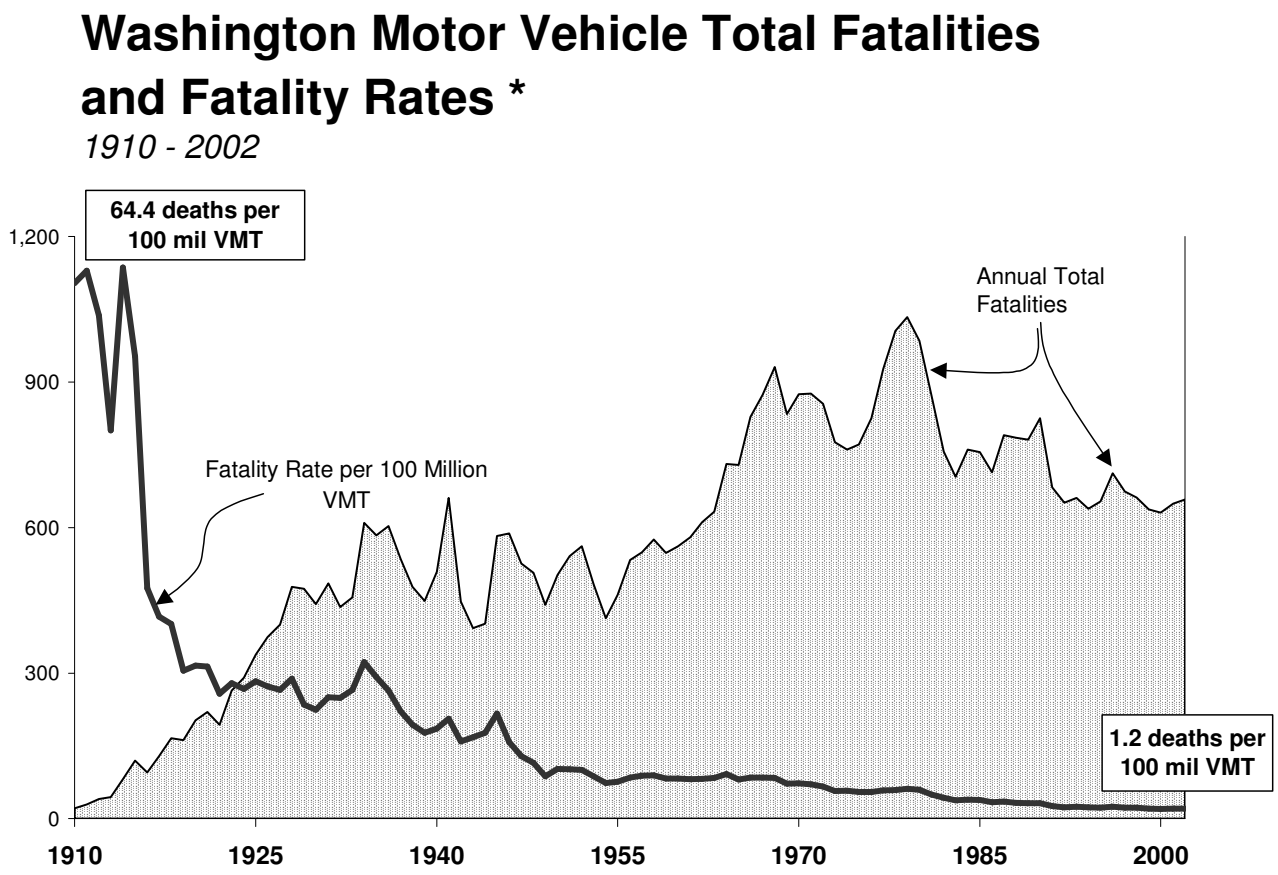
What do we know about Transportation Safety?

Presented to: Transportation Commission • April 22, 2004

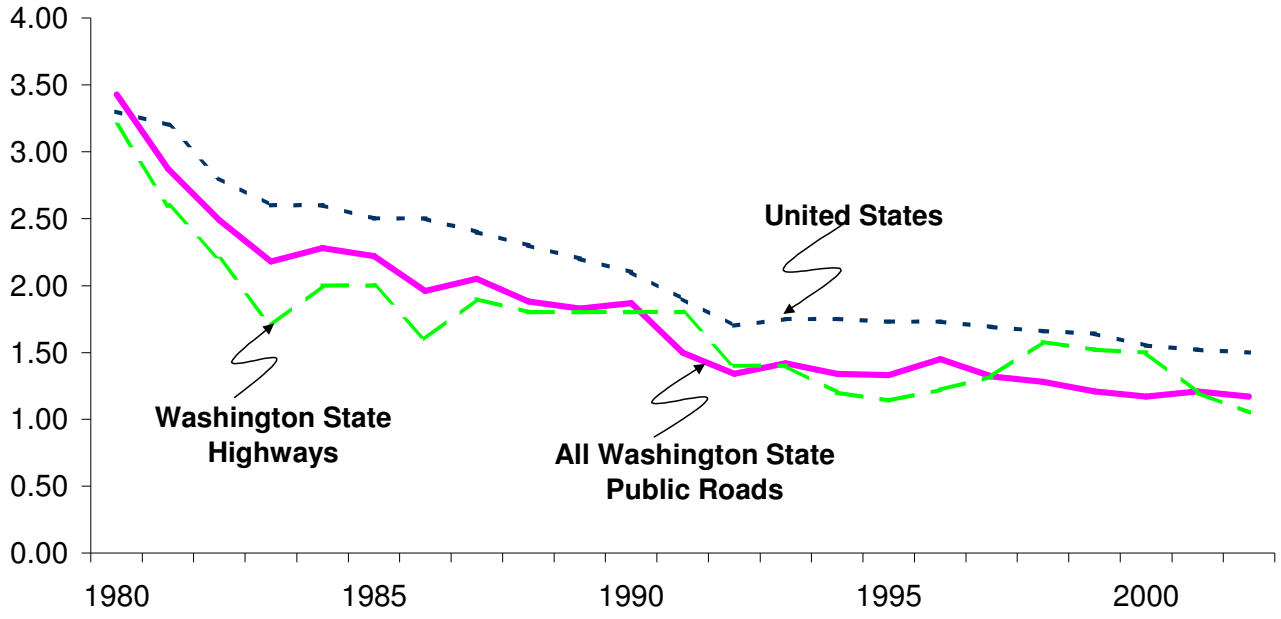
- Ferries, Transit, Rail and Aviation
- Roadways is Problem
- Security is New Focus

Highway Safety---What's going on?

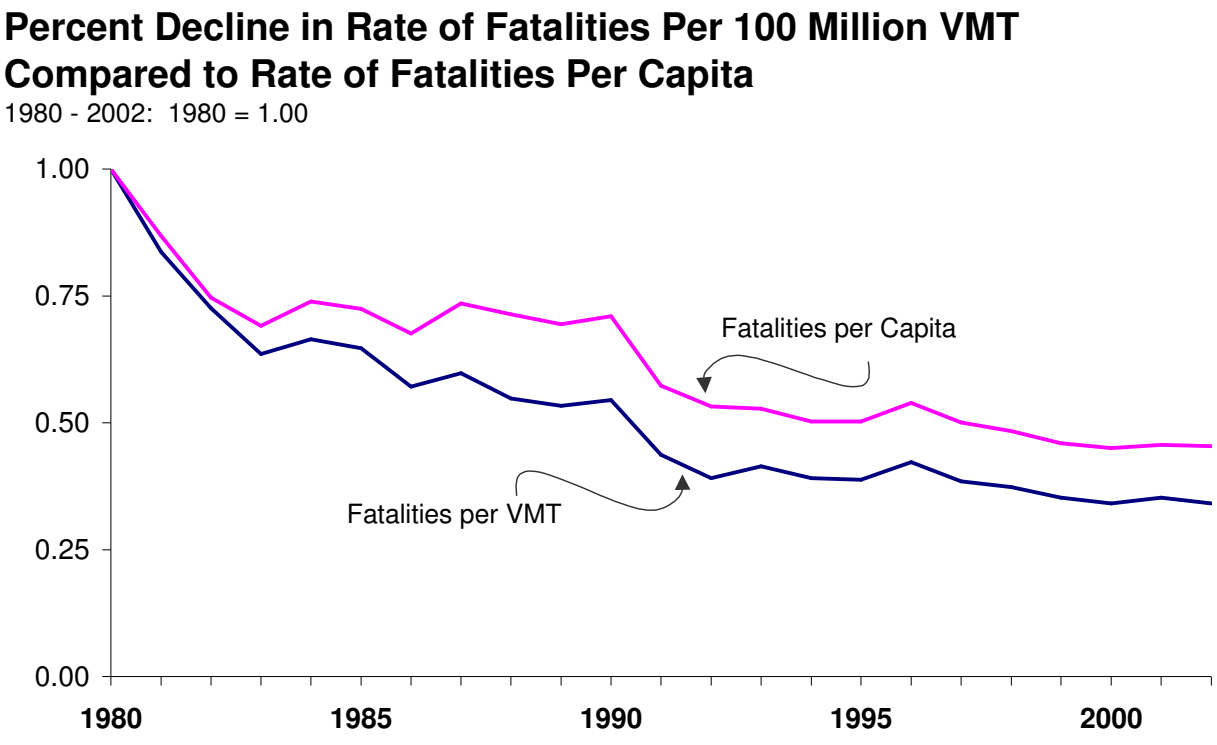


Even though substantial progress has been made do we still have problems?

