MARYLAND TRAFFIC SAFETY FACTS 2003

Maryland Department of Transportation
State Highway Administration
Office of Traffic and Safety

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2003 Maryland Statewide Statistics

Police-Reported Motor Vehicle Traffic Accidents	
Fatal	596
Injury	38,710
Proper Damage Only	69,824
Total	**109,130**

Traffic Accident Victims	Killed	Injured
Drivers	383	38,969
Passengers	143	15,654
Pedestrians (on foot)	118	2,724
Pedalcyclists	6	659
Other/Unknown	1	112
Total	**651**	**58,118**

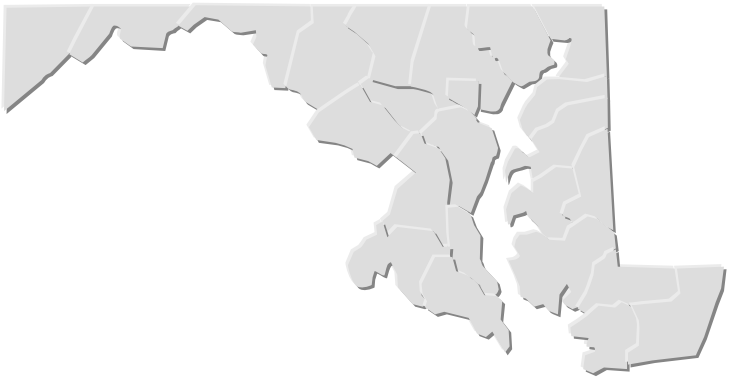
Other Statewide Statistics	
Vehicle Miles Traveled (millions) *	54,678
Resident Population**	5,508,909
Registered Vehicles***	4,481,302
Licensed Drivers***	3,763,031

Fatality Rates	2003 Maryland	2003† National
Fatalities per 100 Million Vehicle Miles Traveled	1.19	1.48
Fatalities per 100,000 Population	11.82	14.66
Fatalities per 100,000 Registered Vehicles	14.53	18.48
Fatalities per 100,000 Licensed Drivers	17.30	21.74

Injured Person Rates		
Injured Persons per 100 Million Vehicle Miles Traveled	106	100
Injured Persons per 100,000 Population	1,055	993
Injured Persons per 100,000 Registered Vehicles	1,297	1,252
Injured Persons per 100,000 Licensed Drivers	1,544	1,473

Source: *Maryland State Highway Administration **Maryland Department of Planning ***Maryland Motor Vehicle Administration
†Traffic Safety Facts 2003, National Highway Traffic Safety Administration, U.S. Department of Transportation

Maryland Traffic Safety Facts 2003



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INTRODUCTION

Maryland Traffic Safety Facts is published annually by the Traffic Safety Analysis Division (TSAD) of the State Highway Administration's Office of Traffic and Safety. Its purpose is to provide information on highway traffic accidents that occur throughout Maryland to safety professionals, public officials, the private sector, and the general public. The data are extracted from motor vehicle accident reports submitted by Maryland's approximately 200 law enforcement agencies through the Maryland Automated Accident Reporting System (MAARS). The Central Records Division of the Maryland State Police manages MAARS and maintains the electronic accident database, which is shared with TSAD and other users for a wide range of tabulations and analyses.

This report presents detailed information on accidents reported by laws enforcement agencies during the calendar year 2003. However, to provide a historic perspective, the first part of each section in every chapter addresses accident trends over the latest 10 years (1994-2003).

It is organized for ease of use - the information is arranged by topics of interest related to various accident factors. Specific chapters of the report address not only the accident information presented in this safety fact book, but also analyze that information, while considering the concepts of When, Where, Who, How, Why, Environment, Engineering, and Enforcement. Information for bordering states, traffic citations, and safety equipment repair orders also are presented. Finally, a glossary, a bibliography, and a list of acronyms are included. All numbers and rates of accidents, deaths, and economic losses occurring during a year or specific time period refer to highway traffic accidents reported by police agencies.

This report was compiled by Mr. Dongwook Kim. The queries from the accident database were conducted by Ms. Susie Wilson. The report was checked for errors and data accuracy by Mr. Donald J.G. Chiarella, Ph.D., Ms. Susie Wilson and Mr. Ron Lipps of TSAD, who also edited it. Please take time to provide us feedback on the form at the end.

2003 BRIEF FACTS

On an average day in Maryland during 2003:

- 300 police-reported traffic accidents occurred (on the average, about 12 accidents every hour).
- 2 persons were killed in traffic accidents (one death every 13.5 hours).
- 160 persons were injured in traffic accidents (about 7 injuries every hour).
- For each person killed, 89 persons were injured.

In Maryland during 2003:

- 330 vehicle drivers were killed.
- 140 vehicle passengers were killed.
- 118 pedestrians were killed.
- 53 motorcyclists and 3 motorcycle passengers were killed.
- 6 pedalcyclists were killed.
- 79 persons were killed in accidents involving large trucks.
- 179 persons involved in alcohol-related accidents were killed.
- 10 fatalities involved buses.
- 340 persons were killed during nighttime.
- 144 persons were killed on wet roadway surfaces.
- 156 persons killed were involved in speeding.
- 48 multiple fatality accidents occurred.

CHAPTER I. GENERAL TRENDS AND OVERIVEW

1.1 SEVERITY AND ACCIDENT TYPES

1.2 TEMPORAL PATTERNS

1.3 SPATIAL PATTERNS

1.1 SEVERITY AND ACCIDENT TYPES

This section describes the trends and 2003 Overview in fatal accidents and fatalities, injury accidents and injuries, and property damage only (PDO) accidents. Trends are shown over 30 years and, to a greater extent, over 10 years.

Some of the notable trends are as follows:

- The annual fatality rate for Maryland has been decreasing from a high of over 4.64 deaths per 100 million VMT in 1968 to a low of 1.19 deaths per 100 million VMT in 2003. The Maryland fatality rate has consistently been lower than the national fatality rate for every year.
- The highest number of accidents reported by police occurred in 1978.
- For the latest 10 years (1994 - 2003), there were downward trends in the number of fatalities and injuries.
- For fatal accidents, fixed object, pedestrian, opposite direction, and angle collisions were the predominant collision types for the past 10 years.

Some results for 2003 are as follows:

- Of the total accidents, 0.5% were fatal accidents and 35.5% were injury accidents.
- Rear-end collisions accounted for the highest percentage of total accidents among the collision types (21.6%).

1.1.1 Accident Severity

Trends

- After steadily increasing until 1978, the number of annually reported accidents decreased until the end of the century, when the trend again reversed.
- A downward trend in fatal accidents with an average change of -0.61 percent per year occurred between 1968 and 2003.

Table 1.1.1 Accidents Trends by Severity, 1968-2003

Year	Fatal Accidents		Injury Accidents		Property Damage Only		Total Accidents	
	Number	Percent Change	Number	Percent Change	Number	Percent Change	Number	Percent Change
1968	758	-	32,822	-	60,937	-	**94,517**	**-**
1969	702	-7.39	34,988	6.60	70,028	14.92	**105,718**	**11.85**
1970	718	2.28	36,384	3.99	75,758	8.18	**112,860**	**6.76**
1971	716	-0.28	37,650	3.48	81,046	6.98	**119,412**	**5.81**
1972	709	-0.98	39,914	6.01	90,297	11.41	**130,920**	**9.64**
1973	725	2.26	39,205	-1.78	87,058	-3.59	**126,988**	**-3.00**
1974	662	-8.69	39,376	0.44	88,292	1.42	**128,330**	**1.06**
1975	618	-6.65	40,352	2.48	92,371	4.62	**133,341**	**3.90**
1976	597	-3.40	41,847	3.70	94,337	2.13	**136,781**	**2.58**
1977	614	2.85	45,495	8.72	117,352	24.40	**163,461**	**19.51**
1978	661	7.65	48,667	6.97	124,136	5.78	**173,464**	**6.12**
1979	629	-4.84	48,310	-0.73	108,991	-12.20	**157,930**	**-8.96**
1980	705	12.08	44,909	-7.04	75,530	-30.70	**121,144**	**-23.29**
1981	701	-0.57	45,306	0.88	73,634	-2.51	**119,641**	**-1.24**
1982	595	-15.12	44,288	-2.25	74,422	1.07	**119,305**	**-0.28**
1983	613	3.03	46,880	5.85	75,731	1.76	**123,224**	**3.28**
1984	592	-3.43	50,432	7.58	78,985	4.30	**130,009**	**5.51**
1985	666	12.50	51,749	2.61	78,811	-0.22	**131,226**	**0.94**
1986	725	8.86	52,233	0.94	72,981	-7.40	**125,939**	**-4.03**
1987	745	2.76	51,536	-1.33	65,272	-10.56	**117,553**	**-6.66**
1988	723	-2.95	51,409	-0.25	63,111	-3.31	**115,243**	**-1.97**
1989	676	-6.50	50,248	-2.26	62,160	-1.51	**113,084**	**-1.87**
1990	681	0.74	48,893	-2.70	57,884	-6.88	**107,458**	**-4.98**
1991	646	-5.14	44,808	-8.35	52,018	-10.13	**97,472**	**-9.29**
1992	593	-8.20	47,180	5.29	51,708	-0.60	**99,481**	**2.06**
1993	604	1.85	38,029	-19.40	46,652	-9.78	**85,285**	**-14.27**
1994	605	0.17	43,044	13.19	53,203	14.04	**96,852**	**13.56**
1995	614	1.49	42,022	-2.37	54,018	1.53	**96,654**	**-0.20**
1996	563	-8.31	42,589	1.35	56,196	4.03	**99,348**	**2.79**
1997	570	1.24	40,062	-5.93	55,488	-1.26	**96,120**	**-3.25**
1998	551	-3.33	38,274	-4.46	55,214	-0.49	**94,039**	**-2.17**
1999	555	0.73	38,021	-0.66	58,433	5.83	**97,009**	**3.16**
2000	574	3.42	37,743	-0.73	60,985	4.37	**99,302**	**2.36**
2001	602	4.88	38,523	2.07	62,286	2.13	**101,411**	**2.12**
2002	606	0.66	38,875	0.91	65,362	4.94	**104,843**	**3.38**
2003	596	-1.65	38,710	-0.42	69,824	6.83	**109,130**	**4.09**
Avg. Change (%)*	**-0.61**	**-**	**0.51**	**-**	**0.42**	**-**	**0.44**	**-**

* Average Change Rate(%) yearly between 1968 and 2003

- After the number of accidents reached its peak point in 1978[1], it had a downward trend from 1978 to 1993[2]. The trend has slightly increased since 1993.

