State of Washington

Fatal Traffic Collisions in Washington State

March, 2001



Washington Traffic Safety Commission 1000 S. Cherry St., PO Box 40944 Olympia, WA 98504-0944 John Moffat, Director (360) 753-6197

1998

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Report prepared by Dick Doane

Washington Traffic Safety Commission John Moffat, Director

1000 S. Cherry Street P.O. Box 40944 Olympia, WA 98504-0944

(360) 753-6197 FAX 586-6489 <u>www.wa.gov/wtsc/</u> (homepage)



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Preface

This report provides a summary and analysis of 1998 fatal traffic crashes on Washington State roads. Most of the data reported are from the Fatality Analysis Reporting system (FARS), a traffic records system created and managed under the auspices of the National Highway Traffic Safety Administration.

The FARS data presented in this summary are based on all 1998 fatal collisions reported as of the close of calendar year 1999. Revisions to FARS data are made as new reports become available, and the file for a particular year is not finalized until December 31 of the following year. Readers should be advised that the figures reported here might differ slightly from those in other published reports, such as Washington State Patrol documents, because of differences in reporting criteria.

In addition, some of the data definitions used in the FARS system differ from those in the WSP's system, also resulting in discrepancies between the numbers reported by each system. For example, the WSP's yearly numbers for alcohol-involved fatal crashes are consistently lower than corresponding numbers from FARS. Another example of such a difference between FARS and WSP involves the fields describing weather conditions under which crashes occur. In the WSP system only five code values are used, while in the FARS system nine distinct code values are used.

Many of the differences between these two data systems stem from their different origins and purposes. The FARS system is a *national* database providing detailed information about all fatal traffic crashes occurring in the U.S. every year. On the other hand, the WSP's system is a *statewide* database describing traffic collisions at all severity levels – fatal, injury, and property-damage-only – occurring in the state of Washington every year.¹

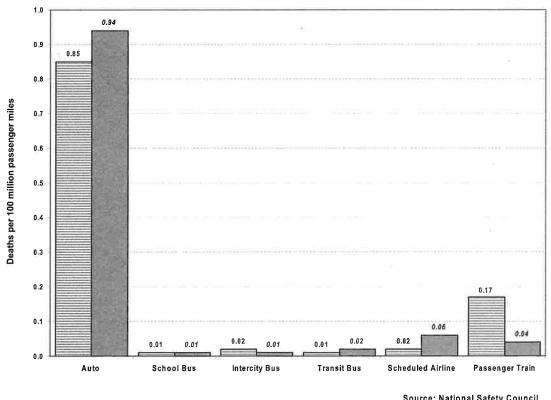
¹ In 1998 Washington law required a citizen or law enforcement report if a collision resulted in death, injury, or at least \$500 in damage to the property of one person. On January 1, 2000, this threshold was raised to \$700.

Introduction

According to the Washington State Department of Health, in 1998 more Washingtonians ages 1 through 44 died as a result of accidents than from any other cause. Traffic collisions were the largest single contributor to accidental deaths in our state, accounting for about one-third of all accidental injury deaths in 1998.

As the graph below indicates, travel by passenger automobile is still the riskiest form of human transportation in terms of deaths per passenger-mile traveled. It is perhaps the most dangerous of all our daily routine activities. However, over the years this danger has diminished dramatically as new technologies have developed – e.g., safer roads and vehicles – and new laws have been implemented, such as the 1986 mandatory seatbelt law. All of these changes were facilitated by careful analysis of a myriad of problems related to traffic safety. It is hoped that the information presented in this report will contribute in some small way to the further enhancement of public safety.

Passenger Death Rate by Transportation Mode United States, 1991-93 & 1994-96



Source: National Safety Council Injury Facts, 1995 & 1998 eds.

III 1004-00

1991-93

 v_1

Executive Summary

Crashes

There were 590 fatal motor vehicle crashes in Washington during 1998. Two hundred forty-six of these crashes (41.7%) were drinking-driver-involved – up from 39.3% in 1997.

Three hundred thirty-one fatal crashes (56.1%) were single-vehicle crashes. By comparison, 163 of the 246 drinking-driver-involved fatal crashes (66.3%) were single-vehicle crashes.

Three hundred fatal crashes (50.1%) occurred on *highways* – state, U.S., and interstate. By contrast, 136 of 246 drinking-driver-involved fatal crashes (55.3%) occurred on county roads and city streets.

One hundred seven fatal crashes (18.1%) happened in King County, more than in any other county in the state. Likewise, 34 drinking-driver-involved fatal crashes (13.8%) happened in King County, more than in any other county.

Sixty-two fatal crashes (10.5%) occurred in July, more than in any other single month. Twenty-six drinking-driver-involved fatal crashes (10.6%) happened in November, more than in any other single month.

Two hundred eighty-eight fatal crashes (48.8%) happened on a Friday, Saturday, or Sunday. One hundred forty-five of 344 non-drinking-driver-involved fatal crashes (42.2%) happened on a Friday, Saturday, or Sunday. By contrast, 143 out of 246 drinking-driver-involved fatal crashes (58.1%) happened on a Friday, Saturday, or Sunday.

Two hundred two fatal crashes (34.2%) occurred between 9 p.m. and 6 a.m. Sixty-two of 344 non-drinking-driver-involved fatal crashes (18.0%) occurred during these hours. By contrast, 140 of 246 drinking-driver-involved fatal crashes (56.9%) occurred during the same time period.

Three hundred thirty-six fatal crashes (56.9%) occurred in the roadway itself (as opposed to on the shoulder, the median, parking lane, or otherwise off the road). By contrast, only 95 of 246 drinking-driver-involved fatal crashes (38.6%) occurred in the roadway.

In 175 fatal crashes (29.7%), the first harmful event involved a vehicle striking a fixed object such as a signpost, guardrail, or light pole. By

comparison, the first harmful event in 106 of 246 drinking-driver-involved fatal crashes (43.1%) was such a fixed-object collision.

Four hundred eighty-two fatal crashes (81.7%) occurred in non-adverse weather conditions. Likewise, 203 of 246 drinking-driver-involved fatal crashes (82.5%) occurred in non-adverse weather conditions.

The majority of fatal crashes – 350 of 590, or 59.3% -- occurred on roadways with posted speed limits of 50 mph or less. Likewise, 152 of 246 drinking-driver-involved fatal crashes (61.8%) occurred on roadways posted for 50 mph or less.

There were 19 hit-and-run fatal crashes in 1998, of which 7 were drinking-driver-involved.

Persons

Six hundred sixty-two persons lost their lives in Washington traffic crashes during 1998. About 80% of these were motor vehicle occupants. Nearly 12% of fatal crash victims were pedestrians, and just fewer than 8% were motorcyclists. About 1% of victims were pedalcyclists.

Two hundred eighty-six traffic deaths, or 43.2% of all traffic deaths, resulted from drinking-driver-involved crashes. This represents an increase over 1997's toll of drinking-driver-involved deaths (39.5%).

Seventy-one persons (10.7%) were killed during July – more than in any other month. Thirty-two persons (4.8%) were killed in drinking-driver-involved crashes during November – more than in any other month.

One hundred fifteen persons (17.4%) were killed in King County traffic crashes – more than in any other county. Thirty-nine persons (5.9%) were killed in drinking-driver-involved traffic crashes in King County, also more than in any other county.

One hundred forty-eight persons (22.4%) between the ages of 21 and 30 were killed in 1998 traffic crashes – more than in any other age group.

Eighty-nine persons (13.4%) between the ages of 21 and 30 were killed in 1998 drinking-driver-involved crashes – also more than in any other age group.

Drivers

Nine hundred seven drivers were involved in 1998 fatal crashes, only 770 of whom possessed valid drivers' licenses.

Two hundred fifty-seven *drinking*-drivers were involved in 1998 fatal crashes – 28.3% of all fatal-crash-involved drivers.

One hundred seven drivers (11.8%) had been in previous crashes.

Three hundred ninety-four drivers were cited for improper lane travel or running off the road, and 305 drivers were cited for alcohol and/or drug involvement – the two most prevalent contributing factors in 1998 fatal crashes.

Trends

Between 1993 and 1998 in Washington, 4,002 people were killed in traffic crashes, an average of 667 per year during that period. Seven hundred fifteen fatalities, or 18% of all traffic deaths, happened in King County, more than in any other Washington county.

During the same period, 1,825 people were killed in drinking-driver-involved traffic crashes – 46% of all traffic deaths between 1993 and 1998.

During the same period, 234 children younger than 15 years of age were killed in traffic crashes.

During the same period, among all passenger vehicle occupants who were killed or injured in fatal traffic crashes, only 48.8% were wearing safety restraints at the time of the crash. By contrast, among persons who survived these same fatal crashes without sustaining any injury, 84.0% were wearing safety restraints at the time of the crash.

Between 1993 and 1998, although drivers ages 15 through 20 accounted for only 6.9% of all licensed drivers, they represented 15.3% of all drivers involved in fatal crashes during the same period – making them the most over-represented driver age group in Washington fatal traffic crashes.

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I. Overview

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In 1998 in Washington State, 662 persons were killed in 590 fatal traffic crashes. While deaths were down 1.8% from the 674 persons killed in 1997, total fatal crashes increased slightly, from 587 in 1997 to 590 in 1998.

The statewide fatal crash rate in 1998 was 1.14 fatal crashes per 100 million vehicle-miles traveled (VMT), which represented a decline of less than 1% from 1997. The death rate in 1998 was 1.27 fatal crashes per 100 million VMT, a 3.8% drop from 1997's rate of 1.32. Thus, while the annual number of traffic fatalities has remained fairly constant in recent years, the death rate per miles of travel in Washington has continued to decline steadily.

The number of drinking-driver-involved fatal crashes in 1998 was 246 – up slightly from a historic low of 231 in 1997. Deaths in those crashes also increased, from 266 in 1997 to 286 in 1998, as did the percent of persons killed in drinking-driver-involved crashes (relative to total traffic deaths), which rose from 39.5% in 1997 to 43.2% in 1998.

Overview of Fatalities and Exposure

Five-year comparison							98 vs
						prev 4-	prev 4-
-	1998	1997	1996	1995	1994	yr avg	yr avg
Fatal Crashes	590	587	643	576	575	595	-0.9%
Drivers Involved	907	871	973	842	857	886	2.4%
Vehicles Involved	908	877	978	847	863	891	1.9%
Statewide Travel ¹	51,926	51,073	49,270	49,248	47,674	49,316	5.3%
Fatal Crash Rate ²	1.14	1.15	1.31	1.17	1.21	1.20	-5.0%
Persons Killed	662	674	712	653	640	670	-1.2%
Male	450	418	484	440	438	445	1.1%
Female	212	255	227	213	202	224	-5.5%
Unknown	0	1	1	0	0	NA	NA
Statewide Travel ¹	51,926	51,073	49,270	49,248	47,674	49,316	5.3%
Death Rate ²	1.27	1.32	1.45	1.33	1.34	1.34	-5.2%
Drinking-driver crashes	246	231	307	268	257	266	-7.4%
Deaths in drinking-driver crashes	286	266	353	305	296	305	-6.2%
Percent of persons killed	43.2%	39.5%	49.6%	46.7%	46.3%	45.5%	-5.1%

¹ In millions of vehicle miles traveled; thus, for example, 1998 travel miles should be read as 51.926 billion VMT.

