven R: Recommended U: Unknown		

Strategies for Reducing Impairment (IMP) Fatalities and Serious Injuries		
Objective	Strategies	Implementation Areas
IMP.4. Control high-BAC and repeat DUI offenders.	IMP.4.1 Monitor DUI offenders closely to reduce recidivism. (P, CTW)	Enforcement
	IMP.4.2 Support and establish DUI Courts. (P, CTW)	Enforcement, Leadership
IMP.5. Foster leadership to facilitate impaired driving system improvements.	IMP.5.1 Build effective partnerships designed to reduce impaired driving. (P, NCHRP)	Leadership
	IMP.5.2 Conduct publicized sobriety checkpoints. (P, CTW)	Enforcement, Leadership
	IMP.5.3 Conduct enforcement in locations where data suggests a high rate of impaired driving. (P, NCHRP)	Enforcement, Evaluation
	IMP.5.4 Encourage laws that use any money collected from DUI fines to support impaired driving reduction efforts. (R, GHSA)	Leadership
	IMP.5.5 Lower the per se BAC limit from .08 to .05. (P, NTSB, NAS, NSC)	Leadership
	IMP.5.6 Support the Judicial Outreach Liaison program. (R, NHTSA)	Leadership
	IMP.5.7 Promote zero tolerance laws for drug-impaired driving. (R, WTSC)	Leadership
	IMP.5.8 Monitor reports from ignition interlock vendors and conduct compliance checks. (P, CTW)	Enforcement
	IMP.5.9 Prevent ignition interlock circumvention attempts. (P, CTW)	Enforcement
P: Proven R: Recommended U: Unknown		

For additional strategies affecting Impairment, refer to the Young Drivers, Motorcyclists, and Pedestrians and Bicyclists chapters.

Distraction

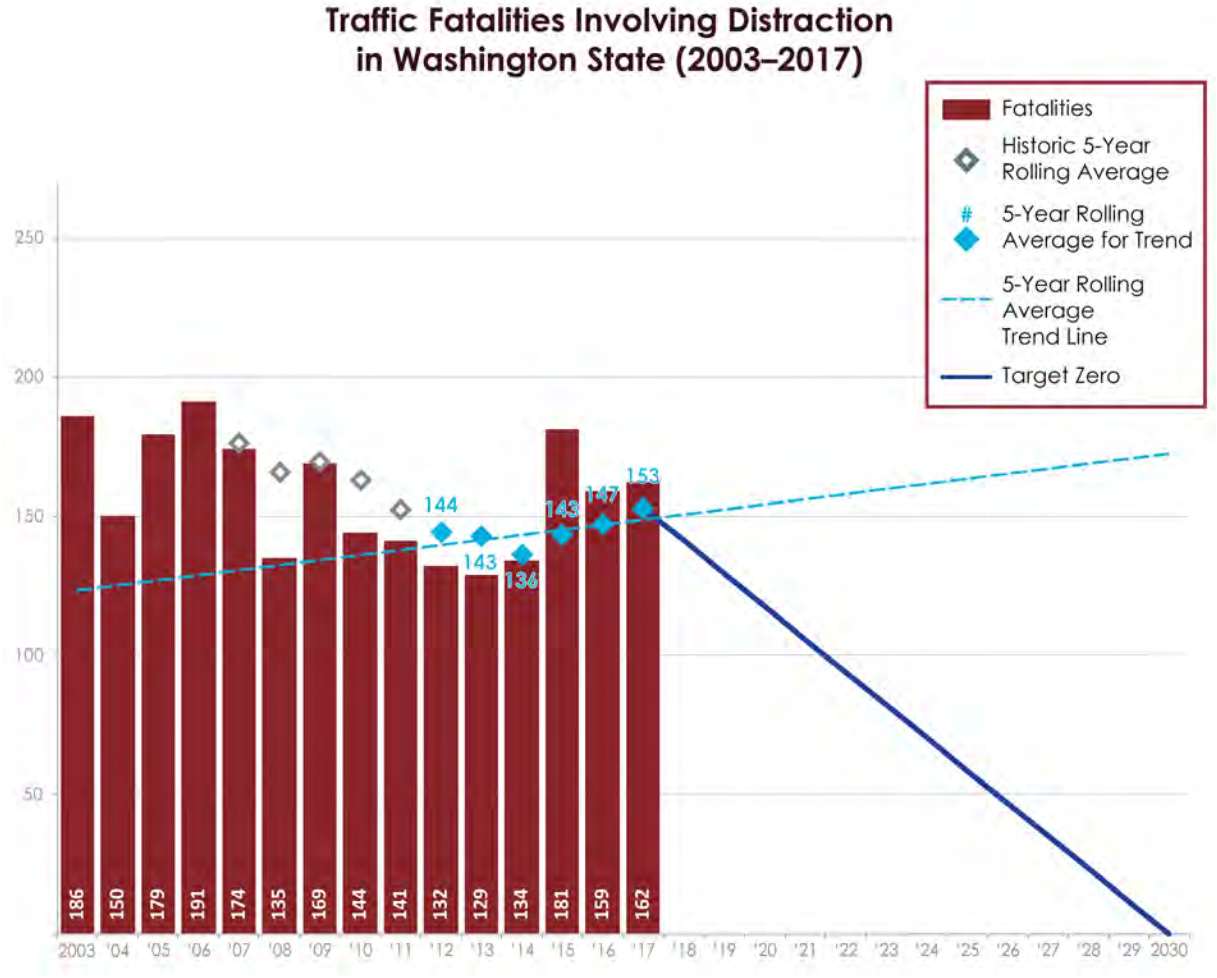


From 2015–2017, 502 people died in crashes involving distracted drivers, pedestrians, or bicyclists. Crashes involving distraction are believed to be underreported, especially for cell phone use. Despite this, distracted driving has risen to be the second most common emphasis area under high risk behavior, just after impairment.

Distraction is often associated with electronic device use while driving, but it does not have to be. Distracted driving is any activity that takes attention away from the task of driving. Distracted driving comes in three different forms:

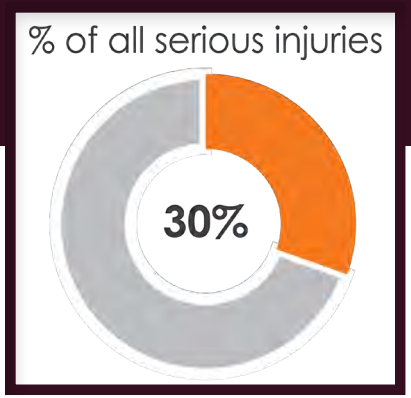
- **Cognitive/mental distraction.** The driver's mind is not focused on driving.
- **Visual distraction.** The driver looks at anything other than the road ahead.
- **Manual distraction.** The driver takes one or both hands off the wheel for any reason.

Driving distracted is a choice and a risky behavior that can increase the probability of fatalities and serious injuries on the road.



Risk Populations

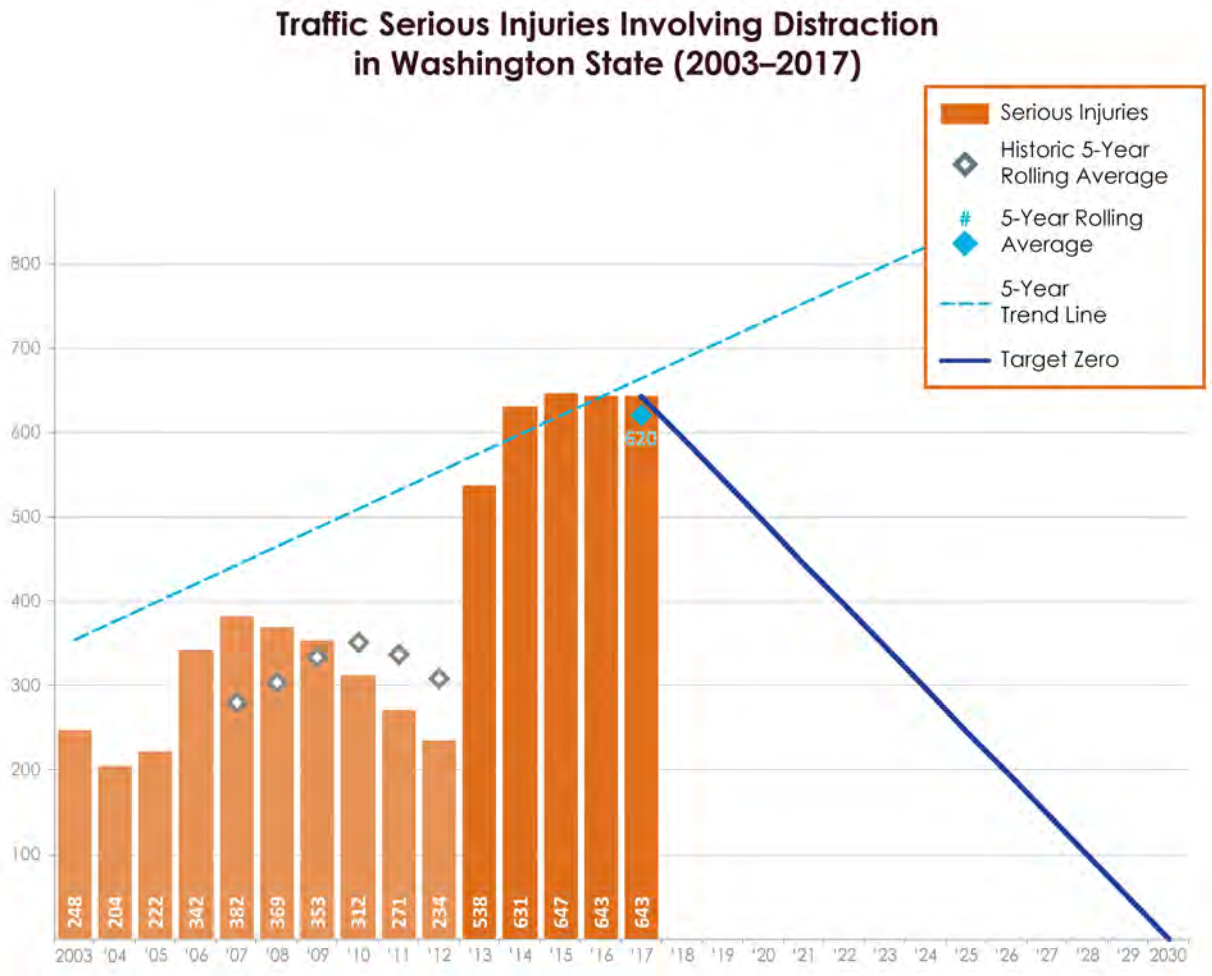
Young drivers (page 110), older drivers (page 148), and pedestrians and bicyclists (page 120) are all at-risk populations for distraction-related crashes. Please see the corresponding chapters to read further.



Priority 1

Key Countermeasures for Distraction Include:

- High Visibility Enforcement Campaigns
- King County Distracted Driving Prevention Campaign Project
- Training, Research, and Education for Driving Safety (TREDS) program
- Reducing distracted driving in the workplace



On January 1, 2013 a change to crash record coding was implemented, making the previous year of data non-comparable. Comparable data years are shaded in the same color. The trend is based on the 5 calendar years of data available since 2013.

BETWEEN 2015–2017 THERE WERE

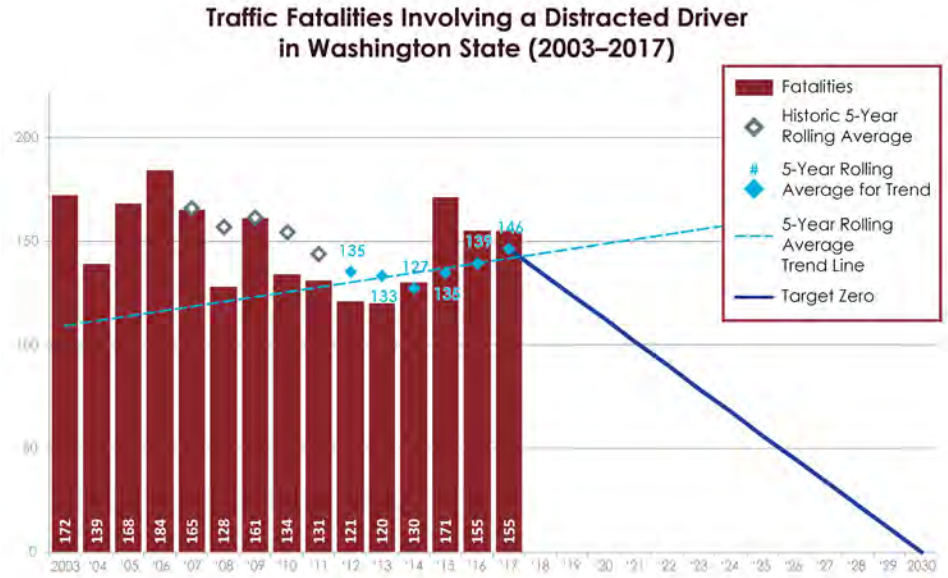
502 FATALITIES AND 1,933 SERIOUS INJURIES INVOLVING DISTRACTION

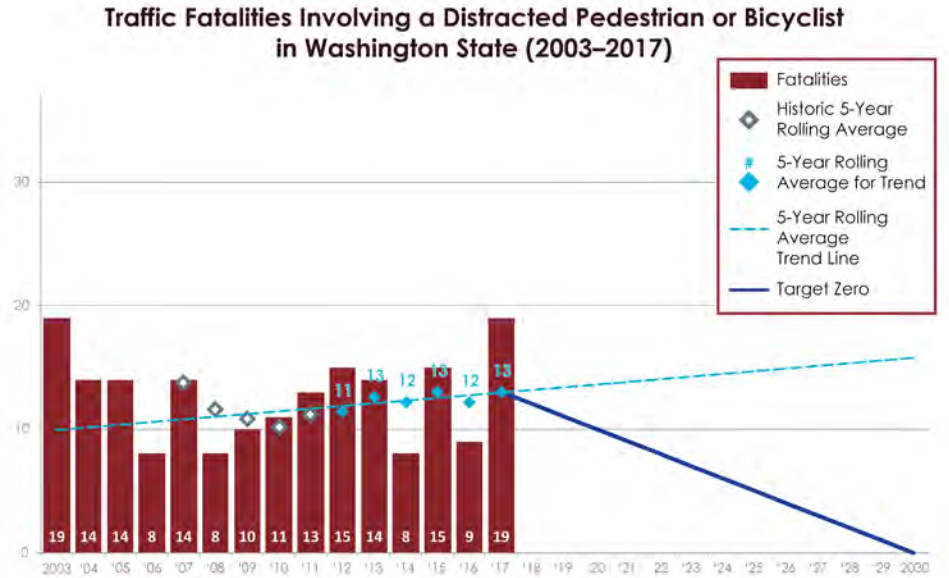
FATALITIES INVOLVING DISTRACTION OFTEN INVOLVE OTHER FACTORS

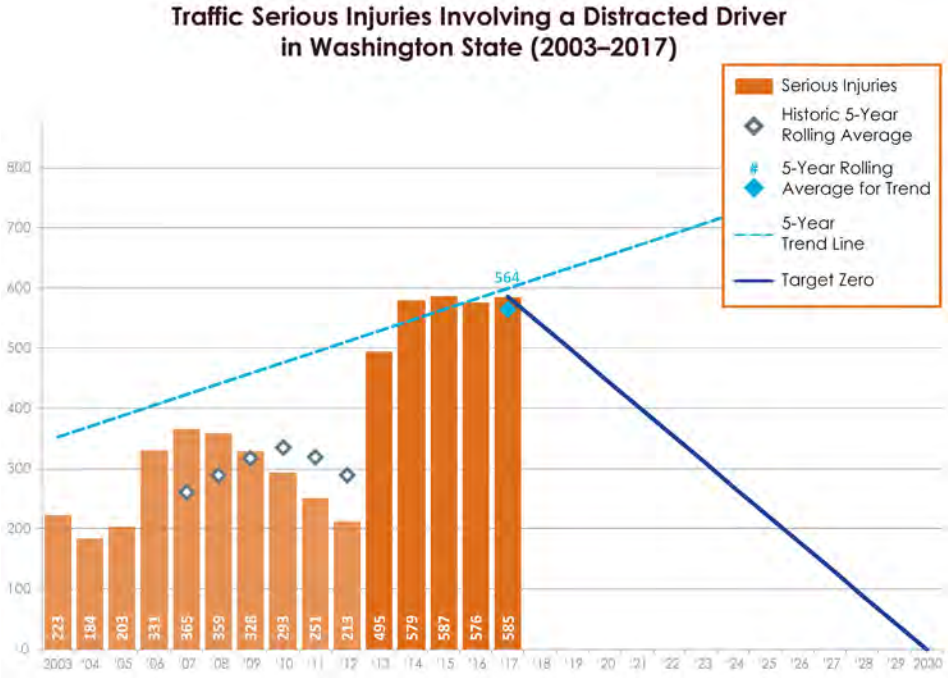
The top two factors that overlap with Distraction are **LANE DEPARTURE** and **IMPAIRMENT**

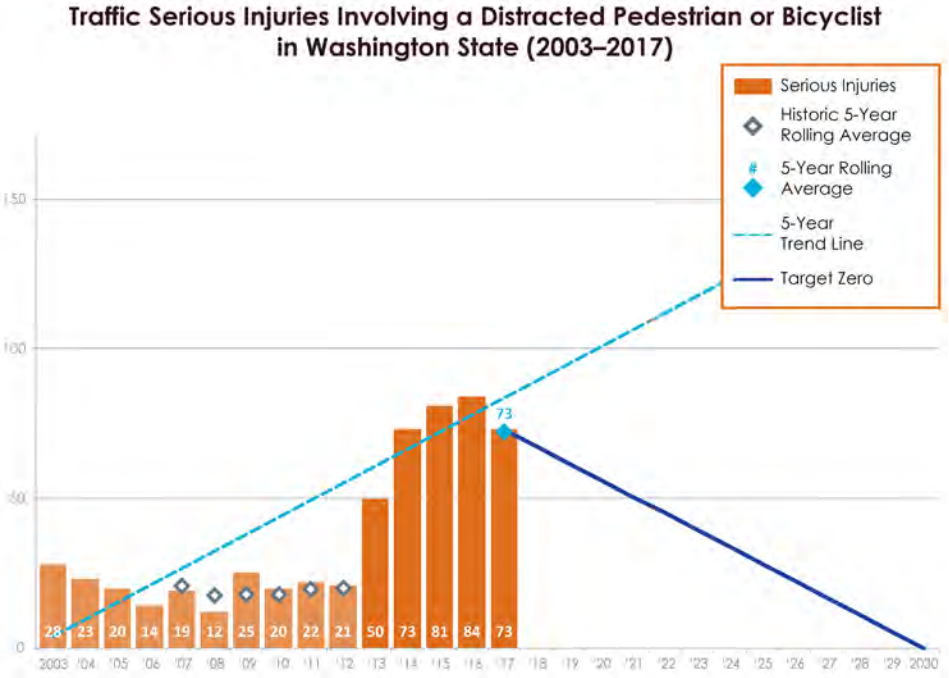
OUT OF **502 FATALITIES**:

38% also involved LANE DEPARTURE
51% also involved IMPAIRMENT
and 20% involved a combination of both