Motor Vehicle Fatality Rates in Washington Compared to the National Average
Fatalities Per 100 Million VMT: 1980 - 2002



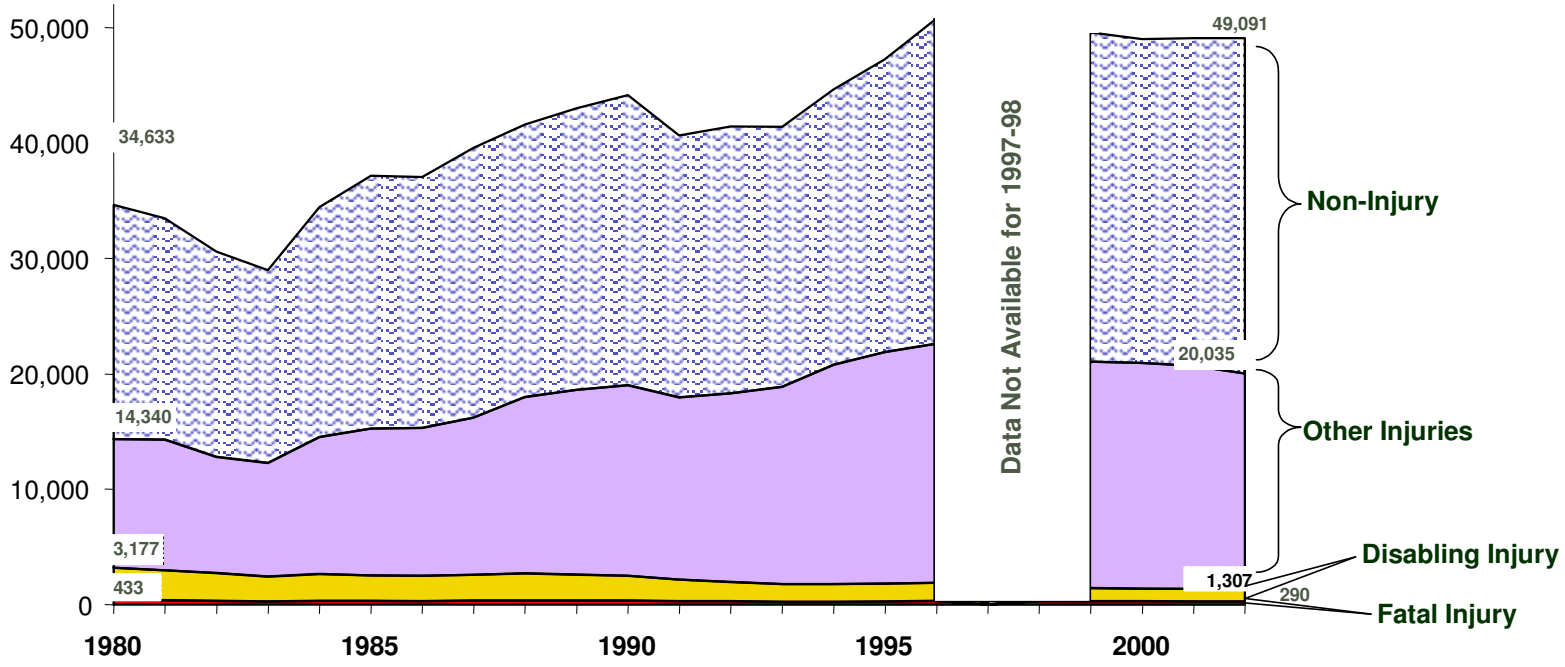
Since VMT has grown almost twice as fast as population, the decline in the fatality rates in relation to VMT is more pronounced than the decline in the fatality rates per capita.



Meanwhile, the total number of crashes – all types – has gone up and up

Collision Types
Washington State Highway System Only

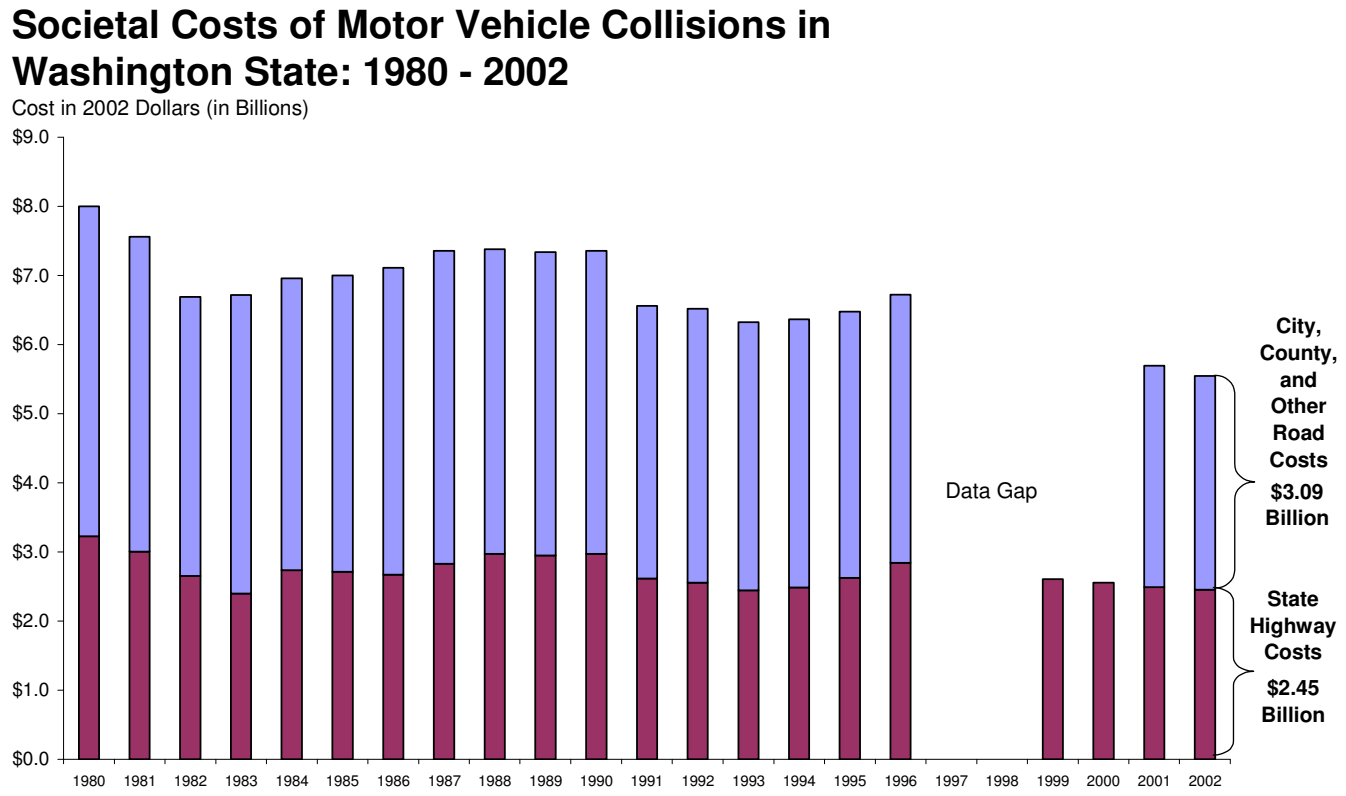
1980 - 2002



How much does it costs?

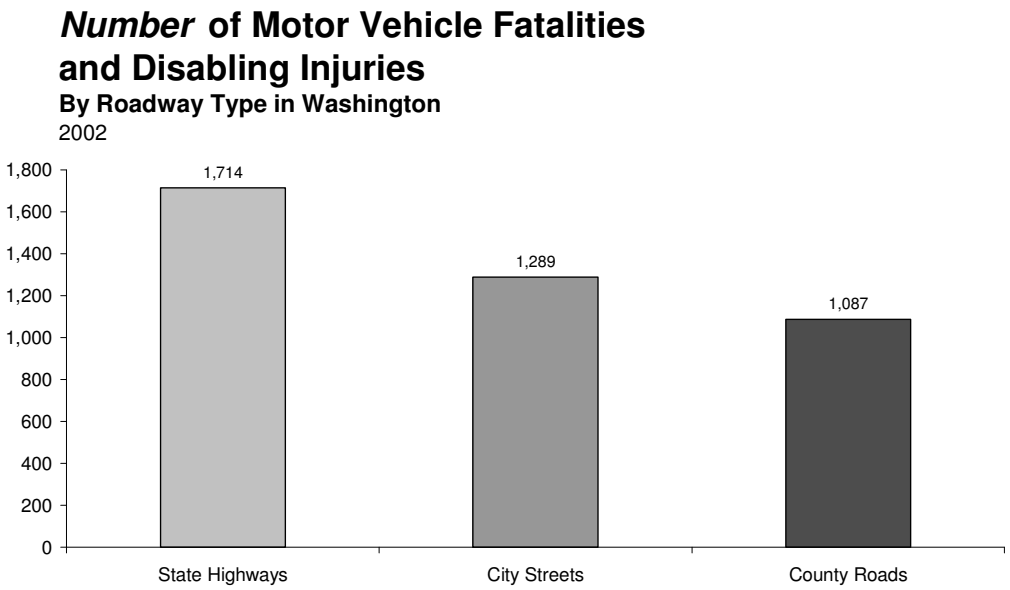
About $5.6 billion dollars – more than three times what we spend on transportation infrastructure each year.

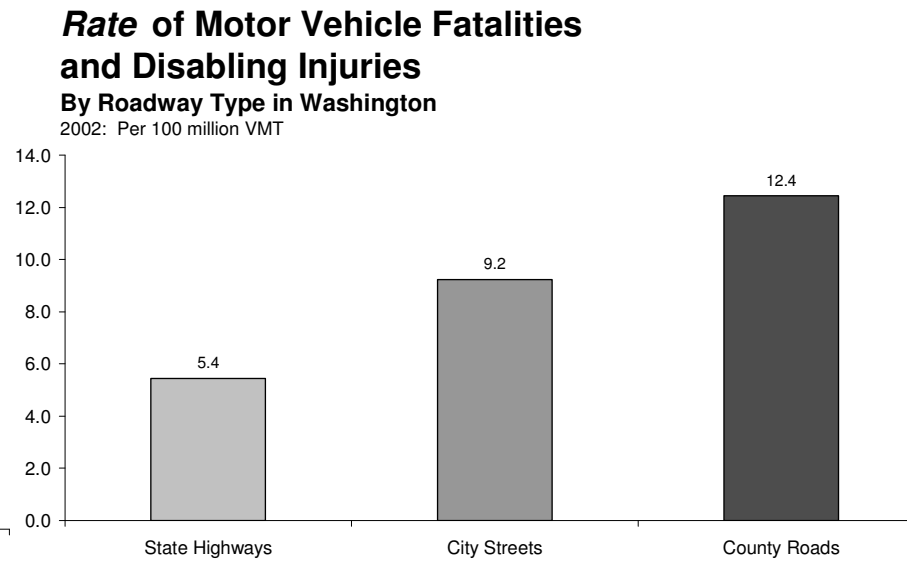
That's $930 for each person in Washington.



Where do crashes occur?

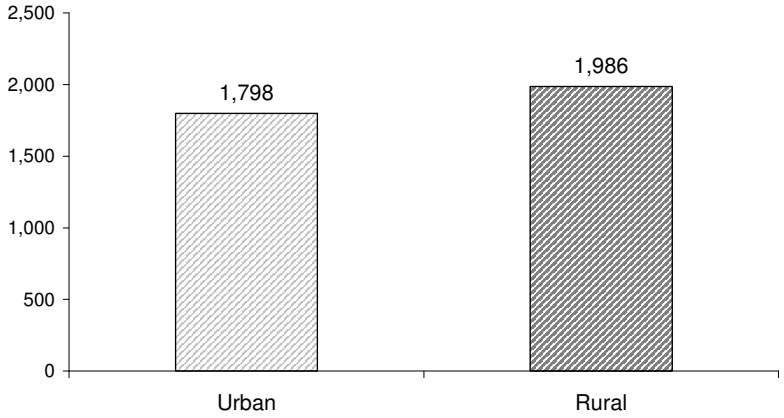
The numbers indicate that more crashes occur on State Highways but the rate shows that City and County Roads are the problems.



