

Safety

collisions. Two elements of operations – Incident Response Teams and Traveler Information Systems – play a key role in highway safety. Incident Response Teams help clear the road and direct traffic when incidents happen and reduce the risk of secondary collisions in the backup. Traveler Information Systems provide motorists with real-time traffic information that allows them to make informed travel decisions.

Roadway design and construction

Safety improvements are incorporated in WSDOT projects in many different ways – from the major improvement projects that add lanes or build interchange connections – to small projects that add a left-turn lane to address a specific problem.

Combined Average for 21 Safety Projects Collisions Per Year

	All Types	Property Damage Only	Injury Fatal
Before	15.5	8.8	6.7
After	9.7	5.5	4.2

Responsibility for programs and projects in the highway safety area is widely shared. At the state level, the Washington Traffic Safety Commission is a consortium of local and state organizations responsible for reducing death, injuries, and economic losses resulting from motor vehicle collisions. All of these groups, associations, and public agencies work together not to prevent all traffic collisions, but to make them more survivable.

Emerging Directions

- Behavioral approaches will be a significant part of the strategy to address impaired driving, seat belt use, speeding, aggressive driving, and other contributing driver behaviors. WSDOT and the Washington Traffic Safety Commission are working together to evaluate the effectiveness of potential behavioral countermeasures.
- Roadway Environment - safety conditions on rural two-lane roadways can and should be addressed. Strategies such as increased enforcement, centerline and edge rumble-strips, and improved shoulders and roadsides are being evaluated. Also, median cable barriers and rumble-strips on Interstates are proving to be cost-effective solutions.
- Pedestrians, bicyclists, and motorcyclists are disproportionately represented in fatality rates and need to be addressed in the safety strategy.
- Stepped up efforts to prevent railroad trespassing, such as Operation Lifesaver, are needed.
- Improved weather information access at general aviation airports will help pilots make good flight decisions.
- Better understanding of data should help target safety efforts where they will have the most effect.



How do we make transportation systems and facilities throughout the state safer for their users?

Transportation safety is a paramount concern in all forms of transportation: airplanes, ferries, buses, trains, roadways, marine ports, bicycles, and pedestrians. The data tell us that roadway safety, including bicyclists and pedestrians, is our biggest concern, accounting for 600 annual fatalities. Because of this most of the discussion that follows is focused on understanding our roadway safety issue, followed by a brief summary of safety concerns of other modes. In addition, transportation system security is an area that has recently moved into the forefront of public concern.

What The Data Are Telling Us

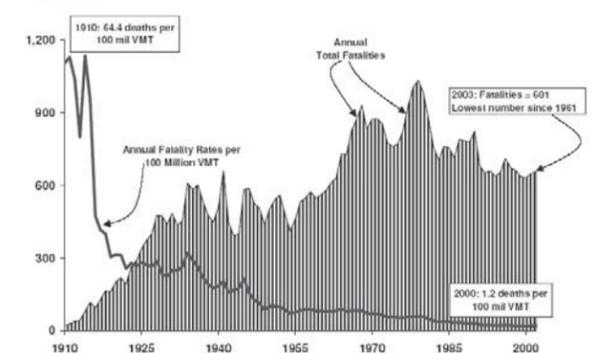
Despite declines, fatalities continue to be a serious problem

The number of deaths on Washington's roadways has declined over the past several years. Even so, more than 600 people die in collisions in Washington State each year – an unacceptable number despite our progress.

On Washington's highway system, collisions of all types (non-injury, other injury, disabling injury, and fatal) have gone up since 1980, from 34,662 in 1980 to 50,157 in 2002, an increase of 45 percent. However the fatality rate in the chart below has tended to steadily decline from 1915 forward.

The societal cost of motor vehicle collisions for all roadways (state, county, city, tribal, and federal) is estimated at \$5.6 billion annually. Although fatal collisions make up only 2.5 percent of the total number of collisions, they account for 54 percent of the total societal costs.

Washington Motor Vehicle Total Fatalities & Fatality Rates *
1910 - 2002



Washington State
Transportation Commission

The Washington State Transportation Commission and the Washington State Department of Transportation are in the process of updating the Washington Transportation Plan. This long range plan is based on data analysis and is focused on ten issues: System Preservation, System Efficiencies, Safety, Transportation Access, Bottlenecks and Chokepoints, Economy and Jobs, Moving Freight, Future Visions, Health and Environment and Funding and Governance. This plan will shape future transportation budget proposals.