Source: FARS, WSDOT

² Fatal crashes / Deaths per 100 million vehicle miles traveled

Population, Vehicle Travel, and Collisions, 1968 - 1998

Washington State

								Deaths per 100	Deaths per
		Licensed	Registered				_	million	10,000
Year	Population	Drivers	Vehicles	Travel ¹	Collisions ²	Injuries	Deaths ³	VMT	pop.
1968	3,336,000	1,727,430	2,027,391	19,023	100,319	49,446	931	4.89	2.79
1969	3,397,000	1,833,232	2,151,691	19,957	103,160	47,354	834	4.18	2.46
1970	3,413,244	1,919,980	2,156,510	20,676	97,486	53,465	875	4.23	2.56
1971	3,436,300	1,965,962	2,231,958	21,324	98,956	55,099	876	4.11	2.55
1972	3,418,800	2,011,893	2,315,310	22,363	101,002	55,454	855	3.82	2.50
1973	3,424,300	2,113,460	2,453,880	23,457	105,515	58,039	776	3.31	2.27
1974	3,448,100	2,122,131	2,545,975	22,585	106,242	57,716	761	3.37	2.21
1975	3,493,990	2,176,505	2,640,944	24,023	120,635	64,145	771	3.21	2.21
1976	3,571,591	2,324,697	2,785,500	25,932	120,864	66,309	825	3.18	2.31
1977	3,661,975	2,339,215	2,952,383	27,449	119,058	71,356	927	3.38	2.53
1978	3,774,300	2,485,248	3,042,265	29,378	116,923	64,669	1,006	3.42	2.67
1979	3,911,200	2,579,368	3,186,898	29,122	118,686	65,399	1,034	3.55	2.64
1980	4,132,353	2,662,659	3,293,065	28,696	113,751	61,532	985	3.43	2.38
1981	4,250,200	2,732,722	3,408,871	30,346	111,993	61,083	872	2.87	2.05
1982	4,264,000	2,774,212	3,313,348	30,353	100,644	54,789	757	2.49	1.78
1983	4,285,100	2,867,032	3,372,966	32,275	106,597	58,317	705	2.18	1.65
1984	4,328,100	2,973,468	3,459,772	33,344	111,655	61,366	761	2.28	1.76
1985	4,384,100	2,980,717	3,546,152	33,978	120,056	63,806	756	2.22	1.72
1986	4,419,700	3,029,375	3,651,102	36,416	122,918	66,707	714	1.96	1.62
1987	4,481,100	3,156,600	3,833,058	38,520	126,807	67,665	790	2.05	1.76
1988	4,565,000	3,264,065	3,896,828	41,698	125,920	72,449	785	1.88	1.72
1989	4,660,700	3,350,324	4,084,367	42,696	128,800	73,993	781	1.83	1.68
1990	4,866,692	3,366,146	4,233,853	44,157	132,056	76,064	825	1.87	1.70
1991	5,000,400	3,572,038	4,381,757	45,663	121,686	72,004	683	1.50	1.37
1992	5,116,685	3,689,741	4,435,259	48,664	125,565	75,803	651	1.34	1.27
1993	5,240,900	3,784,430	4,428,944	46,426	123,965	71,886	661	1.42	1.26
1994	5,334,400	3,862,305	4,535,415	47,674	129,899	81,419	639	1.34	1.20
1995	5,429,900	3,774,980	4,570,615	49,248	135,198	84,236	654	1.33	1.20
1996	5,516,800	4,037,543	4,651,632	49,270	140,215	83,781	712	1.45	1.29
1997	5,685,300	4,184,393	4,769,750	51,073	NA	NA	674	1.32	1.19
1998	5,685,300	4,265,724	4,871,824	51,926	NA	NA	662	1.27	1.16

Source: WSP, OFM, DOL, WSDOT

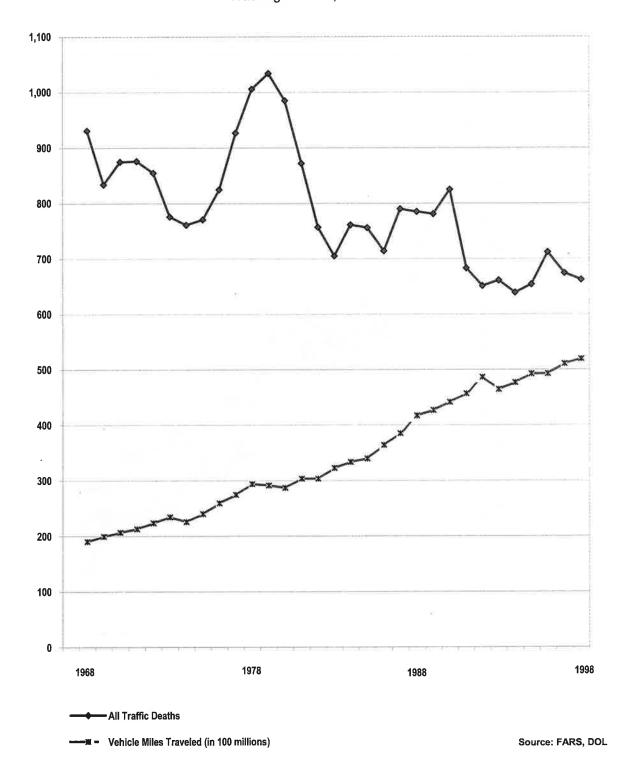
¹ In millions of vehicle miles traveled. Method used by WSDOT for estimating miles traveled changed in 1993, resulting in lower mileage.

² Minimum damage for a reportable collision was increased from \$100 to \$300 to the property of one person on 7/1/77 and to \$500 on 10/1/87.

³ Washington adopted a 90-day fatal-reporting policy in 1980 and a 30-day fatal-reporting policy in 1989.

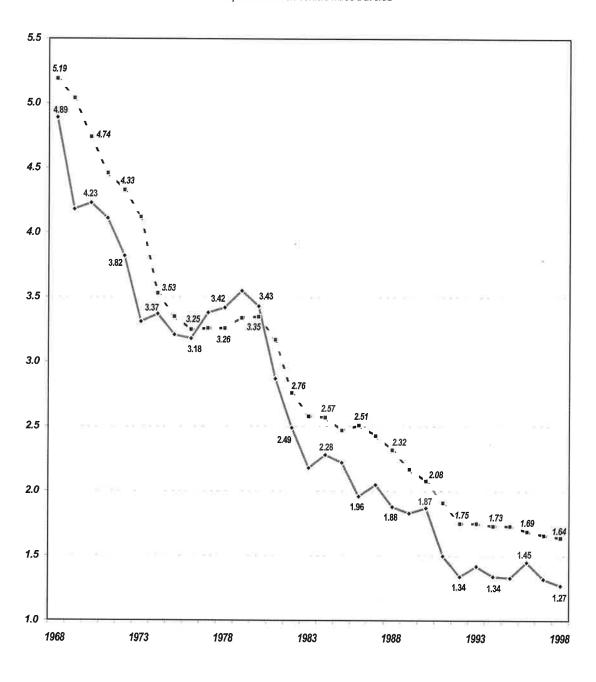
Traffic Deaths and Miles Traveled

Washington State, 1968-1998



Traffic Death Rates

U.S. & Washington State, 1968 -1998 Deaths per 100 million vehicle miles traveled



 Source: WSP, NHTSA, WSDOT, WTSC

Fatal Crashes, Deaths, Drivers, Vehicles, Population, and Travel By county - 1998

_ **	Fatal		Licensed	_		1	Death
County	Crashes	Deaths	Drivers	Vehicles	Population	Travel ¹	Rate ²
Adams	6	8	11,799	16,951	15,900	489,211	1.64
Asotin	3	3	15,141	17,392	20,000	97,683	3.07
Benton	15	19	101,479	120,763	137,500	1,213,568	1.57
Chelan	8	13	48,717	64,831	62,600	614,196	2.12
Clallam	11	13	50,346	59,141	66,700	449,798	2.89
Clark	19	19	242,151	266,454	328,000	2,514,107	0.76
Columbia	1	1	3,206	4,624	4,200	73,085	1.37
Cowlitz	6	6	68,391	86,796	93,100	1,150,671	0.52
Douglas	2	3	21,583	22,153	31,400	365,304	0.82
Ferry	3	3	5,106	4,911	7,300	118,157	2.54
Franklin	6	8	30,157	43,052	44,400	546,213	1.46
Garfield	4	4	2,038	2,665	2,400	66,096	6.05
Grant	18	24	49,057	61,145	69,400	879,545	2.73
Grays Harbor	6	6	50,662	57,465	67,900	633,281	0.95
Island	2	3	52,894	55,653	72,500	387,617	0.77
Jefferson	5	6	21,245	23,526	26,500	303,816	1.97
King	107	115	1,313,918	1,462,129	1,665,800	15,694,579	0.73
Kitsap	12	12	167,568	180,733	229,000	1,516,563	0.79
Kittitas	13	14	23,748	28,863	31,400	944,658	1.48
Klickitat	8	8	14,662	18,055	19,100	233,493	3.43
Lewis	18	20	53,320	63,997	68,600	1,014,754	1.97
Lincoln	5	6	7,252	11,683	10,000	323,601	1.85
Mason	12	13	36,273	44,067	48,300	414,144	3.14
Okanogan	11	14	30,318	34,530	38,400	466,462	3.00
Pacific	3	3	16,346	18,590	21,500	219,627	1.37
Pend Oreille	5	6	8,896	10,259	11,200	152,370	3.94
Pierce	66	76	479,591	502,991	686,800	5,511,436	1.38
San Juan	1	2	10,492	13,431	12,600	32,945	6.07
Skagit	14	16	75,612	102,593	98,700	1,131,657	1.41
Skamania	3	3	6,222	7,286	9,900	93,223	3.22
Snohomish	49	58	418,470	486,666	568,100	4,991,879	1.16
Spokane	42	45	299,056	342,396	410,900	3,157,757	1.43
Stevens	6	6	28,083	30,524	37,600	385,107	1.56
Thurston	20	21	156,622	181,624	199,700	1,936,933	1.08
Wahkiakum	1	2	2,611	3,197	3,900	46,112	4.34
Walla Walla	7	8	34,974	38,099	54,600	404,803	1.98
Whatcom	27	28	118,576	136,035	157,500	1,294,408	2.16
Whitman	4	4	26,834	28,981	41,400	413,183	0.97
Yakima	41	43	143,165	185,232	210,500	1,644,314	2.62
Other ³	NA	NA	19,143	32,768	NA	NA	NA
State Totals	590	662	4,265,724	4,872,251	5,685,300	51,926,356	1.27

¹ In thousands of vehicle-miles.

Source: FARS, DOL, WSDOT, OFM

³ Includes drivers & vehicles licensed in other states or countries.

² Per 100 million vehicle-miles traveled.

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II. Fatal Crashes

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In 1998 the number of fatal crashes (590) increased slightly over 1997's total (587) but also declined below the previous four-year average (595). The worst month for fatal crashes was July, with 62. The worst month for drinking-driver-involved fatal crashes was April, with 27. About 56% of all fatal crashes were single-vehicle crashes, while two-thirds of all drinking-driver-involved fatal crashes were single-vehicle crashes. More than half of all fatal crashes happened on either state highways or county roads, and over one-third of all drinking-driver-involved crashes occurred on county roads alone. More than two-thirds of all non-drinking-driver-involved fatal crashes happened between 6 a.m. and 6 p.m., whereas nearly three-fourths of all drinking-driver-involved fatal crashes occurred between 6 p.m. and 6 a.m. Finally, 58% of drinking-driver-involved (DDI) crashes occurred on a weekend (Friday through Saturday), while 58% of non-drinking-driver-involved crashes happened on a weekday (Monday through Thursday).

Fatal Traffic Crashes, by month

Five-year cor	mparison	•	-				'98 vs
80 a m 41a	4000	4007	4000	400=		Prev	Prev
Month_	1998	1997	1996	1995	1994	4-yr avg	4-yr avg
January	38	48	43	39	54	46	-17.4%
February	34	40	41	30	28	35	-2.2%
March	54	41	52	40	40	43	24.9%
April	52	36	52	52	38	45	16.9%
May	49	36	40	44	35	39	26.5%
June	54	44	67	46	46	51	6.4%
July	62	61	66	61	59	62	0.4%
August	46	77	68	59	57	65	-29.5%
September	56	53	57	53	53	54	3.7%
October	34	53	57	44	66	55	-38.2%
November	54	40	50	51	47	47	14.9%
December	57	58	50	57	52	54	5.1%
Total	590	587	643	576	575	595	-0.9%

Drinking-Driver-Involved (DDI) Fatal Crashes, by month

Five-year cor	mparison				_	D	'98 vs
Month	1998	1997	1996	1995	1994	Prev 4-yr avg	Prev 4-yr avg
January	13	14	17	16	23	18	-25.7%
February	13	12	16	17	9	14	-14.3%
March	22	18	27	22	17	22	-18.2%
April	27	15	31	31	19	27	-44.4%
May	25	11	19	23	21	21	-47.6%
June	20	18	48	25	24	32	-44.3%
July	21	31	30	29	20	26	17.7%
August	21	32	34	23	30	29	10.3%
September	23	24	32	27	21	27	-10.0%
October	12	24	26	19	30	25	-4.0%
November	26	16	19	19	19	19	-15.8%
December	23	16	8	17	24	16	-2.0%
Total	246	231	307	268	257	266	-7.4%

1998 Fatal Crashes

By day of week and time of day

			% of all	
	Mon - Thurs	Fri - Sun	All Week	crashes
12 midnight - 3 am	30	50	80	13.6%
3 am - 6 am	18	21	39	6.6%
6 am - 9 am	35	18	53	9.0%
9 am - 12 noon	34	29	63	10.7%
12 noon - 3 pm	58	31	89	15.1%
3 pm - 6 pm	46	51	97	16.4%
6 pm - 9 pm	44	41	85	14.4%
9 pm - 12 midnight	36	47	83	14.1%
Unknown	1	0	1	0.2%
Totals	302	288	590	100.0%
% of all crashes	51.2%	48.8%	100.0%	

1998 Drinking-driver-involved (DDI) Fatal Crashes

By day of week and time or	•	,,, , a.a., 0		% of drink- driver
	Mon - Thurs	Fri - Sun	All Week	Crashes
12 midnight - 3 am	23	37	60	24.4%
3 am - 6 am	9	14	23	9.3%
6 am - 9 am	3	4	7	2.8%
9 am - 12 noon	9	6	15	6.1%
12 noon - 3 pm	9	4	13	5.3%
3 pm - 6 pm	12	20	32	13.0%
6 pm - 9 pm	16	22	38	15.4%
9 pm - 12 midnight	21	36	57	23.2%
Unknown	1	0	1	0.4%
Totals	103	143	246	100.0%
% of Drink-driver Crashes	41 9%	58.1%	100.0%	