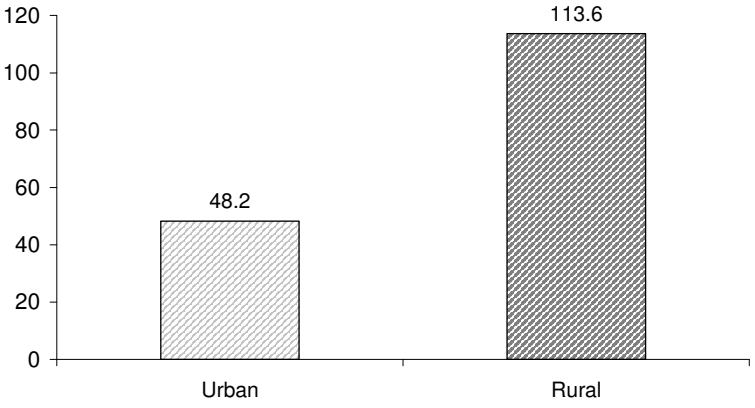


Looking at urban areas of the state in contrast to rural areas (regardless of what jurisdiction “owns” the road), the following relationships appear.

***Number* of Fatal and Disabling Injury Collisions**
By Urban and Rural Roadways
2002

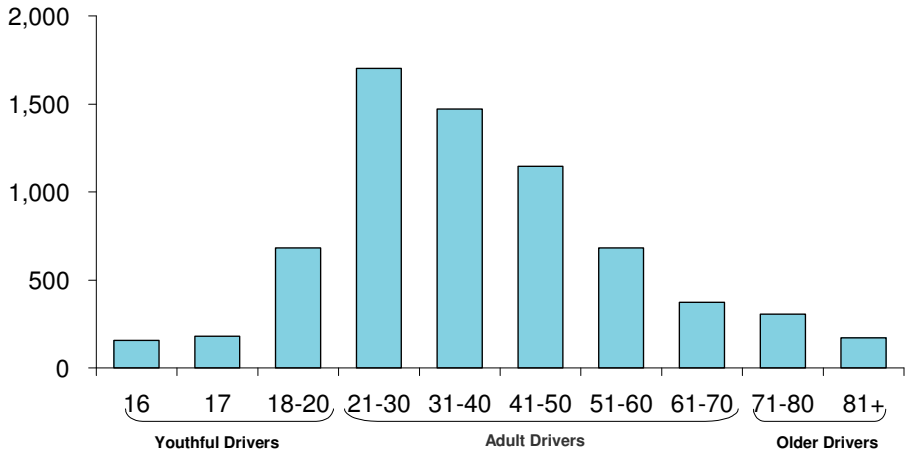


***Rate* of Fatal and Disabling Injury Collisions**
By Urban and Rural Roadways
Rate Per 100 Million VMT
2002



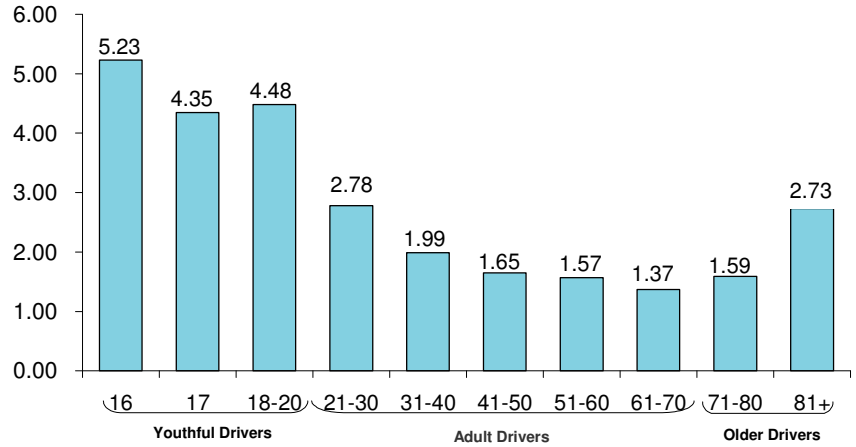
In relation to fatalities, the involvement of drivers in various age groups is shown below:

Number **of Motor Vehicle Fatalities by Driver Age Group: Washington State 8 Year Total 1993 - 2000**

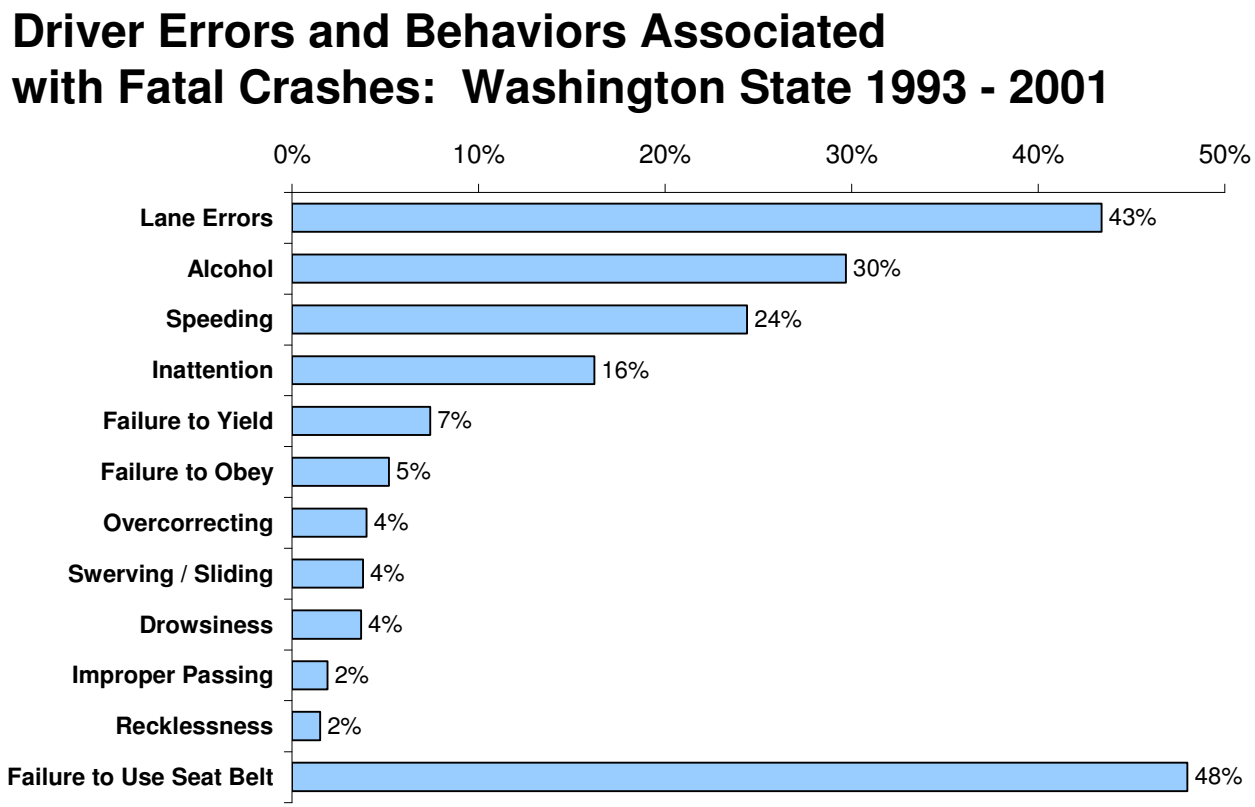


Rate **of Motor Vehicle Fatalities by Driver Age Group: Washington State 8-Year Average 1993 - 2000**

Per 10,000 Licensed Drivers

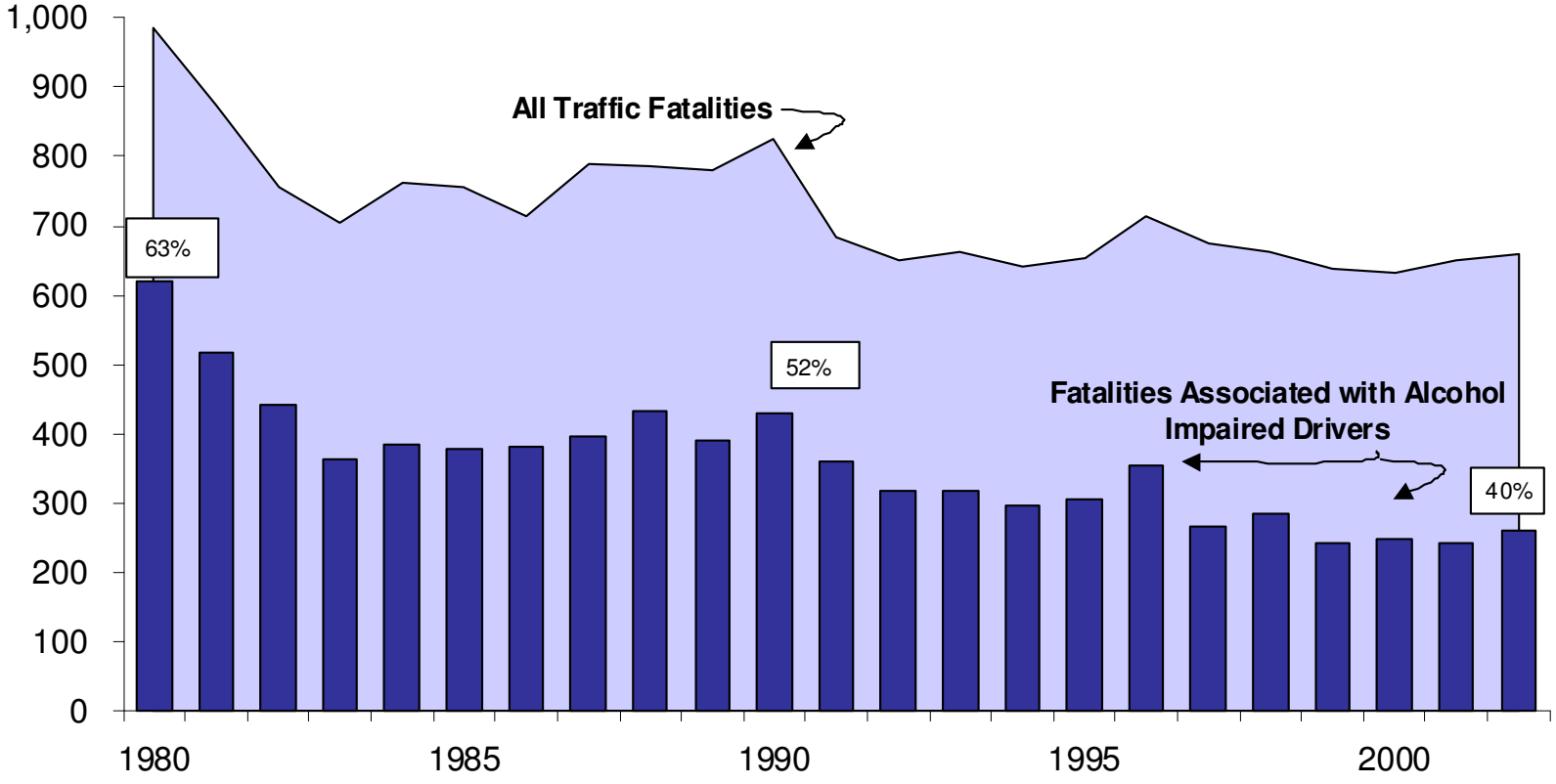


Aggressive driving most often marked by speeding, shows a significant correlation with fatal motor vehicle accidents and is a significant contributor to crashes.