For more on this topic: www.wsdot.wa.gov/planning/wtp

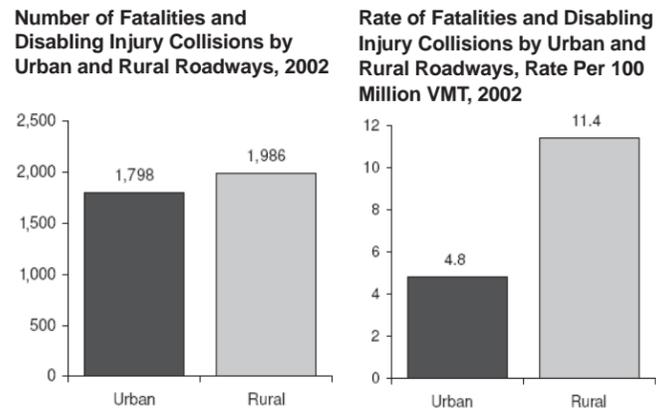
Safety
Toby Rickman (360) 705-7280 rickman@wsdot.wa.gov
State Traffic Engineer
Sandra Pedigo-Marshall (360) 705-7283 pedigos@wsdot.wa.gov
Traffic Planning and Programming Manager

Washington State Transportation Plan
Elizabeth Robbins robbins@wsdot.wa.gov

By Traffic Volume, Serious Collisions occur most Frequently on Rural Roads

A greater number of fatal and disabling collisions occur on state highways (1,714) than on city streets (1,289) or county roads (1,087). When the volume of traffic is taken into account, however, the rate (per 100 million vehicle miles traveled) of serious collisions that occur is greatest on county roads (12.4 per 100 million vehicles miles traveled), followed by city (9.2) streets, and then highways (5.4).

When looking at the data from an urban area versus a rural area, the *number* of collisions is about evenly divided. When the volume of traffic is examined, the *rate* of collisions per 100 million vehicle miles traveled is highest in rural areas.

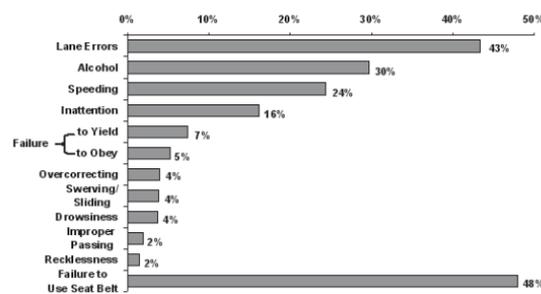


The Contributing Factors

Age - Young inexperienced drivers (16 – 20 years old) are the age group with the highest rate of fatal collisions. On the other end of the age spectrum, the risk of being involved in a fatal collision begins to grow in the 71+ age group. As the state's population ages, this will be a continuing concern.

Driver errors and behavior - The top three contributors in fatal accidents are: Lane errors – 43%, Alcohol – 30 %, and Speeding – 24% (“Lane errors” is a broad category that includes, improper lane changes, merging and exiting, leaving the roadway, crossing into the path of on-coming traffic, etc.)

Driver Errors and Behaviors Associated With Fatal Crashes: Washington State 1993 - 2001



Not using seatbelts contributes to fatalities - Analysis of motor vehicle fatalities for 2002, when seat belt use in Washington was about 93% (the highest in the nation), shows that about half the persons who died were not wearing seat belts.

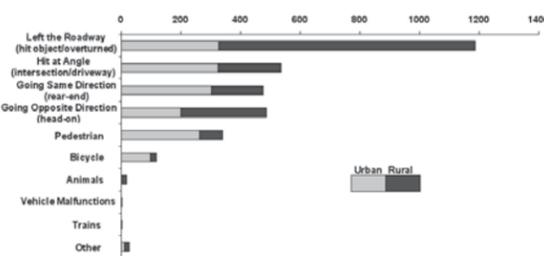
Motorcycle, pedestrian, and bicycle collisions

While the rate of all collisions involving motorcycles is only 1.4%, the percent of fatal and disabling collisions involving motorcycles is 12%. The number of pedestrian fatalities as a result of vehicle collisions has declined slightly since 1993. Even so, the number of pedestrian deaths (11% of all fatalities in 2002) remains disproportionate to the frequency they are involved in roadway collisions (1.4% of all roadway collisions). The number of bicycle fatalities and disabling injuries compared to the number of crashes involving bicycles suggest that bicycle crashes with automobiles are of concern because they are so severe.

Roadway design

Features of the roadway may be a contributing factor in serious accidents. These features include access points along the roadway (driveways, intersections), objects along the roadway (trees, utility poles), curves (sight distance), and lane configuration (multiple lanes, median area, turn lanes). The conditions and circumstances that influence safety vary greatly between urban and rural aspects of the problem. In rural settings, “leaving the roadway” and “head-on collisions” are more likely, whereas in an urban setting, “hit at an angle” and “rear-end” collisions are more likely.

Roadway Circumstances and Conditions Associated with Fatal and Disabling Injury Collisions Washington State 2002



Safety Issues for other Modes

Rail Transportation

Passenger rail transportation has a strong safety record with a national accident fatality rate of .08 per 100 million passenger miles, about 1/10 that of motor vehicles. Work remains to further improve rail safety, including rail crossings, trespassing, and oversight of light rail and monorail systems. Flashing lights and gates now protect nearly all crossings on busy main line tracks resulting in a 56% reduction in railroad crossing collisions since 1992. Trespassing and suicides on rail lines have resulted in 14 people killed in 2002 and four killed in collisions at rail crossings.