1998 Non-Drinking-driver-involved Fatal Crashes

By day of week and time	of day			% of
	· ·			"sober"
	Mon - Thurs	Fri - Sun	Full Week	crashes
12 midnight - 3 am	7	13	20	5.8%
3 am - 6 am	9	7	16	4.7%
6 am - 9 am	32	14	46	13.4%
9 am - 12 noon	25	23	48	14.0%
12 noon - 3 pm	49	27	76	22.1%
3 pm - 6 pm	34	31	65	18.9%
6 pm - 9 pm	28	19	47	13.7%
9 pm - 12 midnight	15	11	26	7.6%
Totals	199	145	344	100.0%
% of "Sober" Crashes	57.8%	42.2%	100.0%	

Fatal Crashes, by First Harmful Event Five-year comparison

	1998	1997	1996	1995	1994	Prev 4- yr avg	98 vs prev 4- yr avg
Collision with:							
Other vehicle	243	232	263	218	226	235	3.5%
Nonmotorist (pedestrian or cyclist)	85	81	97	82	97	89	-4.8%
Tree	34	41	27	35	35	35	-1.4%
Guardrail, curb, barrier, or cushion	52	42	31	36	28	34	51.8%
Embankment (dirt, rock, snow)	16	19	25	34	22	25	-36.0%
Pole or post (e.g., signpost, light pole)	27	20	27	34	27	27	0.0%
Bridge rail, pier, abutment	5	5	7	2	3	4	17.6%
Railroad train	3	3	3	1	3	3	20.0%
Culvert or ditch	11	9	17	11	7	11	0.0%
Fence or wall	11	13	10	12	7	11	4.8%
Other fixed object	19	16	18	15	20	17	10.1%
Animal	6	0	1	1	1	1	700.0%
Other nonfixed object	5	4	3	6	5	5	11.1%
Vehicle overturned	67	89	101	82	84	89	-24.7%
Other noncollision	6	13	13	7	10	11	-44.2%
Total	590	587	643	576	575	593	-0.5%

Drinking-driver-involved Fatal Crashes, *by First Harmful Event* Five-year comparison

	1998	1997	1996	1995	1994	Prev 4- yr avg	98 vs prev 4- yr avg
Collision with:			41130			4.11	
Other vehicle	80	77	108	75	88	87	-8.0%
Nonmotorist (pedestrian or cyclist)	13	13	13	12	18	14	-7.1%
Tree	17	19	23	24	18	21	-19.0%
Guardrail, curb, barrier, or cushion	32	23	20	22	19	21	52.4%
Embankment (dirt, rock, snow)	8	12	19	26	13	18	-54.3%
Pole or post (e.g., signpost, light pole)	17	13	19	19	18	17	-1.4%
Bridge rail, pier, abutment	3	2	2	2	1	2	71.4%
Railroad train	1	0	2	0	1	1	33.3%
Culvert or ditch	7	7	10	8	6	8	-9.7%
Fence or wall	10	7	8	7	3	6	60.0%
Other fixed object	12	11	8	9	11	10	23.1%
Animal	1	0	0	1	0	0	300.0%
Other nonfixed object	4	2	2	5	3	3	33.3%
Vehicle overturned	39	39	70	58	56	56	-30.0%
Other noncollision	2	6	3	0	2	3	-27.3%
Total	246	231	307	268	257	266	-7.4%

Fatal Crashes, by Location in Trafficway

Five-year comparison

						Prev 4-уг	1998 vs Prev	% of '98 fatal
Location	1998	1997	1996	1995	1994	Avg	4-yr Avg	Crashes
On Roadway ¹	336	318	380	320	336	339	-0.7%	53.9%
Roadside ²	156	167	134	138	129	142	9.9%	28.3%
Off Roadway ³	45	49	80	83	66	70	-35.3%	8.3%
Shoulder⁴	18	27	21	17	20	21	-15.3%	4.6%
Median⁵	19	14	12	10	13	12	55.1%	2.4%
Outside right-of-way ⁶	8	8	6	5	7	7	23.1%	1.4%
Parking Lane ⁷	3	3	3	2	3	3	9.1%	0.5%
Gore ⁸	5	1	5	1	1	2	150.0%	0.2%
Unknown	0	0	2	0	0	1	-100.0%	0.0%
Total	590	587	643	576	575	595	-0.9%	100%
% On Roadway	56.9%	54.2%	59.1%	55.6%	58.4%	56.9%	0.1%	

Drinking-driver-involved Fatal Crashes, by Location in Trafficway

Five-year comparison

						Prev 4-yr	1998 vs Prev	% of '98 DDI fatal
Location	1998	1997	1996	1995	1994	Avg	4-yr Avg	Crashes
On Roadway ¹	95	92	132	100	111	109	-12.6%	38.6%
Roadside ²	96	96	91	92	85	91	5.5%	39.0%
Off Roadway³	28	22	59	59	41	45	-38.1%	11.4%
Shoulder⁴	9	9	9	5	9	8	12.5%	3.7%
Median⁵	4	5	8	6	4	6	-30.4%	1.6%
Outside right-of-way ⁶	7	5	3	3	5	4	75.0%	2.8%
Parking Lane ⁷	2	1	2	2	2	2	14.3%	0.8%
Gore ⁸	5	1	3	1	0	11	300.0%	2.0%
Total	246	231	307	268	257	277	-11.3%	100.0%
% On Roadway	38.6%	39.8%	43.0%	37.3%	43.2%	39.2%	-1.5%	

¹ The part of the trafficway that is designated for motor vehicle travel.

Sources: FARS, ANSI D16.1(1996)

²The outermost part of a trafficway between the property line and the roadway.

³Location outside the roadway but otherwise unknown.

⁴Part of trafficway just adjacent to the outermost traffic lane.

⁵Area between parallel roads separating travel in opposite directions.

⁶Out of publicly-owned land corridor on which trafficway is situated.

⁷Designated strip, either on or alongside roadway, in which parking is permitted.

⁸An area of land between two converging or diverging roadways.

1998 Fatal Crashes, *by Road Type and Number of Vehicles* Washington State

Danii Olana	Single Vehicle		Multiple	Vehicles	Road Type	% of All	
Road Class	Crashes	% of all Crashes	Crashes	% of all Crashes	Totals	Crashes	
State Highway	76	12.9%	75	12.7%	151	25.6%	
US Highway	27	4.6%	44	7.5%	71	12.0%	
Interstate	48	8.1%	30	5.1%	78	13.2%	
City Street	69	11.7%	51	8.6%	120	20.3%	
County Road	106	18.0%	57	9.7%	163	27.6%	
Other	5	0.8%	2	0.3%	7	1.2%	
Total Crashes	331	56.1%	259	43.9%	590	100.0%	

1998 Drinking-driver-involved Fatal Crashes, *by Road Type and Number of Vehicles* Washington State

	Single Vehicle		Multiple	Vehicles	Road Type	% of drink-
Road Class	Crashes	% of drink- driver Crashes	Crashes	% of drink- driver Crashes	Totals	driver Crashes
State Highway	36	14.6%	20	8.1%	56	22.8%
US Highway	12	4.9%	17	6.9%	29	11.8%
Interstate	14	5.7%	7	2.8%	21	8.5%
City Street	27	11.0%	23	9.3%	50	20.3%
County Road	70	28.5%	16	6.5%	86	35.0%
Other	4	1.6%	0	0.0%	4	1.6%
Total Crashes	163	66.3%	83	33.7%	246	100.0%

Fatal Crashes, by Weather Condition

Five-year comparison

	1998	1997	1996	1995	1994	Prev 4- yr avg	'98 vs prev 4-yr avg
No adverse conditions	482	467	528	488	484	492	NA
Raining	78	91	79	72	67	77	1.0%
Sleeting/Hailing	3	5	4	1	0	3	20.0%
Snowing	13	5	18	5	6	9	52.9%
Foggy	10	14	11	8	15	12	-16.7%
Foggy & Raining	0	0	1	1	0	1	-100.0%
Other (dusty, smoky, etc.)	0	1	0	0	0	0	-100.0%
Conditions unknown	4	4	2	1	3	3	60.0%
Total	590	587	643	576	575	595	-0.9%

Fatal Crashes, by Light Condition

Five-year comparison

	1998	1997	1996	1995	1994	Prev 4- yr avg	'98 vs prev 4-yr avg
Daylight	300	273	314	272	275	284	NA
Dark	173	191	211	182	182	192	-9.7%
Dark but lighted	100	99	89	97	93	95	5.8%
Dawn	7	10	13	11	11	11	-37.8%
Dusk	10	12	16	13	13	14	-25.9%
Light condition unknown	0	2	0	1	1	1	-100.0%
Total	590	587	643	576	575	595	-0.9%

Fatal Crashes, by Road Surface Condition

Five-year comparison

	1998	1997	1996	1995	1994	Prev 4- yr avg	'98 vs prev 4-yr avg
Dry	410	408	446	407	428	422	NA
Wet	145	138	134	143	117	133	9.0%
Snow or Slush	11	9	25	6	8	12	-8.3%
lcy	18	28	36	20	21	26	-31.4%
Sandy, Oily, or Dirty	4	2	0	0	0	1	700.0%
Other condition	1	0	0	0	0	0	NA
Road condition unknown	1	2	2	0	1	11	-20.0%
Total	590	587	643	576	575	595	-0.9%

Drinking-driver-involved Fatal Crashes, by Weather Condition

Five-year comparison

	4000	1997	1996	1995	1994	Prev 4-	'98 vs prev
	1998	1997	1990	1990	1334	yr avg	4-yr avg
No adverse conditions	203	186	269	236	216	227	NA
Raining	32	35	23	25	31	29	12.3%
Sleeting or Hailing	1	1	1	0	0	n 1	100.0%
Snowing	2	1	8	1	2	3	-33.3%
. Foggy	4	5	5	5	6	5	-23.8%
Foggy & Raining	0	0	0	1	0	0	-100.0%
Other (dusty, smoky, etc.)	0	1	0	0	0	0	-100.0%
Conditions unknown	4	2	1	0	2	1	220.0%
Total	246	231	307	268	257	266	-7.4%

Drinking-driver-involved Fatal Crashes, by Light Condition

Five-year comparison

						Prev 4-	'98 vs prev
	1998	1997	1996	1995	1994	yr avg	4-yr avg
Daylight	71	57	104	78	75	79	NA
Dark	107	114	135	125	121	124	-13.5%
Dark but lighted	58	49	49	49	53	50	16.0%
Dawn	3	4	7	6	1	5	-33.3%
Dusk	7	6	12	9	6	8	-15.2%
Light condition unknown	0	1	0	1	1	1	-100.0%
Total	246	231	307	268	257	266	-7.4%

Drinking-driver-involved Fatal Crashes, by Road Surface Condition

Five-year comparison

						Prev 4-	'98 vs prev
	1998	1997	1996	1995	1994	yr avg	4-yr avg
Dry	171	170	242	205	196	203	NA
Wet	67	54	47	58	54	53	25.8%
Snow or Slush	1	2	9	1	1	3	-69.2%
lcy	4	4	8	4	6	6	-27.3%
Sandy, Oily, or Dirty	1	1	0	0	0	0	300.0%
Other condition	1	0	0	0	0	0	NA
Road condition unknown	1	0	1	0	0	0	300.0%
Total	246	231	307	268	257	266	-7.4%

Fatal Crashes, by Relation to Intersection

Five-year comparison

		1998	1997	1996	1995	1994	Prev 4-yr Avg	'98 vs prev 4- yr avg
	In intersection	79	65	87	82	90	81	NA
NOT in Interchange	Not in intersection	424	447	491	442	427	452	-6.1%
In Int	Intersection-related*	42	39	36	30	35	35	20.0%
erchi	Driveway or alley	3	3	4	6	4	4	-29.4%
ange	Entrance/Exit related	2	4	2	3	3	3	-33.3%
Ope E	Rail Crossing	3	3	4	1	3	3	9.1%
Interchange Area**	In intersection	3	1	0	1	4	2	100.0%
erch	Intersection-related*	1	1	0	0	0	0	300.0%
ange	Driveway or alley	0	1	0	0	0	0	-100.0%
Ne	Entrance/Exit related	14	13	5	4	7	7	93.1%
	Other interchange	19	9	14	7	2	8	137.5%
Ur	known intersection relation	0	1	0	0	0	0	-100.0%
	Total	590	587	643	576	575	595	-0.9%

Drinking-driver-involved Fatal Crashes, by Relation to Intersection

Five-year comparison

		1998	1997	1996	1995	1994	Prev 4-yr Avg	'98 vs prev 4- yr avg
¥	At intersection	18	13	31	23	29	24	NA
NOT in Interchange	Not at intersection	198	192	251	221	208	218	-9.2%
5 5	Intersection-related*	12	12	9	11	11	11	11.6%
terch	Driveway or alley	1	0	2	4	0	2	-33.3%
ange	Entrance/Exit related	2	3	1	1	2	2	14.3%
	Rail Crossing	1	0	2	0	1	1	33.3%
Inter	At intersection	2	0	0	1	1	1	300.0%
chan	Intersection-related*	1	1	0	0	0	0	300.0%
Ge >	Entrance/Exit related	8	7	4	2	3	4	100.0%
Interchange Area*	Other interchange	3	3	7	5	2	4	-29.4%
	Total	246	231	307	268	257	266	-7.4%

^{*}First harmful event occurs during approach to or exit from intersection and results from activity related to the movement of traffic through an intersection.