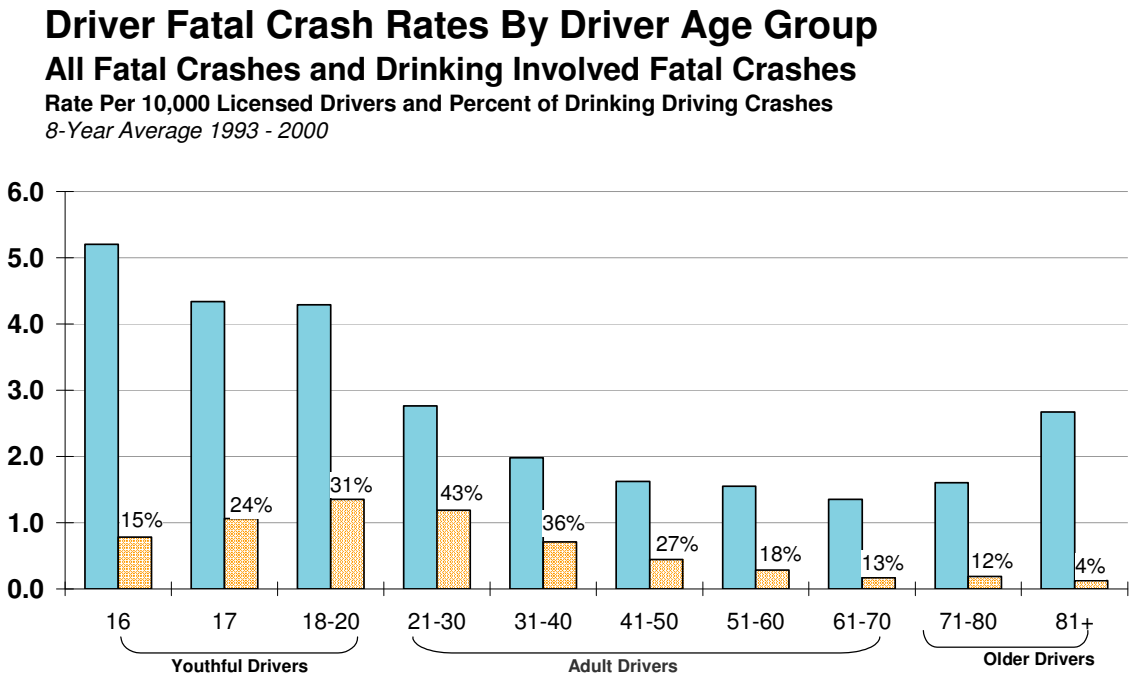


Trend in Rate of Driver Alcohol Impairment Associated with Motor Vehicle Fatalities in Washington

1980 - 2002

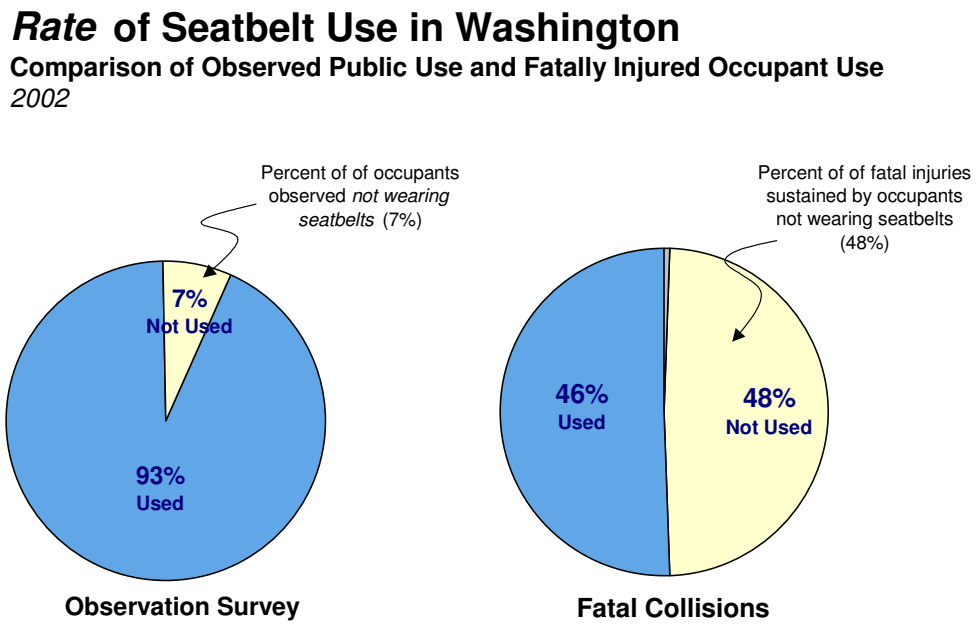


Alcohol is especially likely to be involved in motor vehicle fatalities when the driver is in the 21 to 40 year old age groups.

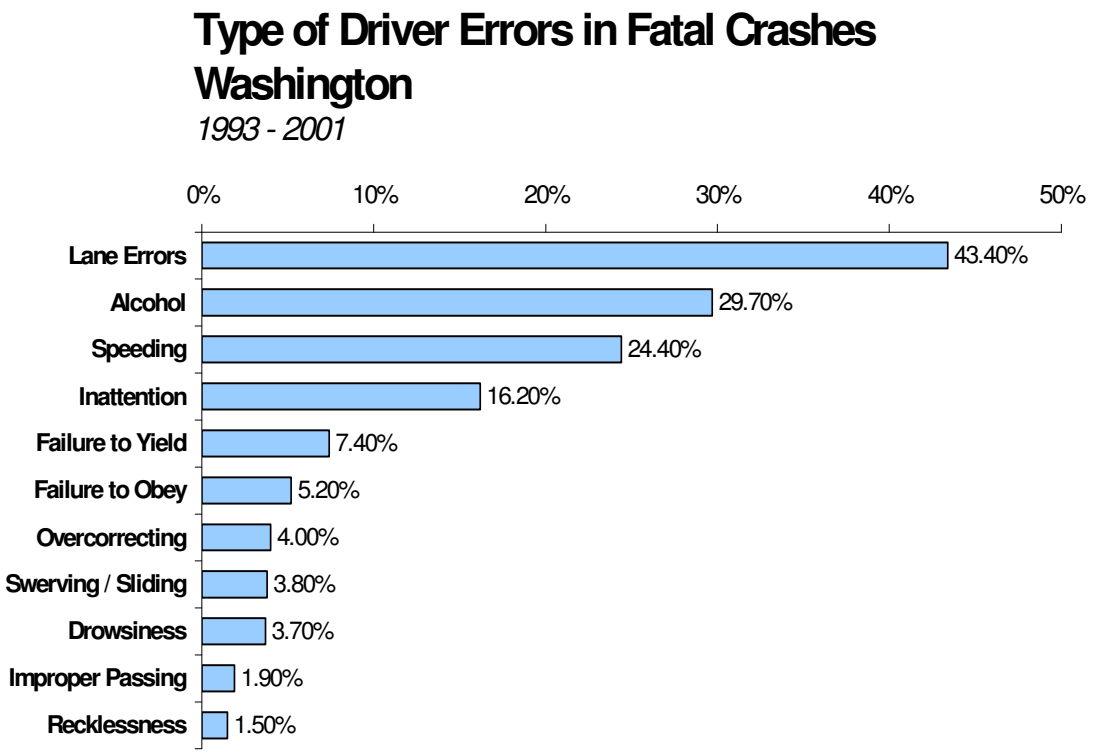


Driver Behavior and *Not Using Seat Belts*

A seat belt will reduce your chance of dying in a collision up to 70%. There is a direct correlation between improvements in the seat belt use rate and reductions in the vehicle death toll.



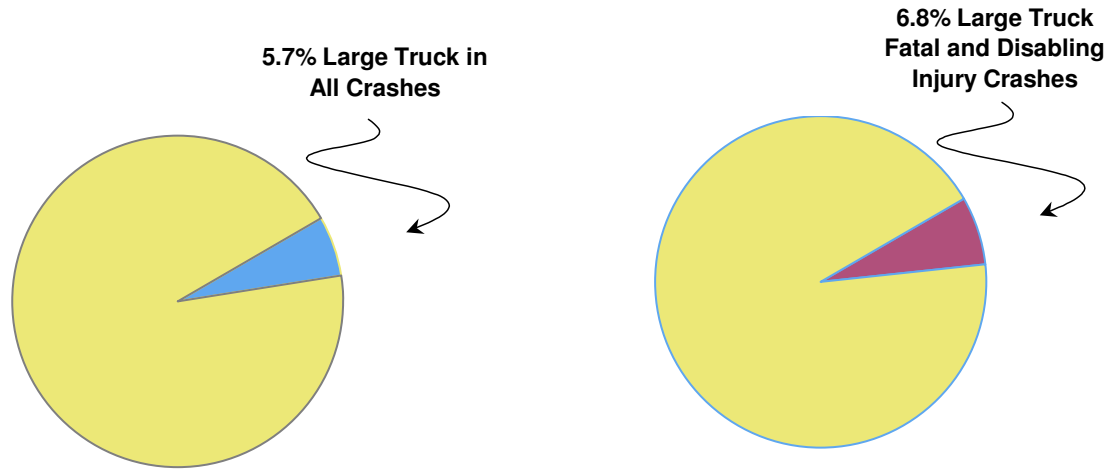
Driver Behavior and Sleepy or Inattentive Drivers