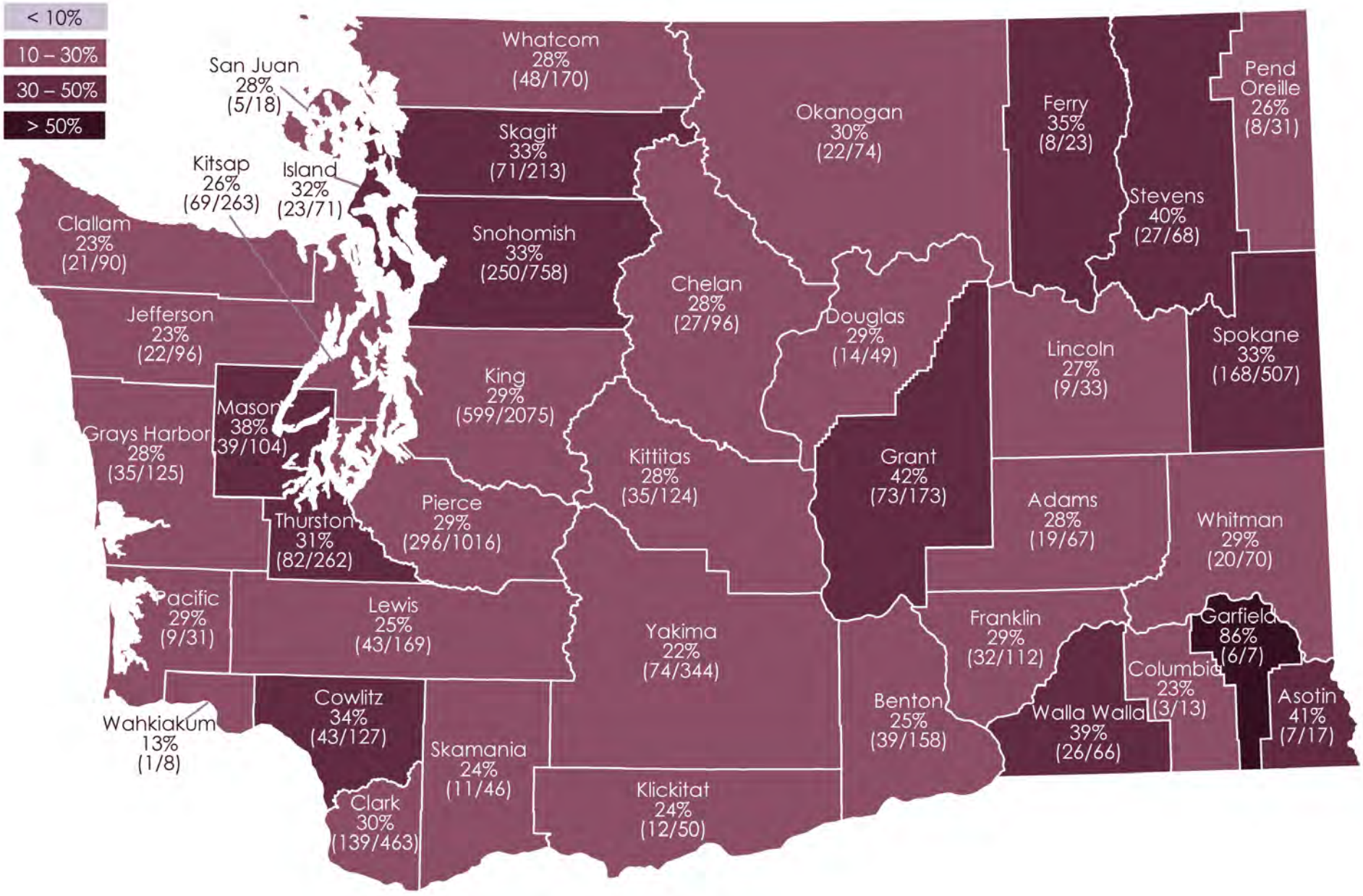

Traffic Fatalities Involving a Distracted Driver
in Washington State (2003–2017)
Fatalities
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Rolling Average Trend Line
Target Zero
172 139 168 184 165 128 161 134 131 121 120 130 171 155 155
135 133 127 136 144
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030


Traffic Fatalities Involving a Distracted Pedestrian or Bicyclist
in Washington State (2003–2017)
Fatalities
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Rolling Average Trend Line
Target Zero
19 14 14 8 14 8 10 11 13 15 14 8 15 9 19
11 13 12 13 12 13
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030


Traffic Serious Injuries Involving a Distracted Driver
in Washington State (2003–2017)
Serious Injuries
Historic 5-Year Rolling Average
5-Year Rolling Average for Trend
5-Year Trend Line
Target Zero
223 184 203 331 365 359 326 293 251 213 495 579 587 576 585
564
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030


Traffic Serious Injuries Involving a Distracted Pedestrian or Bicyclist
in Washington State (2003–2017)
Serious Injuries
Historic 5-Year Rolling Average
5-Year Rolling Average
5-Year Trend Line
Target Zero
28 23 20 14 19 12 25 20 22 21 50 73 81 84 73
73
2003 '04 '05 '06 '07 '08 '09 '10 '11 '12 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 2030

Percent of All Fatal and Serious Injury Crashes That Were Distraction Related, by County (2015–2017)



Key Issues for Distraction

Washington State's data indicate that people understand the risk and danger of distracted driving, but some still choose to drive distracted.

Misconceptions about Distracted Driving

Misconceptions make a person feel that it is socially acceptable to drive distracted. Some examples are:

Misconception: Everyone does it.

Fact: Not everyone chooses to drive distracted. In fact, the Washington Traffic Safety Commission's (WTSC's) 2018 Observational Survey shows that only 8.2% of drivers were distracted, down from 9.2% in both 2016 and 2017. This means that 92% of drivers were NOT driving distracted.

Misconception: I can look at my phone while I drive because I am a good driver.

Fact: Even if a person is a very skilled driver, that person cannot perform well in the driving environment while distracted. In a survey conducted in March 2017, the WTSC asked questions regarding distracted driving to 847 female drivers ages 16–34. Ninety-six percent of these drivers agreed that using a cell phone while driving is dangerous; however, 55% said they felt safe driving using just one hand on the steering wheel while using a phone, and 81% said they felt safe using a hands-free device to talk while driving.

Inattention Blindness and Perception

Inattention blindness occurs when a person's attention is on one thing and that person does not notice unexpected things entering the visual field. The explanation for inattention blindness is that a person's attentional, cognitive, and processing resources are limited. Attention plays a major role in visual perception.

Driving distracted allows the driver's attention to shift, choosing another task to be the focus. Even when looking ahead at the road, a driver's visual field can be limited if the driver is focused on something other than driving. For instance, when talking on the phone – even hands free, looking ahead, and with both hands on the wheel – a driver's visual field will be limited because the focus is on being present on the phone call.

Misconception: I am a good multitasker. I can do multiple things and drive at the same time.

Fact: A person can only do one task at a time. You can toggle from one task to the other, but it is impossible for a person to do any two tasks at the same time. Further, drivers who toggle between other tasks while driving might experience inattention blindness and visually miss things in the environment. Returning a driver's focus to the road is not instant. A period of readjustment occurs after the driver's eyes have returned to the road and will delay response time.

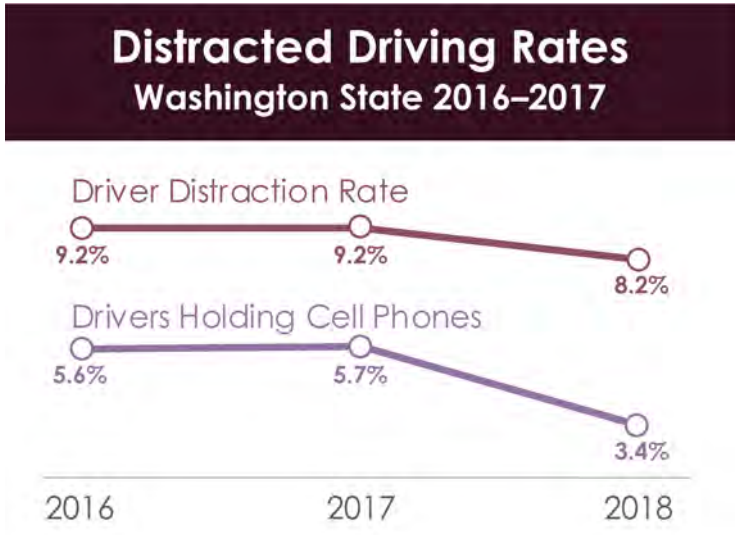
Observational Surveys

The WTSC has been conducting distracted driving observational surveys since 2016. WTSC plans to continue conducting these surveys to measure the impact of the distracted driving law and culture change.

The 2018 survey revealed behavior changes since the first survey and provides the baseline measure of driver distraction prior to the new law's effective date and one year following.

The survey findings, as shown in the graph on this page, estimate the driver distraction rate decreased in 2018, although this change was not significant.

- In 2018, there was a significant decrease in the percentage of observed drivers holding or manipulating cell phones.
- In 2018 there was also a significant increase in drivers engaged in "other distracting behavior," such as eating, tuning a radio, or attending to pets or children.
- In 2016 and 2017, cell phones were the source of three quarters of distractions. In 2018, due to the decrease in handheld cell phone use and the increase in "other distractions," cell phones were the source of just over half of driver distractions.



Washington State Laws Relating to Distraction

RCW 46.61.672 Using a personal electronic device while driving

RCW 46.61.673 Dangerously distracted driving

RCW 46.20.055(3)b Instruction permit

RCW 46.20.075(4) Intermediate driver license holders

Key Countermeasures for the 2019 Plan

High Visibility Enforcement Campaigns

Since 2014, Washington State has participated in a national, annual High Visibility Enforcement (HVE) campaign to reduce distracted driving. This statewide mobilization will continue to be funded. There are two elements to an HVE campaign: enforcement and education. Over 150 law enforcement agencies participate in this multi-jurisdictional campaign. In 2018, during the distracted driving HVE campaign, law enforcement issued 1,776 citations for cell phone use and texting statewide.

King County Distracted Driving Prevention Campaign Project

The King County Distracted Driving Prevention campaign is an ongoing project that aims to change behavior among drivers through HVE and education outreach campaigns. It also includes a driver survey to assess behavior, perceptions, and knowledge related to Washington's Driving Under the Influence of Electronics (E-DUI) law (see the box to the right for more information).

In 2018, this mobilization campaign resulted in contacts with more than 900 drivers over two weeks by 14 law enforcement agencies. The project's education outreach campaign included paid and earned media through radio and television interviews, paid radio and online PSAs, blog posts and news stories, and social media outreach through King County Target Zero Task Force agencies.

Training, Research, and Education for Driving Safety Program

Emergency responders – who often use technology in their vehicles in order to effectively do their jobs – are not subject to the distracted driving law. To reduce the effects of distraction in patrol cars, Washington collaborated with the Training, Research, and Education for Driving Safety (TREDS) program at the University of California at San Diego. The pilot course attracted 44 attendees from 21 different law enforcement agencies, varying from local to federal entities. The state expects each of those 44 trainees to host at least one of these classes in their own jurisdiction or region.

This project is ongoing. The course includes:

- Strategies to manage distraction and reduce distracted driving.
- National and state distracted driving data.
- Reviews of state law.
- Law enforcement risks and consequences, including civil liability.
- Alcohol law enforcement speaker who recently caused a distracted driving crash involving three other vehicles.

The Driving Under the Influence of Electronics Act

In 2017, families, employers, legislators, traffic safety advocates, and insurance companies worked together to pass a new distracted driving law known as the Driving Under the Influence of Electronics (E-DUI) Act. The E-DUI Act states:

- You cannot hold your phone or any other electronic device with your hands while you drive.
  - Even when stopped in traffic or at traffic signal
  - Includes all electronic devices even tablets, laptops and video games
  - No typing messages or accessing information
  - No watching videos or using cameras
- You can use your electronic devices if you are:
  - Hands-free and can start use by a single touch or swipe of your finger.
  - Parked or out-of-the-flow of traffic.
  - Contacting emergency services.

The first ticket for E-DUI costs the driver $136, but the fine goes up to $234 for repeat and subsequent offenses. The new law also makes it possible for these citations to be reported to the driver's insurance company.

The law came from the Legislature with a start date of January 2018. Washington State Governor Jay Inslee vetoed the start date and changed it to July 2017, stressing the urgency and importance of this law.

During the first 12 months, law enforcement issued 27,822 cell phone citations, including 784 for dangerously distracted. Most importantly, there was a 13% reduction in distracted driving in the two-week period following the new law.

Reducing Distracted Driving in the Workplace

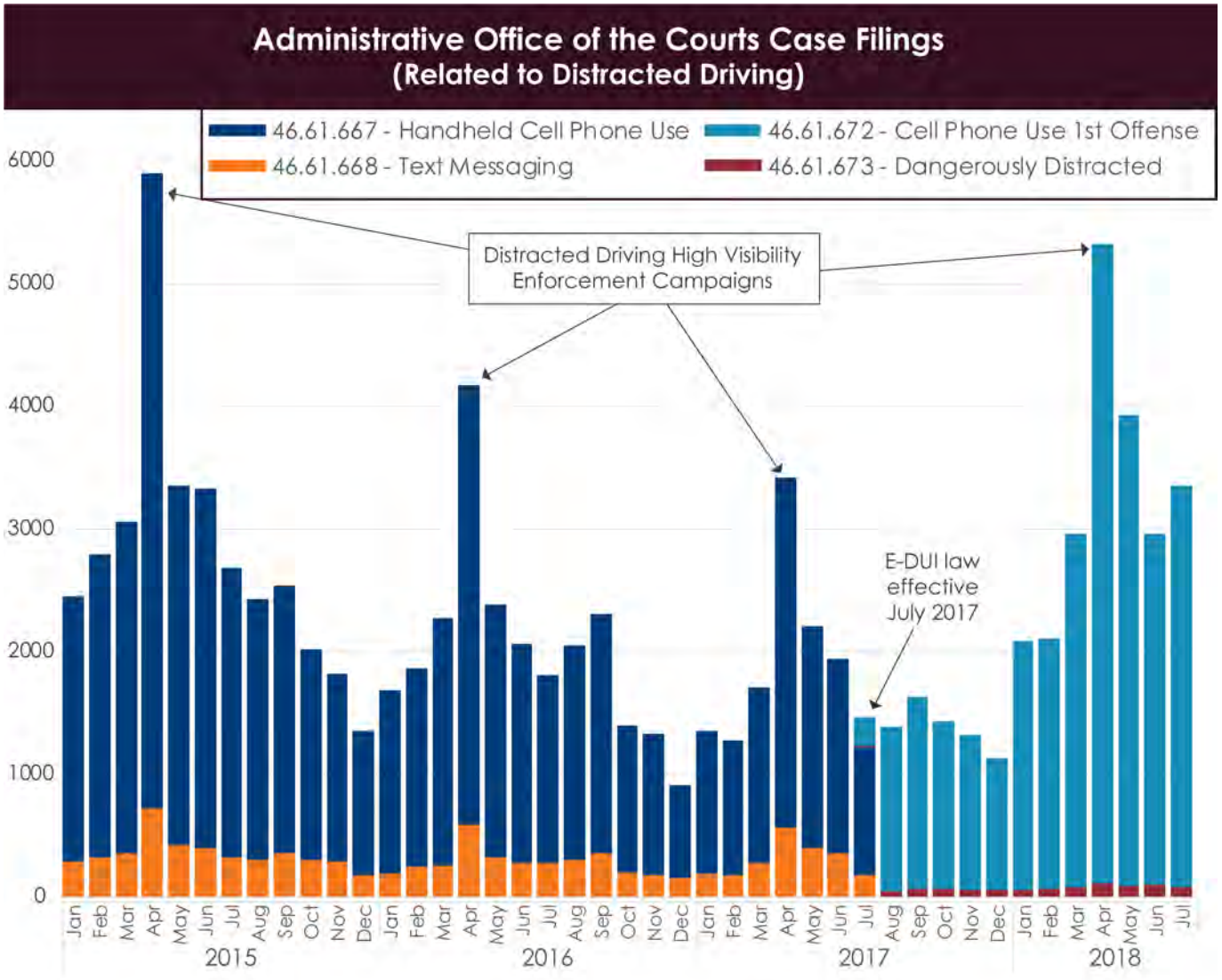
In 2019–2020, the Center for Health and Safety Culture (CHSC) at Montana State University will implement and evaluate a culture-based intervention to address distracted driving in the workplace. This project will include strong policy, training, and communication.

Pre- and post-intervention employee surveys will evaluate effectiveness. The intervention will result in a toolkit for future dissemination to other businesses across the state.

CHSC will report the results from the online surveys as well as impact of the project. The final report will also include guidance on best practices and ways to revise a workplace distracted-driving policy to use with other businesses across the state.

Traffic Safety Culture: Distraction

The CHSC project will focus on the creation of a Target Zero workplace community, and focus on culture change to help people choose to be safer, and influence their coworkers to be safer.



RELATED AREA: Work Zones

From 2015–2017, there were 18 fatalities and 70 serious injuries related to work zones. Of these people seriously injured or killed in work zones, 83% were vehicle drivers or passengers. The most frequently occurring factors are driver distraction and inattention (39%), lane departure (31%), young driver involvement (30%), and speeding (26%).

Safety of workers and the traveling public is a high priority during project development and construction, maintenance work, or any other roadway activities. Detailed work zone policy and guidance documents help agencies develop comprehensive transportation management plans to address work zone safety impacts.

Work zone policy and guidance areas of emphasis include:

- Developing site-specific multimodal traffic control plans to address unique work zone safety and mobility impacts.
- Using positive protection devices, such as concrete barriers or transportable attenuators whenever possible. This protects workers from nearby traffic, and the traveling public from equipment, materials, or excavation.
- Using larger, brighter signs and channelizing devices than required by federal regulations.
- Managing work zone congestion by conducting work during off-peak traffic hours.
- Training WSDOT employees and local agencies on the policy and guidance applications.
- Requiring contractor personnel to be trained when involved with work zone operations.

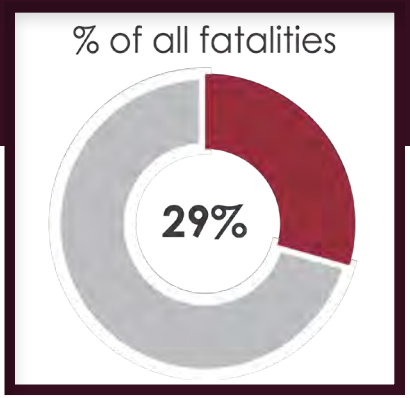
More information can be found at WSDOT's Work Zone Safety website (http://www.wsdot.wa.gov/Safety/Brake/default.htm).

Strategies for Reducing Distraction (DIS) Fatalities and Serious Injuries		
Objective	**Strategies**	**Implementation Areas**
DIS.1. Increase awareness of the risks of distracted driving while implementing multicultural engagement.	DIS.1.1 Conduct statewide distracted driving High Visibility Enforcement (HVE). (R, CTW)	Education, Enforcement
	DIS.1.2 Conduct statewide education campaigns focused on the dangers of driving distracted in work zones. (R, WSDOT)	Education
	DIS.1.3 Develop educational tools for law enforcement on how to identify drivers violating Washington's distracted driving laws. Make these materials available for patrol briefings prior to distracted driving HVE campaigns. (U)	Education, Enforcement
	DIS.1.4 Conduct statewide road education campaigns focused on the dangers of driving distracted. The campaigns should address the diversity of the project/enforcement area in the appropriate cultural context. (U)	Education
	DIS.1.3 Implement community level projects that promote culture change. (U)	Education
DIS.2. Improve data collection.	DIS.2.1 Collect better statewide crash data involving distraction to support distracted driving projects and educational campaigns. (R, NCHRP, MMUCC)	Evaluation
DIS.3. Encourage employers to adopt anti-distracted driving policies and programs.	DIS.3.1 Encourage employers and other agencies to adopt anti-distracted driving policies that are more restrictive than the law, such as also banning the use of hands-free devices while driving. (R, WTSC)	Leadership
	DIS.3.2 Educate emergency responders, such as EMS and police, about the dangers of distracted driving. (R, WTSC)	Education
	DIS.3.3 Educate commercial vehicle and fleet drivers about the dangers of distracted driving. (R, WTSC)	Education
	DIS.3.4 Encourage the implementation of employer-based programs that prevent distracted driving, especially among employers with fleets. (U)	Leadership
DIS.4. Increase programs targeted at school-aged children focused on preventing distracted driving.	DIS.4.1 Implement programs to educate school-aged children that are not of driving age about the dangers of distracted driving and empower them to do bystander interventions with whomever they are riding with. (U)	Education
	DIS.4.2 Support programs for children of driving age based on evidence-based behavior change frameworks, such as Positive Community Norms and the Social Ecological Model. School-based programs should be peer-led and involve parents. (U)	Education
P: Proven R: Recommended U: Unknown		

For additional strategies affecting Distraction, refer to Young Drivers, Pedestrians and Bicyclists, and Older Drivers chapters.


Swift Blvd

Speeding



One in every three fatal crashes between 2015 and 2017 involved speeding as a contributing factor. Most people speed on a daily basis with no adverse consequences, making speeding one of the most difficult behaviors to modify.