Figure 1.1.1 Trend of Total Accidents, 1968-2003

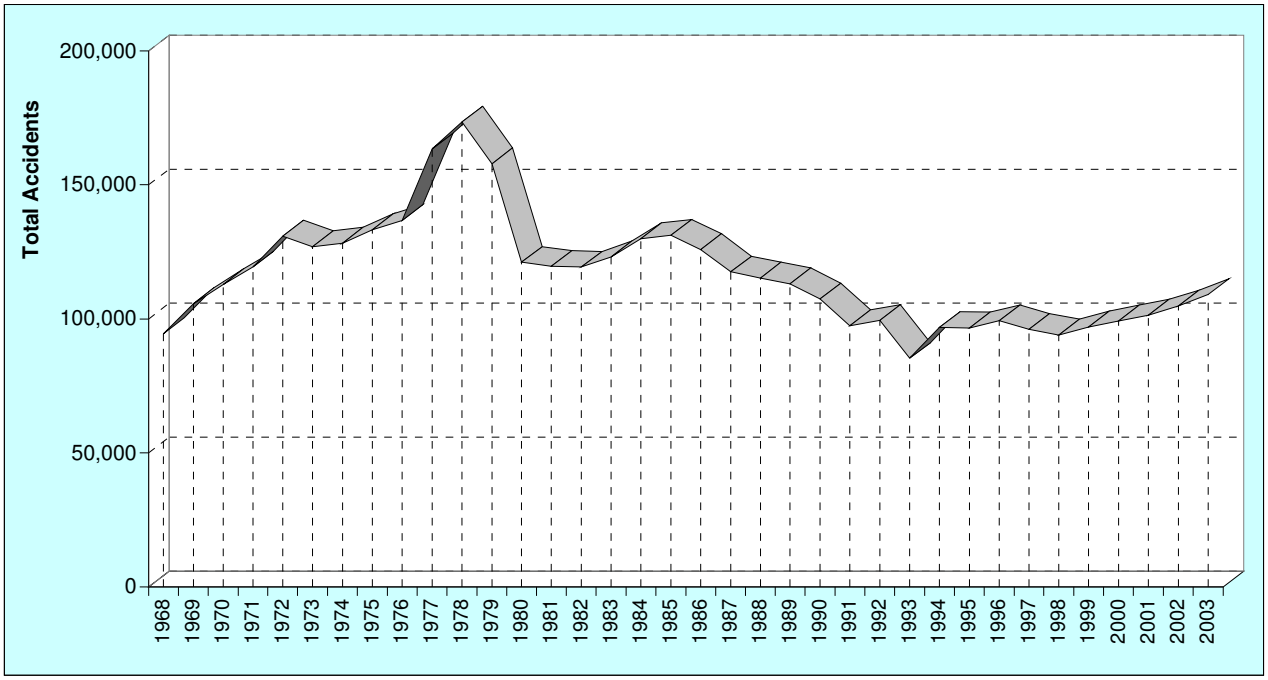
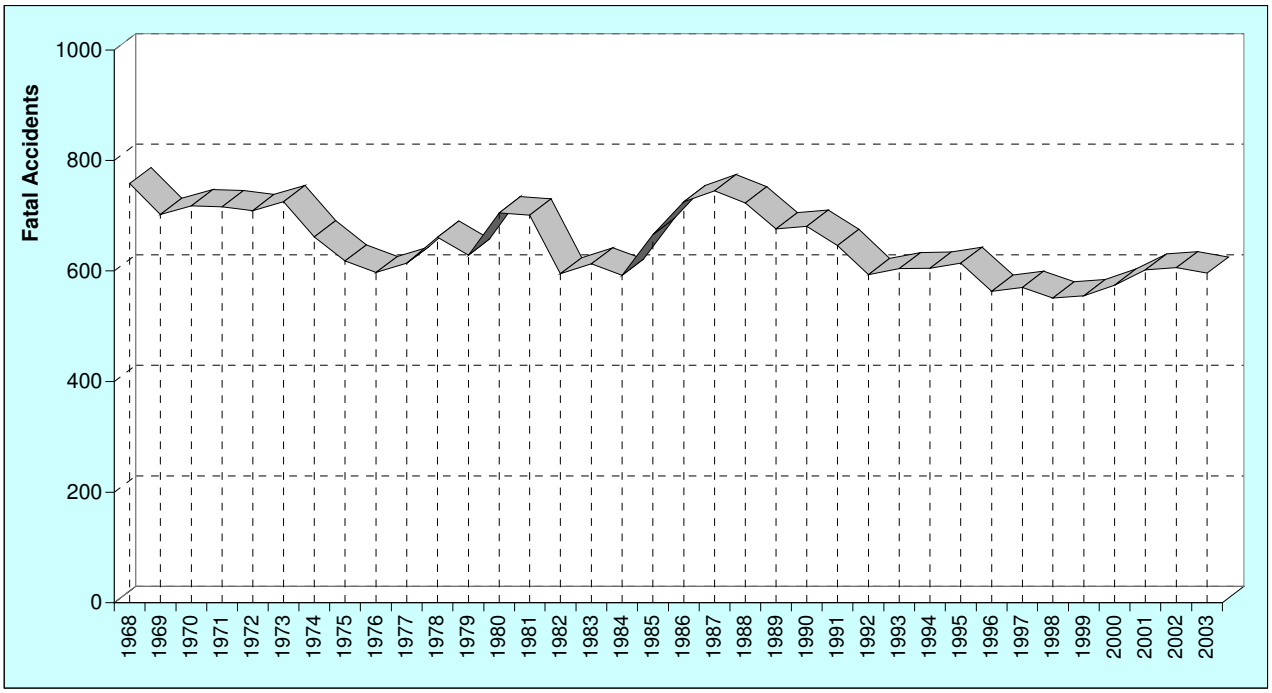


Figure 1.1.2 Trend of Fatal Accidents, 1968-2003



[1] Reduced accident reporting was first implemented in 1978.
[2] The accident report was last revised in 1993.

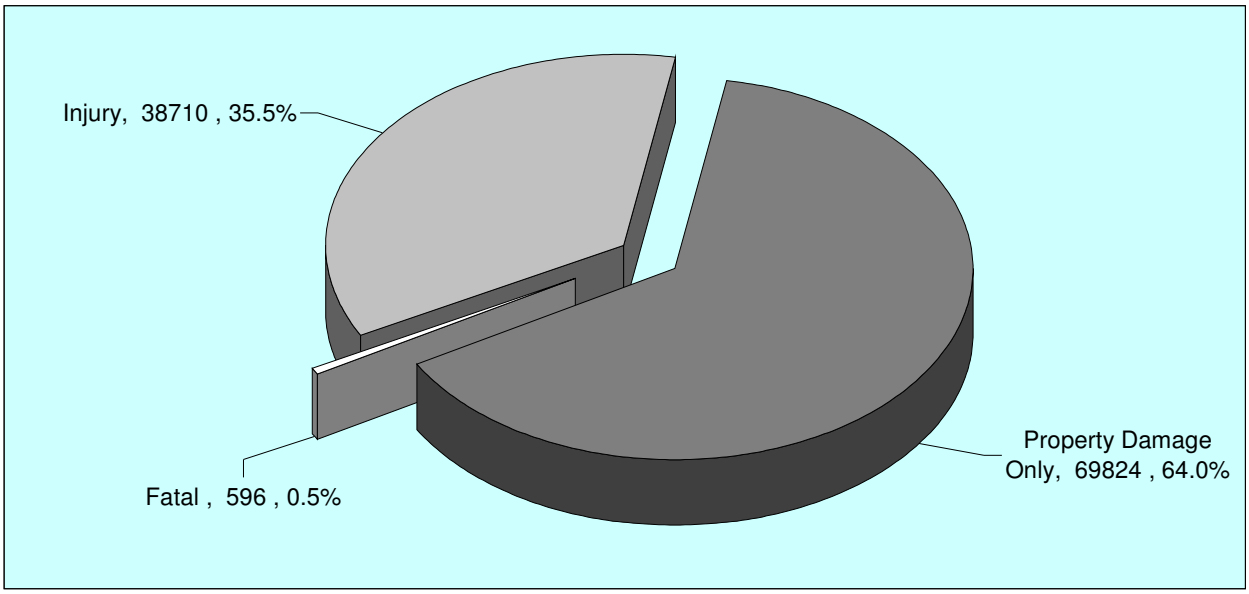
Table 1.1.2 Accidents by Severity, 1990-2003

Year	Fatal Accidents	Injury Accidents				Property Damage Only Accidents	Total Accidents
		Total	Incapacitating	Non-Incapacitating	Possible		
1990	681	48,893	13,693	12,532	22,668	57,884	107,458
1991	646	44,801	12,606	11,335	20,860	52,018	97,465
1992	593	47,180	13,538	11,746	21,896	51,708	99,481
1993	604	38,029	9,976	12,734	15,319	46,652	85,285
1994	605	43,044	10,798	14,996	17,250	53,203	96,852
1995	614	42,022	9,424	15,207	17,391	54,018	96,654
1996	563	42,589	9,019	16,000	17,570	56,196	99,348
1997	570	40,062	8,202	15,594	16,266	55,488	96,120
1998	551	38,274	7,569	14,977	15,728	55,214	94,039
1999	555	38,021	7,063	15,046	15,912	58,433	97,009
2000	574	37,743	6,646	15,192	15,905	60,985	99,302
2001	602	38,523	6,787	15,221	16,515	62,286	101,411
2002	606	38,875	6,458	15,666	16,751	65,362	104,843
2003	596	38,710	6,230	15,608	16,872	69,824	109,130

2003 Overview

- 109,130 accidents occurred in 2003, an increase of 4.1% compared to 2002. On average, there were 299 reportable accidents per day and 12.5 per hour.
- 596 fatal accidents occurred in 2003, a decrease of 1.7% compared to 2002. On average, there were 1.6 fatal accidents per day and 0.07 per hour.
- 0.5% of total accidents were fatal accidents and 35.5% of total accidents were injury accidents.

Figure 1.1.3 Accidents by Severity, 2003



1.1.2 Fatalities and Injured Persons

Trends

- The annual fatality rate over 35 years has been decreasing from a high of over 4.64 per 100 million VMT in 1968 to a low of 1.19 per 100 million VMT in 2003. The Maryland fatality rates have consistently been below the national fatality rates every year since 1968.
- The fatality rate decreased by 0.04 per 100 million VMT from 1.23 in 2002 to 1.19 in 2003.
- For the latest 10 years (1994 - 2003), there was a downward trend in the number of fatalities and injured persons.
- From 1994 to 2003, incapacitating injured persons decreased by 39.8%, and non-incapacitating injured persons decreased by 1.8%.