^{*}Area including all ramps, ancillary roadways, and intersecting roadways that is bounded by a line 100 feet from the gore in the outermost ramp connection.

Fatal Crashes, by Posted Speed Limit

Five-year comparis	on	·				Prev 4-yr	'98 vs prev 4-
S	1998	1997	1996	1995	1994	Avg	yr avg
15 MPH	1	0	1	0	1	1	NA
20 MPH	1	2	2	2	3	2	-55.6%
25 MPH	36	38	43	35	41	39	-8.3%
30 MPH	36	33	42	42	47	41	-12.2%
35 MPH	126	109	116	118	113	114	10.5%
40 MPH	21	28	40	30	36	34	-37.3%
45 MPH	36	34	37	31	32	34	7.5%
50 MPH	93	103	120	107	99	107	-13.3%
55 MPH	91	93	152	174	160	145	-37.1%
60 MPH	95	102	36	1	0	35	173.4%
65 MPH	11	6	7	31	35	20	-44.3%
70 MPH	39	32	39	0	0	18	119.7%
no posted limit	0	2	0	0	0	1	-100.0%
speed limit unknown	4	5	8	5	8	7	-38.5%
Total	590	587	643	576	575	595	-0.9%

Drinking-driver-involved Fatal Crashes, by Posted Speed Limit

Five-year comparison	on					Prev	'98 vs
	1998	1997	1996	1995	1994	4-yr Avg	prev 4- yr avg
15 MPH	1	0	0	0	0	0	NA
20 MPH	0	1	1	0	1	1	-100.0%
25 MPH	17	14	25	18	18	19	-9.3%
30 MPH	16	9	21	16	17	16	1.6%
35 MPH	50	50	52	55	54	53	-5.2%
40 MPH	5	10	20	12	15	14	-64.9%
45 MPH	16	13	21	11	16	15	4.9%
50 MPH	47	41	70	58	53	56	-15.3%
55 MPH	39	36	64	76	66	61	-35.5%
60 MPH	38	43	13	0	0	14	171.4%
65 MPH	5	1	3	17	13	9	-41.2%
70 MPH	10	10	11	0.	0	5	90.5%
no posted limit	0	1	0	0	0	0	-100.0%
speed limit unknown	2	2	6	5	4	4	-52.9%
Total	246	231	307	268	257	266	-7.4%

Hit-and-Run Involvement in Fatal Crashes

Five-year comparison						Prev 4-yr	'98 vs prev 4-
	1998	1997	1996	1995	1994	Avg	yr avg
Hit motor vehicle in transport*	8	11	1	3	4	5	68.4%
Hit parked motor vehicle*	0	2	0	0	0	1	-100.0%
Hit nonmotorist or occupant*	11	15	15	19	11	15	-26.7%
No hit-and-run	571	559	627	554	560	575	-0.7%
Total	590	587	643	<i>5</i> 76	575	595	-0.9%

Hit-and-Run Involvement in Drinking-driver-involved Fatal Crashes

Five-year comparison						Prev 4-yr	'98 vs prev 4-
V <u></u>	1998	1997	1996	1995	1994	Avg	yr avg
Hit motor vehicle in transport*	3	6	1	3	3	3	-7.7%
Hit parked motor vehicle*	0	0	0	0	0	0	NA
Hit nonmotorist or occupant*	4	5	5	5	3	5	-11.1%
No hit-and-run	239	220	301	260	251	258	-7.4%
Total	246	231	307	268	257	266	-7.4%

*and then fled scene Source: FARS

Fatal Traffic Crashes, by County

Five-year comparison

Five-year comparison							
	1998	1997	1996	1995	1994	Prev 4-yr Avg	Prev 4-yr Avg
Adams	6	6	7	6	7	7	-7.7%
Asotin	3	3	2	2	1	2	50.0%
Benton	15	10	14	15	12	13	17.6%
Chelan	8	9	8	13	6	9	-11.1%
Clallam	11	11	9	7	4	8	41.9%
Clark	19	24	33	22	27	27	-28.3%
Columbia	1	2	1	0	0	1	33.3%
Cowlitz	6	14	18	11	11	14	-55.6%
Douglas	2	9	6	7	5	7	-70.4%
Ferry	3	5	5	4	2	4	-25.0%
Franklin	6	10	11	6	14	10	-41.5%
Garfield	4	3	0	0	1	1	300.0%
Grant	18	25	29	11	12	19	-6.5%
Grays Harbor	6	9	15	12	6	11	-42.9%
Ísland	2	7	7	4	6	6	-66.7%
Jefferson	5	8	7	4	5	6	-16.7%
King	107	114	120	111	108	113	-5.5%
Kitsap	12	19	14	17	22	18	-33.3%
Kittitas	13	8	17	11	11	12	10.6%
Klickitat	8	4	6	6	3	5	68.4%
Lewis	18	13	10	13	17	13	35.8%
Lincoln	5	4	4	3	2	3	53.8%
Mason	12	7	15	8	10	10	20.0%
Okanogan	11	14	10	17	9	13	-12.0%
Pacific	3	4	3	6	4	4	-29.4%
Pend Oreille	5	4	2	3	5	4	42.9%
Pierce	66	62	68	60	53	61	8.6%
San Juan	1	2	1	0	2	1	-20.0%
Skagit	14	16	10	15	15	14	0.0%
Skamania	3	1	1	1	0	1	300.0%
Snohomish	49	49	48	42	43	46	7.7%
Spokane	42	23	36	29	39	32	32.3%
Stevens :	6	4	8	13	7	8	-25.0%
Thurston	20	23	21	17	27	22	-9.1%
Wahkiakum	1	1	0	1	2	1 1	0.0%
Walla Walla	7	6	10	9	9	9	-17.6%
Whatcom	27	12	14	16	20	16	74.2%
Whitman	4	8	8	6	11	8	-51.5%
Yakima	41	34	45	48	37	41	0.0%
Total	590	587	643	576	575	595	-0.9%

Drinking-driver-involved Fatal Traffic Crashes, by County

III. Persons in Fatal Crashes

1998 Fatal Traffic Collisions in Washington

Of the 662 persons killed in 1998 traffic crashes, 524 (79.3%) were motor vehicle occupants, virtually the same proportion as during the previous four years. Motorcyclists were over-represented in 1998, however, accounting for nearly 8% of fatalities when they had represented just over 5% of persons killed during the previous four years. Pedestrians and cyclists were both slightly under-represented by comparison with previous years.

Drinking-driver-involved fatalities increased by 7.5% over 1997 (286 in 1998 vs. 266 in 1997), and their percentage of all traffic deaths jumped from 39.5% in 1997 to 43.2% in 1998.

More persons were killed in July than in any other month (71), and more drinking-driver-involved deaths occurred in November than in any other month (32). More persons between 20 and 29 were killed, both overall (148) and in drinking-driver crashes (89), than in any other age group.

Status of Persons Killed in Fatal Crashes

Five-year comparison '98 vs Prev 4-yr prev 4-Avg yr avg **Vehicle Occupant** -2.0% -5.2% Pedestrian 42.7% Motorcyclist -31.0% Cyclist Other / Unknown Total 0.6%

Status of Persons Killed in Drinking-driver-involved Fatal Crashes

Five-year comparis	on					Prev 4-yr	'98 vs prev 4-
	1998	1997	1996	1995	1994	Avg	yr avg
Vehicle Occupant	255	220	312	275	258	266	-4.2%
Pedestrian	12	15	14	12	15	14	-14.3%
Motorcyclist	18	29	25	16	18	22	-18.2%
Cyclist	1	1	2	2	5	3	-60.0%
Other / Unknown	0	1	0	0	0	0	
Total	286	266	353	305	296	305	-12.8%

Persons Killed in 1998 Fatal Crashes

By Month and Traffic User Type

	Vehicle Occupant	Motorcyclist	Cyclist	Pedestrian	Other / Unknown	Total
Jan	37	0	1	7	0	45
Feb	29	4	0	5	0	38
Mar	44	4	0	12	0	60
Apr	48	4	1	4	0	57
May	41	6	2	1	0	50
Jun	48	5	1	4	0	58
Jul	56	7	2	6	0	71
Aug	41	10	1	3	0	55
Sep	50	7	1	3	0	61
Oct	28	1	0	9	0	38
Nov	50	3	0	10	о	63
Dec	52	0	1	13	0	66
Total	524	51	10	77	0	662

Persons Killed in 1998 Drinking-driver-involved Fatal Crashes

By Month and Traffic User Type

	Vehicle Occupant	Motorcyclist	Cyclist	Pedestrian	Other / Unknown	Total
Jan	14	0	0	2	0	16
Feb	12	1	0	2	0	15
Mar	22	1	0	2	0	25
Apr_	27	3	0	11	0	31
May	23	2	0	0	0	25
Jun	19	2	0	0	0	21
Jul	26	2	0	0	0	28
Aug	19	3	0	1 -	0	23
Sep	22	4	0	0	0	26
Oct	15	0	0	0	0	15
Nov	30	0	0	2	0	32
Dec	26	0	1	2	0	29
Total	255	18	1	12	0	286

All Persons in Fatal Crashes, by Injury Severity

Five-year comparison

,						Prev 4-	'98 vs prev 4-
Injury Severity	1998	1997	1996	1995	1994	yr Avg	yr avg
Fatal Injury	662	674	712	653	640	680	1.0%
Serious Injury	180	210	231	244	217	228	-21.2%
Evident Injury	285	268	310	233	240	270	5.4%
Possible Injury	169	163	146	121	112	143	17.9%
No Injury	302	278	324	278	344	293	3.0%
Injury of Unknown Severity	1	1	0	0	0	0	200.0%
Died Prior to Crash	0	1	0	0	0	0	-100.0%
Unknown	4	9	17	13	8	13	-69.2%
Total Persons	1,603	1,604	1,740	1,542	1,561	1,629	-1.6%

All Persons in Drinking-driver-involved Fatal Crashes, by Injury Severity

Five-year comparison

Injury Severity	1998	1997	1996	1995	1994	Prev 4- yr Avg	'98 vs prev 4- yr avg
Fatal Injury	286	266	353	305	296	305	1.0%
Serious Injury	90	78	124	96	103	100	-10.2%
Evident Injury	112	97	127	115	117	114	-1.8%
Possible Injury	44	51	64	31	45	48	-7.9%
No Injury	57	74	71	67	101	78	-27.2%
Injury of Unknown Severity	0	1	0	0	0	0	-100.0%
Died Prior to Crash	0	0	0	0	0	0	NA
Unknown	0	0	4	3	2	2	-100.0%
Total Persons	589	567	743	617	664	648	0.0%

Washington Traffic Deaths by County

Washington Drinking-driver-involved Traffic Deaths by County

e-year compari		4007	4000	4005	4004	Prev	'98 vs prev 4-
	1998	1997	1996	1995	1994	4-yr Avg	yr avg
Adams	5	0	4	4	2	3	100.0%
Asotin	1	1	1	0	1	1 1	33.3%
Benton	8	6	8	7	7	7	14.3%
Chelan	6	2	4	5	12	6	4.3%
Clallam	6	5	4	3	3	4	60.0%
Clark	6	10	17	8	13	12	-50.0%
Columbia	0	0	0	0	0	0	NA
Cowlitz	3	5	10	3	6	6	-50.0%
Douglas	0	5	5	2	3	4	-100.0%
Fеггу	1	3	3	2	2	3	-60.0%
Franklin	5	4	6	5	5	5	0.0%
Garfield	2	2	0	0	2	1	100.0%
Grant	9	14	15	7	10	12	-21.7%
Grays Harbor	2	5	6	7	1	5	-57.9%
Island	2	3	3	2	2	3	-20.0%
Jefferson	2	3	5	2	4	4	-42.9%
King	39	40	67	43	44	49	-19.6%
Kitsap	8	10	6	12	10	10	-15.8%
Kittitas	1	3	8	8	∞ 7	7	-84.6%
Klickitat	6	4	4	2	1	3	118.2%
Lewis	7	6	1	4	5	4	75.0%
Lincoln	4	1	2	3	0	2	166.7%
Mason	11	3	11	4	7	6	76.0%
Okanogan	11	8	8	16	3	9	25.7%
Pacific	2	0	2	3	2	2	14.3%
Pend Oreille	3	1	1	2	2	2	100.0%
Pierce	25	25	35	34	22	29	-13.8%
San Juan	2	2	0	0	2	1	100.0%
Skagit	10	10	5	7	9	8	29.0%
Skamania	1	1	1	0	0	1	100.09
Snohomish	29	27	19	22	26	24	23.49
Spokane	17	13	20	13	17	16	7.9%
Stevens	5	2	6	19	3	8	-33.3%
Thurston	9	10	14	10	12	12	-21.79
Wahkiakum	0	10	0	0	1	1	-100.0%
Walla Walla	4	1	3	4	8	4	0.09
Whatcom	11	4	9	8	14	9	25.79
			3	5	1	4	-100.09
Whitman	0	5		29	27	29	
Yakima Total	23 286	21 266	37 353	305	296	305	-19.3%