Types of Road Users – Large Trucks

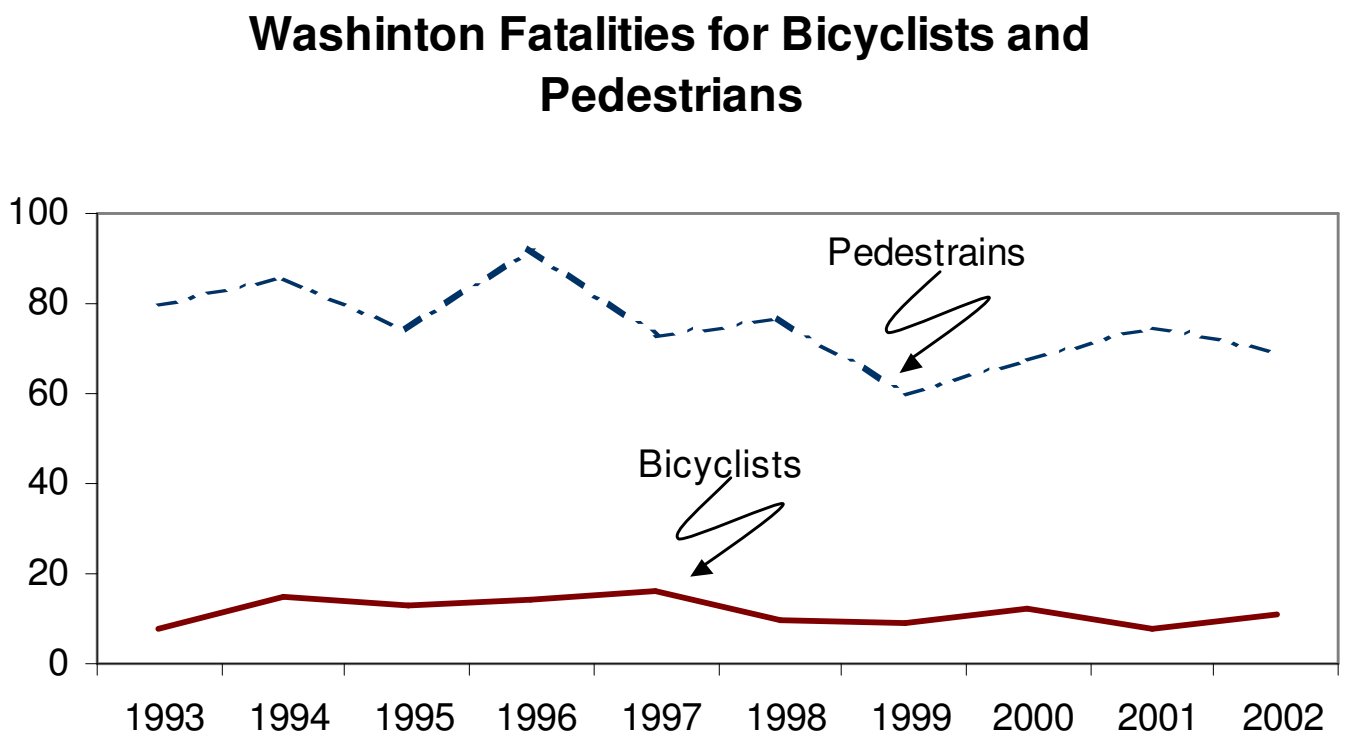
In 2002, large trucks were involved in 7343 out of 127,869 roadway crashes. That's about 5.7% of all roadway crashes involve large truck.

***Percent* of Large Truck Involved in Fatal and Disabling Crashes**
Washington
2002

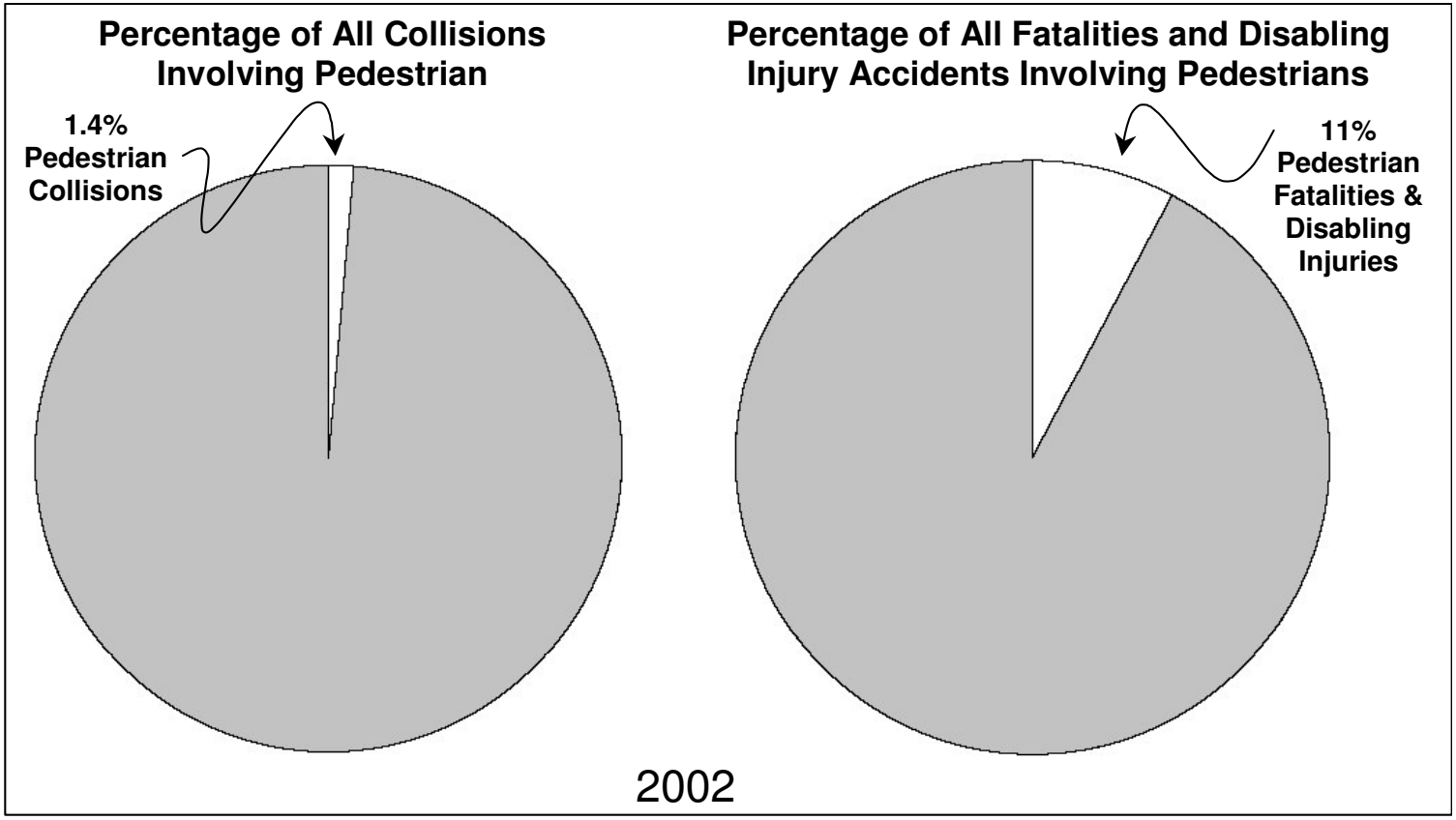


Types of Road Users -- Pedestrians and Bicycles

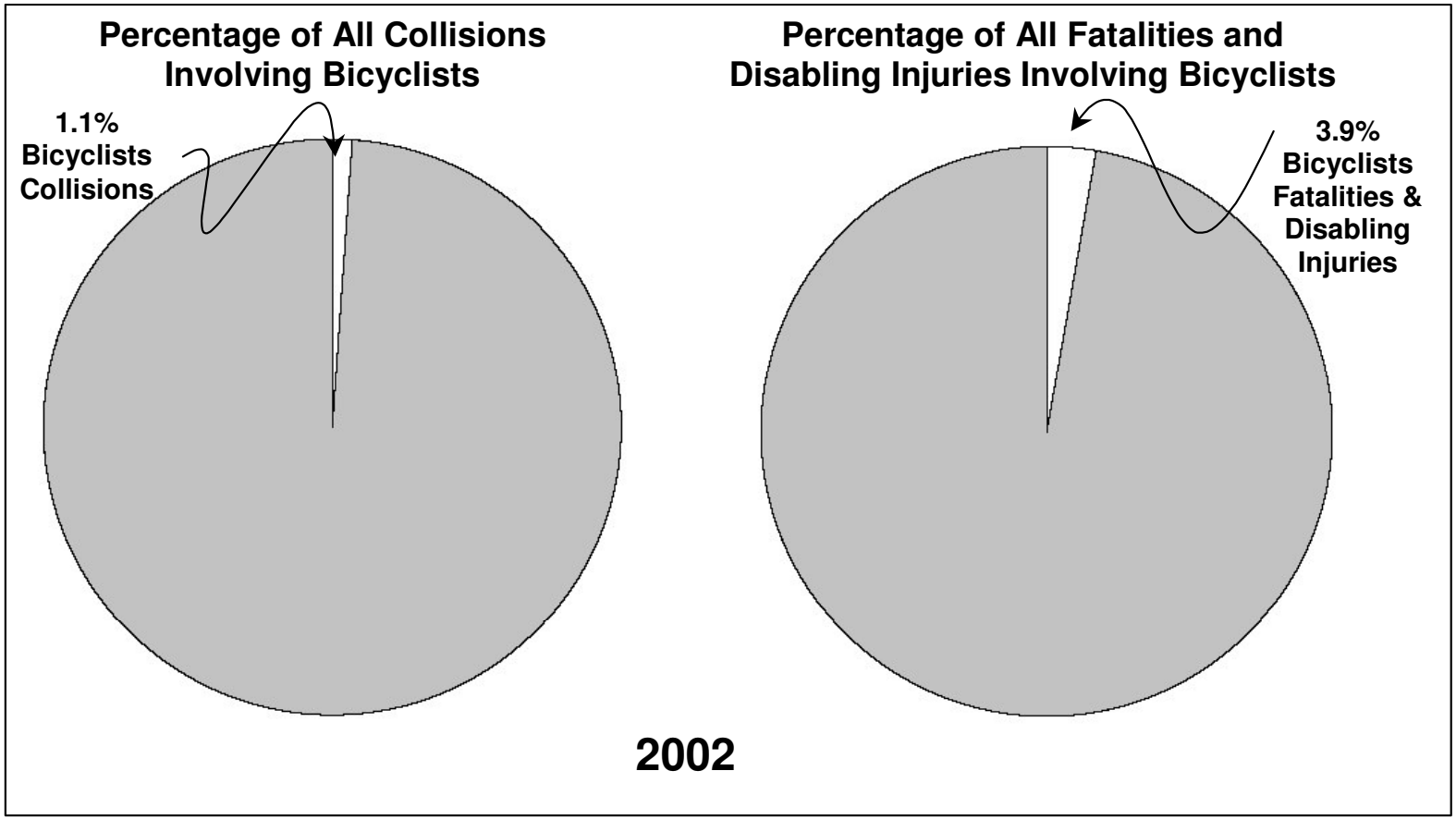
Pedestrian fatalities have declined slightly since 1993 but still show a significant problem when looking at fatal and disabling injuries. Bicycle fatalities remain steady.