Table 1.1.3 Fatalities, Injured Persons, and Fatality and Injured Person Rates per VMT, 1968-2003

Year	Vehicle Miles Traveled*	Fatalities		MD Fatality Rate**	US Fatality Rate** †	Injured Persons		MD Injured Person Rates**	US Injured Person Rates** †
		Number	Percent Change			Number	Percent Change		
1968	18.8	872	-	4.64	5.19	54,325	-	289	-
1969	19.5	801	-8.1	4.11	5.04	57,147	5.2	293	-
1970	20.7	787	-1.7	3.80	4.74	58,672	2.7	283	-
1971	22.2	793	0.8	3.57	4.46	59,817	2.0	269	-
1972	23.6	815	2.8	3.45	4.33	63,621	6.4	269	-
1973	25.7	822	0.9	3.20	4.12	62,235	-2.2	242	-
1974	23.9	733	-10.8	3.07	3.53	61,262	-1.6	256	-
1975	25.2	688	-6.1	2.73	3.35	63,613	3.8	253	-
1976	26.2	678	-1.5	2.59	3.25	65,216	2.5	249	-
1977	27.2	673	-0.7	2.47	3.26	70,501	8.1	259	-
1978	28.1	729	8.3	2.60	3.26	74,493	5.7	266	-
1979	27.8	700	-4.0	2.51	3.34	73,626	-1.2	265	-
1980	28.5	782	11.7	2.74	3.35	70,459	-4.3	247	-
1981	29.4	793	1.4	2.70	3.17	72,724	3.2	248	-
1982	30.2	660	-16.8	2.18	2.76	71,990	-1.0	238	-
1983	31.2	663	0.5	2.13	2.58	76,334	6.0	245	-
1984	31.9	650	-2.0	2.04	2.57	81,788	7.1	257	-
1985	33.5	740	13.8	2.21	2.47	84,483	3.3	253	-
1986	35.3	790	6.8	2.24	2.51	84,649	0.2	240	-
1987	36.8	830	5.1	2.26	2.41	85,265	0.7	232	-
1988	37.6	794	-4.3	2.11	2.32	84,923	-0.4	226	169
1989	38.7	749	-5.7	1.94	2.17	83,432	-1.8	216	157
1990	40.5	727	-2.9	1.79	2.08	81,123	-2.8	200	151
1991	41.3	710	-2.3	1.72	1.91	74,410	-8.3	180	143
1992	41.8	664	-6.5	1.59	1.75	80,593	8.3	193	137
1993	43.3	671	1.1	1.55	1.75	62,976	-21.9	145	137
1994	44.2	657	-2.1	1.49	1.73	71,307	13.2	161	139
1995	44.9	684	4.1	1.52	1.73	69,280	-2.8	154	143
1996	45.9	614	-10.2	1.34	1.69	69,052	-0.3	150	140
1997	47.0	610	-0.7	1.30	1.64	65,587	-5.0	140	131
1998	48.4	606	-0.7	1.25	1.58	60,751	-7.4	126	121
1999	49.1	598	-1.3	1.22	1.55	59,979	-1.3	122	120
2000	50.3	617	3.2	1.23	1.53	58,885	-1.8	117	116
2001	52.0	662	7.3	1.27	1.51	60,051	2.0	115	108
2002	53.7	661	-0.2	1.23	1.50	59,517	-0.9	111	102
2003	54.7	651	-1.5	1.19	1.48	58,118	-2.4	106	100

* in billions
** per 100 million Vehicle Miles Traveled
† Source: Traffic Safety Facts 2003, Early Edition, National Highway Traffic Safety Administration

Figure 1.1.4 Fatality Rates per 100 Million Vehicle Miles Traveled, 1968-2003

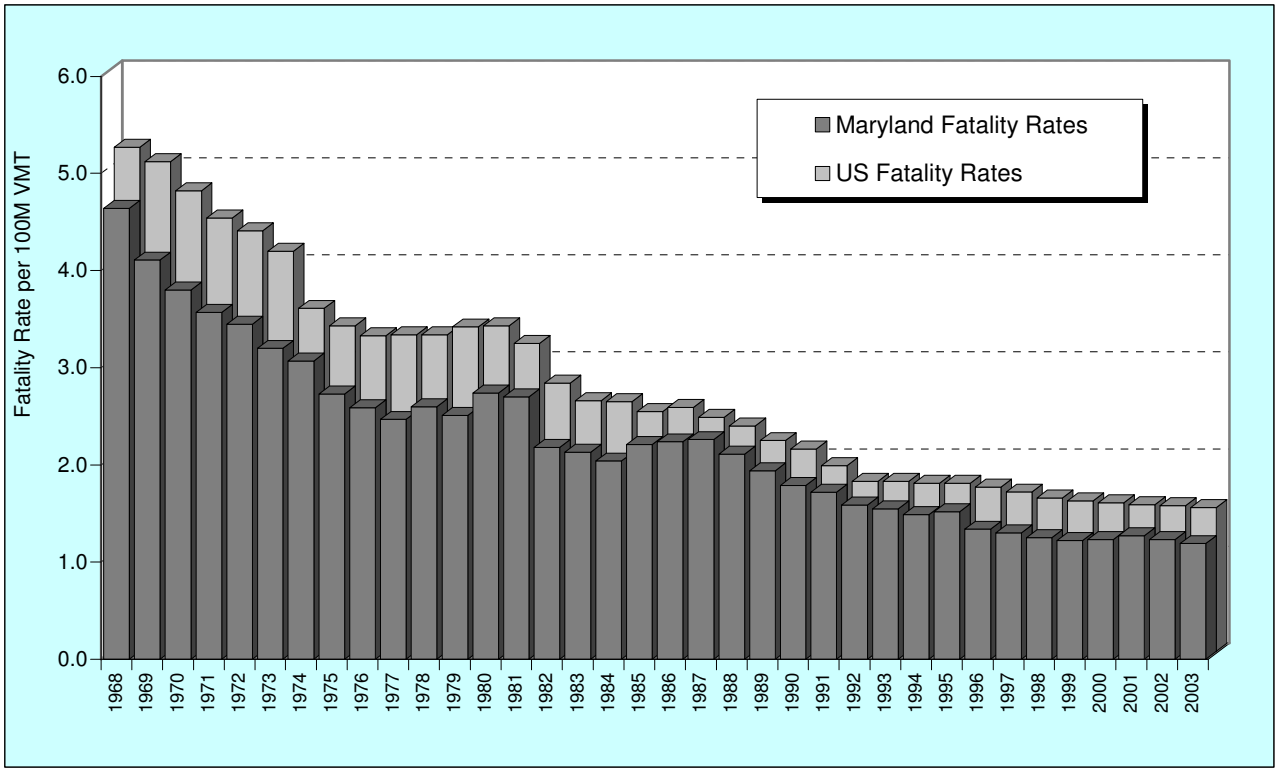


Figure 1.1.5 Maryland Fatality Rates vs. VMT, 1968-2003

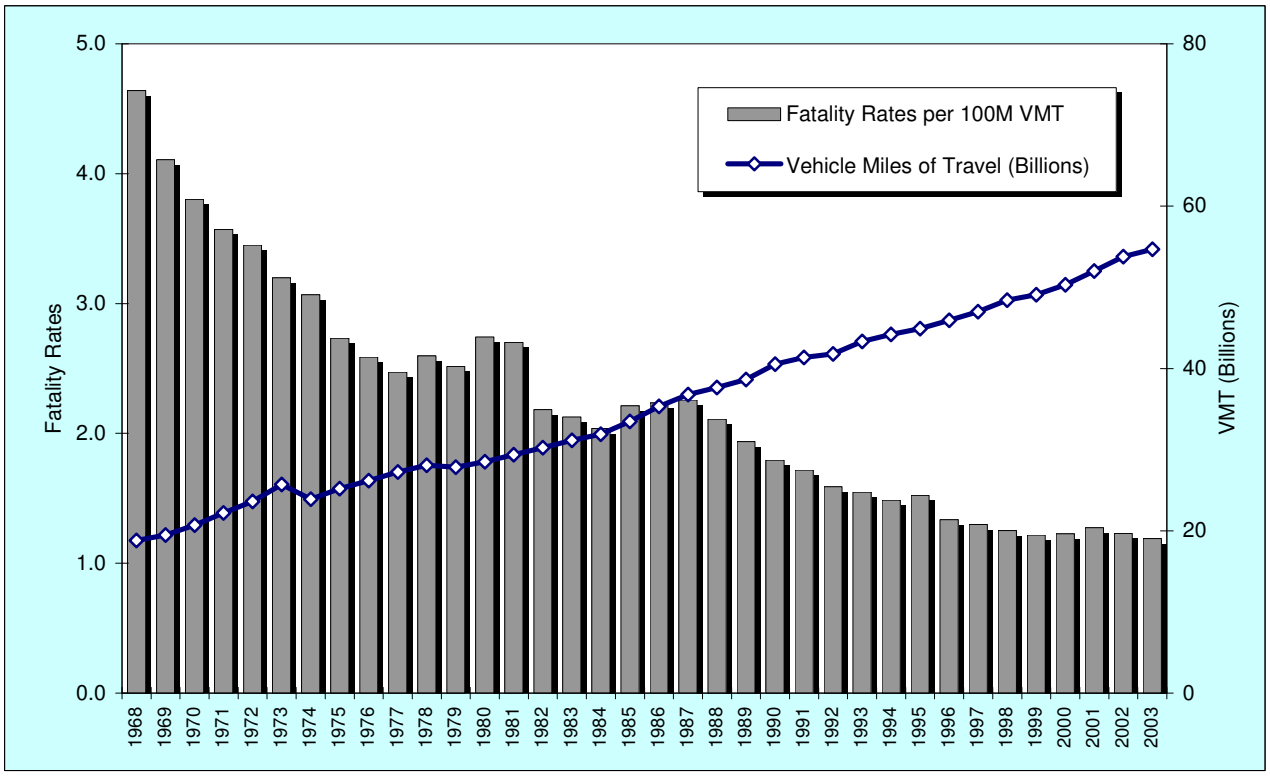


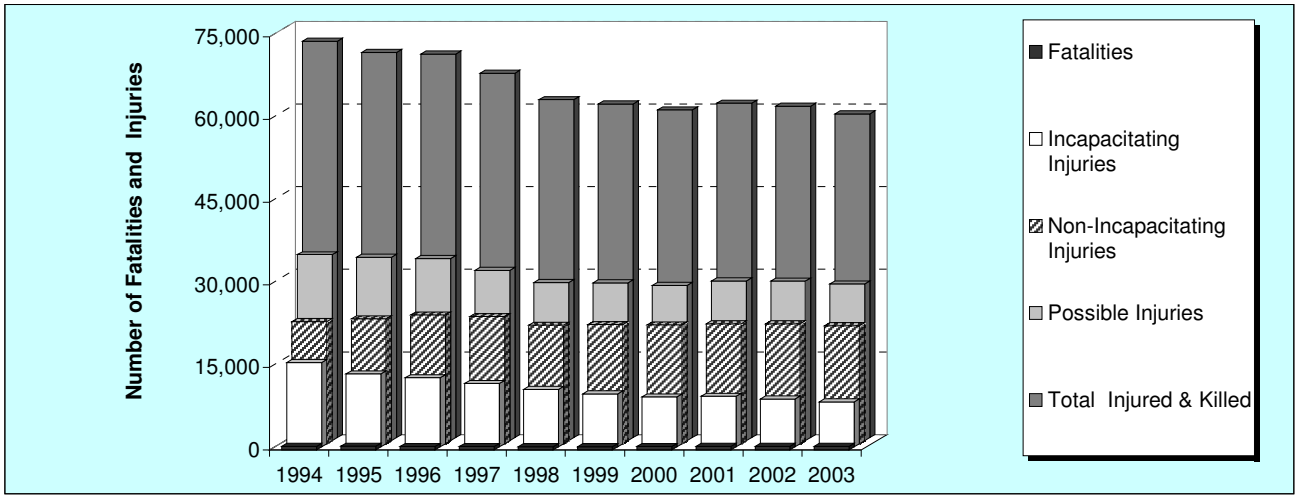
Table 1.1.4 Fatality Rates per Population, Licensed Drivers and Registered Vehicles, 1990-2003