1998 Traffic Deaths in Washington State

By County and Age Group

		45.55	1		ROUP				-
COUNTY	<15	15-20	21-30	31-40	41-50	51-60	61-70	71+	Total
Adams	1		3	2			1	1	8
Asotin						1	1	1	3
Benton	2	4	1	3	5	1	2	1	19
Chelan		6	2			1		4	13
Clallam	1	2	4	2	2	1		1	13
Clark		4	3	2	3	4		3	19
Columbia			1						1
Cowlitz		1	2		1	2			6
Douglas				1				2	3
Ferry			1	1 1	1				3
Franklin		1	3	2	1		1		8
Garfield		1	1		1		1		4
Grant	2	3	5	5	3	1	1	4	24
Grays Harbor	1		2	2				1	6
Island						1		2	3
Jefferson		1	3	1	1				6
King	4	13	22	23	23	12	8	10	115
Kitsap		1	2	1	4	2		2	12
Kittitas		1	1		4	3	1	4	14
Klickitat			3		1	3		1	8
Lewis		7	2	2	3	3	1	2	20
Lincoln			1		1	4			6
Mason		3	4	2	3			1	13
Okanogan	1	4	5	2	2				14
Pacific					2	1			3
Pend Oreille			4		1		1		6
Pierce		15	16	14	8	7	4	12	76
San Juan						1	1		2
Skagit		3	4	5		1		3	16
Skamania		2	1						3
Snohomish	4	9	12	7	12	5	5	4	58
Spokane	3	9	8	8	6	3	3	5	45
Stevens			1	4	1		_		6
Thurston	1	1	7	6	4	1		1	21
Wahkiakum			'	_	·	1	1	'	2
Walla Walla			2		2	1 1	2	1	8
Whatcom	2	7	4	3	6		5	1	28
Whitman			2		· ·	2	3	*	4
Yakima	3	5	16	1	5	6	3	4	43
otal	25	103	148	99	106	68	42	71	662
			. 10				74	, 1	J02

Source: FARS

1998 Traffic Deaths in Washington State

By County and Age Group

ocuum:	-AE	15-20	24.20		ROUP	E4 C0	64.70	74.	1
COUNTY	<15	15-20	21-30	31-40	41-50	51-60	61-70	71+	Total
Adams Asotin	1		3	2			1	1	8 3
Benton	2	4	4	3	E	1	1 2	1	19
Chelan		6	1 2	3	5	1 1		1 4	13
Ciallam	1	2	4	2	2				13
Clark	l '	4	3	2	3	1 4		1 3	19
Columbia		4	1		3	4		3	1
Cowlitz		1	2		1	2			6
Douglas		l '		1				2	3
Ferry			4	1	1				3
Franklin		1	1 3	2	1		1		8
Garfield		1	1		1		1		4
	2	3	1 5	5	3	4	1		24
Grant Horber	2 1	3	2	2	3	1	'	4	
Grays Harbor Island	1					4		1	6 3
Jefferson			,		_	1		2	6
		1 13	3	1	1	40	_	40	
King	4	1	22	23	23 4	12 2	8	10	115 12
Kitsap Kittitas		1	2	1		3	1	2 4	14
		I	1		4	3	1		
Klickitat Lewis		7	3 2	2	1 3	3	1	1 2	8 20
Lincoln		- '	1		3 1	4	'	2	6
Mason		3	4	2	3	4		1	13
	4	4	5	2 2	2			l I	
Okanogan Pacific	1	4	5		2	4			14
Pend Oreille			4		1	1	4		6
Pierce		15	16	14	8	7	1 4	12	76
San Juan		15	10	14	0	7	1	12	2
		2		_		1	'	,	16
Skagit Skamania		3 2	4	5		'		3	3
		9	12	7	10	_	-		58
Snohomish	4 3	9		7	12	5 3	5 3	4	45
Spokane Stevens	3	9	8	8	6	3	3	5	
	4		1 7	4	1				6
Thurston	1	1	7	6	4	1		1	21
Wahkiakum			2		2	1	1	4	2
Walla Walla	0	7	2	2	2	1	2	1	8
Whatcom	2	7	4	3	6	_	5	1	28
Whitman	_	_	2	_	_	2	_	4	4
Yakima	3	5	16	1 20	5	6	3	74	43
Гotal	25	103	148	99	106	68	42	71	662
% of Traffic Deaths	3.8%	15.6%	22.4%	15.0%	16.0%	10.3%	6.3%	10.7%	100.0%

Children* **Killed in Washington State Traffic Crashes**By traffic user type, 1984 - 1998

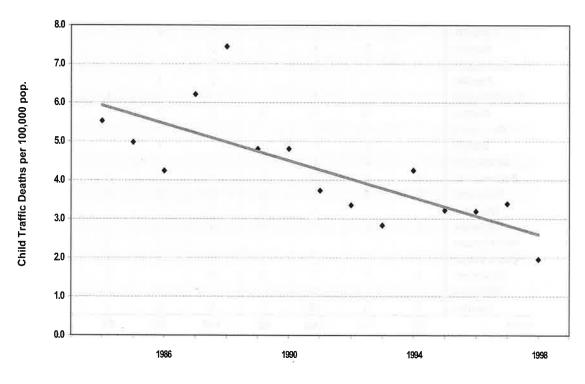
	MV			Total Child	State	Child Deaths per
Year	Occupants	Pedestrians	Cyclists	Deaths	Population*	100,000 pop.
1984	28	22	3	53	958,869	5.5
1985	26	17	5	48	964,752	5.0
1986	25	9	7	41	966,985	4.2
1987	38	16	7	61	981,599	6.2
1988	41	27	7	75	1,007,229	7.4
1989	29	16	5	50	1,041,122	4.8
1990	35	10	7	52 *	1,081,797	4.8
1991	26	15	1	42	1,125,705	3.7
1992	27	8	4	39	1,162,539	3.4
1993	21	10	3	34	1,199,618	2.8
1994	30	14	8	52	1,223,083	4.3
1995	28	7	5	40	1,240,608	3.2
1996	26	6	8	40	1,252,198	3.2
1997	25	12	6	43	1,268,839	3.4
1998	18	3	4	25	1,277,246	2.0

*Ages 0-14

Source: WSP, FARS, OFM

Child* Traffic Death Trend

Washington State, 1984-1998



*Ages 0 - 14

Source: FARS, OFM

All Traffic Deaths, 1993-98

Washington State, Six-year totals, by county and age

				AGE G	ROUP				
COUNTY	<15	15-20	21-30	31-40	41-50	51-60	61-70	71+	Total
Adams	2	7	13	9	4	7	3	3	48
Asotin		5	2	1	1	3	1	1	14
Benton	8	19	19	12	15	6	4	3	86
Chelan	4	10	12	12	9	10	3	16	76
Clallam	3	5	15	13	9	2	3	3	53
Clark	15	27	27	27	36	10	7	24	173
Columbia		1	1			1	1		4
Cowlitz	6	6	15	16	9	9	7	6	74
Douglas	2	9	8	8	5	5	4	7	48
Ferry		1	12	5	5	2		2	27
Franklin	5	12	16	9	7	2	8	9	68
Garfield		3	2		1	2	1		9
Grant	8	20	34	21	17	11	9	9	129
Grays Harbor	4	7	18	13	8	4	7	6	67
Island	2	6	8	5	4	1	3	6	35
Jefferson	2	7	8	6	7	4	2	3	39
King	43	96	162	125	92	71	42	84	715
Kitsap	12	21	18	14	13	11	5	18	112
Kittitas	5	12	13	11	13	9	5	10	78
Klickitat	2	4	9	3	6	6	2	1	33
Lewis	2	21	16	13	10	11	7	18	98
Lincoln		3	4	3	1	6	2	2	21
Mason	4	12	13	10	10	5	2	7	63
Okanogan	2	18	19	23	9	5	2	3	81
Pacific	1	3	4	5	8	2	2	2	27
Pend Oreille	1	2	5	3	3	2	1	5	22
Pierce	13	66	101	61	49	22	29	57	398
San Juan		1	1		1	4	1		8
Skagit	5	29	17	20	11	7	10	7	106
Skamania		4	1		3	1	1	1	11
Snohomish	25	44	84	43	48	13	15	32	304
Spokane	16	37	38	49	30	16	14	30	230
Stevens	1	18	7	16	5	7		3	57
Thurston	7	19	37	31	19	14	10	10	147
Wahkiakum	1	1	1		2	1	1	1	8
Walla Walla	3	10	16	9	10	3	5	. 7	63
Whatcom	11	23	33	15	17	3	12	13	127
Whitman	3	9	13	7	2	4	5	3	46
Yakima	17	57	81	50	32	16	16	28	297
Total	235	655	903	668	531	318	252	440	4,002
% All Traffic Deaths	5.9%	16.4%	22.6%	16.7%	13.3%	7.9%	6.3%	11.0%	100.0%

All Drinking-driver-involved Traffic Deaths, 1993-98

Washington State, Six-year totals, by county and age

COUNTY	<15	15-20	21-30	AGE G 31-40	41-50	51-60	61-70	71+	Total
Adams	2	2	7	4	1	1	1		18
Asotin		1	1			2			4
Benton	3	8	14	10	10	1		1	47
Chelan	4	7	7	7	5	2	1	1	34
Clallam		3	8	5	5	1	1		23
Clark	6	8	16	18	17	3	1	2	71
Cowlitz	2	1	10	8	1	2	1	3	28
Douglas	1	3	5	3	3	1	1	2	19
Ferry			9	4	4	1			18
Franklin	1	6	13	5	4	1	4	1	35
Garfield		2	1			2	1		6
Grant	3	8	21	11	9	5	4	2	63
Grays Harbor		1	13	7	3	1	1		26
Island		2	4	4	1		2	2	15
Jefferson	1	3	4	1	3	2	1	2	17
King	14	41	93	71	37	18	4	10	288
Kitsap	2	13	13	11	11	5	2	1	58
Kittitas	1	8	5	6	3	2	4		29
Klickitat		1	7	2	4	5			19
Lewis		5	10	7	3	2		4	31
Lincoln		2	1	2	1	4			10
Mason		6	12	9	5	4	2	1	39
Okanogan		13	14	18	5	2	1		53
Pacific			2	3	5		2	1	13
Pend Oreille	1		4	2	1	1		1	10
Pierce	3	29	68	32	21	8	4	8	173
San Juan		1	1		1	3	1		7
Skagit	- 3	8	8	15	7	3	3	1	48
Skamania			1		3	1			5
Snohomish	3	24	52	25	27	5	1	6	143
Spokane	5	16	23	30	15	3	1	4	97
Stevens		9	5	14	5	4			37
Thurston	4	7	18	18	11	5	2	2	67
Wahkiakum			1		1			1	3
Walla Walla	3	2	11	5	6	2			29
Whatcom	3	12	25	10	10	2	3	2	67
Whitman		1	6	4	1	2	1		15
Yakima	4	27	55	34	19	6	10	5	160
Total	69	280	568	405	268	112	60	63	1,825
% Drinking-driver Deaths	3.8%	15.3%	31.1%	22.2%	14.7%	6.1%	3.3%	3.5%	100.0%

IV. Safety Equipment Use in Fatal Crashes

1998 Fatal Traffic Collisions in Washington

36

Only 52% of motor vehicle occupants killed or injured in 1998 fatal crashes were wearing safety restraints when they crashed. By comparison, nearly 90% of vehicle occupants neither injured nor killed in these crashes were wearing safety restraints when they crashed – a percentage exceeding the observed statewide use rate of 84%. For the six years from 1993 through 1998, the overall restraint use rate by vehicle occupants injured or killed in fatal crashes was 48.9%, whereas for involved occupants neither injured nor killed in these crashes the overall use rate was 84.4%.