Washington's pedestrian fatality rate we 33rd from the worst nationally in 2001



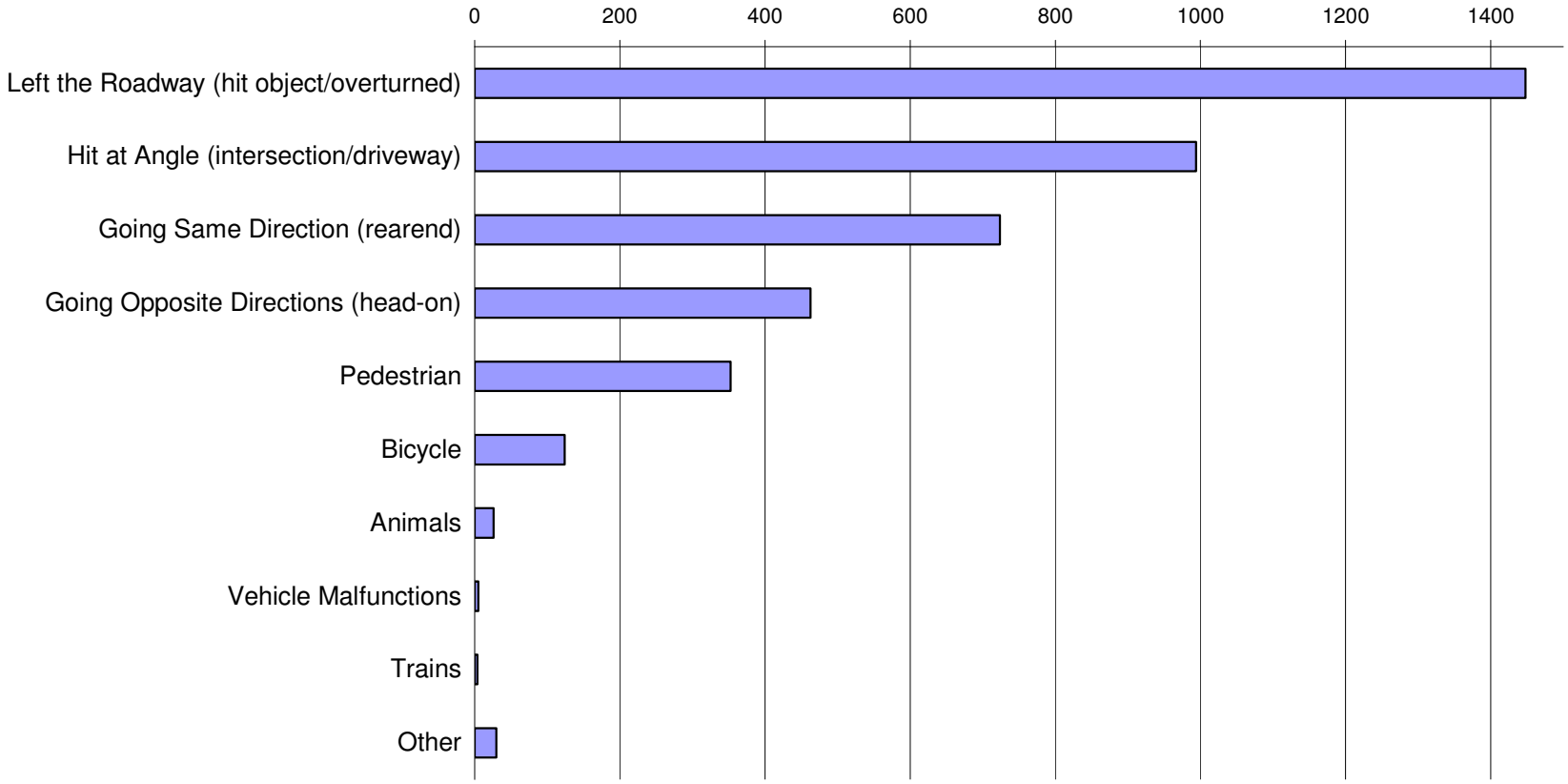
Washington ranked 16th lowest in bicyclist fatality rates in 2001, compared to other states.



Roadway Circumstances and Conditions Associated with Fatal and Disabling Injury Collisions

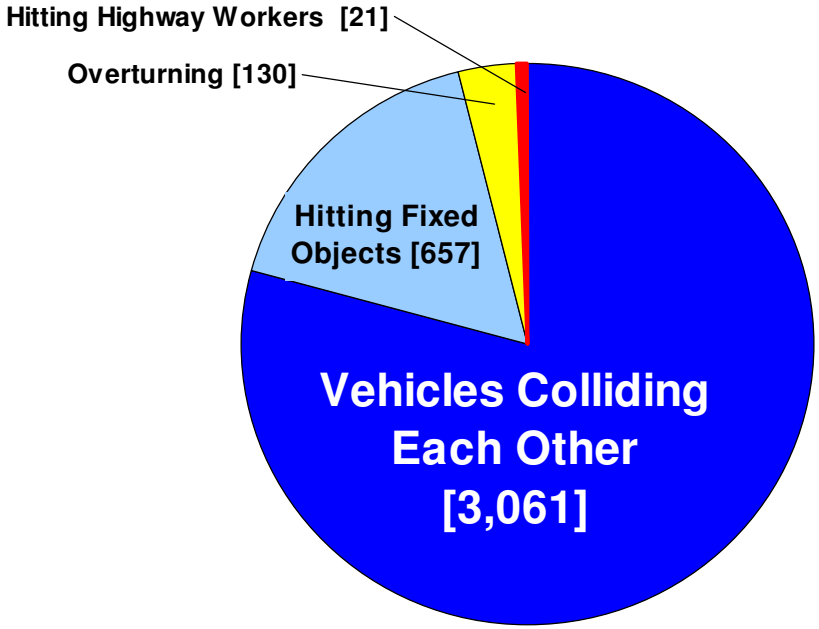
All Washington Roads

2002



Crash Types in Work Zone

1999 - 2001



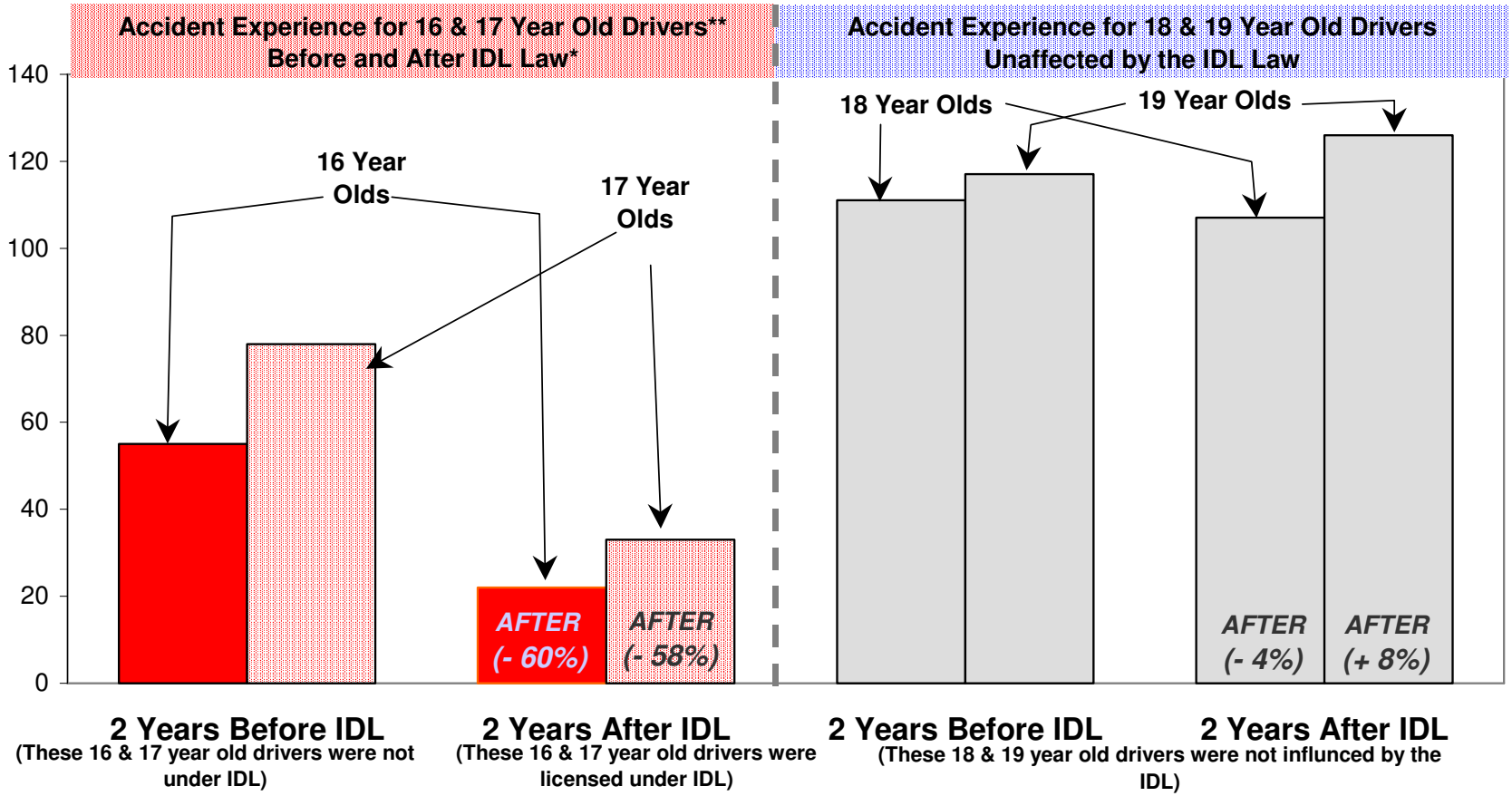
Number of collisions in [ ]. Source: WSDOT-TDO-Washington Highway

The Golden Hour – Emergency Response

	2003 Response Times		
	Urban	Suburban	Rural
Less than 5 min.	31%	27%	9%
5 to 10 min.	48%	45%	36%
11 to 20 min.	14%	20%	38%
More than 20 min.	7%	8%	17%
Average	7.6 min.	9.3 min	13.8 min
Target	8 min.	15 min.	45 min.