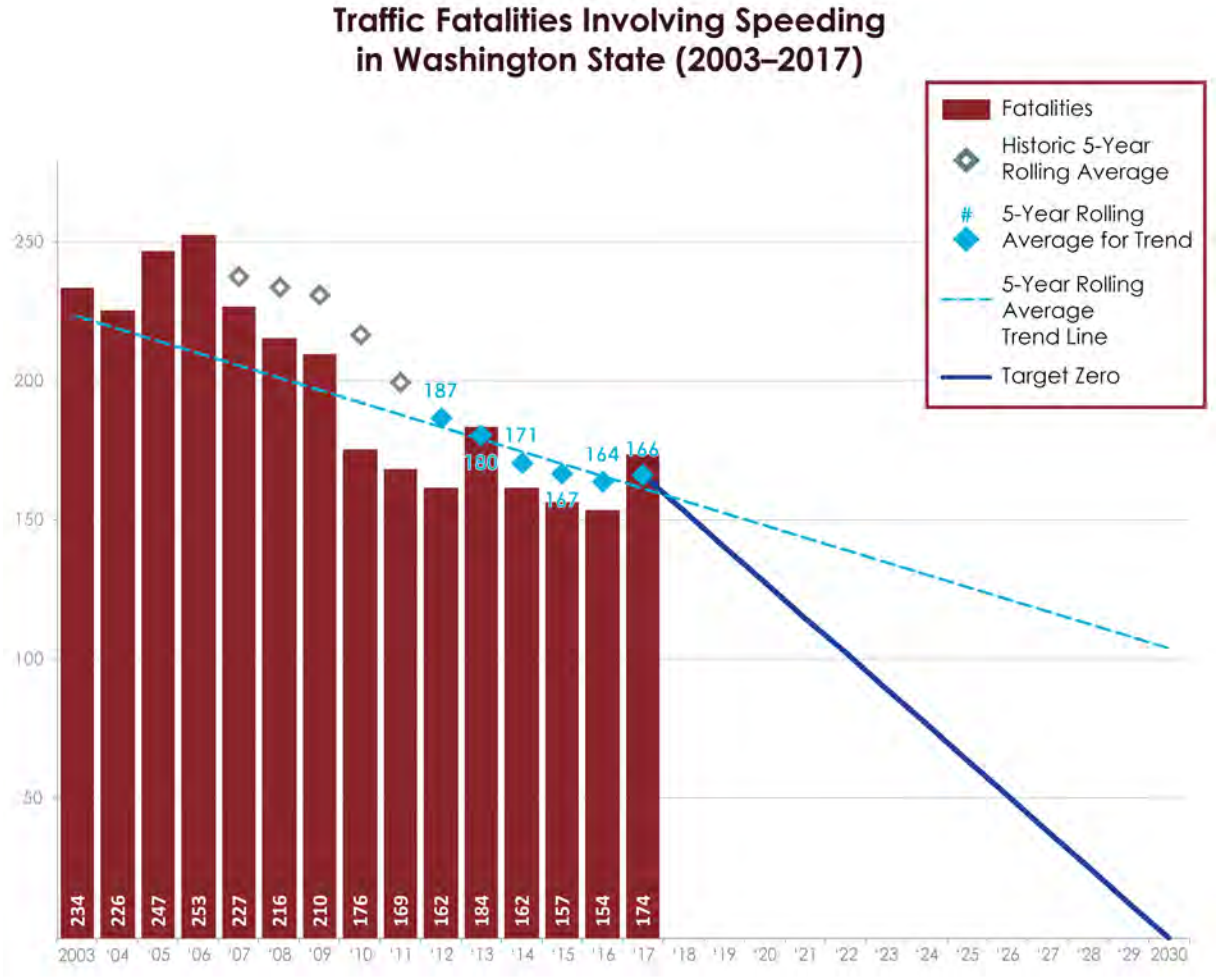
Key Issues for Speeding

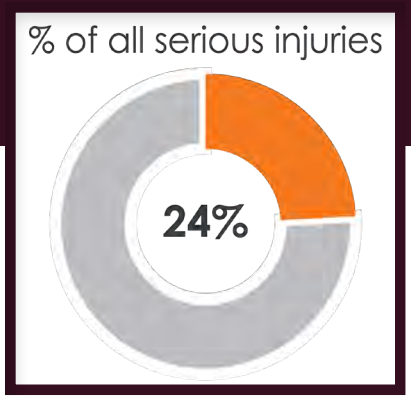
Changing Conditions

Exceeding reasonable safe speeds or exceeding posted speeds affects the vehicle's closing speed on a roadway obstruction or traffic. From 2015–2017, 64% of speeding drivers involved in fatal crashes were exceeding reasonable safe speed – traveling too fast for conditions.

Aggressive Driving

Vehicles that are traveling at vastly different speeds from the traffic around them can create safety issues. In 2012, the Insurance Institute on Highway Safety (IIHS) reported that aggressive driving behaviors were involved in 51.9% of fatal crashes. Aggressive driving is defined as an individual committing a combination of moving traffic offenses so as to endanger other persons or property. Speeding is the most common aggressive behavior.

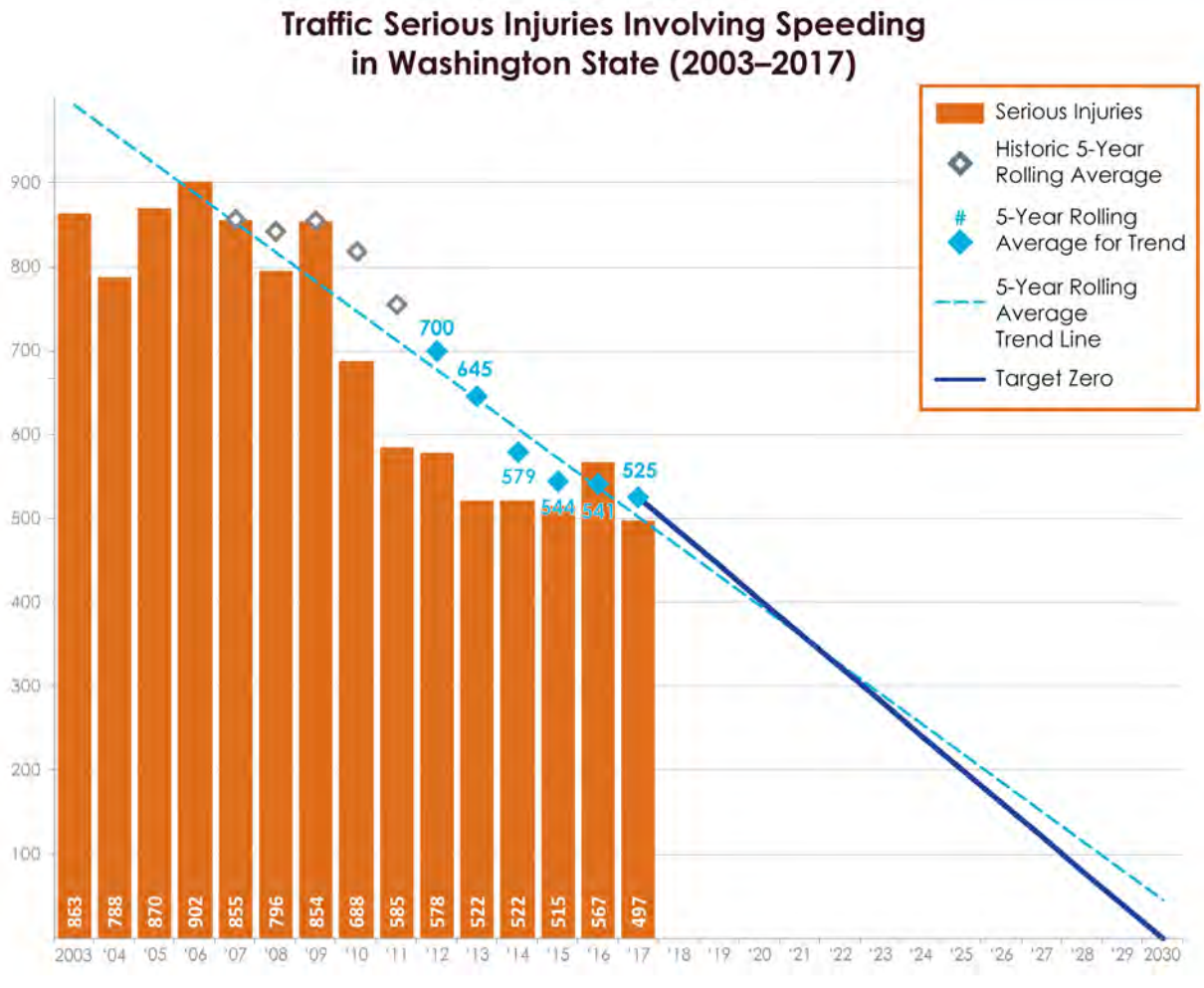




Priority 1

Key Countermeasures for Speeding Include:

- Driver education and campaigns
- Enforcement
- Engineering and road design



The speed of a vehicle is a factor in all crashes. The more force applied, the more damage to the vehicles and injuries to the occupants or pedestrians. Controlling vehicle speed can prevent crashes and reduce their impact by lessening the severity of injuries sustained by the victims.

For more on the effects of speed, see page 124 of the Pedestrians and Bicyclists chapter and page 197 of the Safe Systems Approach chapter.

BETWEEN 2015–2017 THERE WERE

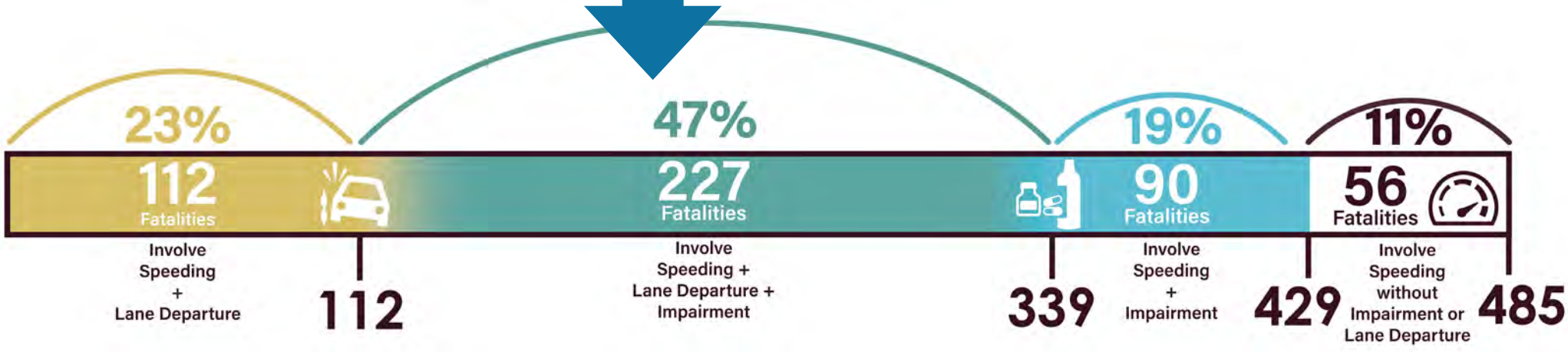
485 FATALITIES AND 1,579 SERIOUS INJURIES INVOLVING SPEEDING

FATALITIES INVOLVING SPEEDING OFTEN INVOLVE OTHER FACTORS

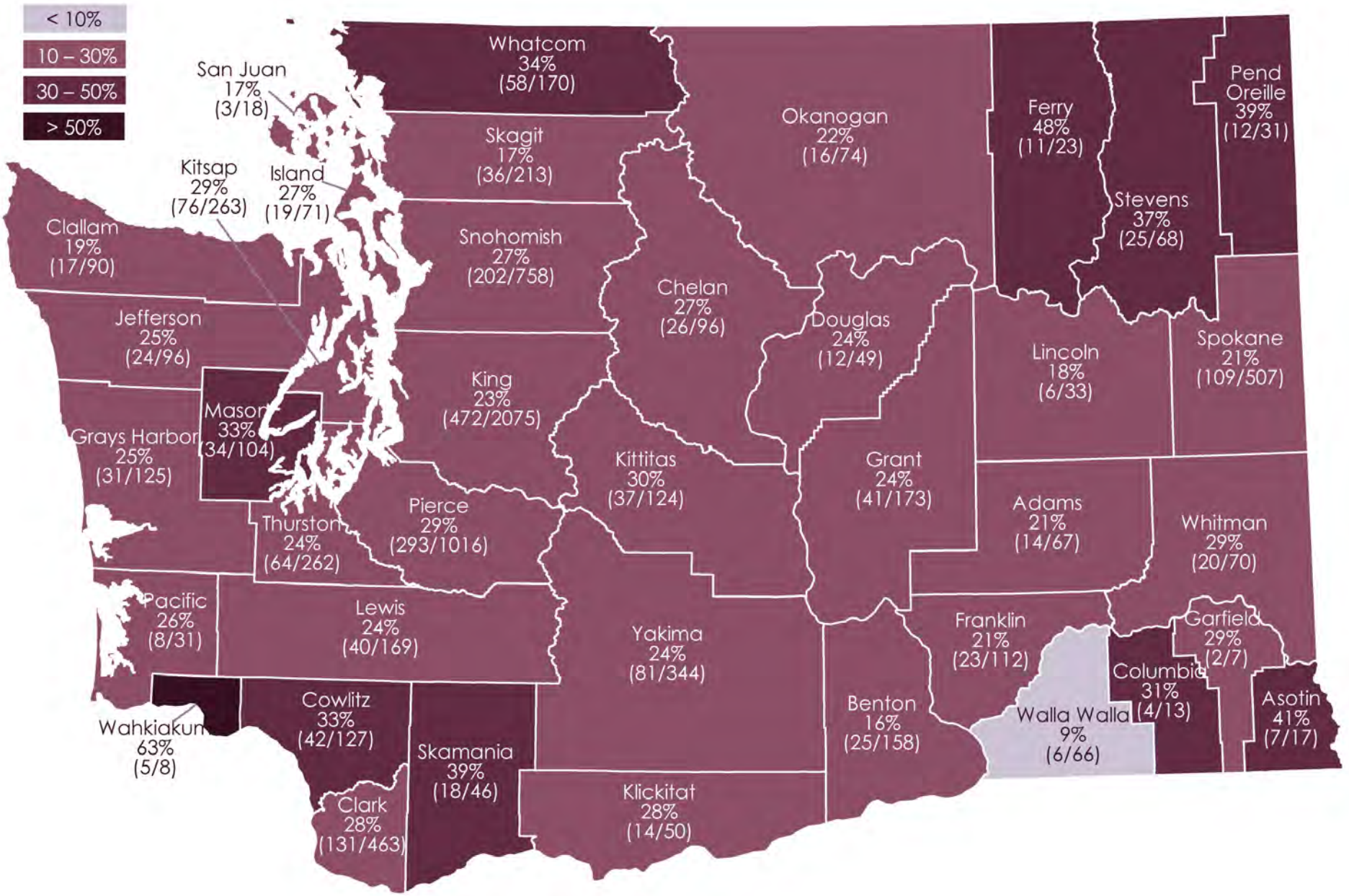
The top two factors that overlap with Speeding are **LANE DEPARTURE** and **IMPAIRMENT**

OUT OF **485 FATALITIES**:

70% also involved LANE DEPARTURE
66% also involved IMPAIRMENT
and 47% involved a combination of both



Percent of All Fatal and Serious Injury Crashes That Were Speeding Related, by County (2015–2017)



Key Countermeasures for the 2019 Plan

Driver Education and Campaigns

Public outreach and education about the dangers of speeding is most effective when used in conjunction with High Visibility Enforcement (HVE). Media campaigns, behavioral change components, and an increase in driver education focusing on the relationship between speeding and aggressive driving behaviors have been shown to boost the effectiveness of HVE. Other types of information that are intended to reduce speeding include:

- Increasing the information provided to drivers around road conditions. This can be accomplished through the use of education or electronic aids that allow greater awareness of changing traffic or roadway conditions.
- National and statewide media campaigns run in conjunction with HVE.

Washington State Laws Relating to Speeding

RCW 46.61.400 Basic rule and maximum limits

RCW 46.61.410 Increases by Secretary of Transportation. Maximum speed limit for trucks

RCW 46.61.440 Maximum speed limit when passing school or playground crosswalks

RCW 46.61.465 Exceeding speed limit — reckless driving

RCW 46.61.470 Speed traps defined, certain types permitted. Measured courses, speed measuring devices, timing from aircraft.

RCW 46.61.275 Reporting of certain speed zone violations — Subsequent law enforcement investigation

Enforcement

Aggressive driving is not only a speeding violation, but a combination of illegal behaviors that endanger the lives of other drivers. It can include speeding, illegal lane changes, following too closely, and other aggressive actions on the road. National Highway Traffic Safety Administration (NHTSA) research suggests that apprehending aggressive drivers has shown little statistical evidence of success; however, it is the best existing enforcement tool. The Washington State Patrol (WSP) operates aggressive driver enforcement patrols in all eight of their districts. Local law enforcement operate patrols throughout the year.

In addition, Automated Speed Enforcement (ASE) would allow for more consistent and standard coverage. Automated enforcement is currently limited by statute, although it has been shown to be effective. Expanding the use of automated traffic safety cameras has been shown to reduce crashes by 20-25% if placed at conspicuous fixed locations. According to the Centers for Disease Control and Prevention, allowing wider use of speed cameras in Washington would annually save about 21 lives, prevent about 1,700 injuries, and save nearly $68 million in avoided crashes. See the Legislation and Policy chapter on page 206 for more information.

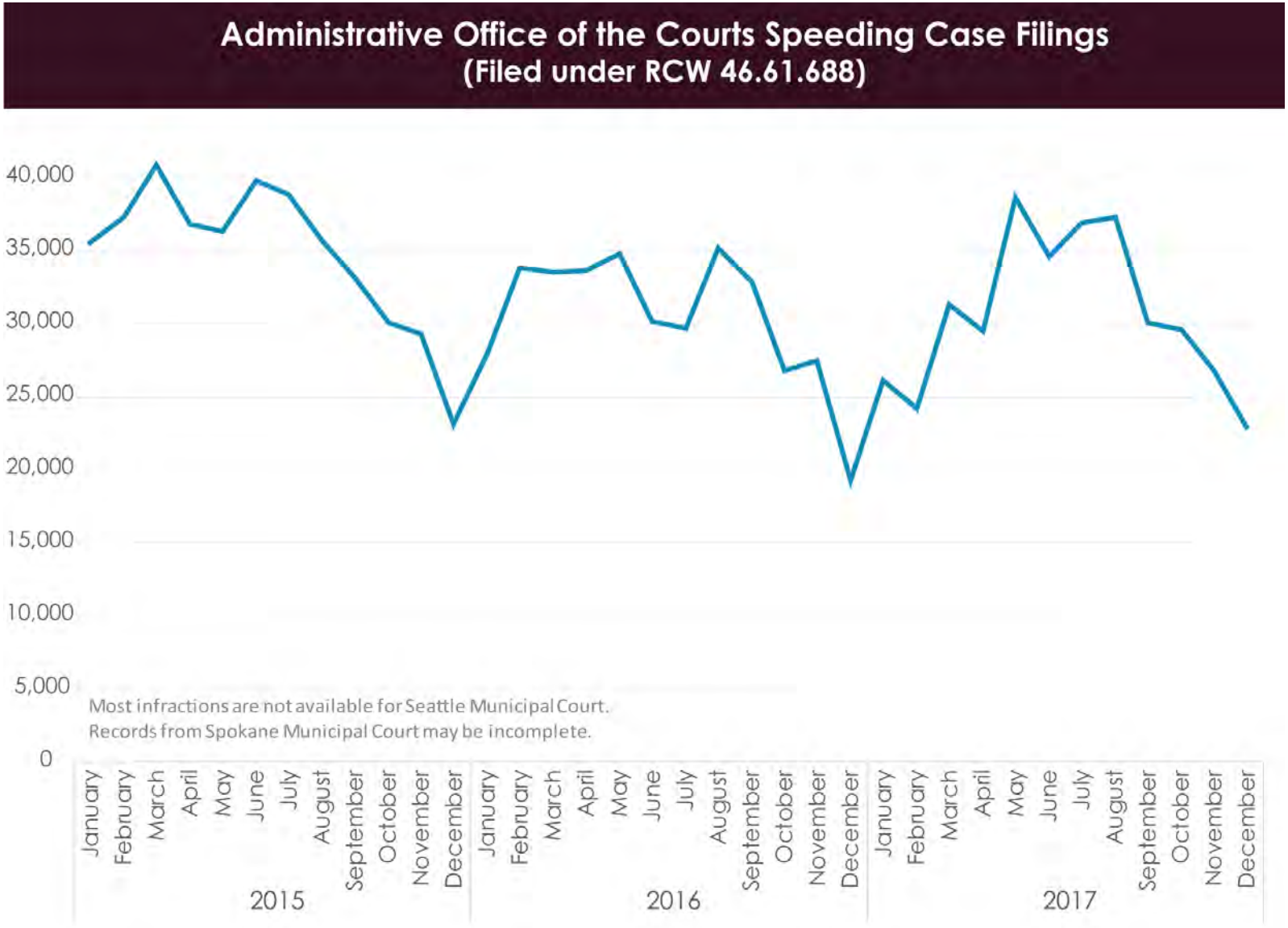
Engineering, Road Design, and Vehicle Technology

Engineering countermeasures to address speeding commonly focus on advanced warnings, increased roadway visibility, and traffic calming. Examples include:

- Real-time warning to drivers of slowed traffic conditions ahead (interstates).
- Improved signing and delineation of curves (rural roads).
- Use of speed feedback signs (urban roads).
- Narrowed roadways or use of speed bumps (residential roads).
- Road diets with typical features, such as curb extensions (urban roads.