Aviation

General aviation has an excellent safety record in Washington. The national picture shows a fatality rate of .03 for 100 million miles flown. In recent years, general aviation has experienced about 51 accidents per year, with fatalities numbering in a range from 3 to 16 per year. The majority of general aviation collisions are the result of pilot error and weather.

Washington State Ferries

Washington State Ferries has a strong safety record in both its marine and terminal operations. It operates 28 vessels on 10 routes and carries over 25 million passengers annually. The United State Coast Guard sets safety standards for vessels and crew licensing. In 2002, there were 100 reported injuries to passengers on ferries – all of them minor in nature. There were 33 reported injuries at terminals – all minor in nature.

Transportation Security

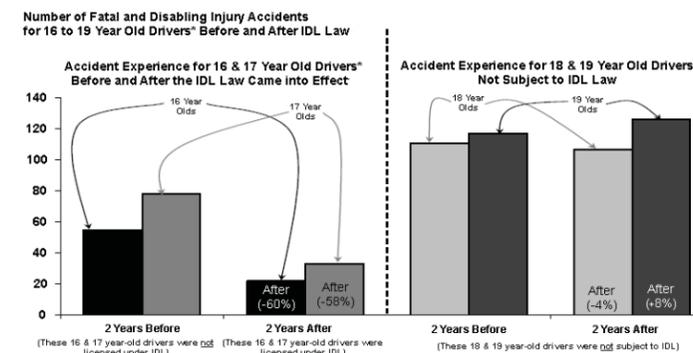
Terrorism activities have become an issue of public concern following the attack on the United States of September 11, 2001. As a result, transportation system security has become a focus of safety planning to deal with operational challenges that might be present in a terrorist emergency. Transportation system security includes: implementing protections to prevent harm to the transportation systems or their users; putting measures in place that deter terrorists from acting; and preparing to respond in the aftermath of a terrorist act.

Effectiveness of Safety Programs

Through collecting and tracking data, it has been demonstrated that many steps to increase safety are effective in lowering the toll of fatalities, injuries, and property damage on our roadways. These strategies focus on education, enforcement, and roadway conditions.

Intermediate drivers' license for young drivers

This law, passed in July 2001, requires an additional 50 hours of behind-the-wheel driving time for drivers under the age of 18 before they can obtain a license. It also limits the number and age of passengers in a vehicle and late night driving hours for young drivers.



* Collisions on Washington State Highways.

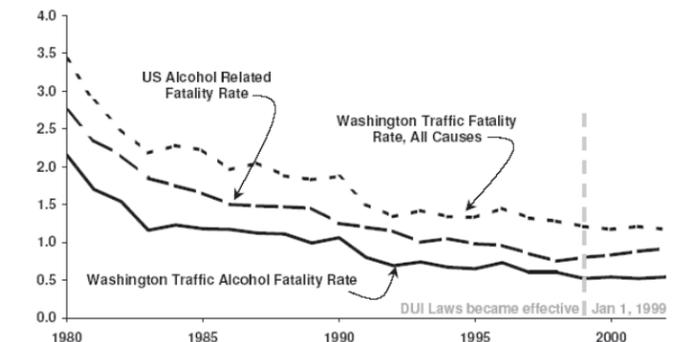
Early statistics collected in the two years after the law began indicate a drop of 60% in the number of fatalities and disabling injuries for 16 and 17 year-old drivers.

Alcohol limit .08

The State Legislature enacted anti-drunk-driving laws in 1998 that lowered the blood alcohol intoxication standard from 0.10 to 0.08 percent and provided for automatic loss of licenses for drunk drivers. The graph shows that in years prior to about 1998, a significant drop had been seen in the rate of alcohol related traffic fatalities. Since 1998, however, in Washington the trend mirrors the nationwide picture where the rate of alcohol related traffic fatalities has remained steady. Meanwhile, the nationwide rate has increased slightly from the year of its best performance (1998). In 2002, the rate of driver alcohol impairment associated with motor vehicle fatalities was 40%. This data is puzzling in view of the broad perception that the lowered alcohol threshold would, or has, spurred improvement in the drunk driving situation. More investigation is required before WSDOT can confidently suggest the meaning of these data.

Other measures taken in Washington to reduce drunk driving include offenders required use of ignition interlock devices (a device attached to the car's ignition system that requires the driver to blow into the device before starting the car – if alcohol is detected the car won't start) and a crackdown on deferred DUI prosecutions.

Alcohol Related Traffic Fatalities Washington State's Public Roadway Facility Fatality Rate and Alcohol Related Fatality Rate Per 100 Million VMT 1980-2002



Seat belts and the Click it or Ticket Program

Washington's strong policies and enforcement of the seat belt law resulted in a high of 93% seat belt use in 2002 and increased to about 95% in 2003 and 2004. Half of the fatalities of motor vehicle occupants are people who were among the 5% to 7% of non-seat belt users.

Maintenance and operations of the roadway

Maintaining and operating highway systems makes a critical contribution to roadway safety. Day-to-day maintenance activities – including snow and ice control, debris removal, guardrail repair, traffic signal maintenance and repair – help reduce the conditions and circumstances that can lead to