Year	Fatalities Number	Population (1,000)	Licensed Drivers (1,000)	Registered Vehicles (1,000)	Fatality Rates per		
					100,000 Population	100,000 Licensed Drivers	100,000 Registered Vehicles
1990	727	4,781	3,333	3,440	15.21	21.81	21.13
1991	710	4,871	3,403	3,502	14.58	20.86	20.27
1992	664	4,947	3,234	3,490	13.42	20.53	19.03
1993	671	5,023	3,474	3,594	13.36	19.31	18.67
1994	657	5,059	3,308	3,600	12.99	19.86	18.25
1995	684	5,059	3,343	3,721	13.52	20.46	18.38
1996	614	5,070	3,360	3,790	12.11	18.27	16.20
1997	610	5,090	3,387	3,885	11.98	18.01	15.70
1998	606	5,110	3,406	3,955	11.86	17.79	15.32
1999	598	5,193	3,431	4,031	11.52	17.43	14.84
2000	617	5,296	3,588	4,187	11.65	17.20	14.74
2001	662	5,375	3,626	4,348	12.31	18.26	15.23
2002	661	5,418	3,684	4,394	12.20	17.94	15.04
2003	651	5,509	3,763	4,481	11.82	17.30	14.53

Table 1.1.5 Fatalities and Injured Persons by Severity, 1994-2003

Year	Fatalities	Incapacitating Injured Persons	Non-Incapacitating Injured Persons	Possible Injured Persons	Total Injured or Killed
1994	657	15,308	22,215	33,784	71,964
1995	684	13,255	22,714	33,311	69,964
1996	614	12,563	23,408	33,081	69,666
1997	610	11,523	23,123	30,941	66,197
1998	606	10,456	21,557	28,738	61,357
1999	598	9,625	21,681	28,673	60,577
2000	617	9,085	21,610	28,190	59,502
2001	662	9,210	21,815	29,026	60,713
2002	661	8,708	21,824	28,985	60,178
2003	651	8,190	21,458	28,470	58,769

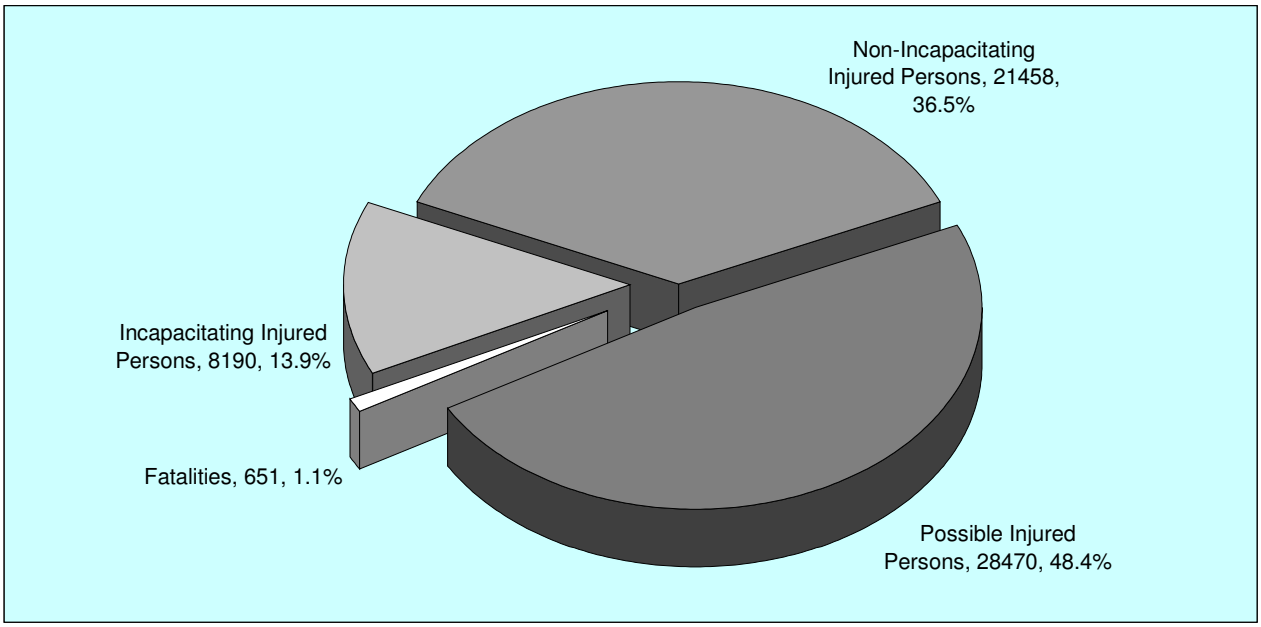
Figure 1.1.6 Fatalities and Injured Persons by Severity, 1994-2003



2003 Overview

- 651 fatalities occurred in 2003, a decrease of 1.5% compared to 2002.
- In 2003, 58,118 persons were injured in traffic accidents, a decrease of 2.4% compared to 2002. 8,190 incapacitating injured persons occurred in 2003, a decrease of 5.9% compared to 2002.
- 13.9% of the persons killed or injured were classified as incapacitating injured persons. Possible injured persons accounted for 48.4% of the persons killed or injured.

Figure 1.1.7 Fatalities and Injured Persons by Severity, 2003



1.1.3 Accident Types

Trends

- Rear-end collisions accounted for the largest percentage among collision types over 1994 - 2003. Crashes with fixed objects were in the second place over this period.
- Run-off-the-road collisions have increased significantly since 1994. Although other and unknown accident types have also increased, pedalcycle, opposite direction, and angle collision types have gradually decreased.
- For fatal accidents, fixed object, pedestrian, opposite direction, and angle collisions were the predominant collision types for the past 10 years.

Table 1.1.6 Total Accidents by Accident Type, 1994-2003

*Accident Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	**Avg. Change(%)
Opposite Direction	3,900	3,325	3,594	3,050	3,049	2,993	3,074	3,186	3,262	3,471	-1.2
Rear End	21,973	21,074	20,682	20,994	21,143	21,799	22,280	23,064	23,962	23,584	0.8
Left Turn	6,400	6,127	6,119	5,798	5,629	5,565	5,311	5,594	5,745	5,973	-0.7
Sideswipe	7,339	6,342	5,372	4,972	4,784	4,770	5,043	5,281	5,341	5,270	-3.1
Angle	14,383	14,242	13,523	13,007	12,331	12,699	12,124	12,597	12,899	13,304	-0.8
Parked Vehicle	13,548	12,318	12,334	11,251	10,867	11,744	12,672	11,770	12,056	12,770	-0.6
Pedestrian	3,290	3,216	3,267	3,057	2,879	2,947	2,950	2,886	2,875	2,972	-1.1
Pedalcycle	1,292	1,203	1,140	1,156	1,089	1,087	1,019	912	852	829	-4.0
Other Conveyance	30	70	61	68	55	68	62	76	71	77	17.4
Railway Train	23	20	40	42	55	57	60	44	35	51	13.5
Animal	1,187	1,292	1,390	1,399	1,335	1,364	1,268	1,415	1,362	1,490	2.8
Fixed Object	16,732	16,878	17,276	17,279	17,109	17,076	17,331	17,790	18,769	19,768	2.0
Other Object	838	923	1,118	993	1,007	1,074	1,105	1,074	1,088	1,199	4.8
Overturned	837	722	793	872	835	802	832	882	922	1,045	2.8
Spilled Cargo	26	47	40	51	53	61	52	48	51	38	5.1
Jacknife	50	58	73	58	55	72	46	51	34	40	-2.2
Units Separate	19	25	23	23	41	39	27	33	41	29	5.8
Other Non Collision	737	672	679	547	469	443	444	371	352	381	-5.4
Run Off Road	44	57	147	274	440	720	1,089	1,343	1,704	1,960	483.8
Down Hill Runaway			4	9	7	9	7	5	8	7	10.7
Explosion or Fire	144	126	141	234	233	295	275	324	307	292	11.4
U-Turn	1,546	1,456	1,450	1,372	1,332	1,412	1,509	1,356	1,420	1,426	-0.9
Backing	814	822	855	823	792	772	806	799	867	879	0.9
Other/unknown	1,700	5,639	9,227	8,791	8,450	9,141	9,916	10,510	10,820	12,275	69.1
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**	**1.4**

* Accident type: combination of collision type and first harmful event.
** Avg. change (%): annual average change rate from 1994 to 2002.

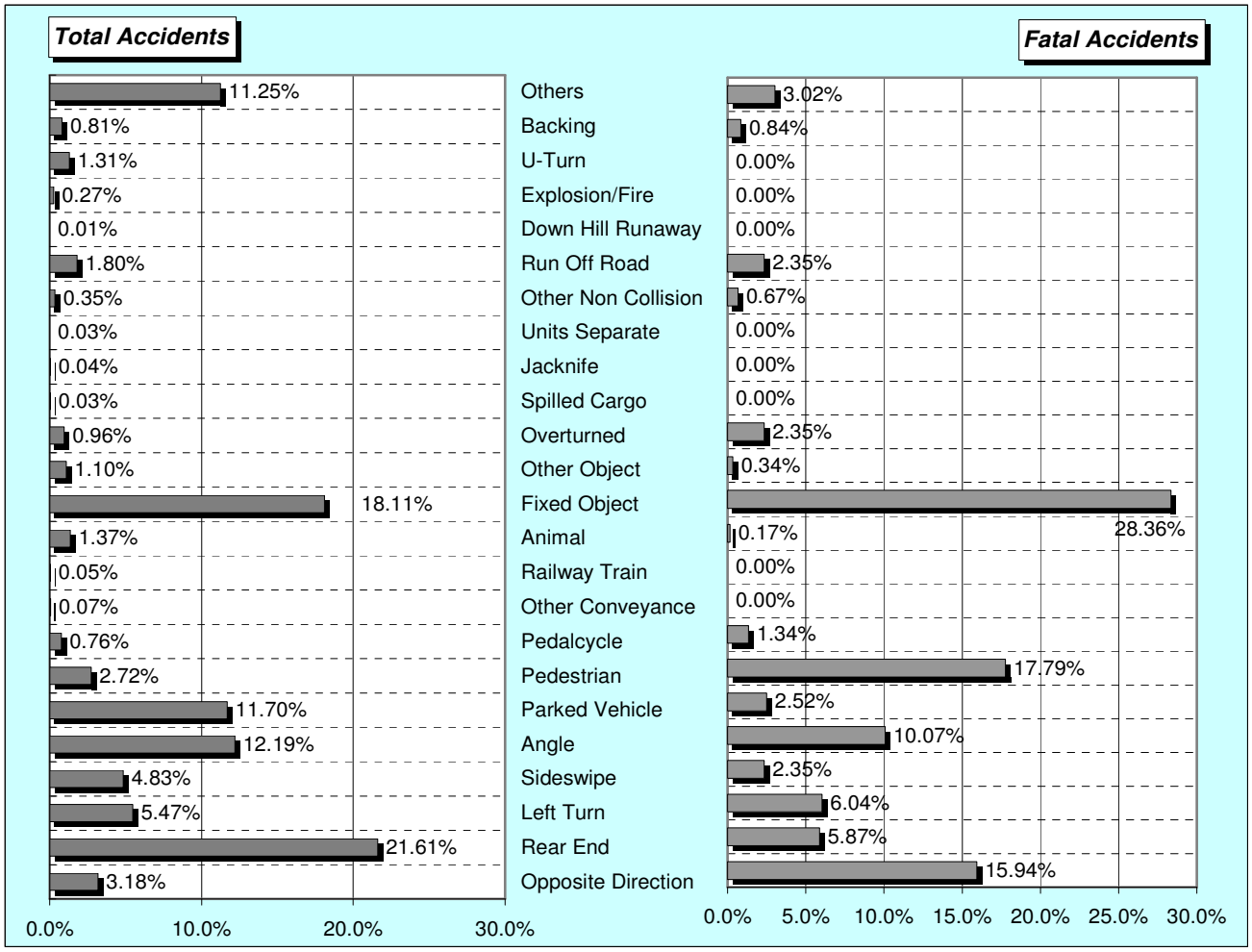
Table 1.1.7 Fatal Accidents by Accident Type, 1994-2003