For in-vehicle technology, IIHS reports a 20%+ lower claims rate in certain collision types for vehicle equipped with advanced or automated collision warning systems.

For more information, please see the Safe Systems Approach chapter on page 192.

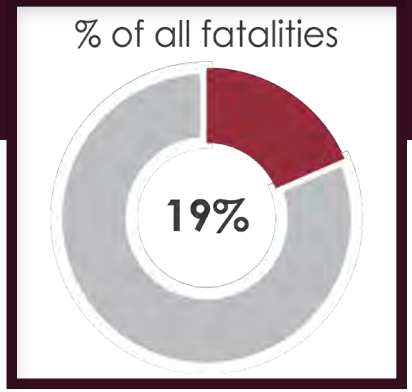


Strategies for Reducing Speeding (SPE) Fatalities and Serious Injuries		
Objective	Strategies	Implementation Areas
SPE.1. Reduce motorist speed through enforcement activities.	SPE.1.1 Increase use of automated speed enforcement. (P, CTW)	Enforcement
	SPE.1.2 Conduct High Visibility Enforcement efforts at locations where speeding-related crashes are more prevalent. (P, NCHRP)	Education, Enforcement
	SPE.1.3 Increase penalties for repeat and excessive speeding offenders. (R, CTW)	Leadership
	SPE.1.4 Equip law enforcement officers with appropriate equipment for speeding enforcement. (R, WSP)	Enforcement
	SPE.1.5 Increase use of aerial speed enforcement. (U)	Enforcement
SPE.2. Use engineering measures to lower motorist speed.	SPE.2.1 Set speed limits which account for roadway design, traffic, and environment. (R, NCHRP)	Engineering
	SPE.2.2 Implement traffic calming strategies at road sections and intersections along the types of streets for which they are intended, primarily low-volume residential and, occasionally, collector and arterial streets. (R, NCHRP)	Engineering
	SPE.2.3 Place speed limit signs so they 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
	SPE.2.6 Implement timed and coordinated traffic signals to improve traffic flow, reduce red-light running, and manage speeds. (R, NCHRP)	Engineering
P: Proven R: Recommended U: Unknown		

Strategies for Reducing Speeding (SPE) Fatalities and Serious Injuries		
Objective	Strategies	Implementation Areas
SPE.3. Build partnerships to increase support for motorist speed-reduction strategies.	SPE.3.1 Educate the public about the dangers of excessive speed and speeding too fast for conditions, and its role in traffic fatalities. (R, NCHRP)	Education
	SPE.3.2 Implement neighborhood speed watch/traffic management programs in low speed areas. (R, NCHRP)	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)	Evaluation, Leadership
	SPE.3.4 Educate prosecutors and judges to ensure speeding violations are treated seriously and fairly. (R, NCHRP)	Education, Enforcement
	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
	SPE.3.6 Educate about the effects of roadway conditions on appropriate motorist speed, such as weather, congestion, daytime/nighttime, and roadway user mix. (U)	Education
P: Proven R: Recommended U: Unknown		

For additional strategies affecting Speeding, refer to the Impairment, Intersections, Young Drivers, and Pedestrians and Bicyclists chapters.

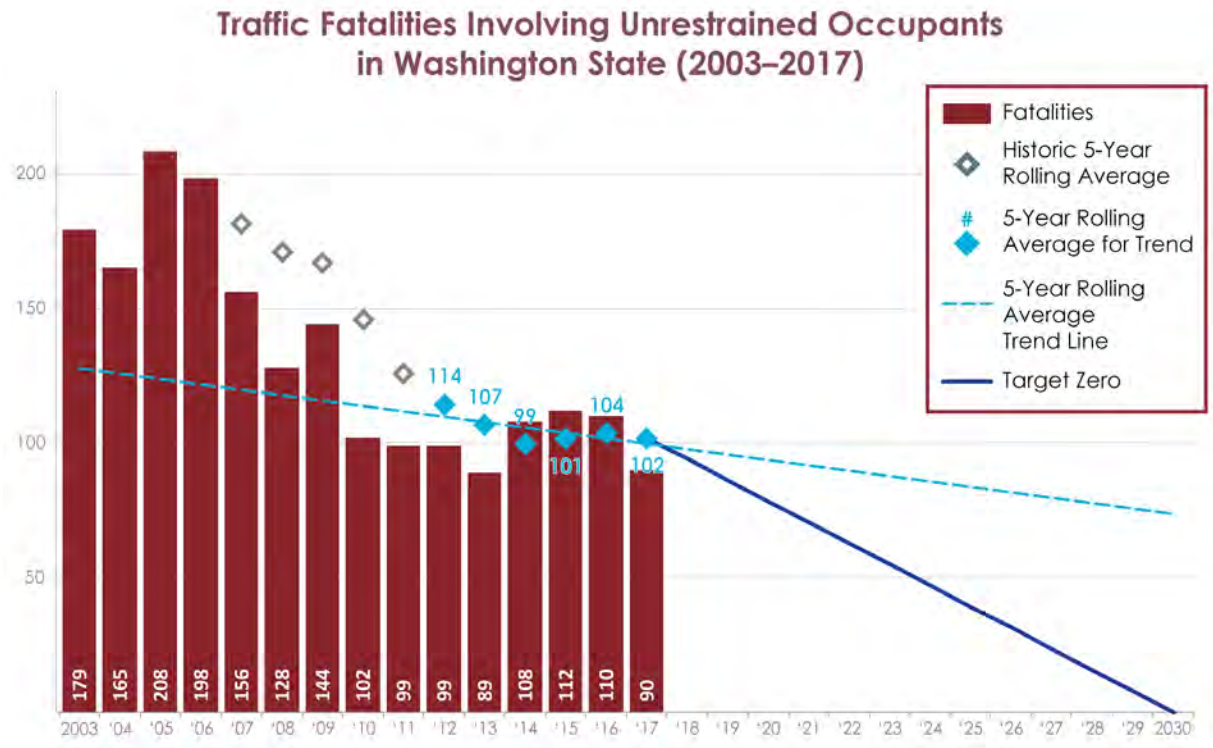
Unrestrained Occupants

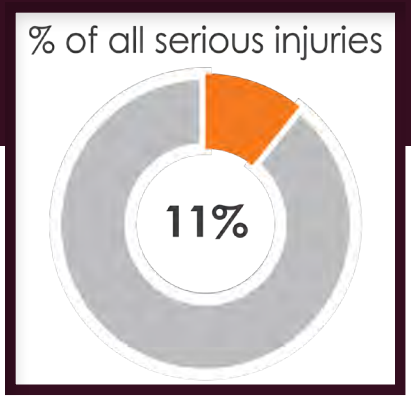


Generally, restraining occupants of a vehicle to improve safety involves use of two categories of devices – safety restraint systems (seat belts) installed in the vehicle, and child passenger safety systems that are added to increase the safety and security of children riding in vehicles (car and booster seats).

Washington's 2018 observed seat belt use rate was 93.2%, one of the highest rates in the nation. Washington's seat belt use rate has been over 90% since the primary seat belt law was implemented in 2002. Despite Washington's consistently high seat belt use rate, from 2015–2017, nearly one in five fatally injured persons were not using, or not properly using, a seat belt or child passenger safety system.

In Washington State, all children under the age of 13 are required to ride in the back seat. Other requirements focus on keeping children in appropriate child passenger systems, either car seats or booster seats. The number of fatalities for unrestrained or improperly restrained children fell from seven in 2012–2014 to four in 2015–2017. That news is tempered somewhat by having no change in reported serious injuries for unrestrained or improperly restrained children, an average of 10 every year since 2012.

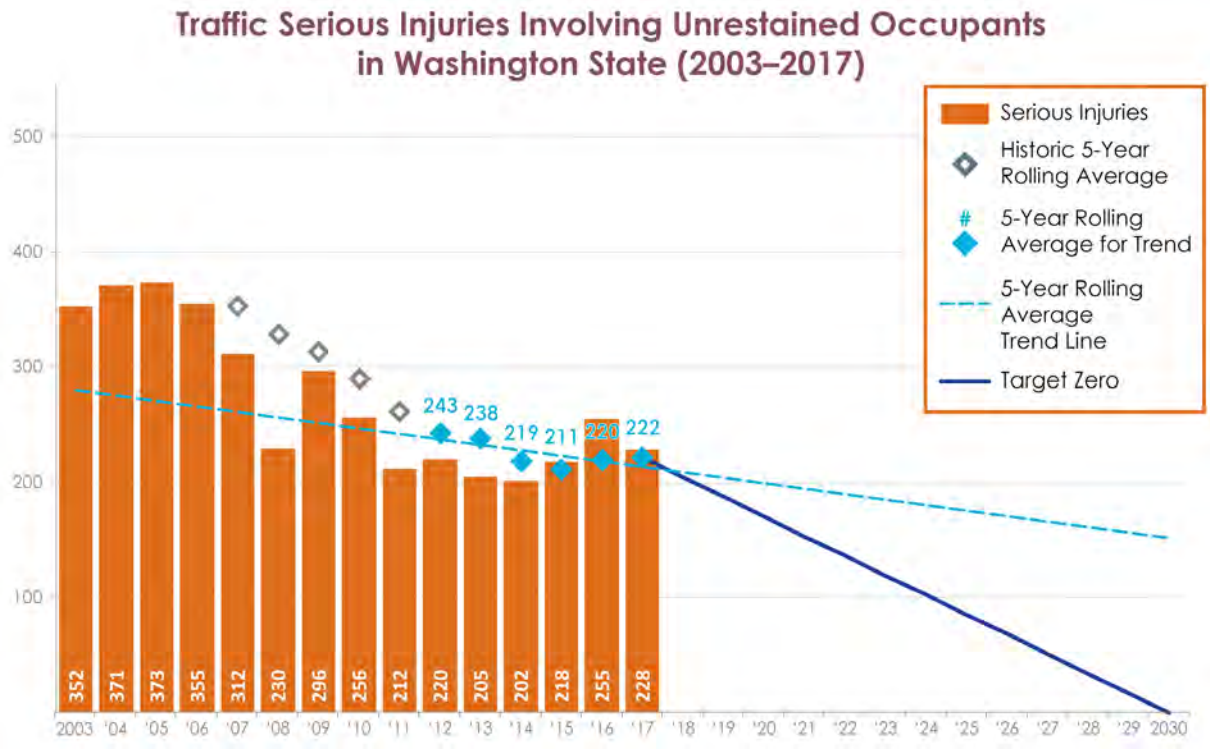




Priority 2

Key Countermeasures for Unrestrained Occupants Include:

- Maintaining Washington's high seat belt use rate
- Focusing on high risk populations
- Safest Ride Campaign
- Improving law enforcement understanding of car seats



BETWEEN 2015–2017 THERE WERE

312 FATALITIES AND 701 SERIOUS INJURIES

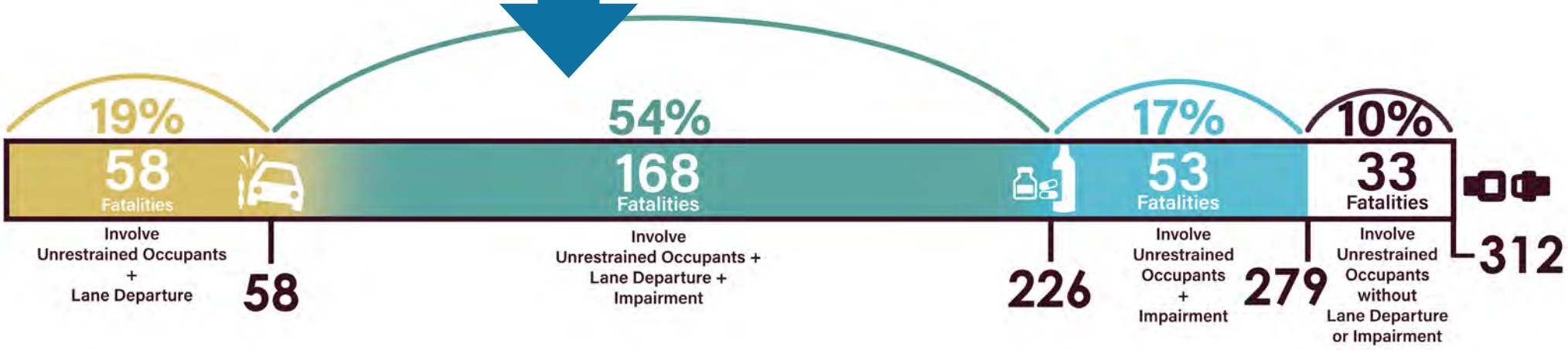
INVOLVING UNRESTRAINED OCCUPANTS

FATALITIES INVOLVING UNRESTRAINED OCCUPANTS OFTEN INVOLVE OTHER FACTORS

The top two factors that overlap with Unrestrained Occupants are **LANE DEPARTURE** and **IMPAIRMENT**

OUT OF **312 FATALITIES**:

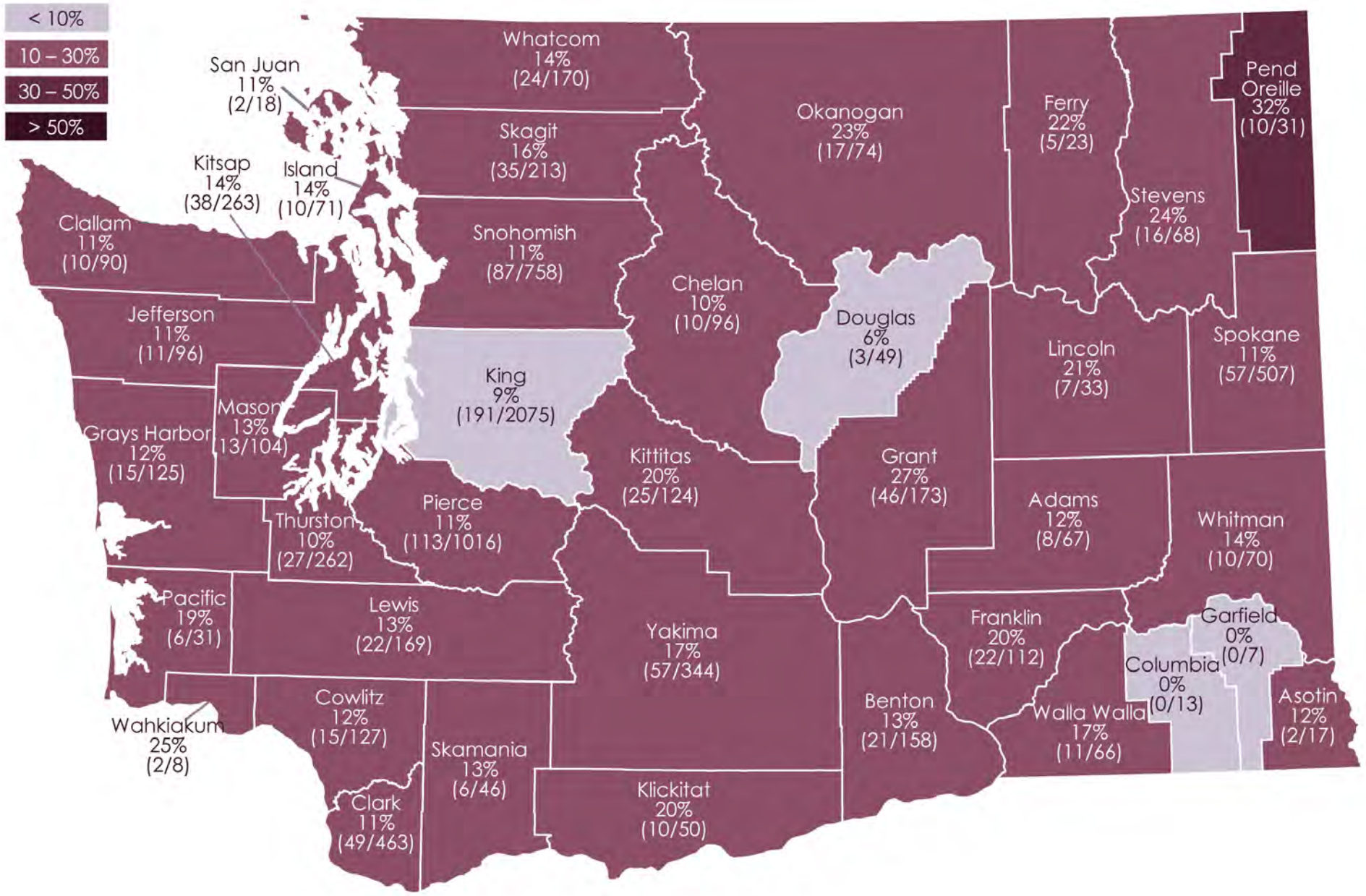
73% also involved LANE DEPARTURE
71% also involved IMPAIRMENT
and 54% involved a combination of both



Washington State Laws Relating to Child and Adult Restraints in Vehicles

- RCW 46.61.688 covers passengers over 16 years of age. People driving or riding in a motor vehicle shall wear a seat belt. Drivers are responsible for ensuring all child passengers under the age of sixteen years either wear a seat belt or use an approved child restraint device.
- RCW 46.61.687 (effective at the start of 2020):
  - Children under age 2 must ride in a rear-facing car seat.
  - Children ages 2–4 must ride in a car seat rear or forward-facing with a harness.
  - Children 4 and older must ride in a car or booster seat until they are 4'9" tall.
  - Children under 13 must ride in the back seat (when practical).

Percent of All Fatal and Serious Injury Crashes That Were Unrestrained-Related, by County (2015–2017)



Key Issues for Unrestrained Occupants

Staying in the Vehicle is the Best Protection in the Event of a Crash

Much of the success in reducing traffic fatalities and serious injuries has occurred because of vehicle design and seat belt use. For example, all vehicles sold in the United States beginning with the 2009 model year were required to feature "crumple zones" in which the vehicle literally folds up to absorb the impact from a crash, thus reducing the potential for harm for vehicle occupants. Because vehicle design protects occupants in the event of a crash, the best protection for vehicle occupants is to stay in the vehicle during the crash. The best way to stay in the vehicle is to use seat belts.

Some Populations are Less Likely to Use Seat Belts

For American Indians and Alaskan Natives (AIANs) in Washington State, the lack of seat belt use results in an unrestrained occupant fatality rate that is 8.8 times higher than the rate for all other races/ethnicities combined. Of the AIANs who died in 2015–2017 traffic crashes, 39% were not buckled at the time of the crash.

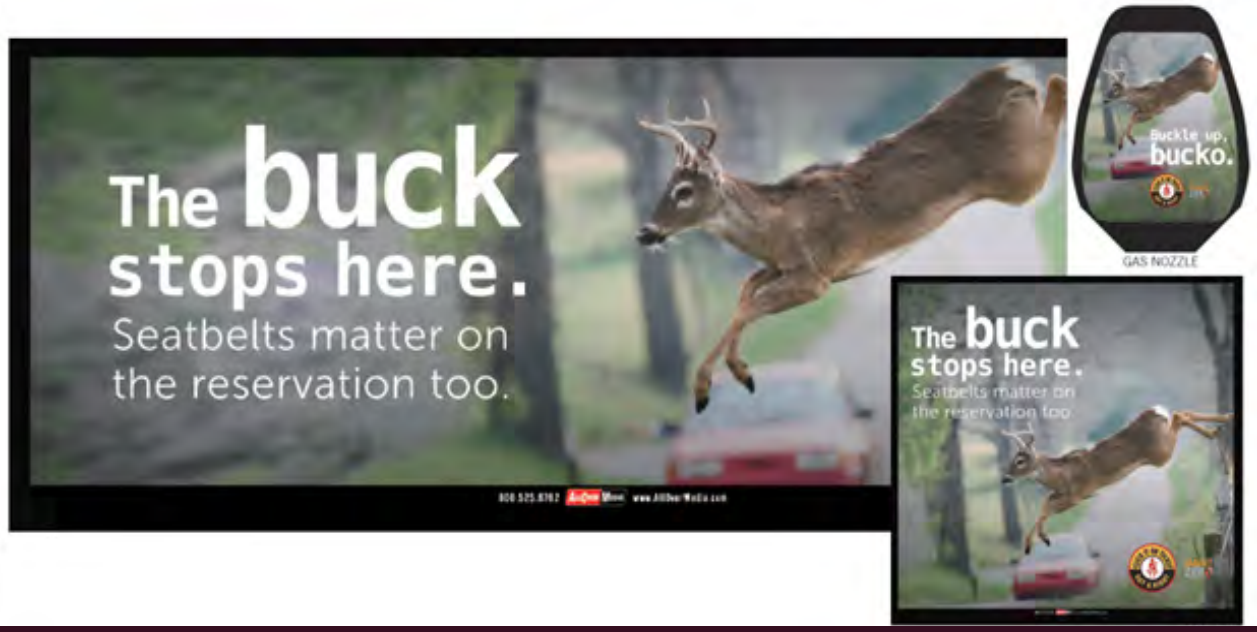
An observational seat belt use survey on a large reservation in Washington State – conducted with the cooperation of the tribe – showed seat belt use rates were as much as 30% lower on roadways located on the reservation than on roadways located just off the reservation. Other tribes in Washington State have conducted their own observational seat belt surveys and have found various rates of usage, but almost all were substantially lower than the overall state rate.