Safety Restraint Use by Passenger Vehicle* Occupants Killed or Injured in Fatal Crashes

Washington State, Six-year comparison

Restraint Use	98	97	96	95	94	93	Totals
Child Safety Seat	13	10	14	4	9	7	57
Lap Belt	71	54	63	56	60	60	364
Shoulder Belt	14	16	19	22	20	13	104
Lap and Shoulder	456	469	461	389	371	334	2480
Used, Type Unknown	0	0	1	1	5	6	13
Belt use Improper	1	3	0	3	0	n/a	7
None used or N/A	505	525	541	542	496	558	3167
Unknown	47	56	43	48	59	57	310
Total	1,107	1,133	1,142	1,065	1,020	1,035	6,502
Use Rate	52.4%	51.3%	50.8%	46.7%	48.4%	42.9%	48.9%

Safety Restraint Use by Passenger Vehicle* Occupants NOT Killed or Injured in Fatal Crashes

Washington State, Six-year comparison

Restraint Use	98	97	96	95	94	93	Totals
Child Safety Seat	11	9	7	7	8	6	48
Lap Belt	15	14	22	23	33	30	137
Shoulder Belt	0	0	1	6	5	2	14
Lap and Shoulder	185	136	181	136	168	133	939
Used, Type Unk	0	1	0	0	0	0	1
Belt use Improper	0	0	1	0	0	0	1
None used or N/A	24	36	26	32	46	47	211
Unknown	19	25	22	18	34	18	136
Total	254	221	260	222	294	236	1,487
Use Rate	89.8%	81.6%	89.1%	84.3%	82.3%	78.4%	84.4%

^{*}Includes cars, SUVs, minivans, and pickup trucks.

Safety Restraint Use by All Motor Vehicle Occupants Killed*

Five-year comparison						Prev	'98 vs
						4-yr	prev 4-
Restraint Type	98	97	96	95	94	Avg	yr avg
Child Safety Seat	2	1	4	0	5	3	-20.0%
Lap Belt	15	20	18	20	20	20	-23.1%
Shoulder Belt	9	11	14	11	14	13	-28.0%
Lap and Shoulder Belts	175	178	177	146	133	159	10.4%
Restraint used, type unknown	0	0	0	1	4	1	-100.0%
Belt used improperly	1	2	0	2	0	1	0.0%
None used or N/A	298	320	320	319	297	314	-5.1%
Unknown	24	23	25	27	27	26	-5.9%
Total	522	554	554	526	495	532	-1.9%
	60%					62%	None Us

Motorcycle Helmet Use by Motorcyclists Killed Prev '98 vs Five-year comparison 4-yr prev 4-Avg yr avg Helmet Used Properly 54.1% Helmet Used Improperly None used or N/A -14.3% Unknown Total 34.2%

Bike Helmet Use by Cyc Five-year comparison	prev 4-yr	'98 vs prev 4-					
	98	97	96	95	94	avg	yr avg
Helmet Used Properly	1	5	3	2	5	4	-73.3%
Helmet Used Improperly	0	1	0	0	0	Ιo	
None used or N/A	9	10	11	10	9	10	-10.0%
Unknown	0	0	0	1	1	1	
Total	10	16	14	13	15	14	-28.6%

Airbag Deployment 1 Five-year comparison	prev 4-vr	'98 vs prev 4-					
	98	97	96	95	94	avg	yr avg
Deployed	55	44	15	17	8	21	161.9%
Not Deployed	28	17	5	4	3	4	
Unknown or N/A	441	494	538	505	489	511	-13.6%
Total	524	555	558	526	500	528	-0.8%

^{*}Includes occupants of medium-heavy trucks, buses,

Safety Restraint Use by Passenger Vehicle* Occupants Injured or Killed In 1998 fatal crashes, by age

		1 0	0111	01:11.0-6-4		Total	Mana Haad		
Age	Lap Belt	Lap & Shoulder	Shoulder Belt	Child Safety Seat	Improper Belt Use	Restraints Used	None Used or N/A	Not known	% Used**
Under 1	1	0	0	5	0	6	1	0	85.7%
1 - 3	1	1	0	7	1	10	3	0	76.9%
4 - 7	5	10	0	1	0	16	5	1	76.2%
8 - 14	10	12	0	0	0	22	24	4	47.8%
15 - 20	18	85	5		0	108	130	10	45.4%
21 - 30	5	84	5		0	94	143	8	39.7%
31 - 40	7	79	1		0	87	72	5	54.7%
41 - 50	3	60	1		0	64	55	8	53.8%
51 - 60	2	50	0		0	52	32	4	61.9%
61 - 70	10	24	1		0	35	23	0	60.3%
71+	9	51	1		0	61	17	7	78.2%
							0.70	00	40.00/
Male	37	268	7	8	1	321	373	36	46.3%
Female	33	188	7	4	0	232	133	11	63.6%
Unknown	1	0	0	1	0	2	0	0	100.0%
Totals	71	456	14	13	1	555	505	47	52.4%

^{*}Includes cars, SUVs, minivans, and pickup trucks.

Air Bag Deployment among Passenger Vehicle* Occupants Injured or Killed In 1998 fatal crashes, *by age*

Age	Deployed	Not Deployed	Unknown or N/A	Total
Under 1	0	0	7	7
1 - 3	0	0	13	13
4 - 7	0	0	22	22
8 - 14	1 1	0	49	50
15 - 20	15	10	223	248
21 - 30	27	20	198	245
31 - 40	25	2	137	164
41 - 50	14	9	104	127
51 - 60	11	6	71	88
61 - 70	9	3	46	58
71+	18	3	64	85
Total	120	53	934	1,107

^{*}Includes cars, SUVs, minivans, and pickup trucks.

^{**}Excludes "Not Known"

Safety Restraint Use and Injuries among Children in Fatal Traffic Crashes Washington State, 1993-1998

AGE			INJURY	LEVEL		
GROUP	SAFETY RESTRAINT USE	none	minor	serious	fatal	Totals
	none used	10	8	16	21	55
	row %	18.2%	14.5%	29.1%	38.2%	100.0%
	adult belts1	11	10	5	4	30
	row %	36.7%	33.3%	16.7%	13.3%	100.0%
0 - 3 yrs	child restraints*2	46	28	9	16	99
	row %	46.5%	28.3%	9.1%	16.2%	100.0%
	unknown	0	1	3	2	6
	row %	0.0%	16.7%	50.0%	33.3%	100.0%
	Totals	67	47	33	43	190
	none used	6	25	18	13	62
	row %	9.7%	40.3%	29.0%	21.0%	100.0%
	adult belts1	38	48	12	12	110
	row %	34.5%	43.6%	10.9%	10.9%	100.0%
4 - 7 yrs	child restraints*	2	4	1	0	7
	row %	28.6%	57.1%	14.3%	0.0%	100.0%
	unknown	2	4	0	3	9
	row %	22.2%	44.4%	0.0%	33.3%	100.0%
	Total	48	81	31	28	188
0(none used	29	65	36	41	171
	row %	17.0%	38.0%	2.1%	24.0%	100.0%
	adult belts ¹	66	85	35	22	208
	row %	31.7%	40.9%	16.8%	10.6%	100.0%
	restraints used, type unknown	0	1	0	1	2
8 - 14 yrs	row %	0.0%	50.0%	0.0%	50.0%	100.0%
	belts used improperly	0	0	0	0	0
	row %	0.0%	0.0%	0.0%	0.0%	0.0%
	unknown	1	3	6	4	14
	row %	7.1%	21.4%	42.9%	28.6%	100.0%
	Total	96	154	77	68	395
Grand To	tals	211	282	141	139	773

^{*}Child restraints include all types of child safety seats (e.g., booster seats, infant seats, and toddler seats). The FARS database does not distinguish types of child restraint seats.

¹ Adult belts include lap belt, shoulder belt, and lap-and-shoulder belt systems.

² Includes one fatality case of improper child restraint use.

Safety Restraint Use by Persons Injured or Killed in Fatal Crashes

Washington State, 1993-1998, By county and restraint type

				SAFETY	RESTRA	INT LISE				
COUNTY	None Used	Shoulder Belt	Lap Belt	Lap & Shoulder Belt	Child Safety Seat	SR Used, type unknown	Improper SR Use	unknown SR Use	Total	Safety Restraint Use Rate
Adams	30	2	4	37	2			3	78	57.7%
Asotin	11			8				3	22	36.4%
Benton	85	3	11	54	4			7	164	43.9%
Chelan	48	1	16	73				9	147	61.2%
Clallam	52	4	19	19	1			1	96	44.8%
Clark	113	4	14	132	1	2	1	13	280	55.0%
Columbia	3			2					5	40.0%
Cowlitz	47	2	6	35				6	96	44.8%
Douglas	41	3	4	41	1			5	95	51.6%
Ferry	25	2	1	7				1	36	27.8%
Franklin	59	4	11	48				4	·126	50.0%
Garfield	6			4				2	12	33.3%
Grant	140	5	15	72				8	240	38.3%
Grays Harbor	49		7	36	3			1	96	47.9%
Island	⊕ 21	4	5	34	1			4	69	63.8%
Jefferson	35	1	5	31	1		1	1	75	52.0%
King	417	19	42	421	9	4	2	79	993	50.1%
Kitsap	78	5	8	71	2			11	175	49.1%
Kittitas	60	5	6	48				7	126	46.8%
Klickitat	33	3	2	5				3	46	21.7%
Lewis	72	2	6	61				8	149	46.3%
Lincoln	18		5	19					42	57.1%
Mason	64	2	1	37				3	107	37.4%
Okanogan	90	1	3	25				5	124	23.4%
Pacific	20		1	20	1				42	52.4%
Pend Oreille	15	3	2	10				2	32	46.9%
Pierce	270	7	47	227	10	1	2	45	609	48.3%
San Juan	8			2					10	20.0%
Skagit	77		5	79	2			1	164	52.4%
Skamania	14		3	4				1	22	31.8%
Snohomish	218	6	22	232	4	2		18	502	53.0%
Spokane	198	6	23	129	4	2		11	373	44.0%
Stevens	66		14	31	1	1		6	119	39.5%
Thurston	117	1	4	73	1			12	208	38.0%
Wahkiakum	4			4				1	9	44.4%
Walla Walla	47	5	9	44				1	106	54.7%
Whatcom	123	1	15	108	1	1	1	11	261	48.7%
Whitman	42	1	2	32					77	45.5%
Yakima	351	2	26	165	8			17	569	35.3%

Source: FARS

48.9%

6,502

310

57

13

364

104

Total

3,167

2,480

Safety Restraint Use by Persons *NOT* Injured or Killed in Fatal Crashes

Washington State, 1993-1998, By county and restraint type

					RESTRA	INT USE				
COUNTY	None Used	Shoulder Belt	Lap Belt	Lap & Shoulder Belt	Child Safety Seat	SR Used, type	Improper			Safety Restraint
Adams	10	Delt	1		Seat	илкпомп	SR Use	unknown	Total	Use Rate
Asotin	10		I	9					20	50.0%
Benton			3	4 6	1			3	7	100.0%
Chelan	1		4	_18	1			2	12	100.0%
Clallam	5		5	5				3	26	95.7%
Clark	3	3	15	65	2			1	16	66.7%
Cowlitz	5	3	4	13	2	1		5	93	96.6%
Douglas	1		7	7		l '		1	24	78.3%
Ferry	2			3				1	9 5	87.5%
Franklin			7	14	2				_	60.0%
Grant	7	3	3	23	2				23	100.0%
Grays Harbor	6	3	4	18	2			4	40	80.6%
Island	J		1	5	2			2	32	80.0%
Jefferson	1		'	7	2		*	2	10	100.0%
King	40	4	19	266	4		1	33	8	87.5%
Kitsap	4	7	9	24	2		' '	4	367 43	88.0% 89.7%
Kittitas	3		3	10	1			2	19	82.4%
Klickitat	2		J	3	1			1	7	66.7%
Lewis	2		5	18	1			4		
Lincoln	-		1	3	1			1	30 6	92.3% 100.0%
Mason	1		'	5	1			3	10	85.7%
Okanogan	5		2	8	1			4	19	66.7%
Pacific	Ü		_	1				4	19	100.0%
Pend Oreille	1			1				1	3	50.0%
Pierce	25	4	17	129	9			21	205	86.4%
San Juan	1	i i		120	3			21	1	0.0%
Skagit	1		2	20	3			4	30	96.2%
Snohomish	15		1	77	3			7	103	90.2% 84.4%
Spokane	11		9	57	5			4	86	86.6%
Stevens	5		3	4	3			3	12	44.4%
Thurston	4		9	40	2			3	58	92.7%
Wahkiakum	1		J	70	2			1	2	0.0%
Walla Walla	9		4	17	1			- 4	31	71.0%
Whatcom	9		2	28	1			5	45	77.5%
Whitman	1		-	5	'			٥	6	83.3%
Yakima	30	0	7	26	4			11	78	55.2%
Total	211	14	137	939	48	1	1	136	1,487	84.4%

V. Drivers in Fatal Crashes

1998 Fatal Traffic Collisions in Washington

In 1998, there were 907 drivers involved in fatal crashes – 770 with valid drivers licenses and 128 without valid licenses (the license status of the remaining 9 drivers was unknown). Among drivers with valid licenses, only 2.3% had received prior DUI convictions, whereas 7.9% of drivers without valid licenses had previously been convicted for DUI.