Accident Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change(%)
Opposite Direction	106	98	99	76	77	86	70	75	72	95	-1.2
Rear End	32	29	29	40	34	28	39	39	58	35	1.0
Left Turn	35	31	33	30	35	29	39	36	26	36	0.3
Sideswipe	11	13	15	18	9	10	10	13	10	14	3.0
Angle	64	86	75	72	72	66	80	72	72	60	-0.7
Parked Vehicle	33	18	16	15	16	13	19	10	11	15	-6.1
Pedestrian	112	103	107	91	93	109	87	92	101	106	-0.6
Pedalcycle	16	8	8	12	10	5	6	11	4	8	-5.6
Other Conveyance	-	-	-	2	-	-	-	-	-	-	-
Railway Train	-	-	-	-	-	2	1	1	-	-	-
Animal	2	1	-	1	-	2	2	1	1	1	-5.6
Fixed Object	165	203	162	178	171	174	184	199	204	169	0.3
Other Object	1	2	2	1	3	3	2	1	4	2	11.1
Overturned	12	4	8	19	15	11	9	16	11	14	1.9
Spilled Cargo	-	-	-	-	-	-	-	-	-	-	
Jacknife	1	1	-	-	-	-	-	-	1	-	-11.1
Units Separate	-	-	-	-	-	-	-	-	-	-	
Other Non Collision	5	8	2	6	6	1	5	3	4	4	-2.2
Run Off Road	2	-	-	3	3	5	12	19	14	14	66.7
Down Hill Runaway	-	-	-	-	-	-	-	-	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	1	-	-	-
U-Turn	-	-	2	-	-	-	-	1	1	-	-
Backing	4	3	3	3	4	6	2	6	3	5	2.8
Other/unknown	4	6	2	3	3	5	7	6	9	18	38.9
Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**	**-0.2**

2003 Overview

- In 2003, rear-end collisions accounted for the highest percentage of total accidents among the collision types (21.6%), and fixed object collisions had the second highest percentage (18.1%).
- Fixed object collisions accounted for the highest percentage of fatal accidents among the collision types (28.4%), and pedestrian-involved collisions had the second percentage (17.8%).

Figure 1.1.8 Total and Fatal Accidents by Accident Type, 2003



1.2 TEMPORAL PATTERNS

This part of the report describes the temporal patterns of accidents, considering the month, day of week, and time of day when accidents occur.

Some of the notable trends are follows:

- For the latest 10 years, accidents were most frequent between October and December, except in 2000. Fatal accidents were most frequent between October and December, except in a few years (1995, 1997 and 2002). Fewer fatal accidents occurred between January and March than in other quarters.
- Fatal accidents have occurred more on Saturdays than any other days. Between 2002 and 2003, the number of fatal accidents on Thursdays significantly decreased from 91 to 58, while the number of fatal accidents on Saturdays significantly increased from 100 to 126.
- For the latest 10 years, accidents have been most frequent between 4:00 PM and 8:00 PM and between noon and 4:00 PM.

Some notable 2003 findings are as follows:

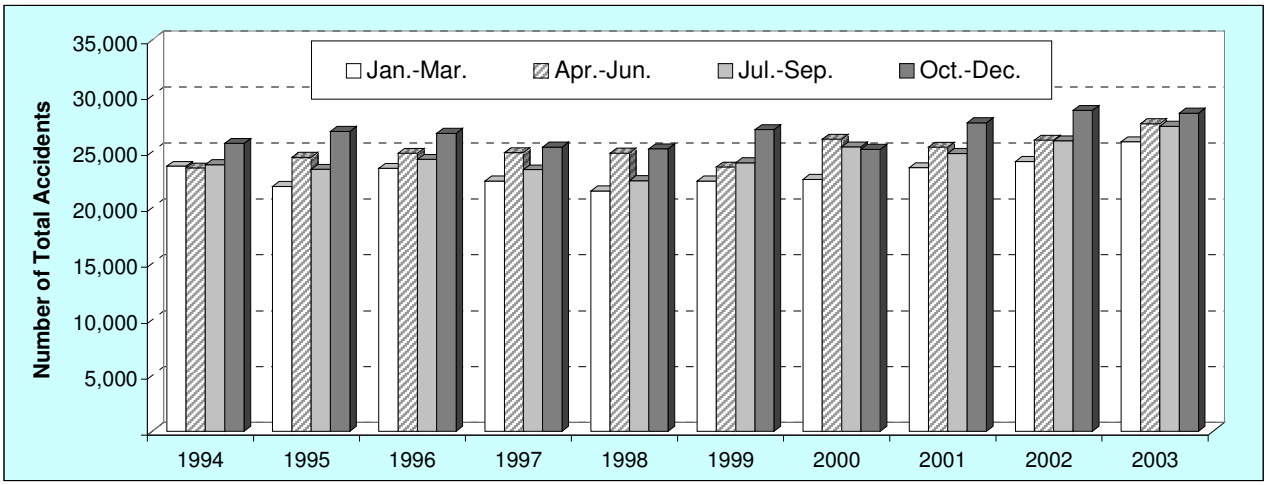
- The largest number of accidents occurred in May (9.1%), while the largest numbers of fatal accidents occurred in November (10.9%).
- The highest percentage of accidents occurred on Fridays (17.1%), while the highest percentage of fatal accidents occurred on Saturdays (21.1%).
- Total and fatal accidents were most frequent between 4:00 AM and 8:00 PM (25.1% and 21.5%, respectively).

1.2.1 Month

Trends

- For the latest 10 year, accidents were most frequent between October and December, except in 2000.
- The period with the fewest accidents was the first quarter.

Figure 1.2.1 Total Accidents by Month and Quarter, 1994-2003



- From 1994 through 2001, the quarter with the highest number of fatal accidents was the fourth, except in 1995 and 1997. However, for the latest two years, 2002 and 2003, the third quarter had the highest number of fatal accidents.
- Fewer fatal accidents occurred between January and March than in other quarters.

Figure 1.2.2 Fatal Accidents by Month and Quarter, 1994-2003

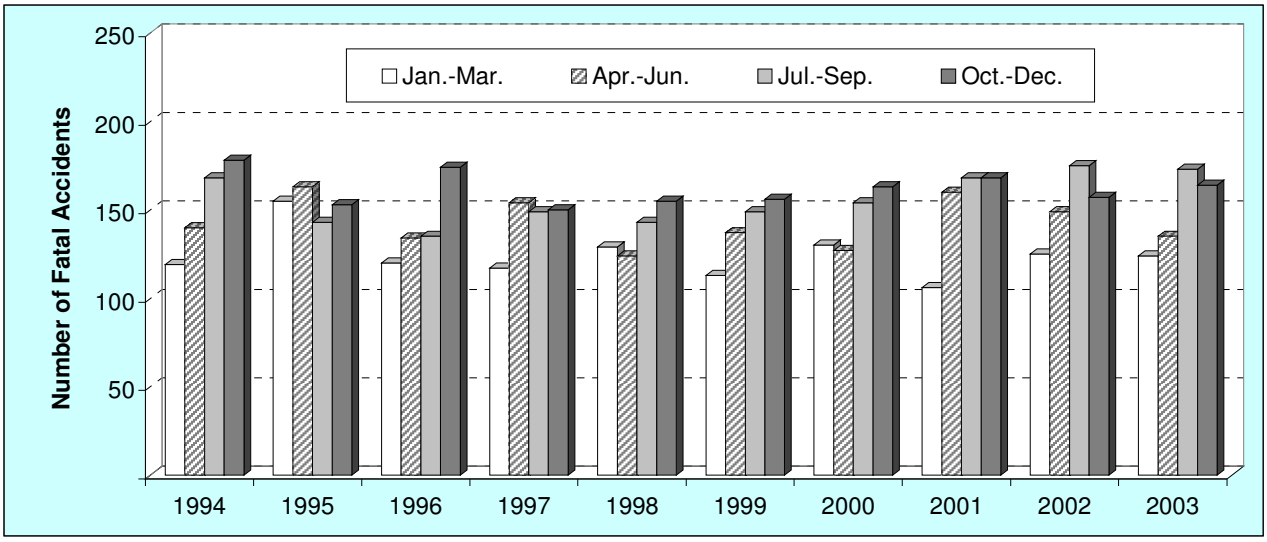


Table 1.2.1 Total Accidents by Month and Quarter, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
January	8,606	7,693	7,945	7,678	7,885	7,666	8,397	7,999	8,230	8,851
February	7,453	7,005	7,867	6,676	6,346	6,794	6,704	7,708	7,007	8,854
March	7,644	7,197	7,697	8,014	7,262	7,920	7,413	7,860	8,901	8,190
April	7,457	7,770	7,756	8,279	7,916	7,622	8,486	7,837	8,718	8,305
May	8,443	8,684	9,043	8,603	9,108	7,990	9,310	9,066	9,163	9,878
June	7,636	8,065	8,066	8,048	7,863	8,020	8,326	8,501	8,158	9,315
July	8,039	7,552	8,314	7,918	7,450	7,819	8,613	8,526	8,523	8,821
August	8,021	7,620	7,931	7,779	7,498	7,688	8,404	8,404	8,688	9,263
September	7,802	8,255	8,086	7,694	7,446	8,516	8,417	7,923	8,767	9,200
October	8,556	8,896	9,172	8,465	8,480	9,033	8,556	9,163	9,997	9,732
November	8,937	9,102	8,469	8,677	8,273	8,983	8,254	9,708	9,418	9,379
December	8,258	8,815	9,002	8,289	8,512	8,958	8,422	8,716	9,273	9,342
Ist Quarter Jan. – Mar.	23,703	21,895	23,509	22,368	21,493	22,380	22,514	23,567	24,138	25,895
2nd Quarter Apr. – Jun.	23,536	24,519	24,865	24,930	24,887	23,632	26,122	25,404	26,039	27,498
3rd Quarter Jul. – Sep.	23,862	23,427	24,331	23,391	22,394	24,023	25,434	24,853	25,978	27,284
4th Quarter Oct. – Dec.	25,751	26,813	26,643	25,431	25,265	26,974	25,232	27,587	28,688	28,453
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**