In addition, younger drivers are particularly likely to be involved in crashes involving unrestrained occupant deaths. Only 68% of drivers ages 16–25 involved in fatal crashes were restrained at the time of the crash, the lowest belted rate among all ages of drivers involved in fatal crashes. Roadway users between the ages of 16-25 account for 27% of unrestrained fatalities.

As with crashes involving other risky behaviors, the highest percent of unrestrained occupant crashes occur on weekends and on rural roads.

Other High Risk Behaviors

It is critical to understand the behaviors and attitudes of unrestrained drivers better so that effective interventions can be developed to encourage seat belt use. Unrestrained occupants are often involved in other high risk driving behaviors, as seen in the infographic on page 82. Therefore finding ways to get them to use their seat belts is likely to result in reductions in other high risk driving behaviors as well. Changing these high risk behaviors would result in a reduction of fatalities and serious injuries.



Child Passenger Safety

Motor vehicle crashes remain one of the leading causes of death for children four years and older. Using the correct car seat or booster seat can help decrease the risk of death or serious injury by over 70%.

The most common mistakes in Washington State are:

- No restraint used
- Children 12 and under are illegally seated in the front seat.
- Premature graduation from the booster seat to a seat belt.
- Child restraint not installed in vehicle properly
- Harness does not have a correct fit on child

Priorities for Occupant Protection in Washington State

- Approximately 6%–7% of Washington State's drivers still do not use seat belts.
- On some tribal reservations, seat belt use is dramatically lower than the state rate.
- Road injuries are the leading cause of preventable deaths and injuries to children in the United States. (Safe Kids Worldwide). Correctly-used child safety seats can reduce the risk of death by more than 70%. Three out of four car seats are not used or installed correctly.
- Lack of current data regarding usage of child passenger safety products.

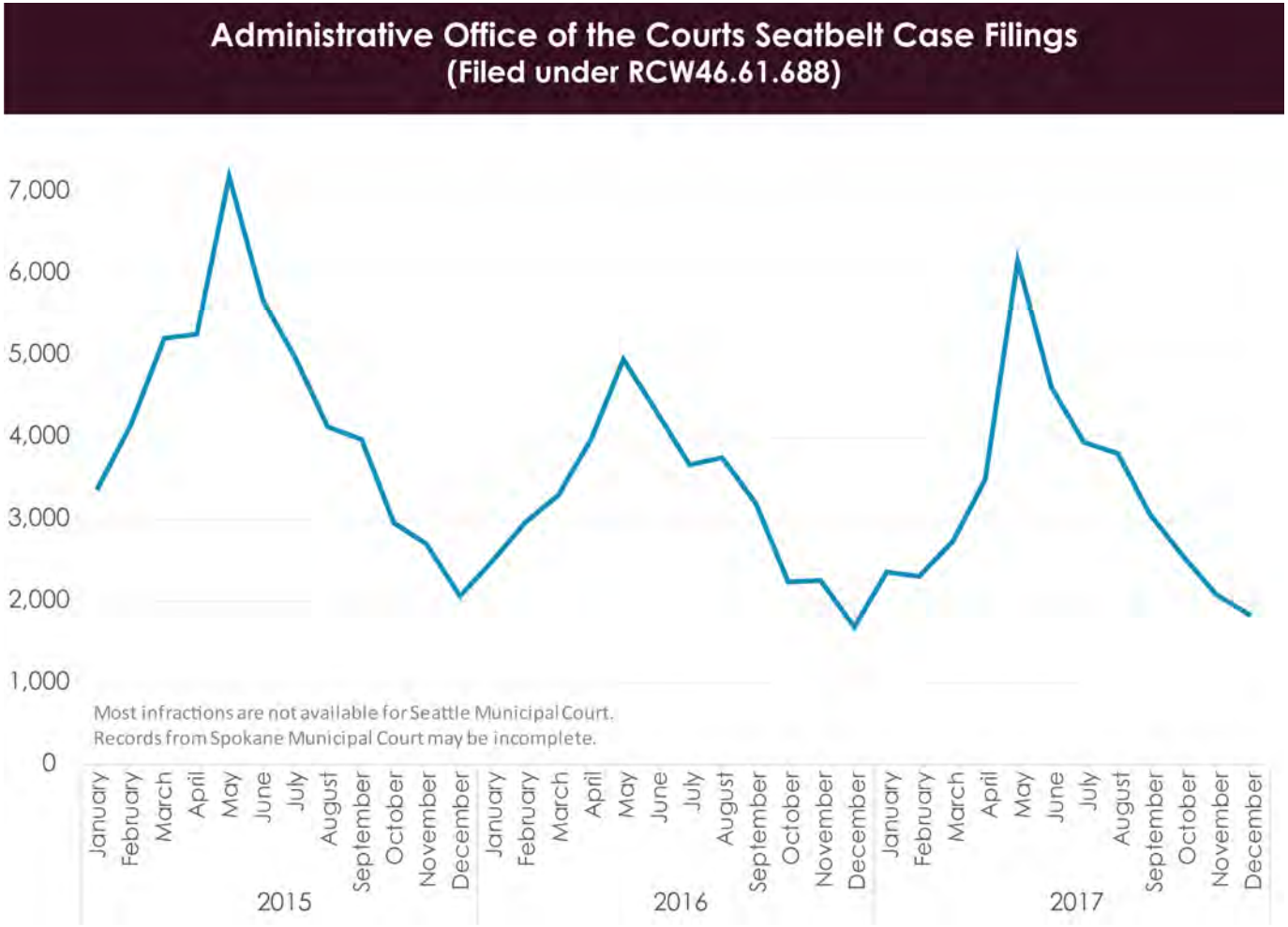
The American Academy of Pediatrician's latest evidence-based recommendations call for the following:

- Infants and toddlers should ride in a rear-facing car seat as long as possible, at least until they reach the highest weight or height allowed by their seat. Most convertible seats have limits that will allow children to ride rear-facing for two years or more.
- Once they are facing forward, children should use a forward-facing car safety seat with a harness for as long as possible, at least until they reach the height and weight limits for their seats. Many seats can accommodate children up to 65 pounds or more.
- When children exceed these limits, they should use a belt-positioning booster seat until the vehicle's lap and shoulder seat belt fits properly. This is often when they have reached at least 4 feet 9 inches in height and are eight to 12 years old.
- When children are old enough and large enough to use the vehicle seat belt alone, they should always use lap and shoulder seat belts for optimal protection.
- All children younger than 13 years should ride in the rear seats of vehicles for optimal protection.

Key Countermeasures for 2019–2021

Maintaining Washington's High Seat Belt Use Rate

Washington adopted its first seat belt law in 1986, resulting in a 36% seat belt use rate. The primary seat belt law is estimated to have saved 91 lives and prevented 253 serious injuries since its introduction in 2002. Primary seat belt laws allow law enforcement officers to ticket a driver or passenger for not wearing a seat belt, without any other traffic offense taking place. Secondary seat belt laws state that law enforcement officers may issue a ticket for not wearing a seat belt only when there is another citable traffic infraction.



Washington State supports aggressive efforts to publicize seat belt patrols and seat belt use, and law enforcement aggressively enforces the state's seat belt law. Target Zero Managers (TZMs) in 17 regions share messages on seat belt use to the local communities they work with. At the same time, participation in the annual Click It Or Ticket program provides a statewide platform to discuss the importance of seat belt use. For more information on the TZMs, please see page 228.

An Example of Why People do Child Passenger Safety Work

"At the time, my knowledge of car seats derived from a magazine article and my pediatrician. Neither had the proper training or provided me with the information to keep my children the safest in the car. Fortunately, instincts directed me to a rear-facing-only seat for my five-day-old baby and to keep my five-year-old in a harness seat as long as possible. Only a mile away from home, a young driver ran a red light and crashed into our vehicle as we crossed the intersection. We all survived; my newborn baby didn't even wake up and my son complained of the cold air outside of the car. It was then I realized that car seats really do save lives! I became a car seat technician in 2013 and a CPST [Child Passenger Safety Technician] Instructor in 2016. I hope to empower parents to make the right choice for their children."

- Kathleen Clary-Cooke, SafeKids Coordinator, Benton-Franklin Counties.

Focusing on High Risk Populations

Increasing the state's seat belt usage rate will involve a renewed focus on finding ways to convert non-users to users. The state has identified specific groups of people most likely to not use seat belts based on a review of seat belt citations and other research. Some of the groups of people who have been identified as being more likely to not use seat belts are:

- American Indian/Alaska Native (AIAN) males younger than 25.
- Hispanic/Latino males younger than 25.
- White farmers and ranchers older than 55.

From the identification of these focus populations has come some new approaches to media and public education. One example was creating messaging directed at AIAN young men featuring animals native to the reservation, especially deer. The messaging was physically located on top of self-serve gas pumps.

Another example is a tribe that conducted a series of focus groups in spring of 2017 in the communities on its reservation to find out what peoples' attitudes and beliefs were about seat belt use. The information from the focus groups will be used to develop community-specific seat belt use messages.

Safest Ride Campaign

The 2014 statewide child restraint observational survey results showed approximately one in five child passengers under age 13 were illegally riding in the front seat. This places those children at greater risk of injury.

Washington's Child Passenger Safety program (CPS) collaborated with Safe Kids Washington to develop a 2016 media campaign about the importance of children riding buckled up in the back seat. They launched The Safest Ride during CPS week in September of that year. Several SafeKids Coalitions and Target Zero Task Forces participated. The group designed three community awareness activities in addition to conducting pre- and post-observational surveys at targeted elementary schools. Safe Kids Washington provided mini-grants, while Washington's CPS program provided educational tools and resources. Post-observation results from the mini-grants found an average 12.3% increase in the number of children correctly riding in the back seat.

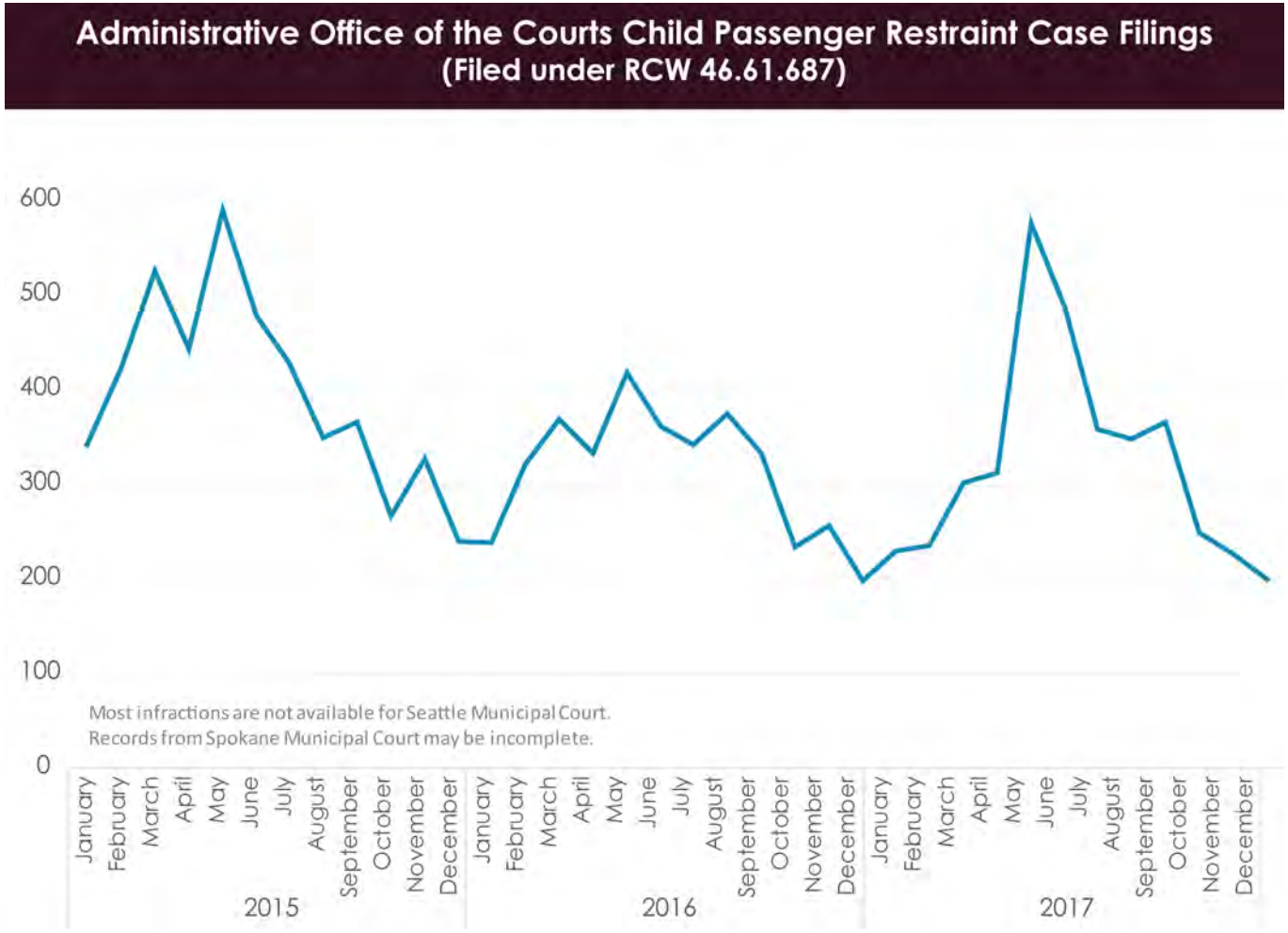
This media campaign continues to be used throughout Washington State and has had materials translated into Spanish.

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 Washington Traffic Safety Commission (WTSC) supported the creation of a Car Seat Awareness training for law enforcement agencies.

Between May 2015 and 2018, the online class has had 4,147 sessions, considerably more people than could be served in-person.



Washington State's Child Passenger Restraint Safety Program Funds Efforts to Improve Child Safety in Vehicles

Washington's Child Passenger Safety Program provides direct support to a network of over 430 nationally certified car seat technicians. This network has identified local leaders consisting of 17 Target Zero managers, 13 SafeKids coordinators, and other community child passenger safety leaders. The program provides grant funding:

- To increase visibility of child passenger safety issues in Washington.
- To maintain and support the statewide network of child passenger safety technicians and inspection stations.
- To strengthen efforts to increase compliance, enforcement, and adjudication of the seat belt and child restraint law.

Strategies for Reducing Unrestrained Vehicle Occupants (UVO) Fatalities and Serious Injuries		
Objective	**Strategies**	**Implementation Areas**
UVO.1. Strengthen efforts to increase compliance, enforcement, and adjudication of the seat belt and child restraint laws.	UVO.1.1 Engage and collaborate with all levels of law enforcement to effectively carry out high visibility communications, outreach, and enforcement of seat belt use, such as the Click It or Ticket campaign. (P, CTW)	Education, Enforcement
	UVO.1.2 Implement Click It or Ticket-style child car seat short-term, high visibility education and enforcement campaigns. (P, CTW)	Education, Enforcement
	UVO.1.3 Identify population groups with lower than average restraint use rates and implement communications, outreach, and enforcement campaigns directed at groups/ areas where restraint use is lowest, particularly rural areas. (R, CTW)	Education, Enforcement, Evaluation
	UVO.1.4 Conduct nighttime patrols during Click it or Ticket statewide seat belt mobilizations. Combine short-term, high visibility seat belt use enforcement with nighttime enforcement programs. (R, CTW)	Education, Enforcement
	UVO.1.5 Encourage law enforcement and other emergency responders to adopt seat belt use policies for their employees. (R, NHTSA)	Leadership
	UVO.1.6 Host car seat awareness and instruction classes, especially in diverse community locations with populations that have lower than average proper car seat use. Target child transport agencies, hospitals, childcare centers, schools, etc. Collaborate with Target Zero Manager, SafeKids Coalition, or local Child Passenger Safety Team. (R, CTW)	Education, Evaluation
	UVO.1.7 – Promote use of currently available online continuing education instruction for current law enforcement officers to train them about what to look for in enforcing child passenger safety law and work with Washington's Criminal Justice Training Commission and the WA State Patrol Academy to conduct trainings for new law enforcement officers and seasoned officers on Washington's child restraint law. (R, CTW)	Education, Enforcement
	UVO.1.8 Promote child car seat distribution programs. (U)	Education
UVO.2. Promote Washington's restraint use laws through education and development of accurate and culturally-appropriate educational materials.	UVO.2.5 Ensure educational materials follow the most recent recommendations issued by the American Academy of Pediatrics. (P, AAP)	Education
	UVO.2.1 Ensure that education about proper child restraint use is provided to people who transport foster children and Medicaid participants. (R, ABACCL)	Education
	UVO.2.2 Ensure that people who provide medical and other transport receive education about not allowing unrestrained humans in the back of moving pickup trucks. (R, IIHS)	Education
	UVO.2.3 Provide education to city and county governments about the science involved with using photo enforcement to increase seat belt compliance. (U)	Education, Leadership
	UVO.2.4 Develop a briefing paper regarding the effects of adding a $25 administrative fee for violators to fund child passenger safety efforts. (U)	Leadership, Evaluation
P: Proven R: Recommended U: Unknown		

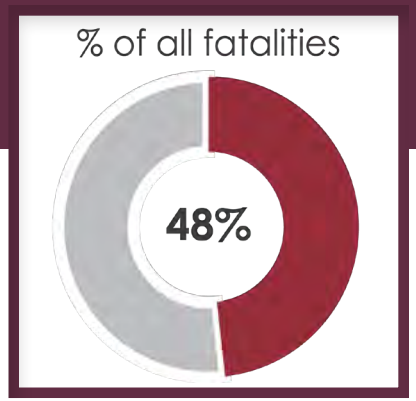
Strategies for Reducing Unrestrained Vehicle Occupants (UVO) Fatalities and Serious Injuries		
Objective	Strategies	Implementation Areas
UVO.3. Maintain and support the statewide network of child passenger safety technicians.	UVO.3.1 Support opportunities for child car seat inspection events, CPS Technician certification courses, and recertification of technicians. Work collectively with Washington's Target Zero managers, SafeKids Coalitions, and local child passenger safety teams. (R, CTW)	Education, Leadership
	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)	Evaluation
	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. (R, WTSC)	Leadership
	UVO.3.4 Explore options for gaining a measure of statewide child restraint use. (R, WTSC)	Evaluation
	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)	Evaluation
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. (R, CTW)	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. (R, CTW)	Education
	UVO 4.3 – Utilize Safest Rides protocols to offer positive reinforcement to parents/guardians correctly transporting children. (R, DOH)	Education
P: Proven R: Recommended U: Unknown		

For additional strategies affecting Unrestrained Vehicle Occupants, refer to the Impairment, Young Drivers, and Older Drivers chapters.

Crash Type

Certain types of vehicle crashes are more serious for drivers and other road users. The data show that crashes that involve lane departure and intersections are top priorities.

Lane Departure



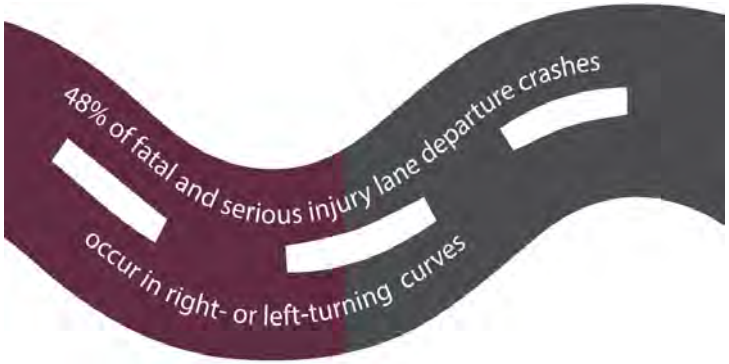
Lane departure crashes involve a vehicle unintentionally leaving its lane of travel. This includes both vehicles leaving a lane to the right (run-off-the-road crashes) as well as vehicles leaving a lane to the left (either opposite-direction crashes or run-off-the-road crashes).