Two hundred fifty-seven drivers involved in 1998 fatal crashes (28.3%) had been drinking prior to crashing. Of these, 218 (24%) had positive BAC readings. Nearly half of the drinking drivers in 1998 fatal crashes were ages 30 and younger. Nearly 40% of all drivers in 1998 fatal crashes were in the same age range.

As in previous years, the driver factors cited most frequently by investigators were *improper lane travel* and running off the road, which together accounted for over 30% of all driver factors cited.

Drivers in Fatal Crashes, 1993-1998

By License Status & Previous DUIs

Six-year comparison, Washington State

Valid License						
Previous DUI Conviction	98	97	96	95	94	93
None	750	741	813	672	707	684
One	17	9	8	7	13	12
Two or more	1	1	1	2	0	0
Unknown	2	0	1	1	1	1
Totals	770	751	823	682	721	697
Percent w/ prev DUI*	2.3%	1.3%	1.1%	1.3%	1.8%	1.7%

No Valid License						
Previous DUI Conviction	98	97	96	95	94	93
None	116	85	112	121	104	86
One	8	13	18	18	17	26
Two or more	2	2	4	4	3	6
Unknown	2	0	0	1	1	2
Totals	128	100	134	144	125	120
Percent w/ prev DUI*	7.9%	15.0%	16.4%	15.4%	16.1%	27.1%

^{*} Excludes drivers with unknown previous DUI conviction record or license status.

License Status among Drivers in Fatal Crashes Washington State, 1994-1998 Among drivers whose presence status is known

		DRI	VER PRESEN		% Drivers	
YEAR	LICENSE STATUS	driver present	no driver in vehicle*	driver left scene	Total	w/o valid license
	not stated		6		6	
	not licensed	44			44	
- 1	suspended	39			39	
	revoked	26		1	27	
1994	expired	14			14	44 -01
	canceled / denied	1			1	14.5%
	valid license	718		1	719	
	learner's permit	2			2	
	unknown	8		3	- 11	
	TOTAL	852	6	5	863	
	not stated		4		4	
	not licensed	38			38	
	suspended	62		1	63	
400-	revoked	24	Į II	1	25	
1995	expired	17			17	47.00/
	canceled / denied	1			1	17.0%
	valid license	672		2	674	
	learner's permit	7		1	8	
_	unknown	16		1	17	
	TOTAL	837	4	6	847	
	not stated		5		5	
	not licensed	31		1	32	
	suspended	61		2	63	
	revoked	22		4	26	
1996	expired	12			12	13.7%
1	canceled / denied	1			1	13.7%
	valid license	818		2	820	
	learner's permit	3			3	
-	unknown	12		4	16	
	TOTAL	960	5	13	978	
	not stated		4		4	
	not licensed	30			30	
	suspended	51		4	55	
1997	revoked	12	12	3	15	
1997	expired	2			2	11.8%
	canceled / denied	1			1	11.0 /0
	valid license	749			749	
	learner's permit	3			3	
-	unknown	15		3	18	
_	TOTAL	863	4	10	877	
	not stated not licensed	20	1	,	1	
		32		1	33	
1998	suspended	57		4	61	
1220	revoked expired	27		1	28	14.1%
	expired valid license	6			6	/0
	unknown	769		1	770	
-	TOTAL	9			9	
F13/5		900	1	7	908	
FIVE	-YEAR TOTALS	4,412	20	41	4,473	13.9%

^{*}Driverless vehicle, such as a parked car

Drivers in Fatal Crashes

Washington State, 1998

By License Status & Previous Driving Record

	Valid License	No Valid License	Percent w/o Valid License
Total Drivers in Fatal Collisions	770	128	14.3%
Prior Collisions			
None	671	116	14.7%
One	91	8	8.1%
Two or more	6	2	25.0%
Unknown	2	2	50.0%
% w/ prior collisions	12.6%	7.8%	ı.ē
Prior License Suspensions			
None	693	44	6.0%
One	36	31	46.3%
Two	16	14	46.7%
Three or more	23	37	61.7%
Unknown	2	2	50.0%
% w/ previous license suspensions	9.7%	64.1%	=
Prior Speeding Convictions			
None	555	97	14.9%
One	141	17	10.8%
Two	52	7	11.9%
Three or more	20	5	20.0%
Unknown	2	2	50.0%
% w/ prior speeding convictions	27.7%	22.7%	_
Other Convictions			
None	586	85	12.7%
One	133	24	15.3%
Two	31	5	13.9%
Three or more	18	12	40.0%
Unknown	2	2	50.0%
% with prior other convictions	23.6%	32.0%	_

Known BAC levels of Drinking Drivers in Fatal Crashes

By Age and Sex - 1998

			Driver B	AC Level			Total # Positive	% with Positive
Driver Age	.00	.01079	.08099	.10149	.15199	.20+	BACs	BACs
15	2	0	0	0	1	0	1	(4)
16	5	1	0	3	0	0	4	44.4%
17	8	0	2	1	0	1	4	33.3%
18	7	3	1	3	0	4	11	61.1%
19	11	3	0	0	0	0	3	21.4%
20	6	2	0	2	1	2	7	53.8%
21-30	50	7	4	20	15	27	73	59.3%
31-40	42	5	2	4	13	23	47	52.8%
41-50	29	4	3	7	7	19	40	58.0%
51-60	33	2	0	1	4	7	14	29.8%
61-70	11	2	2	2	2	3	11	50.0%
71+	32	2	0	0	0	1	3	8.6%
Male	160	26	12	39	38	77	192	54.5%
Female	76	5	2	4	5	10	26	25.5%
Total	236	31	14	43	43	87	218	48.0%

Source: FARS

BAC Levels of Drivers in Fatal Crashes

Five-year comparison

						prev	'98 vs prev
BAC Level	98	97	96	95	94	4-yr avg	4-yr avg
.00	236	222	242	228	223	231	2.2%
.01079	31	35	35	29	33	32	-4.1%
.08099	14	13	14	17	12	14	-2.3%
.10149	43	45	51	43	41	45	-4.4%
.15199	43	60	64	52	48	55	-21.3%
.20 and above	87	54	99	85	100	95	-8.1%
Test Not Given	438	426	461	378	392	410	6.7%
Unknown (Test Given)	4	9	2	7	2	4	7.
Test Refused	0	3	0	0	0	0	ā
Missing data	3	0	0	0	0	0	-
Unknown	8	4	5	3	6	5	71.4%
Total	907	871	973	842	857	891	1.8%

All Drivers in Fatal Crashes, 1993-1998

Washington State, By Age Group

			A	E GRO	U P			Total*
	15-20	21-30	31-40	41-50	51-60	61-70	over 70	Iotal
All Drivers in Fatal Crashes Six-year totals	806	1,311	1,132	858	491	271	403	5,283
% of All Drivers in Fatal Crashes By age group, seven-year totals	15.3%	24.8%	21.4%	16.2%	9.3%	5.1%	7.6%	100.0%
% of All Licensed Drivers By age group, seven-year average	6.9%	19.2%	23.4%	21.3%	12.8%	8.5%	7.9%	100.0%
Over-Under Representation Ratio % in fatals/% licensed drivers	2.21	1.29	0.92	0.76	0.73	0.60	0.97	1.00

^{*} Totals include 11 drivers under age 15 not represented in age group columns.

Drinking Drivers in Fatal Crashes, 1993 - 1998

Washington State, By Age Group

			A	E GRO	UP			Total*
	15-20	21-30	31-40	41-50	51-60	61-70	over 70	Total
Drinking Drivers in Fatal Crashes Six-year Totals	228	580	419	251	92	43	44	1,660
All Drivers in Fatal Crashes Six-year Totals	806	1,311	1,132	858	491	271	403	5,283
Percent of Drivers in Age Group Who Had Been Drinking	28.3%	44.2%	37.0%	29.3%	18.7%	15.9%	10.9%	31.4%
Percent of All Drinking Drivers in Fatal Crashes	13.7%	34.9%	25.2%	15.1%	5.5%	2.6%	2.7%	100.0%
Percent of All Licensed Drivers By age group, six-year average	6.9%	19.2%	23.4%	21.3%	12.8%	8.5%	7.9%	100.0%
Over-Under Representation Ratio (Drinking Drivers in Fatal Crashes)	1.99	1.82	1.08	0.71	0.43	0.30	0.34	1.00

^{*}Includes 3 drinking drivers under age 15 not represented in age columns.

Source: FARS, DOL

Substance Impairment and Fatal-Crash-Involved Drivers

Washington State, 1993-1998

Between 1993 and 1998:

- 5,283 drivers were involved in fatal crashes.
- 1,660 drivers had been drinking alcohol before the crash (31.4%).
- 252 drivers tested positive for potentially impairing drugs (4.8%).
- 149 drivers tested positive for one drug (59%); 64 tested positive for two drugs (25%); and 39 tested positive for three or more drugs (15%).
- 150 drug-positive drivers had a BAC of 0.00 (59.5% of drug-positive drivers, or 2.8% of all fatal-crash-involved drivers).
- 12 of the drug-positive drivers either were not tested for alcohol or had unknown test results (4.8% of all drug-positive drivers).
- 90 drug-positive drivers had a BAC of 0.01 or greater (35.7% of drug-positive drivers); 75 of these had a BAC of 0.08 or greater (29.8%).

Drugs detected in fatal-crash-involved drivers included the following:

- Stimulants accounted for 42.4% of drugs found, principally amphetamine and cocaine and their relatives (e.g., methamphetamine, phentermine, fenfluramine, and benzoylecgonine, an inactive metabolite of cocaine). Generally, these drugs impair driver performance during the "downer" phase but, paradoxically, have been shown to improve driver performance during the initial "upper" phase.
- Depressants accounted for 19.0% of the drugs found, principally barbiturates and benzodiazepines. Barbiturates (e.g., phenobarbital and butabarbital) are highly impairing, typically acting on both sensory and motor areas of the CNS (symptoms include slurred speech, voluntary muscle problems, visual impairment, and drowsiness). Benzodiazepines (e.g., Valium®) act to block nerve conduction generally throughout the CNS (symptoms include blurred vision, drowsiness, and loss of coordination).
- Cannabinoids accounted for 11.2% of drugs found, principally marijuana and THC. Research results are mixed regarding impairment effects, and mechanisms of action are not well understood. Cannabinoids produce synergistic effects in combination with alcohol. Drivers may be able to control voluntary actions only intermittently. Anecdotally, THC-impaired drivers tend to drive more slowly.
- Narcotics accounted for 9.6% of the drugs found, principally synthetic and natural derivatives of opium (e.g., heroin, morphine, methadone, codeine, Demerol®, Darvon®, and Dilaudid®). These drugs act on endogenous opiate receptors to inhibit ascending pain pathways, alter perceptual processes, and cause drowsiness, disorientation, and general CNS depression.
- Other / Unknown (unspecified) drugs accounted for 17.5% of drugs found.

Driver-Related Factors Cited Most Frequently in Fatal Crashes

Washington State, Six year comparison Nonbehavioral factors excluded 1

							Six- year	% of all factors in fatal
Driver-Related Factors	1993	1994	1995	1996	1997	1998	Totals	crashes
Improper Lane Travel / Run Off Road	367	338	359	392	410	394	2,260	29.9%
Alcohol / Drug Involvement ²	315	280	306	351	274	305	1,831	24.3%
Excessive Speed	220	201	216	223	213	216	1,289	17.1%
Inattention	116	126	125	144	150	164	825	10.9%
Failure to Yield Right-of-Way	53	57	45	73	62	81	371	4.9%
Failure to Obey Signs, Signals, Laws	48	46	39	43	44	35	255	3.4%
Drowsy, Sleepy, Asleep	33	33	37	35	37	27	202	2.7%
Overcorrecting	27	33	39	41	29	26	195	2.6%
Improper Passing	16	18	12	12	16	20	94	1.2%
Reckless or Careless Driving	14	8	15	18	10	6	71	0.9%
Traveling Wrong Direction	6	6	9	9	10	14	54	0.7%
Improper Following	4	3	6	9	13	7	42	0.6%
Stopping in Roadway	2	8	8	8	6	5	37	0.5%
Failure to Dim or Use Lights	1	3	0	5	4	3	16	0.2%
Improper Entry or Exit into Traffic	1	0	2	0	1	1	5	0.1%
Totals	1,223	1,160	1,218	1,363	1,279	1,304	7,547	100.0%

This table shows over 98% of all behavioral driver factors cited in Washington fatal crashes between 1993 and 1998.

¹ Excludes pre-existing driver injury or disability; sudden driver illness, emotional upset, or vision impairment; sliding or swerving resulting from road surface conditions; citations of vehicular homicide, manslaughter, assault, or hit-and-run; or the presence of certain electronic devices in the vehicle (e.g., cell phones or fax machines). These instances account for < 4% of all driver factors cited in FARS data.