Table 1.2.2 Fatal Accidents by Month and Quarter, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
January	57	47	34	40	31	33	51	35	36	45
February	24	48	39	34	38	39	35	36	39	40
March	38	60	47	43	60	41	44	35	50	39
April	46	55	46	55	43	39	35	51	42	38
May	54	59	40	49	40	56	48	50	49	46
June	40	49	48	50	41	42	44	59	58	51
July	54	42	37	52	43	53	52	47	62	59
August	49	50	59	44	49	54	49	64	69	60
September	65	51	39	53	51	42	53	57	44	54
October	63	56	64	40	46	45	58	57	51	50
November	60	51	57	55	46	60	52	59	52	65
December	55	46	53	55	63	51	53	52	54	49
Ist Quarter Jan. – Mar.	119	155	120	117	129	113	130	106	125	124
2nd Quarter Apr. – Jun.	140	163	134	154	124	137	127	160	149	135
3rd Quarter Jul. – Sep.	168	143	135	149	143	149	154	168	175	173
4th Quarter Oct. – Dec.	178	153	174	150	155	156	163	168	157	164
Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**

2003 Overview

- In 2003, the largest number of total accidents occurred in May (9.1%), while the largest numbers of fatal accidents occurred in November (10.9%).
- The largest number of total accidents occurred in the fourth quarter, while the largest numbers of fatal accidents occurred in the third quarter.

Figure 1.2.3 Total Accidents by Month, 2003

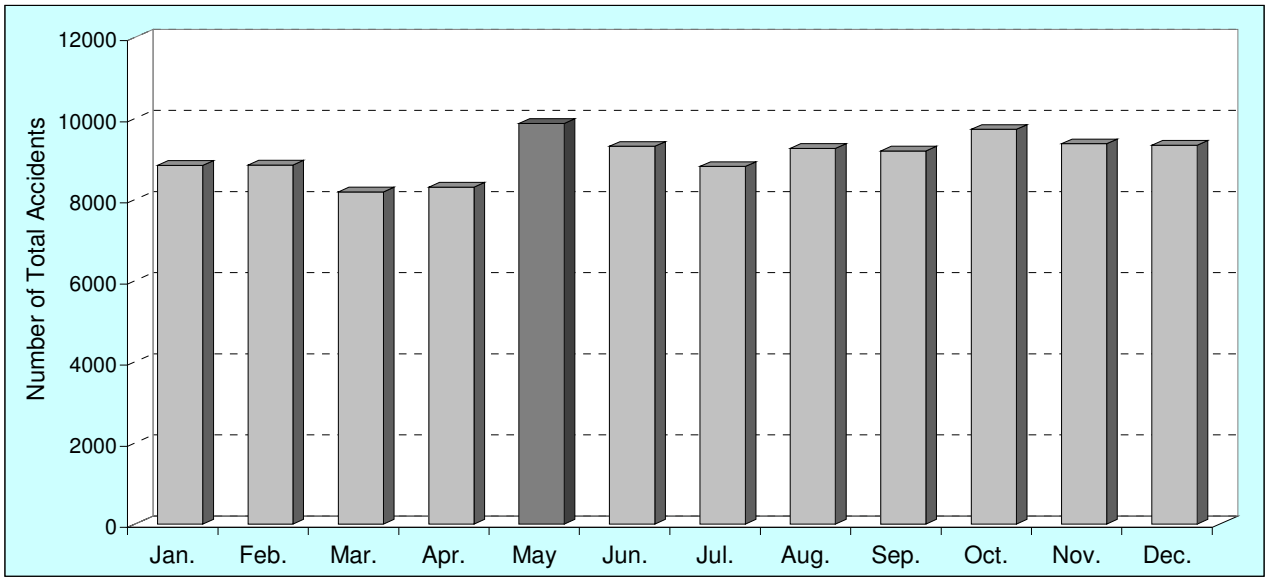
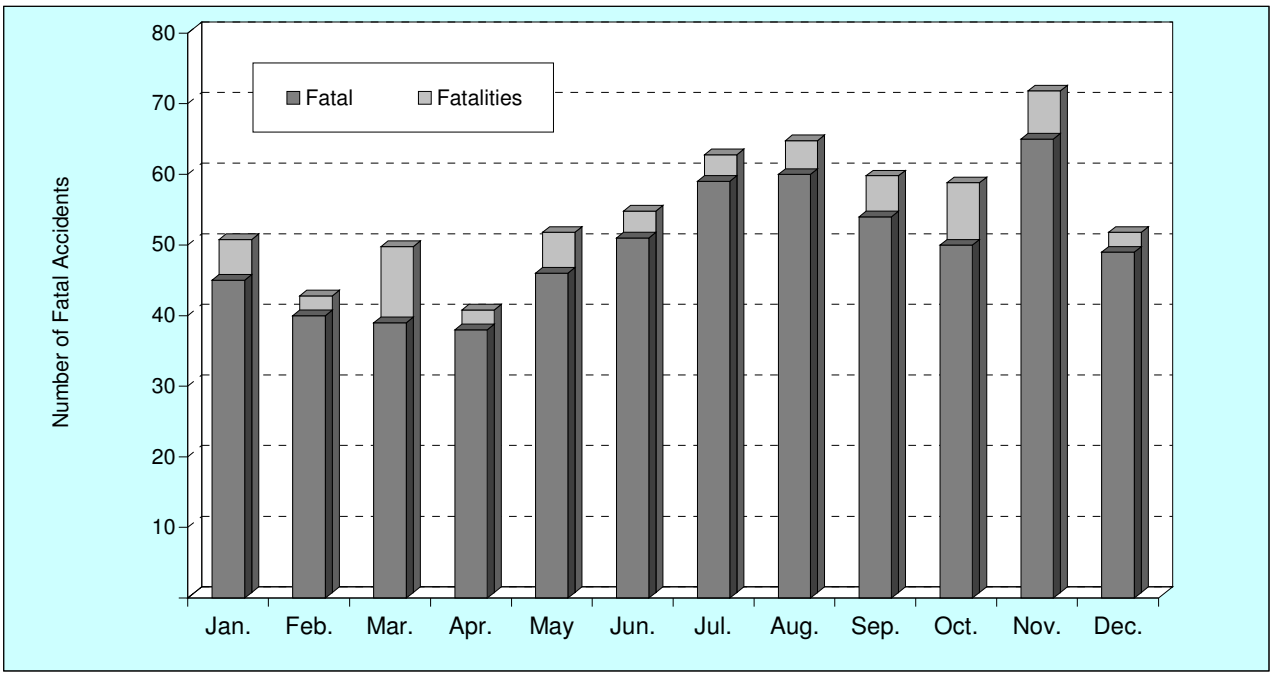


Figure 1.2.4 Fatal Accidents and Fatalities by Month, 2003



1.2.2 Day of Week

Trends

- For the latest 10 years (1994 – 2003), traffic accidents for various days of the week showed similar patterns. Total accidents occurred most on Fridays, and least on Sundays.
- Fatal accidents have occurred more on Saturdays than any other days. Between 2002 and 2003, the number of fatal accidents on Thursdays significantly decreased from 91 to 58, while the number of fatal accidents on Saturdays significantly increased from 100 to 126.