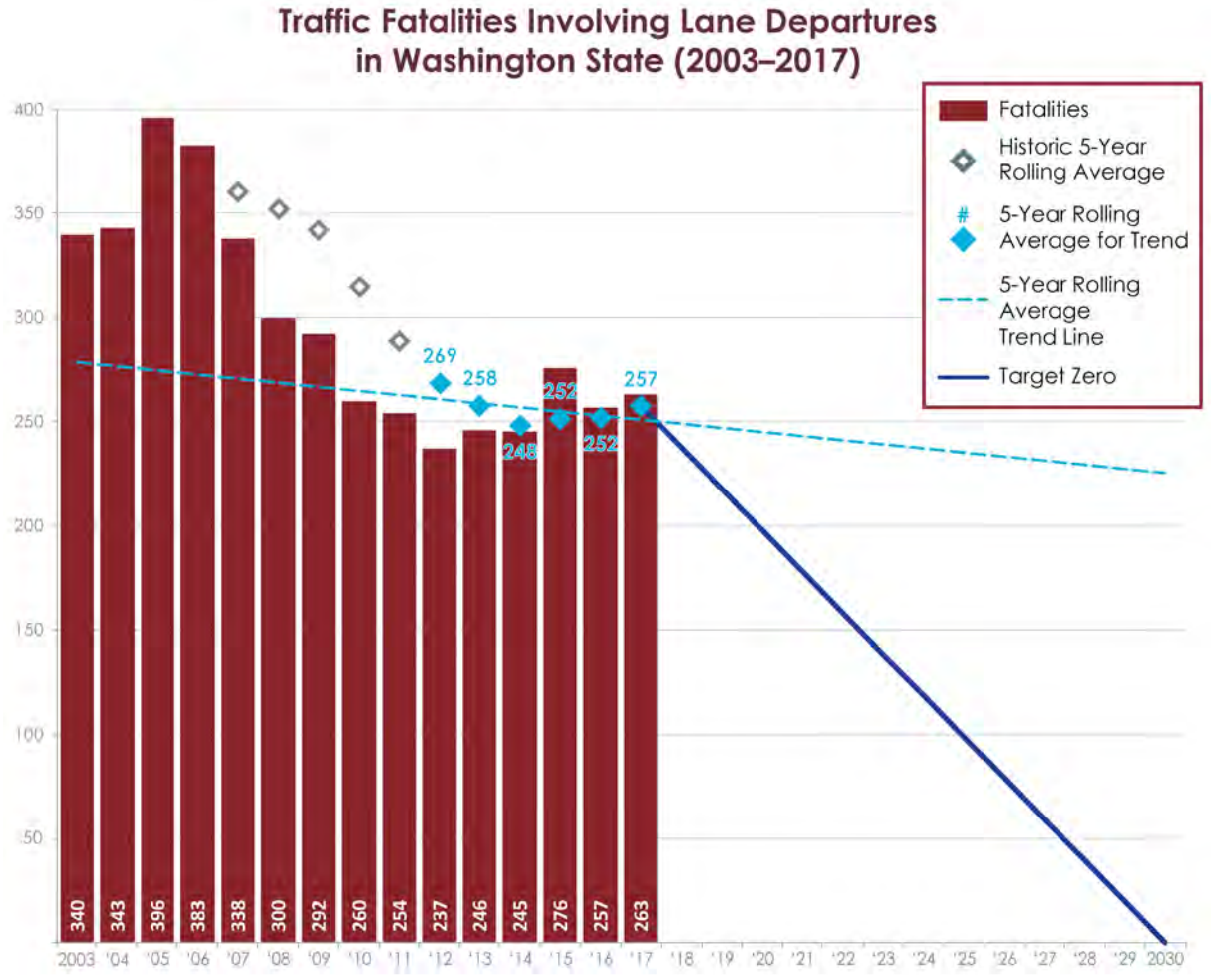
Key Issues for Lane Departures

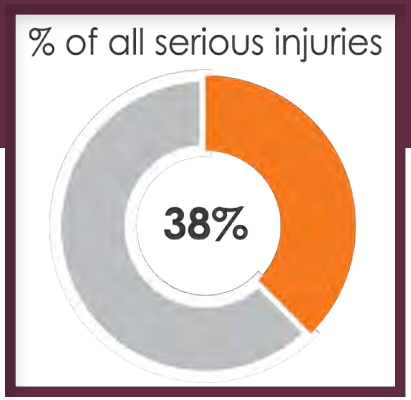
Roadside conditions. Nearly two-thirds of all fatal or serious injury lane departure crashes involve a vehicle leaving the road and hitting a fixed object.

Horizontal (left- or right-turn) curves. Nearly half of all fatal or serious injury lane departure crashes involve a vehicle traveling in a left- or right-turning curve.

Nighttime and lighting conditions. Nearly half of all fatal or serious injury lane departure crashes (44%) happen at night. Twenty-five percent happen during darkness where no roadside lighting is present. This is despite the fact that the majority of driving, and of all crashes, occurs during daylight hours.





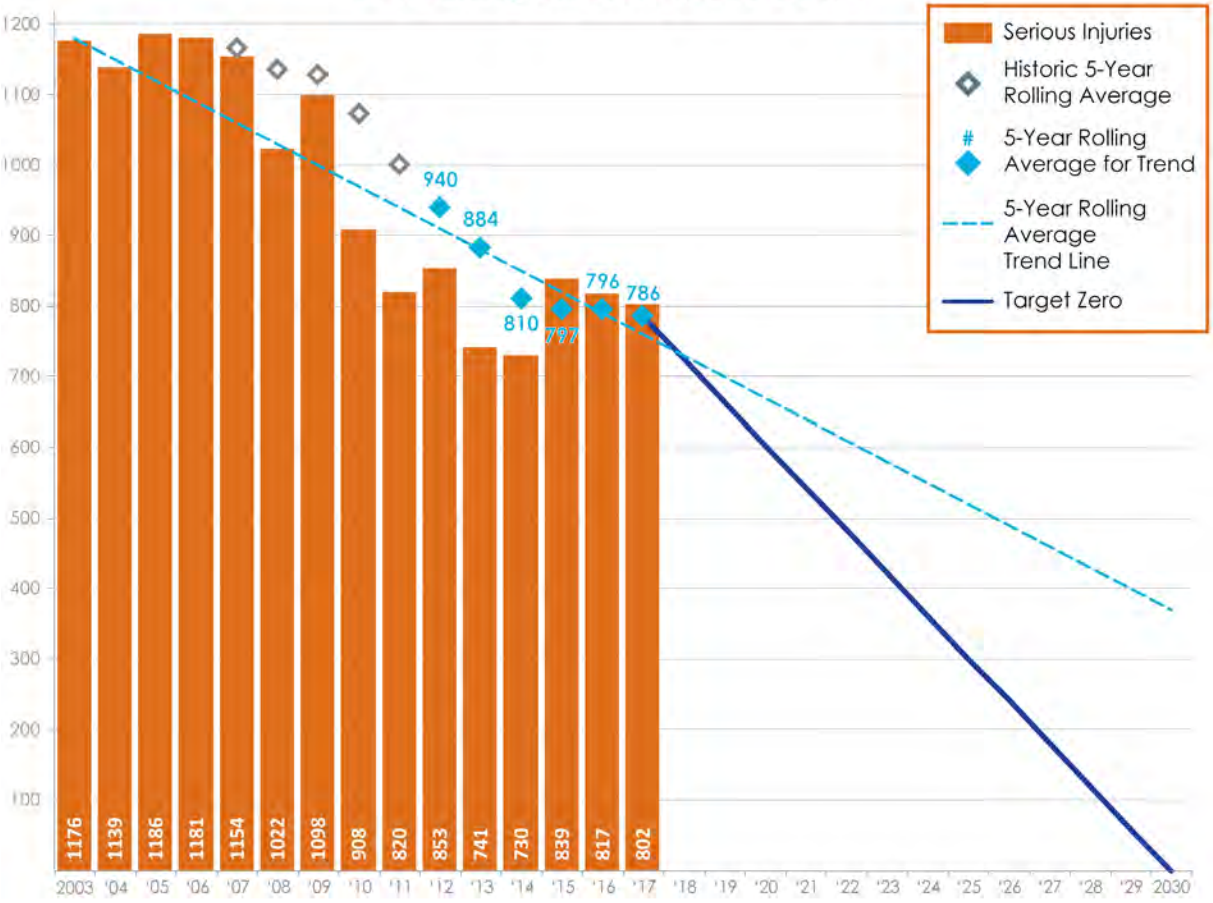


Priority 1

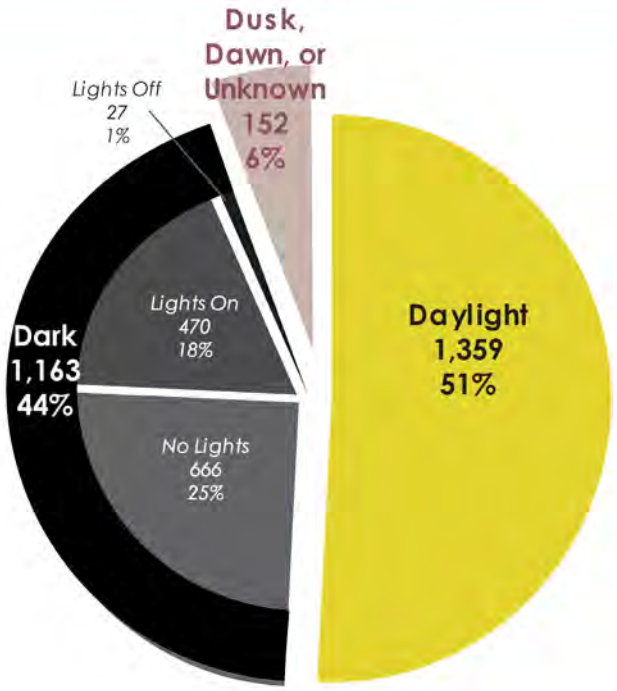
Key Countermeasures for Lane Departures Include:

- Local Road Safety Plans
- High friction surface treatments
- Improved roadway visibility

Traffic Serious Injuries Involving Lane Departures in Washington State (2003–2017)



Light Conditions for Lane Departure Fatality and Serious Injury Crashes
Washington State 2015–2017



BETWEEN 2015–2017 THERE WERE

796 FATALITIES AND 2,458 SERIOUS INJURIES

INVOLVING A LANE DEPARTURE

FATALITIES INVOLVING LANE DEPARTURES OFTEN INVOLVE OTHER FACTORS

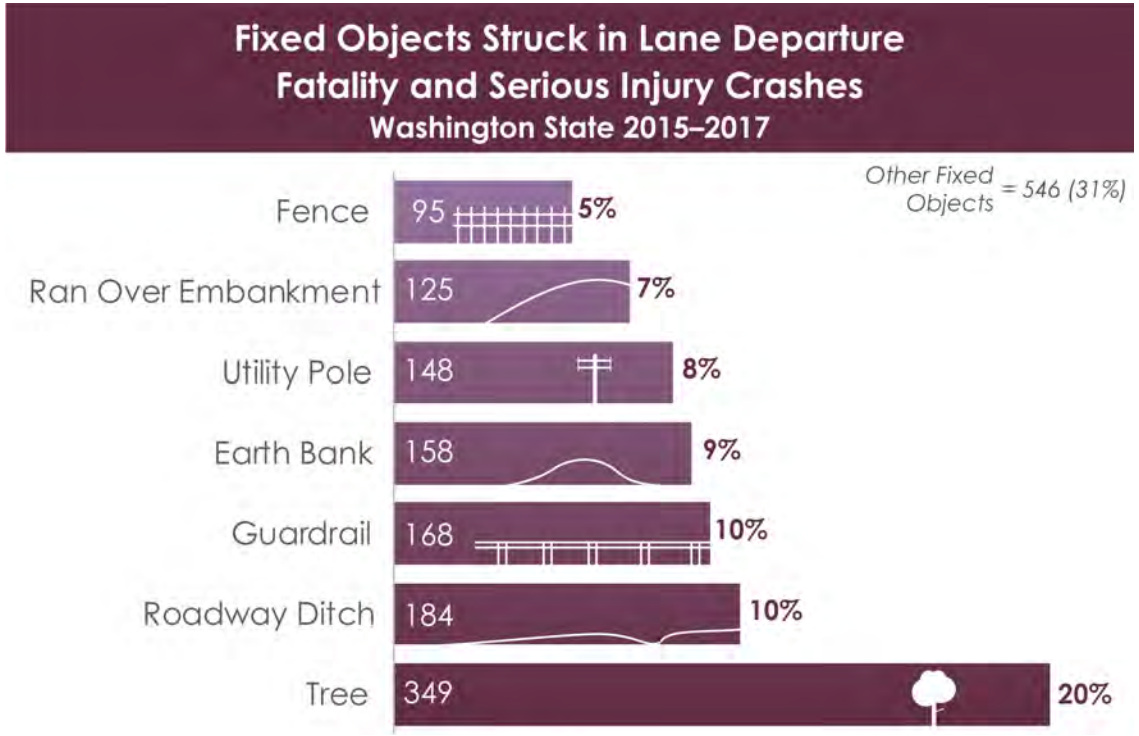
The top two factors that overlap with Lane Departures are **IMPAIRMENT** and **SPEEDING**

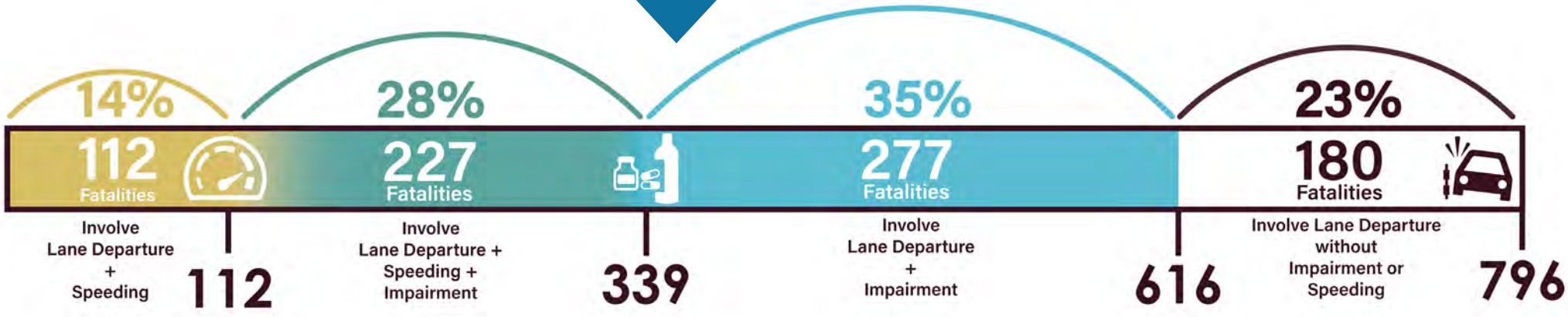
OUT OF **796 FATALITIES**:

63% also involved IMPAIRMENT

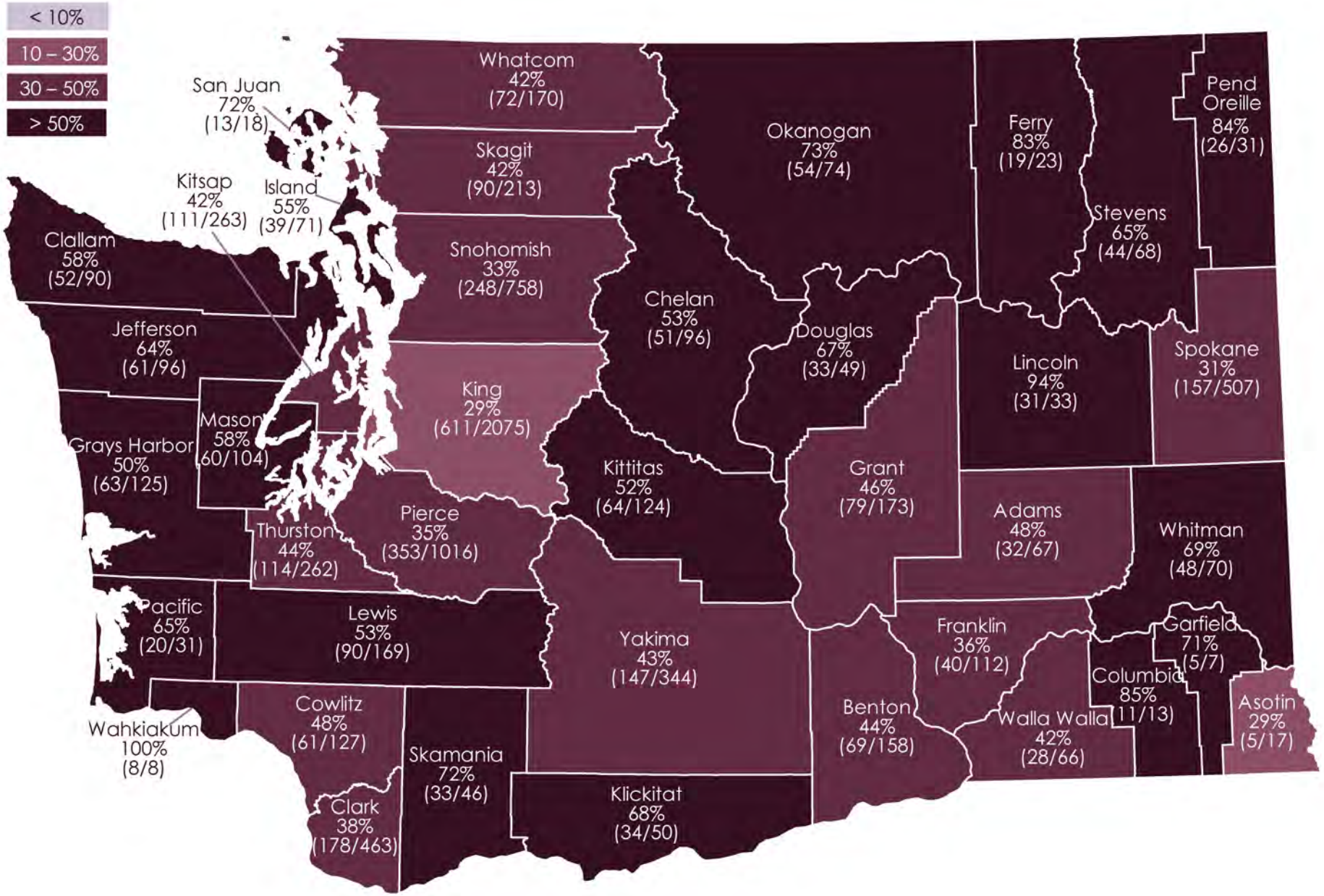
43% also involved SPEEDING

and 28% involved a combination of both





Percent of All Fatal and Serious Injury Crashes That Involved Lane Departures, by County (2015–2017)



Key Countermeasures for the 2019 Plan

Local Road Safety Plans

These plans use a systemic approach to identifying priority locations to be addressed. The plans identify the most common roadway and operational factors associated with fatal and serious injury crashes – for example, posted speeds, traffic volumes, horizontal curves, and roadside condition – and then prioritize locations that have the greatest number of these factors present.

This systemic analysis helps to prioritize investments, which can be difficult due to the scattered nature of actual lane departure crashes. With over 39,000 centerline miles on county roads alone, in addition to state highways and city streets, it can be difficult to isolate specific locations based solely on crash data. Investing in these systemic locations has the greatest potential to prevent future fatal or serious injury crashes from occurring.

Local Road Safety Plans have been developed by 85% of the counties in Washington. In addition, more than 20 cities have developed these plans (or Vision Zero plans) as well.

Local Road Safety Plans are relatively recent developments in our state. The majority of county plans were developed in 2014 and updated in 2017; most city plans were developed in 2018. While it is too early to draw any conclusions from the deployment of countermeasures identified in these plans, the initial trends on county roads look promising. For instance, there have been greater decrease in fatal and serious injury crashes on county roads than for roads owned by other jurisdictions; early 2018 data indicate that county roads have experienced a ~12% drop compared to 2017, while other roadway types increased slightly.

High Friction Surface Treatments

This specialized road surface treatment involves putting down a thin, strong epoxy (glue) with a very sharp rock layer that greatly increases the friction between vehicle tires and the roadway. The treatment stays in place for many years without needing to be reapplied. High Friction Surface Treatment (HFST) is one of the best methods to keep vehicles on the roadway, especially in horizontal curves and when roadway and tire friction are typically low, such as during wet weather.