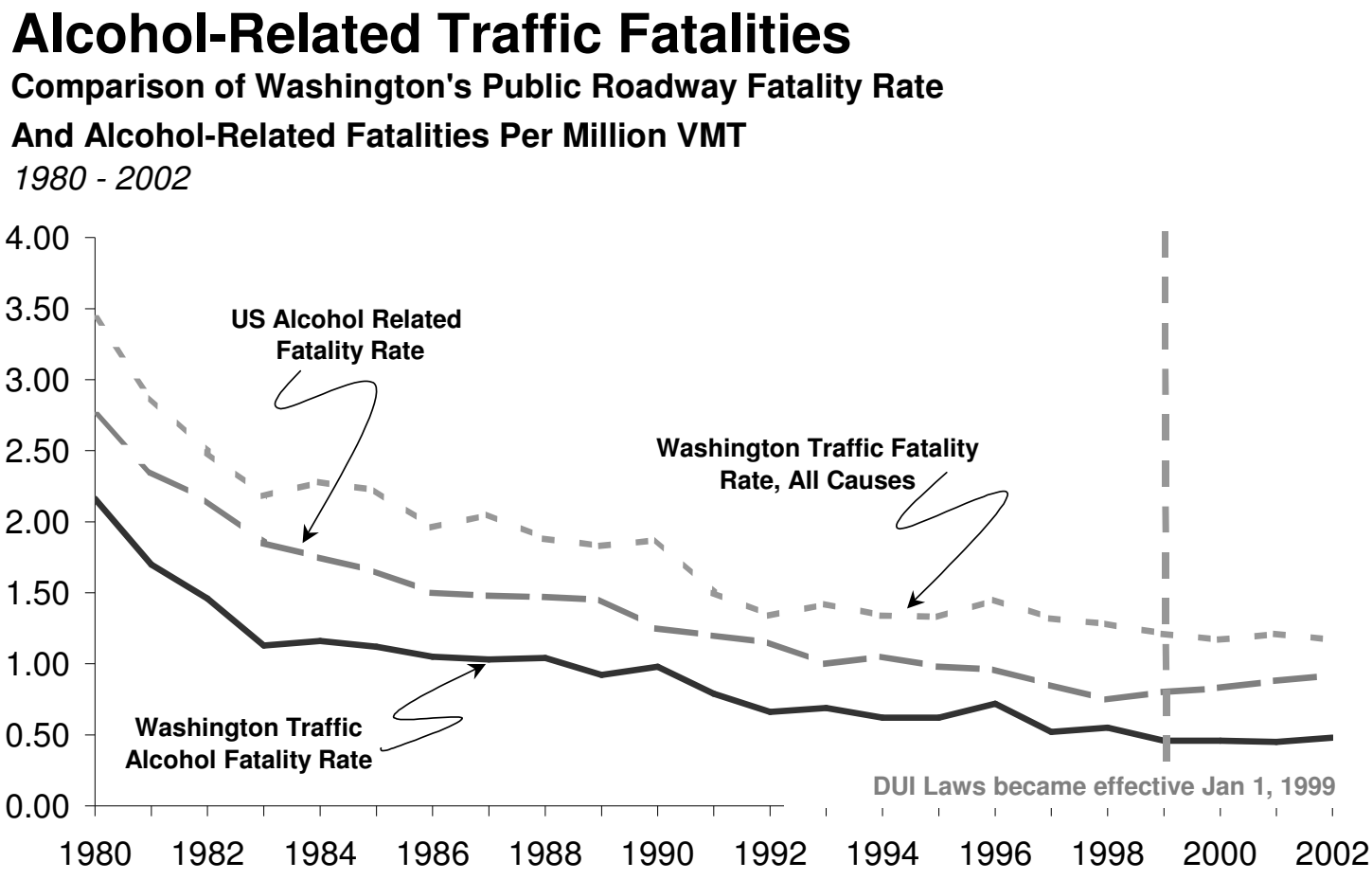
The Toll of Highway Deaths, Injuries and Property Damage Can be Reduced

Number of Fatal and Disabling Injury Accidents for 16 to 19 Year Old Drivers Before and After IDL Law



*The Intermediate Driver's Licensing (IDL) Program went into effect July 1, 2001. **Collisions on Washington State Highways. Source: TDO-WSDOT.

In 1998 a series of DUI laws were enacted.
National DDI rate trends up while Washington Declines slightly.



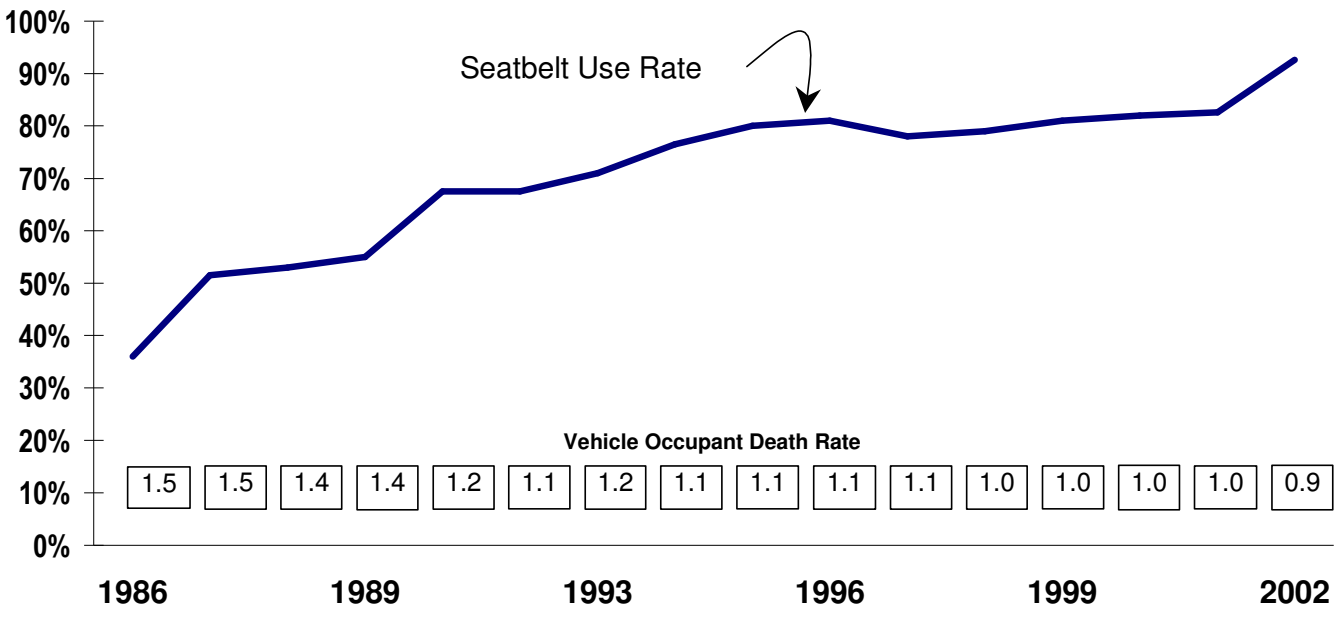
Seat Belts – Click it or Ticket

Vehicle Occupant Death Rates

Change of Washington Occupant Deaths per 100 VMT

and Observed Seatbelt Use

1986-2002

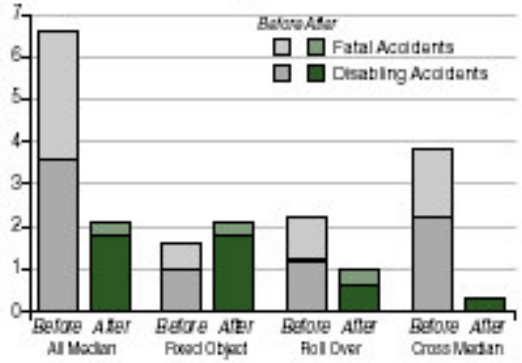


Roadway improvements prove effective in reducing crashes

Severe Collisions

Before and After Cable Median Barrier Installation

Annual Fatal and Disabling Collisions and Median Collision Type



Source: WSDOT Engineering and Regional Operations Division.

Safety Projects – Before and After Results

Each year, WSDOT completes a variety of safety improvement projects throughout the state highway system, ranging from adding turn lanes and signals to installing median barrier and rumble strips. To begin to determine their effect on reducing the number and severity of traffic collisions, a preliminary before-and-after study has been conducted for 21 such projects. Projects were chosen that permitted at least 18 months of collision data to be analyzed in the before period, and at least 12 months in the after period. The data was then normalized (12 month average) to make a fair comparison.

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

Source: WSDOT Transportation Data Office.

Preliminary results indicate that for this 21 project sample the average number of collisions per year for all projects combined was reduced by 37 percent. Likewise, the average number of fatal and injury collisions per year also declined by 37 percent. As additional data becomes available, this safety project analysis will be updated and expanded.

Coordinated effort of traffic safety education, enhanced enforcement, engineering improvements and enhanced emergency response improves roadway safety.

Community Corridor Safety Program Gets Results

The Corridor Safety Program is a partnership between WSDOT, the Washington Traffic Safety Commission, and the Washington State Patrol. Local collaboration improves safety in specific corridors, using low-cost approaches and building strong local partnerships. In each locale a committee representing a wide range of interested community members and groups coordinates the effort. The Corridor Safety Program was awarded Governor Locke's *2002 Governor's Award for Public Benefit*.

U.S. 97A between Wenatchee and Chelan
This 40-mile-long U.S. 97A corridor had a high number of single-vehicle accidents. Compared to similar highways in the region, 97A experienced 300% more wildlife collisions, 188% more alcohol-related collisions with 176% more fatalities and disabling injuries, as well as higher percentages of "failure to yield" and "driver inattention" collisions.