 ^{2 1,660} drivers classified as "impaired" had been drinking (91%), and 261 had ingested drugs (14%)
 -- including legal medications. Nine cases of police-reported impairment had no known test results.
 90 impaired drivers had consumed *both* alcohol and drugs (5%).

All Drivers Involved in 1998 Fatal Crashes By County and Driver Age

	15-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66+	Count Total
Adams		1	2	2					1	1	1	8
Asotin						1		1	1	1	1	5
Benton	6	3	2	2	4	3	1	1	2	1	2	27
Chelan	1	3		2		1	1	2	1	. 81	1	12
Clallam	3	1	3	2	3	1	1	_	1		1	16
Clark	9	6	2	1		1	4	2	3	2	2	32
Columbia				1		1		_	"			2
Cowlitz	1	1	1				1	2				6
Douglas		-	107	1	2			_			1	4
Ferry			1		1		1					3
Franklin		2	1	3	1	1	1			1		1
Garfield	1	1	1		1	1	1	1		*	1	10
Grant	2	4	2	3	1	2	2	1	3	2		6
Grays Harbor	1	1	1	1	2	1	2		3	2	5	27
sland				'	_			1		2	1	12
Jefferson	2		1	1			1	1	1		1	2
King	15	21	26	19	20	17	11			-		6
Kitsap	3		3	2	20	2		17	8	3	17	174
Kittitas	2	1	3		0	4	1 1	4		1	1	19
Klickitat	-	2	1	1	2	9	1	3	9		5	19
_ewis	6		3	1		2			1	1		10
_incoln	1	1	3	1	1	4	3	3	_1_	1	3	26
Mason	1	3	3	1			1	1		1		6
Okanogan	3	5	3		2	1	1	1	2.80		2	14
Pacific	3	5		1	2	carr	1	75)	1			13
Pend Oreille				- 20		1	1	1	1			4
Pierce	15	1	1	1	1		1					5
San Juan	15	10	15	12	11	5	4	10	5	4	11	102
Skagit										1		1
Skamania	4	1	2	4	2	1	1				4	19
	1	2	_									3
Snohomish	9	12	7	8	7	17	7	5	3	2	6	83
Spokane	10	9	8	4	9	3	5	4	2	4	8	66
Stevens	_	1	2	2	3	1	2					11
hurston	2	6	3	7	4	2	2	2			1	29
Vahkiakum								1				1
Valla Walla		3	1			1	2	1	1		1	10
Vhatcom	5	6	2	4	3	- 5	7	2	1	2	5	42
Vhitman		1		1	2			2				6
/akima	9	11	9	5	4	6	4	5	7	2	4	66
Age Totals	112	119	106	92	89	85	70	73	44	32	85	907
Fatal Drivers	12.3%	13.1%	11.7%	10.1%	9.8%	9.4%	7.7%	8.0%	4.9%	3.5%	9.4%	100.0%
icensed Drivers ¹	313.1	364.2	430.2	446.1	494.9	489.1	435.8	352.7	248.6	188.0	502.9	4,265.7
Lic Drivers ²	7.3%	8.5%	10.1%	10.5%	11.6%	11.5%	10.2%	8.3%	5.8%	4.4%	11.8%	100.0%
atal Crash Rate ³	3.58	3.27	2.46	2.06	1.80	1.74	1.61	2.07	1.77	1.70	1.69	2.13

¹In thousands

² Percentage of all licensed drivers -- i.e., 4,265,724.

³ Per 10,000 licensed drivers in age group.

Drinking Drivers* Involved in 1998 Fatal Crashes

By County and Driver Age

Adams Asotin Benton Chelan Clallam Clark Columbia Cowlitz Douglas Ferry Franklin Garfield	1 2 2 3 3	1 1 1 1 1 1 1 1 2	26-30 1 1 1 1 1	31-35	2	1 2	46-50	51-55	56-60	61-65	66+	7	20.0% 25.9% 33.3% 31.3%
Asotin Benton Chelan Clallam Clark Columbia Cowlitz Douglas Ferry Franklin	2 2 3	1 1 1 1 1	1 1 1	•			1					1 7 4	20.0% 25.9% 33.3%
Chelan Clallam Clark Columbia Cowlitz Douglas Ferry Franklin	2 2 3	1 1 1	1				1					7 4	25.9% 33.3%
Clallam Clark Columbia Cowlitz Douglas Ferry Franklin	2 2 3	1 1 1	1			_	1					4	33.3%
Clark Columbia Cowlitz Douglas Ferry Franklin	2 3	1 1	1		1		1						
Columbia Cowlitz Douglas Ferry Franklin	3	1					1			11			
Cowlitz Douglas Ferry Franklin		1	1					1 1				6	18.8%
Douglas Ferry Franklin			1					·				0	0.0%
Ferry Franklin			·			:		1				3	50.0%
Ferry Franklin		2						i i				0	0.0%
Franklin		2					1					1	33.3%
										1		3	30.0%
		_									1	2	33.3%
Grant	1	2		1		1	1			1		7	25.9%
Grays Harbor		1		1						- 1		2	16.7%
Island											1	1	50.0%
Jefferson		1					1				•	2	33.3%
King	6	1	6	7	4	2	4	3		1	3	37	21.3%
Kitsap	1		2	1	1	-	3	2		.		10	52.6%
Kittitas			- 1		1 . 1			-			1	1 1	5.3%
Klickitat		2			1	1			2		•	6	60.0%
Lewis	3		2		1				_	J		6	23.1%
Lincoln			_	1			1		1			3	50.0%
Mason	2	5		1	1	1	1					11	78.6%
Okanogan	2	3	1		2		1					9	69.2%
Pacific					- 4	1	1					2	50.0%
Pend Oreille		1	1		- 1	.						2	40.0%
Pierce	2	6	5	3	1	2		2				21	20.6%
San Juan		-	-			-		_		1		1	100.0%
Skagit	1		1	3	2	- 1					1	8	42.1%
Skamania		1			-				1		'	1	33.3%
Snohomish	3	4	4	1	5	3	2	1	1		1	25	30.1%
Spokane	2	4	2	2		2	2	.	2		1	17	25.8%
Stevens	-	.	-	2	2	-	1		-		'	5	45.5%
Thurston	1	2	1	1	1	1	2					9	31.0%
Vahkiakum		-			'	'	-					0	0.0%
Valla Walla		2				1						3	30.0%
Whatcom	1	2	1	1	1		2				2	10	23.8%
Whitman	•	7		'	1		-				۷	0	0.0%
/akima	1	9	3	3	1	1	1	2	1	1		23	34.8%
Age Totals	35	54	34	29	26	19	25	12	7	5	11	257	28.3%

[%] Drinking Drivers in Fatal Crashes 13.6% 21.0% 13.2% 11.3% 10.1% 7.4% 9.7% 4.7% 2.7% 1.9% 4.3% 100.0%

^{*}Police-reported alcohol-involvement or a BAC of at least .01

VI. Vehicles in Fatal Crashes

1998 Fatal Traffic Collisions in Washington

Half of the vehicles involved in 1998 fatal crashes were passenger cars, and another 20% were light trucks – proportional contributions that were virtually the same as during the previous four years. SUVs accounted for roughly 7% of the vehicles involved in 1998 fatal crashes, down slightly from their roughly 9% average during the previous four years. Vans and minivans, on the other hand, accounted for 8.5% of vehicles involved in 1998 fatal crashes – up from a 6.5% average during the previous four years. The greatest increase among fatal-crash-involved vehicle types, however, came from motorcycles, whose numbers jumped 47% over the previous four-year average.

Motor Vehicle Types involved in Fatal Crashes

Washington State, Five-year comparison

						Prev 4-yr	'98 vs prev 4-
Vehicle Type	98	97	96	95	94	Avg	yr avg
Passenger Car (includes derivatives)	454	443	478	445	450	454	0.0%
Van (includes minivans)	77	69	56	52	56	58	32.2%
Light Truck (<10,000 lbs)	184	162	216	167	179	181	1.7%
Sport Utility Vehicle	63	86	88	60	73	77	-17.9%
Med / HeavyTruck (10,000 lbs+)	72	81	75	67	57	70	2.9%
Motorcycle / MoPed / ATV / ATC	50	28	39	36	34	34	46.0%
Bus	3	4	11	7	5	7	-55.6%
Other (Snowmobile, Farm Equip)	1	0	3	4	3	3	-60.0%
Unknown	4	4	12	9	6	8	-48.4%
Total Vehicles	908	877	978	847	863	896	1.3%

1998 Traffic Deaths by Vehicle Type Occupied*

Washington State

VELHOLE TABLE	AGE GROUP								
VEHICLE TYPE	<14	15-20	21-30	31-40	41-50	51-60	61-70	71+	Totals
Passenger Car (includes derivatives)	11	68	88	51	48	20	18	50	354
Light Truck (<10,000 lbs)		7	16	13	12	16	9	6	79
Motorcycle / MoPed / ATV / ATC		10	15	12	10	4			51
Van (includes minivans)	4	1	7	5	10	8	2	4	41
Heavy / Med Truck (10,000 lbs+)			1	1	3	3	3		11
Sport Utility Vehicle	3	8	8	6	6	7		1	39
Occupant Totals	18	94	135	88	89	58	32	61	575

^{*}All motor vehicle occupants killed in 1998 reported fatal crashes.

Registered Vehicles in Washington State, 1998 By County and Vehicle Type

	Passenger	Motor	· Mo) Motor	Antique or		For Hire Stage Buses Private	•	County
County	Vehicles	Cycles	Peds	Homes	Restored	Trucks	School		-
Adams	9,352	184	22	221	8	7,120	1	43	16,951
Asotin	10,751	345	12	318	7	5,941	2	16	17,392
Benton	83,060	2,250	165	2,222	44	32,855	19	148	120,763
Chelan	40,482	1,976	106	1,140	22	20,985	11	109	64,831
Clallam	36,670	1,312	78	1,456	29	19,504	23	69	59,141
Clark	186,926	4,642	404	3,421	221	70,531	46	263	266,454
Columbia	2,297	112	6	78	2	2,116	0	13	4,624
Cowlitz	54,336	1,536	177	1,723	63	28,832	29	100	86,796
Douglas	13,146	553	33	443	6	7,927	3	42	22,153
Ferry	2,488	109	3	93	5	2,193	0	20	4,911
Franklin	27,155	581	42	716	19	14,449	3	87	43,052
Garfield	1,347	19	1	45	2	1,235	2	14	2,665
Grant	36,349	1,023	92	1,183	31	22,311	14	142	61,145
Grays Harbor	34,389	937	415	1,079	35	20,486	19	105	57,465
Island	38,337	1,244	115	1,064	23	14,788	13	69	55,653
Jefferson	14,710	695	77	597	17	7,399	5	26	23,526
King	1,115,396	28,918	1,978	12,946	719	297,969	1,854	2,349	1,462,129
Kitsap	126,006	4,595	346	3,226	116	46,206	102	136	180,733
Kittitas	16,506	796	77	532	9	10,876	2	65	28,863
Klickitat	10,062	358	18	304	6	7,272	1	34	18,055
Lewis	37,261	1,104	130	1,202	79	24,091	11	119	63,997
Lincoln	5,914	147	17	261	4	5,304	3	33	11,683
Mason	26,423	950	138	1,215	30	15,261	12	38	44,067
Okanogan	19,018	781	29	655	43	13,929	6	69	34,530
Pacific	10,799	296	145	474	5	6,829	1	41	18,590
Pend Oreille	5,735	208	6	243	9	4,020	0	38	10,259
Pierce	357,405	9,365	981	7,121	526	126,652	246	695	502,991
San Juan	8,144	410	205	194	5	4,447	13	13	13,431
Skagit	65,738	2,413	232	2,018	53	32,000	37	102	102,593
Skamania	4,266	177	4	153	2	2,660	1	23	7,286
Snohomish	340,743	10,925	757	7,350	320	125,811	208	552	486,666
Spokane	236,715	6,629	304	4,863	275	93,059	180	371	342,396
Stevens	16,841	561	26	693	16	12,326	4	57	30,524
Thurston	124,102	3,888	345	2,869	98	50,071	44	207	181,624
Wahkiakum	1,707	37	11	78	2	1,353	0	9	3,197
Walla Walla	25,024	790	99	590	15	11,510	15	56	38,099
Whatcom	92,200	2,974	224	2,463	59	37,877	84	154	136,035
Whitman	17,818	474	63	332	8	10,194	2	90	28,981
Yakima	120,331	2,704	229	3,359	56	58,242	71	240	185,232
DOL / pro	18,130	436	41	273	24	12,553	11	1,300	32,768
State Totals	3,394,079	97,454	8,153	69,213	3,013	1,289,184	3,098	8,057	4,872,251

Source: DOL

Washington Traffic Safety Commission 1000 S. Cherry Street P.O. Box 40944 Olympia, WA 98504-0944

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