HFST has been deployed by at least eight counties and two cities in Washington, as well as on WSDOT-maintained roads. Some of these entities have done a single project/section, while others have addressed a large number of areas – for example, King County has installed HFST in 49 locations. The majority of the locations addressed have been horizontal curves, with some work on ramps and at intersections.

HFST projects in Washington have only recently been deployed – most have been constructed in the past three years. In addition, many of the locations where they have been deployed have been based on Local Road Safety Plans, which use roadway and operational factors to determine which locations to address. Therefore, it may take a while to determine the crash reduction benefits. However, other states with longer histories of using HFST have shown significant benefits. According to information available in the Crash Modification Factor (CMF) Clearinghouse, HFST shows a 24% reduction in total crashes, with a 52% reduction in crashes on wet roads.

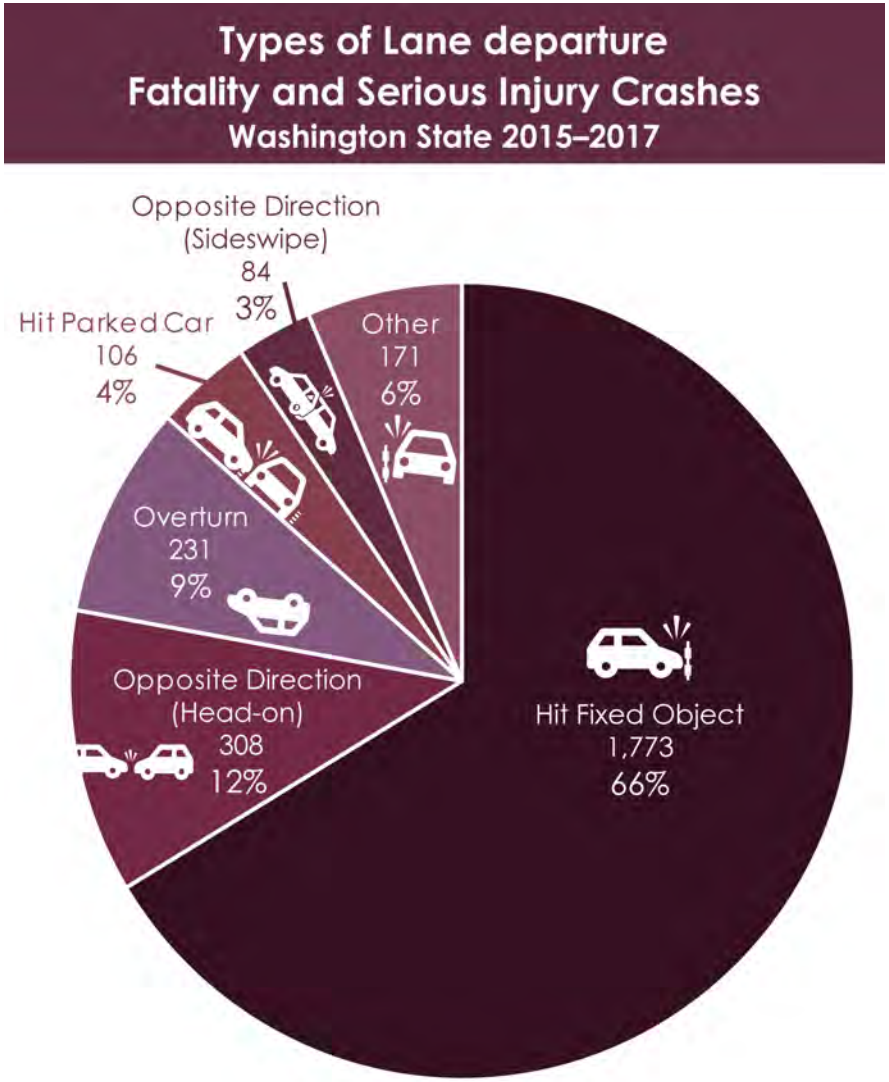
Improved Roadway Visibility

Nearly half of the fatal or serious injury roadway departure crashes in Washington occur during low-visibility conditions. Because of this, deploying countermeasures that increase visibility during all conditions can be very effective at keeping vehicles on the road. Roadway visibility modifications could include upgraded signing, pavement markings, roadway lighting, and delineation. Examples include flexible guideposts and reflective markers on guardrail.

A large number of agencies all across Washington have made visibility additions to the roadway network. This is especially true in the case of additional or larger signing, particularly on horizontal curves, with nearly a decade of significant investment in this countermeasure by both WSDOT and many counties.

There are a variety of studies and measures of effectiveness available in the CMF Clearinghouse for different roadway visibility contexts and visibility related modifications, both in Washington and nationally. While not all the studies indicate the same level of change, some examples include:

- Installing a combination of chevron signs, curve warning signs, and flashing beacons on horizontal curves has shown a 40% reduction in crashes.
- Installing a combination of edge lines, center lines, and flexible guideposts has shown a 45% reduction in injury crashes.
- Installing illumination has shown a 30% reduction in injury crashes.



Strategies for Reducing Lane Departure (LDX) Fatalities and Serious Injuries		
Objective	**Strategies**	**Implementation Areas**
LDX.1. Analyze lane departure data to prioritize safety investments.	LDX.1.1 Develop and implement a Local Road Safety Plan. (P, WSDOT)	Engineering, Leadership
	LDX.1.2 Inventory horizontal curves and gather data to support development of programs and projects to reduce the severity of lane departure crashes. (R, WSDOT)	Evaluation
	LDX.1.3 Locate and inventory fixed objects inside the clear zone to support development of programs and projects to reduce the severity of lane departure crashes. (R, WSDOT)	Evaluation
LDX.2. Reduce opposite direction crashes.	LDX.2.1 Install centerline rumble strips. (P, CMF)	Engineering
	LDX.2.2 Install raised medians or median barriers. (P, CMF)	Engineering
	LDX.2.3 Install raised pavement markers or profiled center lines. (R, CMF)	Engineering
LDX.3. Reduce the number of vehicles leaving the roadway.	LDX.3.1 Install chevron signs, curve warning signs, and/or sequential flashing beacons in curves. (P, CMF)	Engineering
	LDX.3.2 Improve pavement friction using high friction surface treatments. (P, CMF)	Engineering
	LDX.3.3 Install center and/or bicycle-friendly edge line rumble strips. (P, CMF)	Engineering
	LDX.3.4 Install lighting. (R, CMF)	Engineering
	LDX.3.5 Install edge lines, especially on curves, where adequate shoulders exist. (R, CMF)	Engineering
	LDX.3.6 Install wider edge lines. (R, CMF)	Engineering
	LDX.3.7 Install delineation on fixed objects that cannot be removed from the clear zone, such as guardrails and other roadway hardware. (U)	Engineering
	LDX.3.8 Install edge line rumble stripes and profiled center and bicycle-friendly edge lines. (U)	Engineering
	LDX.3.9 Install dynamic curve warning signs. (U)	Engineering
LDX.4. Minimize the consequences of leaving the roadway.	LDX.4.1 Increase distance to roadside features on high-speed roadways by removing/ relocating fixed objects, such as trees and utility poles, in the clear zone. (P, CMF)	Engineering
	LDX.4.2 Flatten side slopes to reduce the potential for rollover crashes. (P, CMF)	Engineering
	LDX.4.3 Install roadside safety hardware such as guardrail, cable barrier, or concrete barrier. (P, CMF)	Engineering
	LDX.4.4 Install safety edge treatment to reduce edge drop-off crashes. (P, CMF)	Engineering
	LDX.4.5 Implement roadway design to be consistent with the surrounding context. (R, NCHRP)	Engineering
	LDX.4.6 Remove or replace existing barrier that is damaged or non-functional. (R, FHWA)	Engineering
P: Proven R: Recommended U: Unknown		

For additional strategies affecting Lane Departure, refer to the Impairment, Speeding, and Distraction chapters.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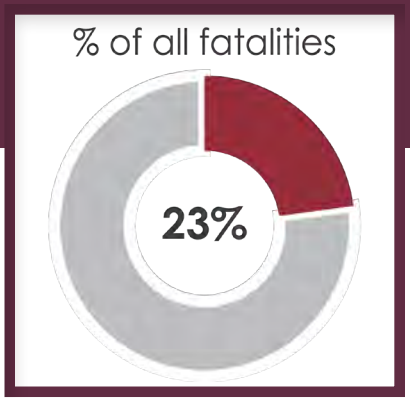
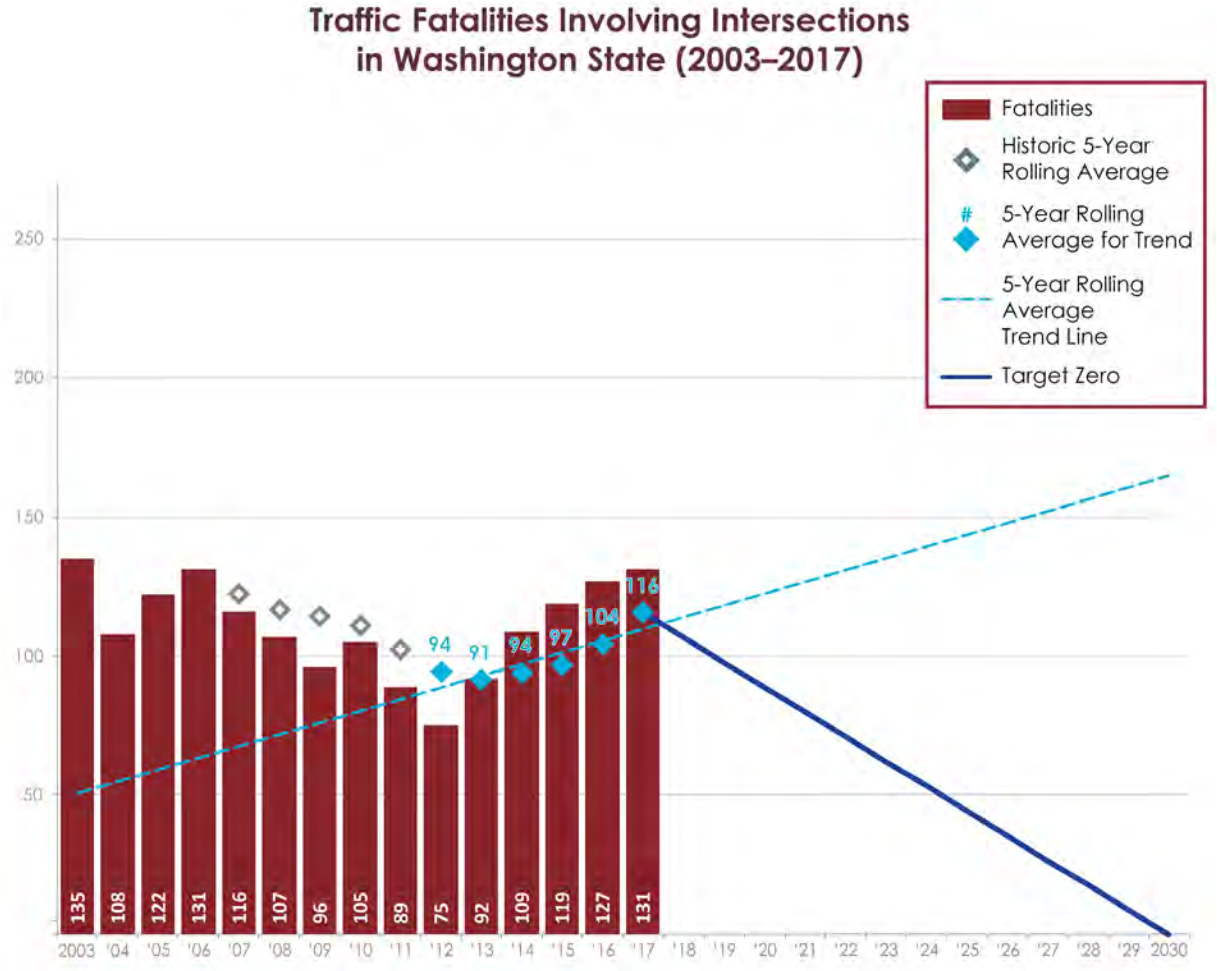
Intersections

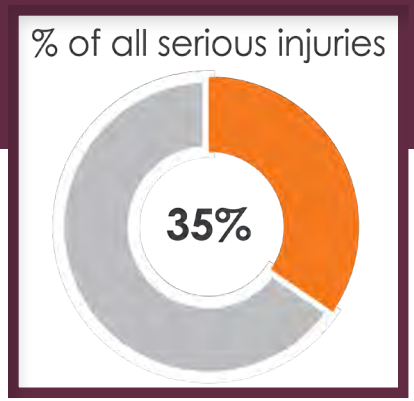


Intersections are a conflict point for traffic. Because of this, when people make mistakes at these locations, it often results in a crash. One of the major objectives of addressing intersection-related crashes is to reduce the severity of those crashes when they occur.

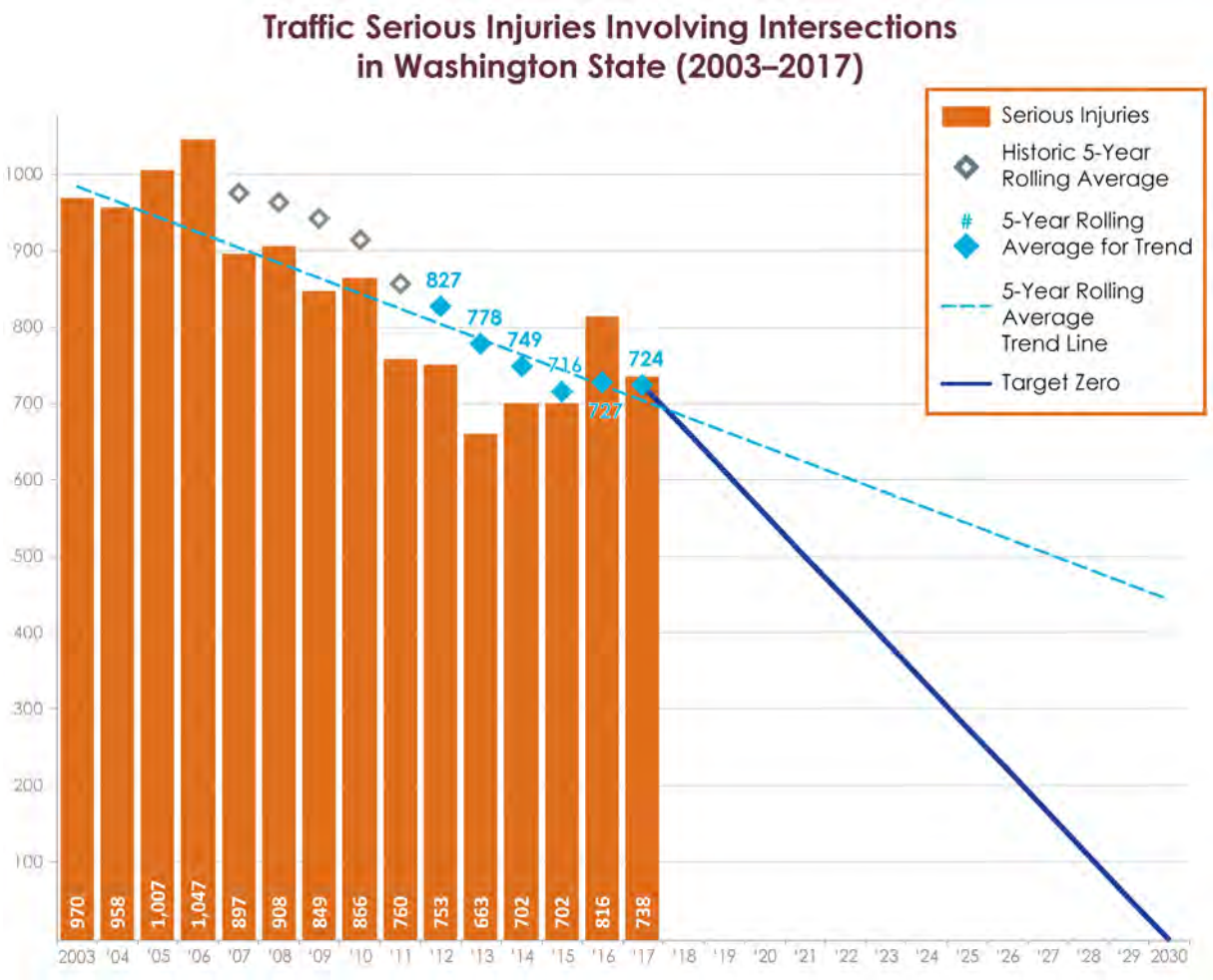
Key Issues for Intersections

- **Angle crashes.** Almost half of all fatal or serious injury intersection-related crashes involve an angle crash. This involves a vehicle being hit in a T-bone style crash, either turning left in front of oncoming traffic (one-third of fatal or serious injury angle crashes), or entering from a side street and pulling out in front of oncoming traffic (two-thirds).
- **Nighttime conditions.** More than one-third of all fatal or serious injury intersection-related crashes happen at night. This condition disproportionately impacts pedestrians, as less than one-fifth of daylight-hour fatal and serious injury intersection crashes involve a pedestrian, but more than one-third of nighttime crashes do.
- **Bicyclist and pedestrian crashes.** Nearly one-third of all fatal or serious injury intersection-related crashes involve a pedestrian or bicyclist. Refer to the Pedestrians and Bicyclists chapter page 120 for more information.





Priority 1



Key Countermeasures for Intersections Include:

- Roundabouts
- Improved intersection visibility
- Signal operations improvements

BETWEEN 2015–2017 THERE WERE

377 FATALITIES AND 2,256 SERIOUS INJURIES

INVOLVING AN INTERSECTION

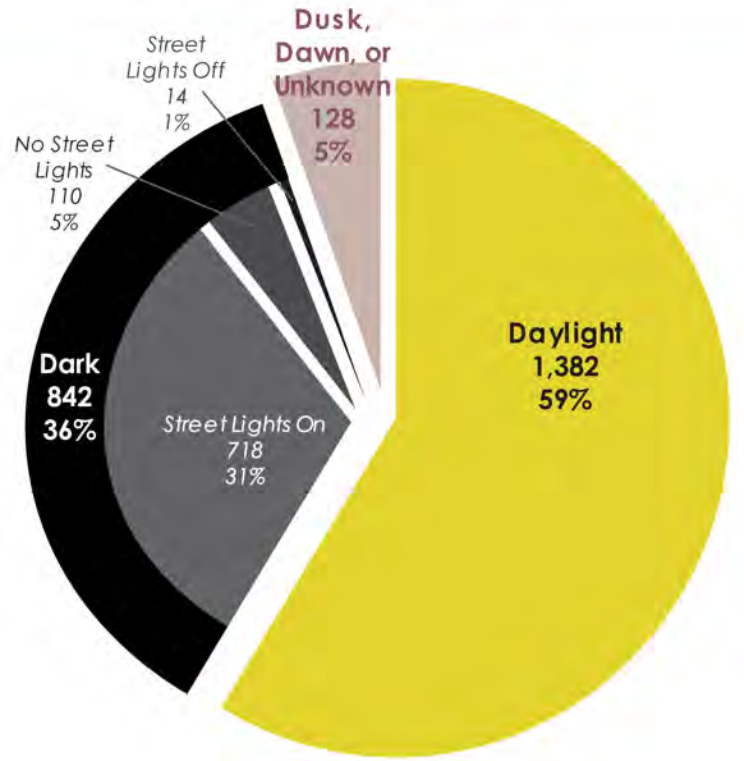
FATALITIES INVOLVING INTERSECTIONS OFTEN INVOLVE OTHER FACTORS

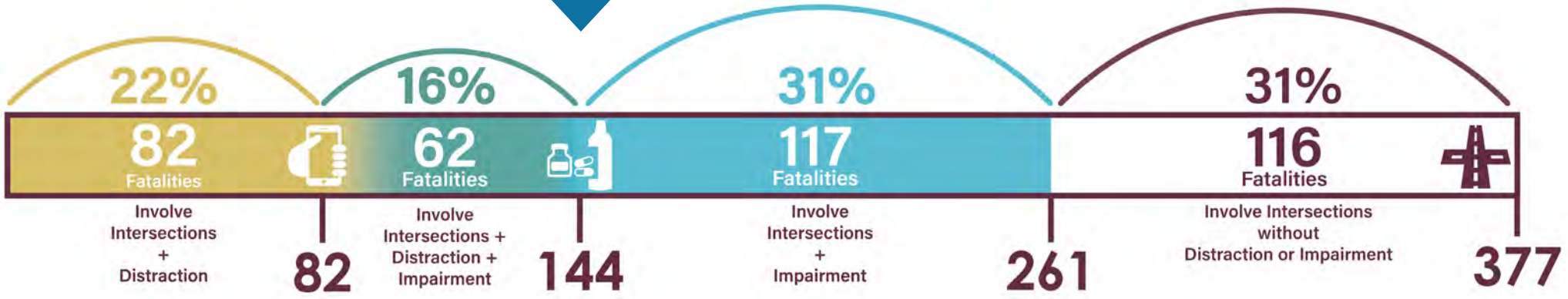
The top two factors that overlap with Intersections are **DISTRACTION** and **IMPAIRMENT**