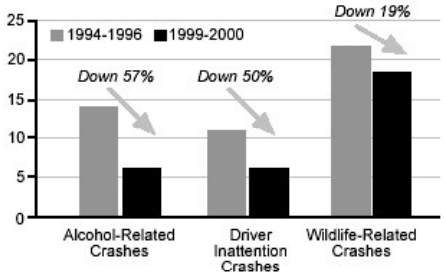
The project reduced collisions, injuries and deaths through the "Four Es" – **e**ducation, **e**nforcement, **e**mergency services and **e**ngineering. Highlights of these approaches include:

Education
- Presentations to community groups and schools
- Public Safety Announcements
- Project website (active through end of 2001)

Enforcement
- DUI emphasis patrols
- Coordinated multi-jurisdictional law enforcement
- Highway Watch Program

Emergency Services
- Improved use of 911 system
- Development of more incident response teams
- GPS equipment to pinpoint emergency scenes

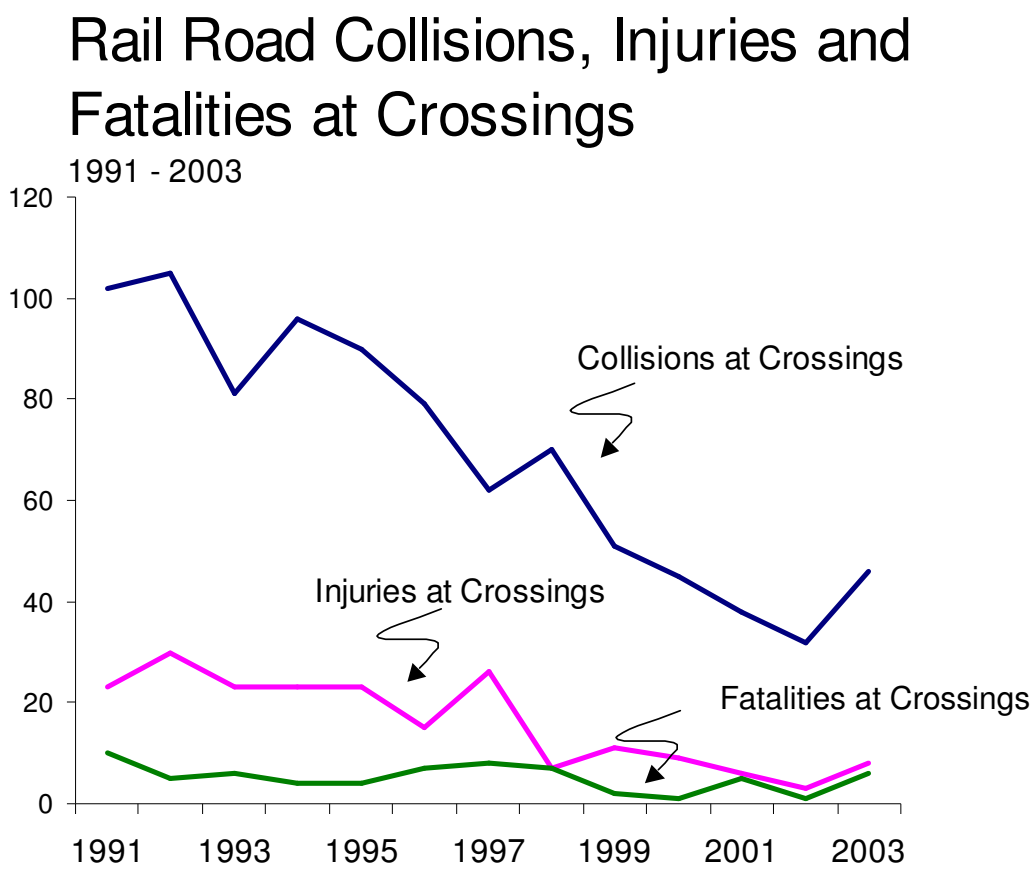
Engineering
- Additional warning and hazard signs
- Wildlife fences and reflectors
- Enhanced paint striping program
- Attention-getting signing ("Killed by Drunk Driver")



Source: WSDOT Traffic Office.

The program is cost-effective: every dollar invested saves approximately $35 in societal costs.

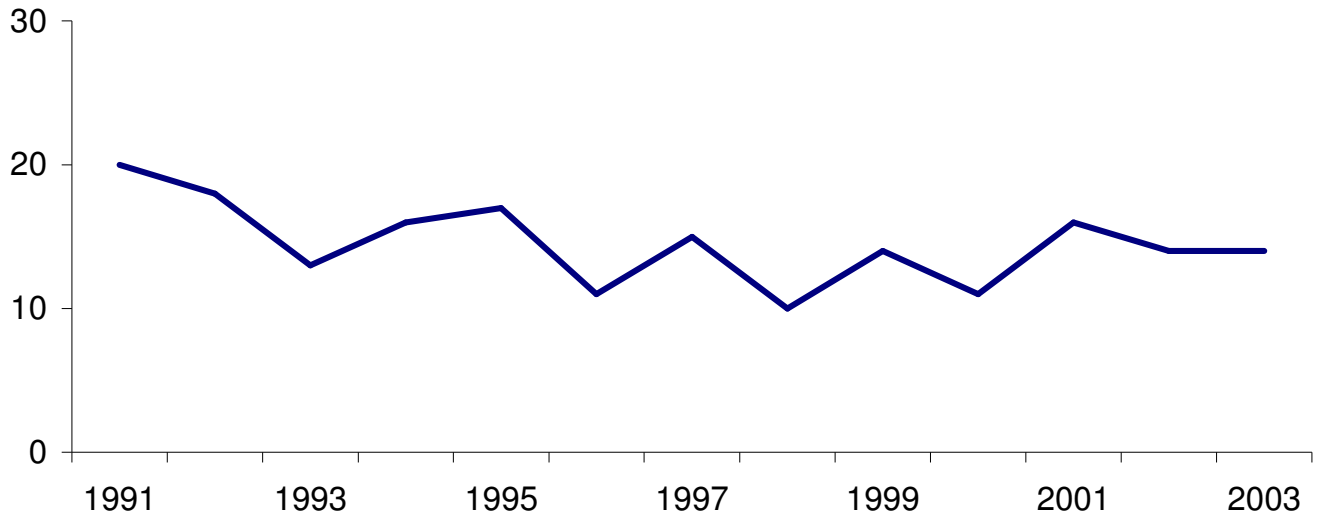
Grade crossings – Problem mostly solved



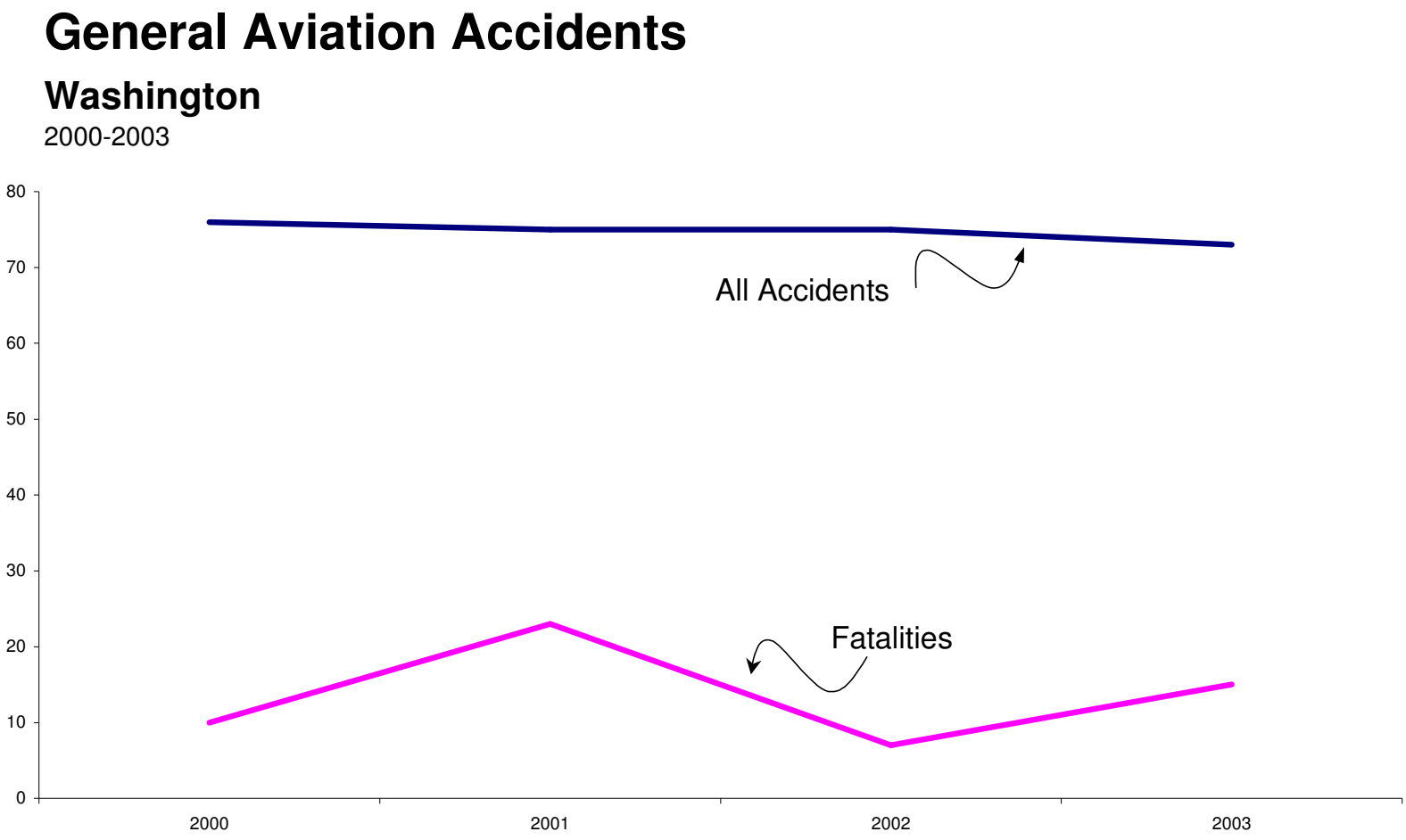
Number of Fatalities Related to Tresspassing on Washington Railroad Properties

Washington

1991 - 2003



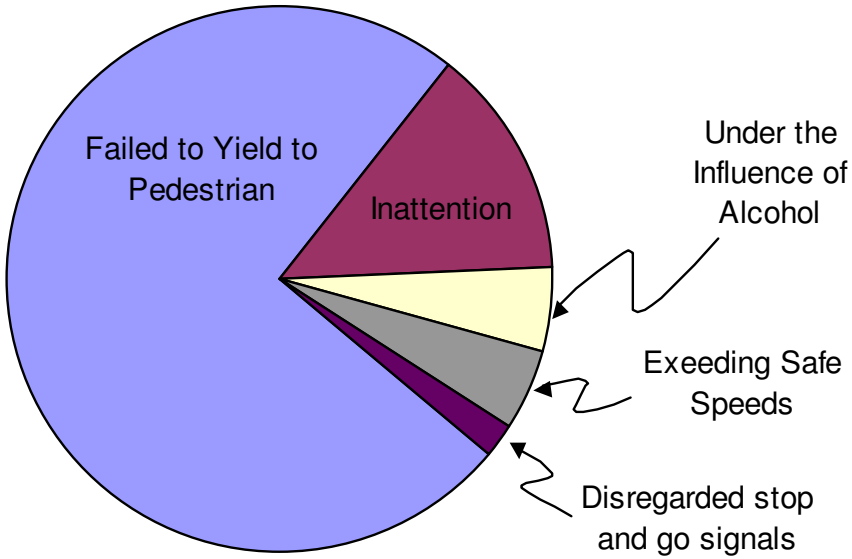
General aviation safety



Pedestrians and Public Transit

Circumstances Contributing to Pedestrian Accidents in Washington

1996 - 2001



Washington State Ferries
An excellent safety record

2002

- 29 vessels, 10 routes, 20 terminals
- 25.2 million passengers
- 15,192 sailings
- 100 minor injuries on vessels
- 33 minor injuries at terminals