Figure 1.2.5 Total and Fatal Accidents by Day of Week, 1994-2003

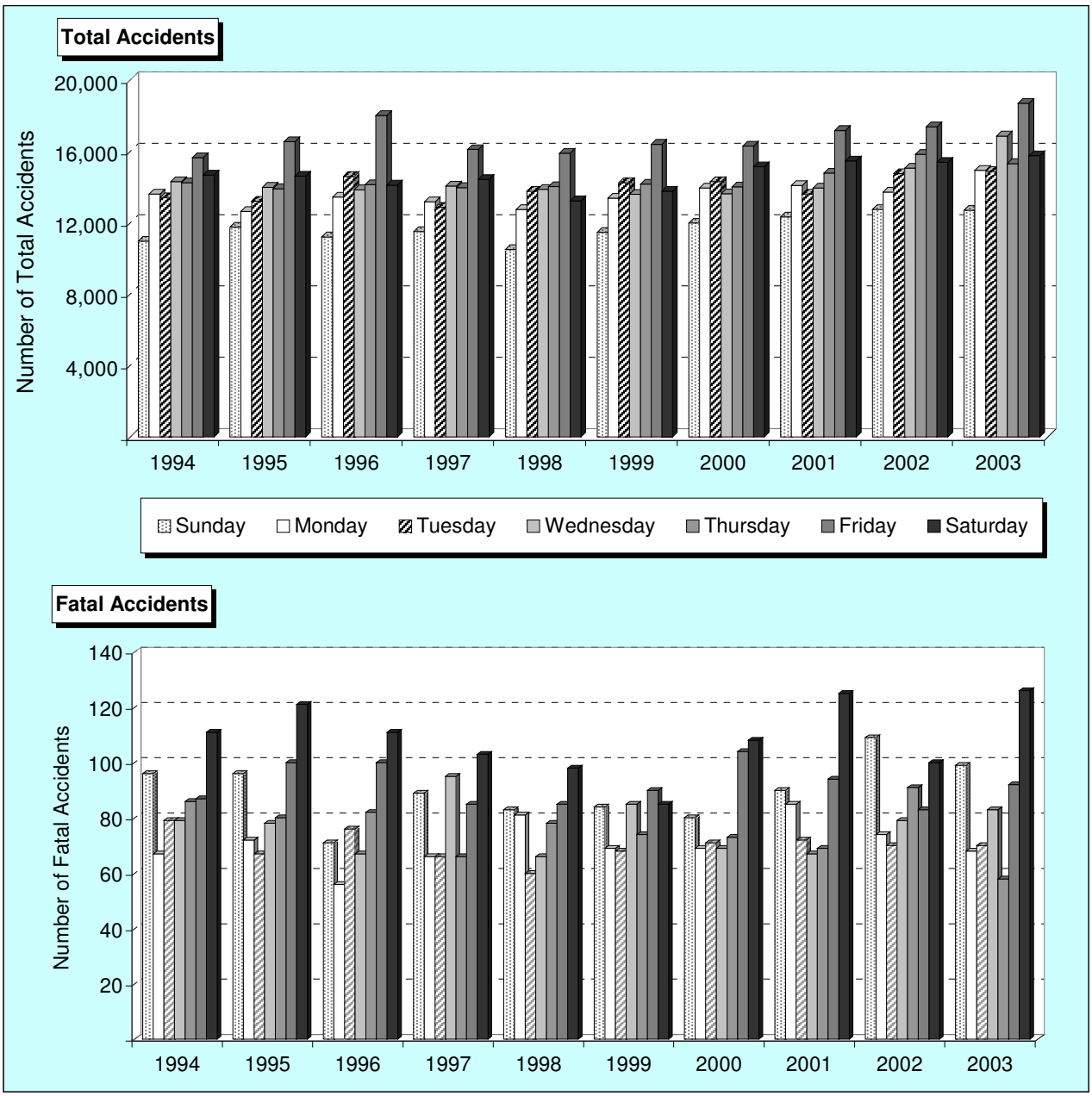


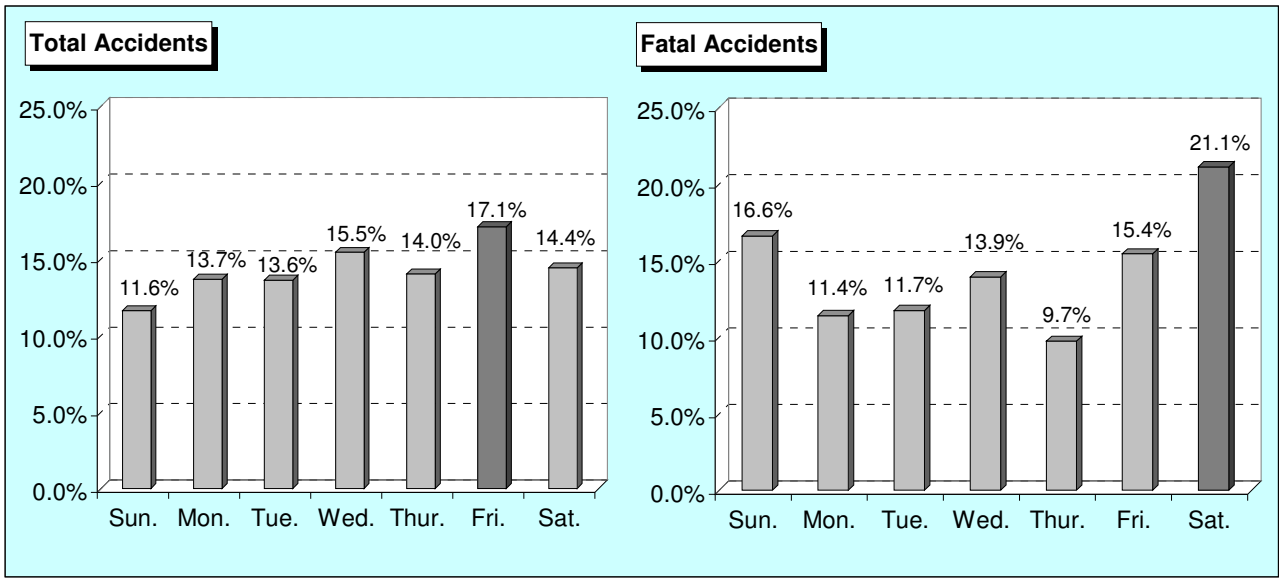
Table 1.2.3 Total and Fatal Accidents by Day of Week, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Accidents										
Sunday	10,965	11,751	11,201	11,501	10,506	11,457	11,973	12,335	12,743	12,700
Monday	13,613	12,635	13,440	13,180	12,746	13,385	13,947	14,090	13,712	14,939
Tuesday	13,409	13,213	14,598	12,874	13,764	14,236	14,299	13,609	14,745	14,870
Wednesday	14,306	13,987	13,848	14,060	13,868	13,591	13,630	13,955	15,054	16,866
Thursday	14,239	13,911	14,137	13,972	14,029	14,166	14,014	14,784	15,821	15,312
Friday	15,647	16,546	18,013	16,107	15,893	16,405	16,304	17,174	17,386	18,695
Saturday	14,673	14,611	14,111	14,426	13,233	13,769	15,135	15,464	15,382	15,748
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**
Fatal Accidents										
Sunday	96	96	71	89	83	84	80	90	109	99
Monday	67	72	56	66	81	69	69	85	74	68
Tuesday	79	67	76	66	60	68	71	72	70	70
Wednesday	79	78	67	95	66	85	69	67	79	83
Thursday	86	80	82	66	78	74	73	69	91	58
Friday	87	100	100	85	85	90	104	94	83	92
Saturday	111	121	111	103	98	85	108	125	100	126
Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**

2003 Overview

- In 2003, the highest percentage of total accidents occurred on Fridays (17.1%), while the highest percentage of fatal accidents occurred on Saturdays (21.1%).

Figure 1.2.6 Total and Fatal Accidents by Day of Week, 2003

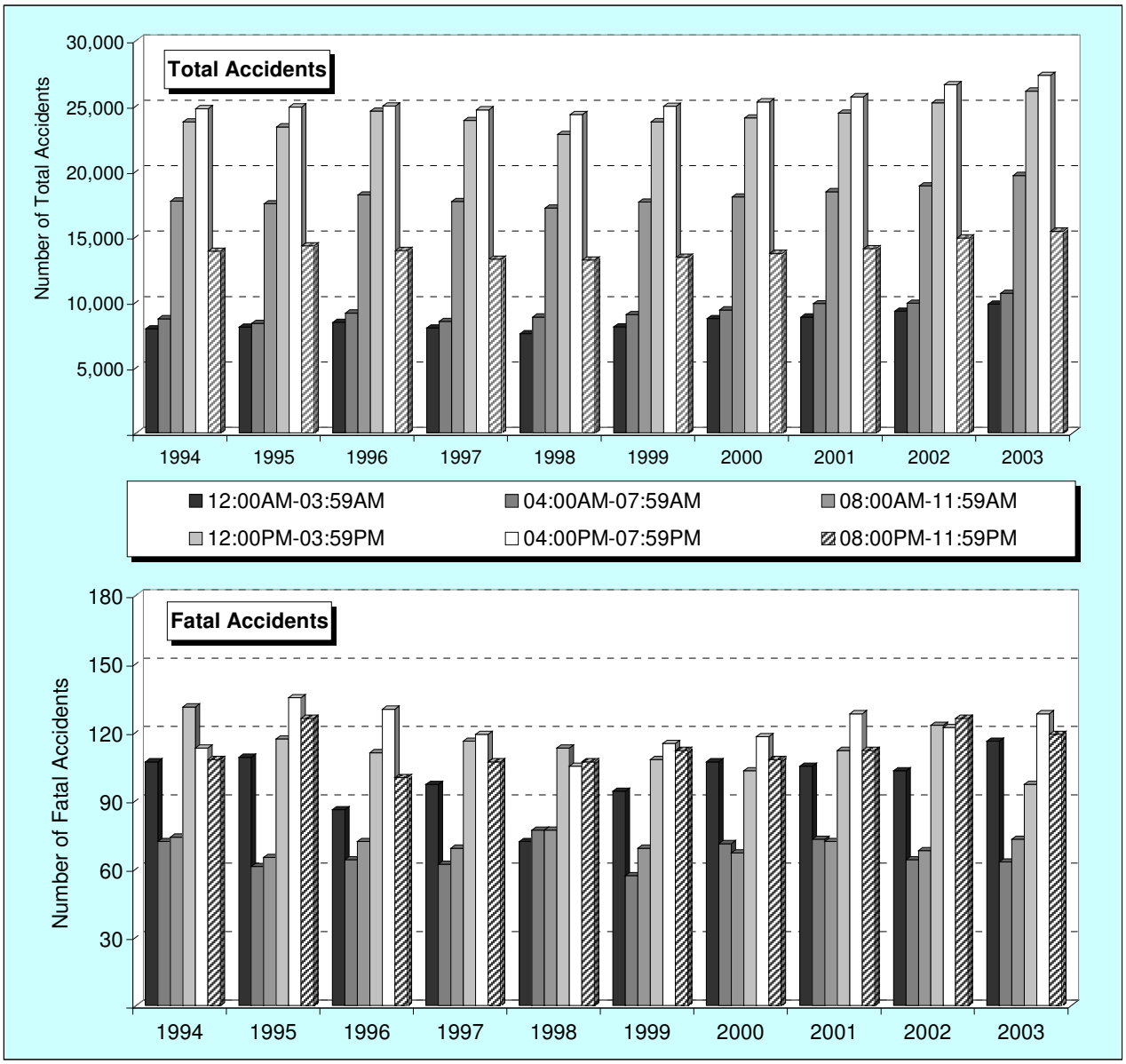


1.2.3 Time of Day

Trends

- For the latest 10 years, accidents have been most frequent between 4:00 PM and 8:00 PM and between noon and 4:00 PM.
- From 1994 through 2002, fatal accidents had occurred more in three 4-hour periods between noon and midnight than in other times. However, in 2003, fatal accidents occurred more in three 4-hour periods of between 4:00 PM and 4:00 AM, and fatal accidents between midnight and 3:59 AM accounted for a much higher percentage of fatal accidents than of total accidents in the same period.
- Fewer fatal accidents occurred between 4:00 AM and 11:59 AM than in other time periods.

Figure 1.2.7 Total and Fatal Accidents by Time of Day, 1994-2003



2003 Overview

- Among the 4-hour periods, accidents were most frequent between 4:00 PM and 8:00 PM (25.1%).
- A larger fatal accident percentage occurred between 4:00 PM and 8:00 PM than in other 4-hour periods (21.5%).