OUT OF **377 FATALITIES**:

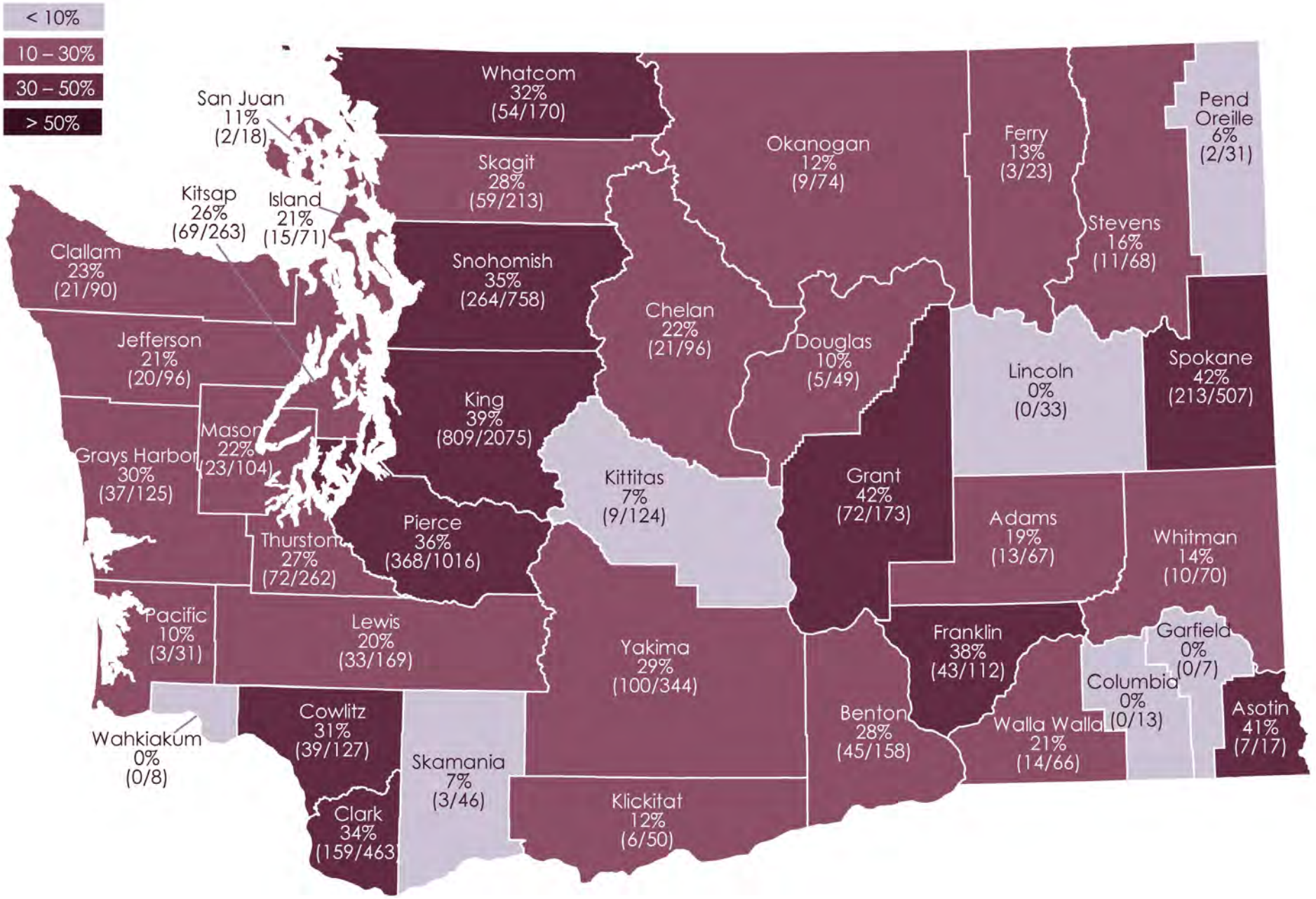
38% also involved DISTRACTION
47% also involved IMPAIRMENT
and 16% involved a combination of both

Light Conditions for Fatality and Serious Injury Crashes at Intersections
Washington State 2015–2017





Percent of All Fatal and Serious Injury Crashes That Involved Intersections, by County (2015–2017)



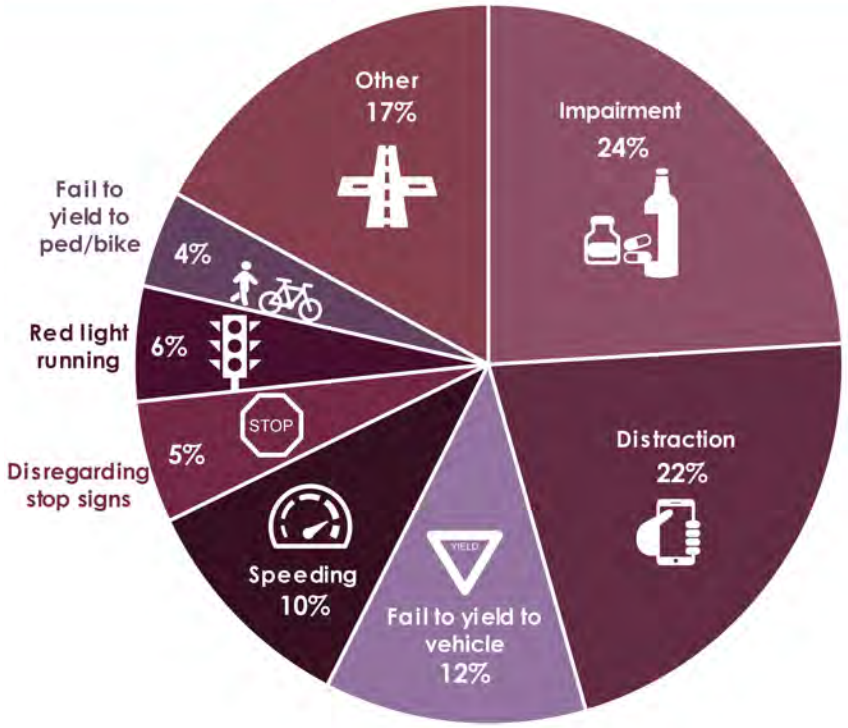
Roundabouts

Beyond being a great countermeasure at reducing intersection-related fatal and serious injury crashes overall, roundabouts are especially effective at reducing angle crashes. First, they create a low speed environment. Perhaps more importantly, the physical channeling of vehicles almost entirely eliminates angle crashes: drivers cannot "run" a roundabout like they do a red light or a stop sign. In addition, there are no left-turn movements at a roundabout, as exiting drivers are always making a through or right-turn move. This can be particularly helpful for older drivers (see page 152).

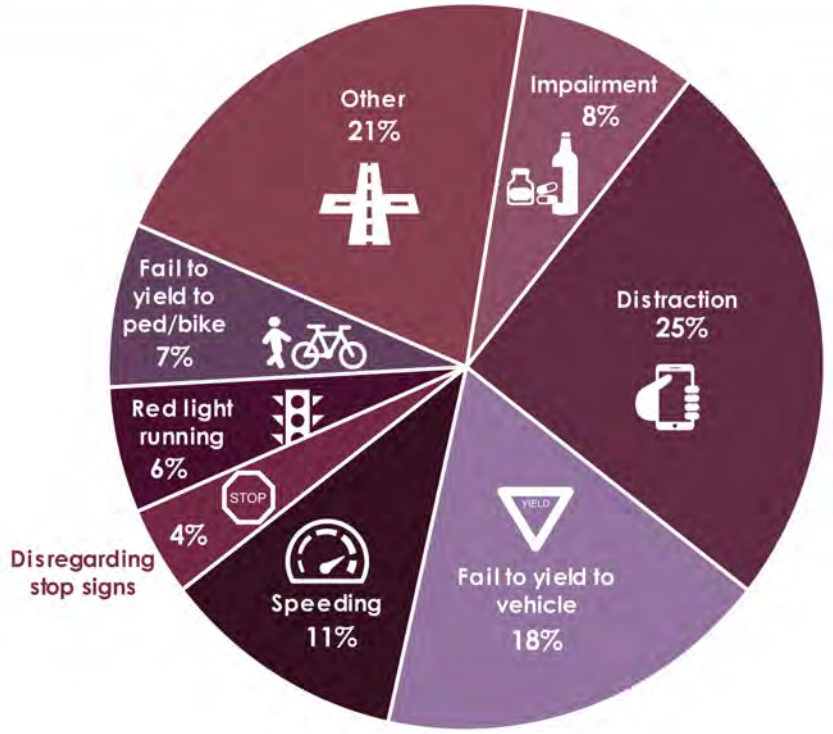
Washington has more than 400 roundabouts on the state and local system. Of 39 counties in the state, 24 (62%) have at least one roundabout.

According to information from the Crash Modification Factors (CMF) Clearinghouse, both in Washington and nationally, significant safety benefits result from deploying roundabouts. Most studies (depending on previous conditions) put the reduction in fatal or serious injury crashes at 50–100%.

Fatal Crashes at Intersections
(% of Driver Contributing Circumstances)
Washington State 2015–2017



Serious Injury Crashes at Intersections
(% of Driver Contributing Circumstances)
Washington State 2015–2017



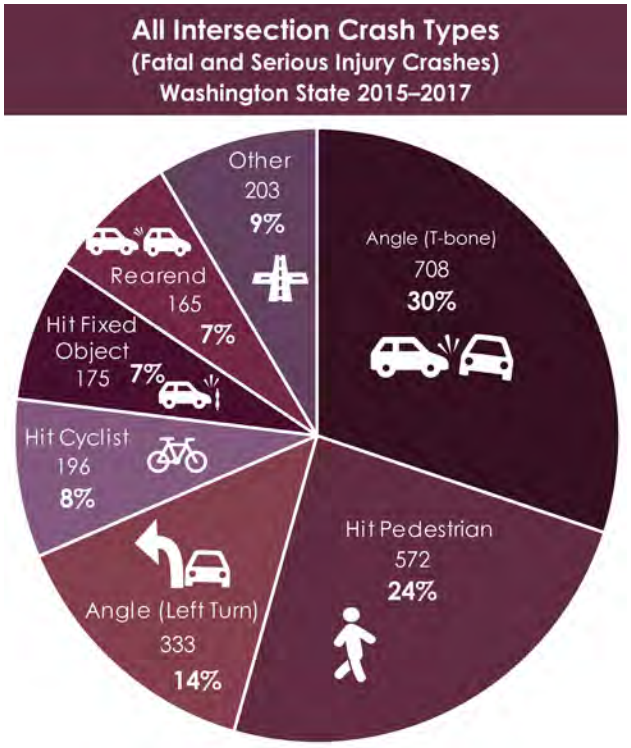
Improved Intersection Visibility

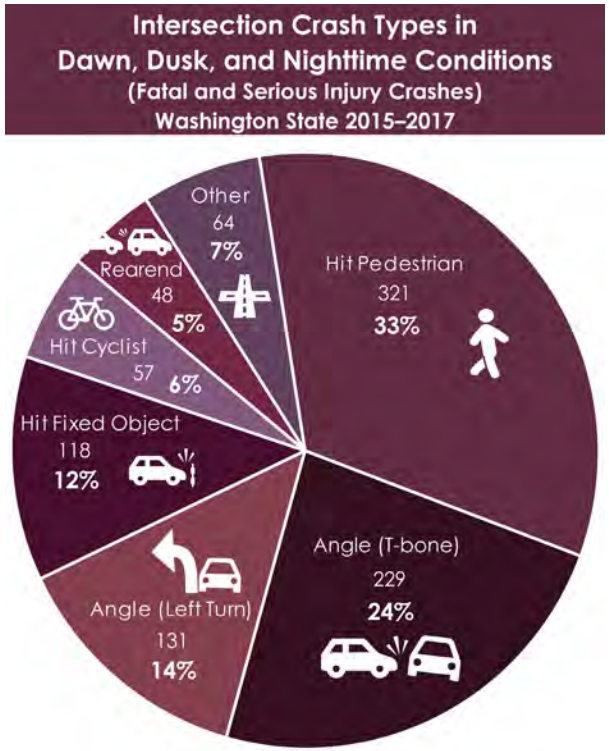
Improved intersection visibility starts with roadway lighting and markings. However, many of the nighttime intersection crashes already occur at lighted intersections. Additional visibility and driver recognition of moving through an intersection is also needed, especially to help combat distracted driving. These include upgraded signing, targeted lighting, and delineation such as reflective markings on signals and on sign posts.

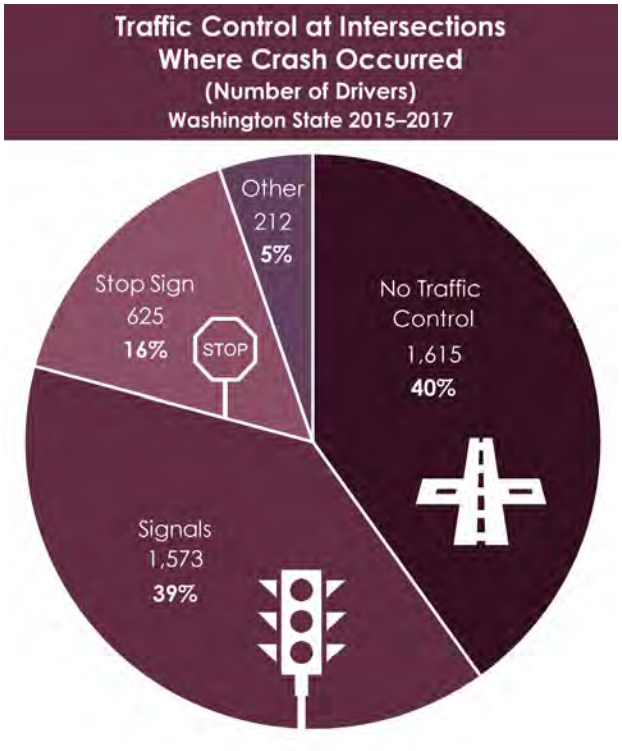
City, county, and state engineers have been implementing best practices for visibility modifications on roadways around the state.

The CMF Clearinghouse includes a variety of studies and measures of effectiveness for different roadway visibility countermeasures in different roadway contexts, both in Washington and nationally.

- Intersection lighting leads to a approximately 40% reduction in nighttime crashes.
- Signing and marking improvements at stop-controlled intersections lead to approximately 10% reduction in fatal and injury crashes (25% in rural areas).
- Signing and visibility improvements at signalized intersections lead to approximately 10% reduction in fatal and injury crashes (15% in urban areas).
- Reflective markings on signals lead to approximately 15% reduction in crashes.







Signal Operations Improvements

Roughly 40% of crashes related to intersections occur at intersections equipped with traffic signals. Making operational changes to traffic signals may offer reduction in crash potential to a variety of users of the intersection, especially pedestrians. Those modifications include leading pedestrian intervals, protected-only left-turn movements, and restricting turn movements (left or right).

A few agencies have begun widespread implementation of leading pedestrian intervals for their signalized network. Restricting turning movements and limiting left turns to protected-only movements have been done by many agencies, but only on a site-by-site basis — there has been no coordinated, statewide implementation campaign.

While widespread implementation of leading pedestrian intervals is very recent in Washington, studies from the CMF Clearinghouse have shown a 59% decrease in pedestrian crashes at locations implementing this treatment. Eliminating or restricting turning movements has the potential to almost completely prevent certain crash types. As an example, national studies show a 99% decrease in left-turning crashes in locations where protected-only left turns are implemented.

RELATED AREA: Vehicle-Train Crashes

The train data in Target Zero is limited to fatal and serious crash events between trains and motor vehicles at highway-rail grade crossings.

Between 2015 and 2017, there were 12 fatalities and four serious injuries involving trains and vehicles at railroad crossings. Railroad crossings are intersections used by two very different modes of transportation. The crossings are multi-jurisdictional, meaning both roadway and railroad authorities are responsible for different aspects of design and maintenance.

The Washington Utilities and Transportation Commission (UTC) has regulatory authority over safety at most public railroad crossings. The UTC's Rail Safety Program oversees rail operations in the state, inspects railroad crossings, resolves complaints received from the public and other stakeholders, and funds rail safety projects. The commission also promotes public awareness in partnership with the national nonprofit Operation Lifesaver Program.

The UTC is working to prevent train and vehicle crashes by:

- Providing Operation Lifesaver outreach and education in communities across the state.
- Funding projects to improve railroad safety at public crossings by administering grants through the Grade Crossing Protective Fund.
- Routinely inspecting safety and maintenance at railroad crossings.
- Identifying opportunities to upgrade safety at crossings in partnership with road authorities and railroads.

For more information, please visit the UTC website (www.utc.wa.gov/publicSafety/railsafety).

Strategies for Reducing Intersection (INT) Fatalities and Serious Injuries		
Objective	Strategies	Implementation Areas
INT.1. Reduce crashes at intersections.	INT.1.1 Develop and implement a Local Road Safety Plan. (P, WSDOT)	Engineering, Leadership
	INT.1.2 Install or convert intersections to roundabouts. (P, CMF)	Engineering
	INT.1.3 Convert four-lane roadways to three-lane roadways with center turn lane (road diet). (P, CMF)	Engineering
	INT.1.4 Convert permitted left turns to protected left turns at signals. (P, CMF)	Engineering
	INT.1.5 Install left turn lanes. (P, CMF)	Engineering
	INT.1.6 Install intersection conflict warning systems (real time warning) to warn drivers on mainline or side streets of conflicting vehicle traffic at rural intersections. (P, CMF)	Engineering
	INT.1.7 Increase pavement friction using high friction surface treatments. (P, CMF)	Engineering
	INT.1.8 Remove unwarranted signals. (P, CMF)	Engineering
	INT.1.9 Modify signal phasing to implement a leading pedestrian interval. (P, CMF)	
	INT.1.10 Install lighting. (R, CMF)	Engineering
	INT.1.11 Coordinate arterial signals. (R, CMF)	Engineering
	INT.1.12 Convert to flashing yellow arrows at signals. (R, CMF)	Engineering
	INT.1.13 Optimize traffic signal clearance intervals. (R, CMF)	Engineering
	INT.1.14 Restrict or eliminate turning maneuvers at intersections. (R, NCHRP)	Engineering
	INT.1.15 Implement restricted access to properties/driveways adjacent to intersections using closures or turn restrictions. (R, NCHRP)	Engineering
	INT.1.16 Implement systemic signing, marking, and visibility improvements at intersections. (R, CMF)	Engineering
INT.2. Improve driver compliance at intersections.	INT.2.1 Install red light cameras (automated enforcement) at locations with angle crashes. (P, CMF)	Enforcement, Engineering, Leadership
	INT.2.2 Implement automated speed enforcement cameras for approach speeds. (P, CMF)	Enforcement, Engineering, Leadership
	INT.2.3 Provide targeted stop sign/signal enforcement at intersections and intersection approaches. (R, NCHRP)	Enforcement
	INT.2.4 Implement automated enforcement for “block the box” violations. (U)	Enforcement, Engineering, Leadership
P: Proven R: Recommended U: Unknown		

Strategies for Reducing Intersection (INT) Fatalities and Serious Injuries		
Objective	**Strategies**	**Implementation Areas**
INT.3. Improve driver awareness of intersections.	INT.3.1 Add retroreflective borders to signal back plates. (P, CMF)	Engineering
	INT.3.2 Install transverse rumble strips on rural stop-controlled approaches. (P, CMF)	Engineering
	INT.3.3 Provide advanced dilemma zone detection (real time warning) for high speed approaches at rural signalized intersections. (R, CMF)	Engineering
	INT.3.4 Increase sight distance (visibility) of intersections on approaches. (R, CMF)	Engineering
	INT.3.5 Increase visibility of signals and signs at intersections. (R, NCHRP)	Engineering
	INT.3.6 Provide targeted public information and education about crash-contributing factors found at specific intersections. (R, NCHRP)	Education
P: Proven R: Recommended U: Unknown		

For additional strategies affecting Intersections, refer to the Impairment, Distraction, and Pedestrians and Bicyclists chapters.