Figure 1.2.8 Total Accidents by Time of Day, 2003

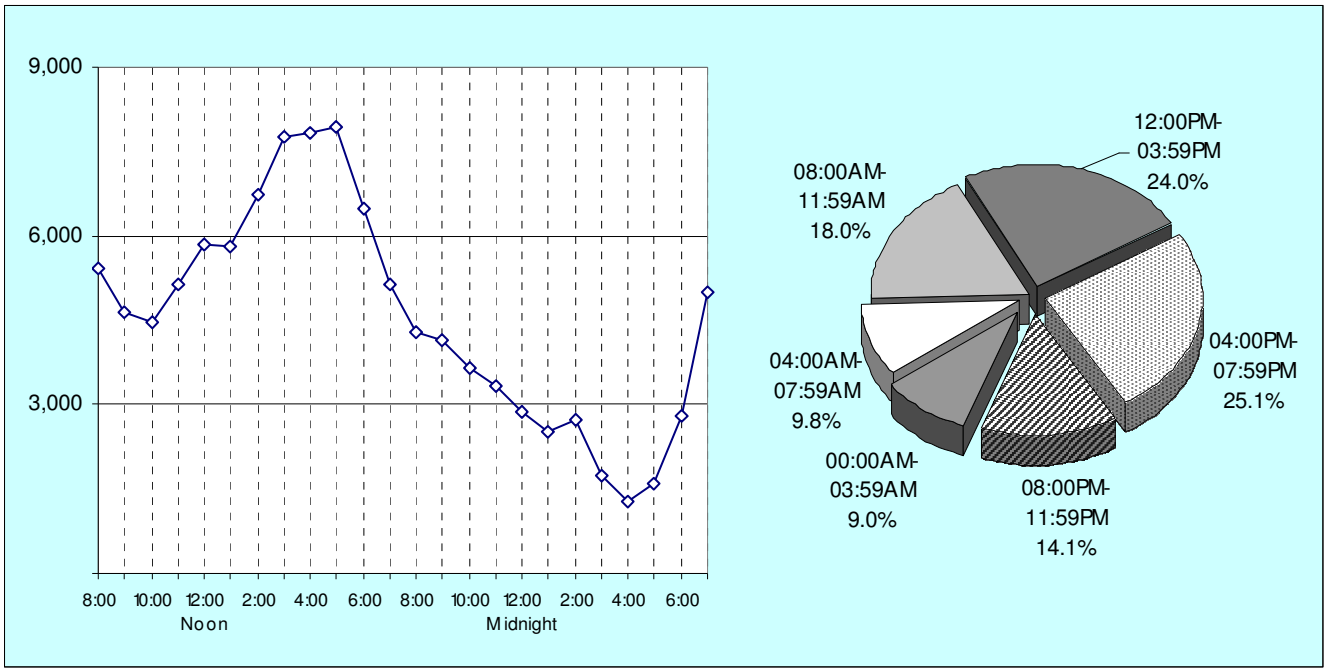
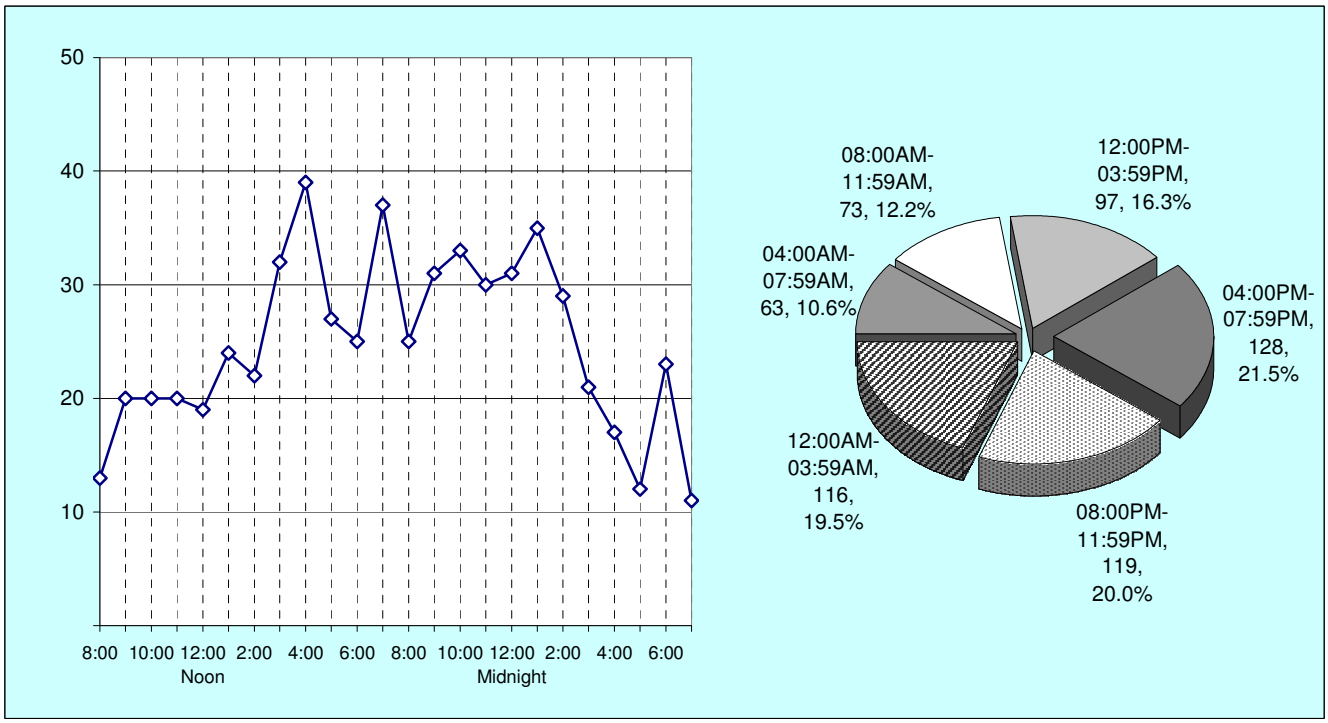


Figure 1.2.9 Fatal Accidents by Time of Day, 2003



1.3 SPATIAL PATTERNS

This section describes where accidents happen. Spatial patterns include route types, regions, counties, and 11 municipalities which have the population size of over 20,000.

Some of the notable trends are as follows:

- From 1994 to 1999, total accidents on MD numbered and County highways had been holding almost steady, but have been trending up from 2000 to 2003. Total accidents on Interstate highways have increased from 1998 to 2003.
- From 1994 through 2003, the Baltimore Metropolitan area (the Central Maryland) had more total and fatal accidents than any other region.
- From 1994 through 2003, Baltimore City had the most total accidents, and Prince George's County had the second most total accidents.
- For the latest 10 years, most of municipalities had no significant changes for the numbers of fatal and total accidents. Except in Gaithersburg in 2000, the numbers of fatal accidents in all municipalities for each year have been 5 or below.

Some results for 2003 are as follows:

- In 2003, the highest percentage of total accidents (29.7%) as well as the highest percentage of fatal accidents (45.5%) occurred on MD highways.
- The state-maintained highways accounted for 46.4% of total accidents and 66.4% of fatal accidents.
- Among 5 regions, more than 50% of total accidents occurred in the Baltimore Metropolitan Area. The Washington Metropolitan area accounted for 28.7% of total accidents.
- The Washington Metropolitan area had the highest total and fatal accident rates per 100 million VMT (518.67 and 2.88, respectively).
- Prince George's County had the largest numbers of fatal accidents, fatalities, and injuries.
- Five jurisdictions including Baltimore City, Prince George's, Baltimore, Montgomery and Anne Arundel Counties accounted for more than 70% of total accidents.
- Garrett County and Baltimore City had the highest fatality and total accident rates per VMT.
- In 2003, among the 11 municipalities, the largest number of fatal and total accidents occurred in Rockville City. The fatality rate per population was highest in College Park (0.79 per 10,000 population), and the injured person rate per population was highest in Salisbury (194.48 per 10,000 population).

1.3.1 Route Types

Trends

- For the latest 10 years, more than 50% of accidents and nearly two-thirds of fatal accidents occurred on MD and County highways. From 1994 to 1999, total accidents on MD and County highways had been holding almost steady, but has been trending up from 2000 to 2003. Total accidents on Interstate highways have increased from 1998 to 2003.
- The state-maintained routes (IS, US and MD) have had fewer total accidents than other routes, whereas the state-maintained routes have had more fatal accidents than other routes for the latest 10 years.

Table 1.3.1 Total Accidents by Route Types, 1994-2003

Route Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
IS	6,770	6,608	7,175	6,777	7,065	8,002	8,036	8,580	8,883	9,435
US	7,800	7,408	7,931	7,725	7,861	8,055	7,927	7,966	8,456	8,725
MD	**28,044**	**28,073**	**29,114**	**28,204**	**27,811**	**27,774**	**28,086**	**29,647**	**31,482**	**32,462**
CO	**23,312**	**23,093**	**22,924**	**22,763**	**22,626**	**22,361**	**22,964**	**24,989**	**26,100**	**27,475**
MU	4,739	4,466	4,535	4,314	4,267	4,508	4,614	4,698	4,832	5,087
GV	67	72	63	73	69	56	83	73	94	77
SR	153	144	144	167	168	163	172	143	132	137
OP	379	387	406	387	454	431	477	475	525	567
Baltimore City, CY	19,114	19,746	20,024	18,908	17,329	18,948	20,032	18,573	17,981	18,472
Parking Lots	5,144	5,571	5,537	4,467	3,656	4,266	4,816	4,110	4,299	4,679
Other / Unknown	1,330	1,086	1,495	2,335	2,733	2,445	2,095	2,157	2,059	2,014
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**

Table 1.3.2 Fatal Accidents by Route Types, 1994-2003

Route Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
IS	74	50	51	69	67	71	70	68	75	57
US	83	77	76	70	68	64	74	75	83	68
MD	**239**	**283**	**242**	**251**	**254**	**245**	**270**	**253**	**256**	**271**
CO	**124**	**134**	**131**	**118**	**109**	**118**	**103**	**145**	**141**	**149**
MU	13	13	9	9	7	5	6	7	7	6
GV	-	1	1	-	-	-	2	2	-	1
SR	-	1	-	-	1	-	-	-	-	
OP	1	1	1	2	2	-	-	1	-	3
Baltimore City, CY	63	46	44	45	39	28	29	43	36	33
Parking Lots	4	7	6	4	2	8	4	2	4	4
Other / Unknown	4	1	2	2	2	16	16	6	4	4
Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**

Figure 1.3.1 Total Accidents by Route Types, 1994-2003

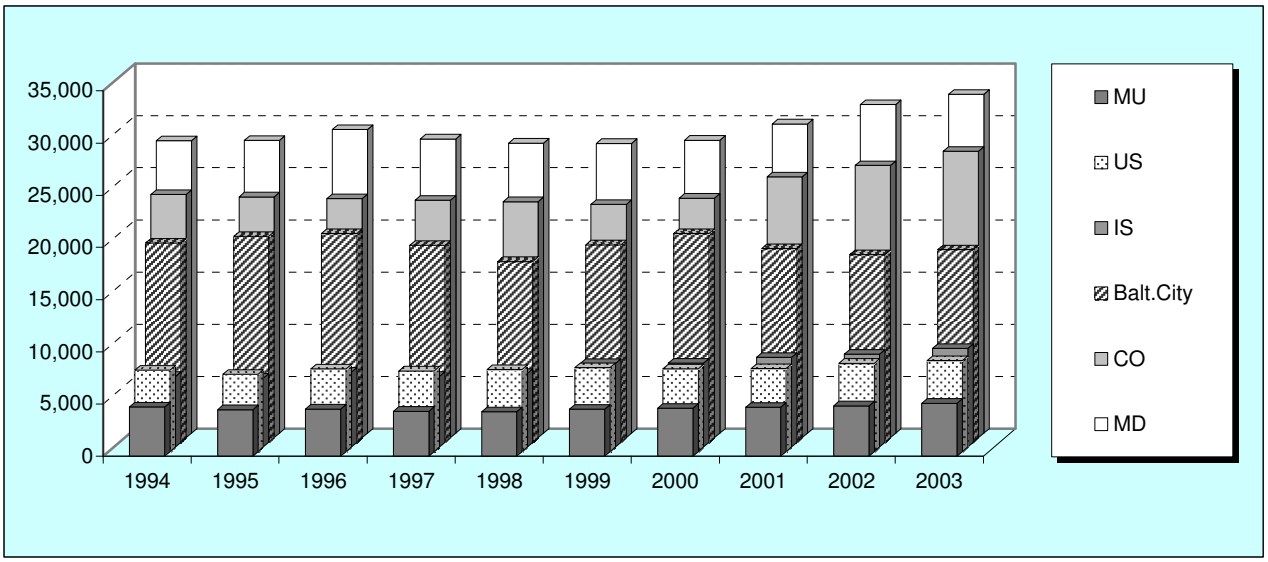


Figure 1.3.2 Fatal Accidents by Route Types, 1994-2003

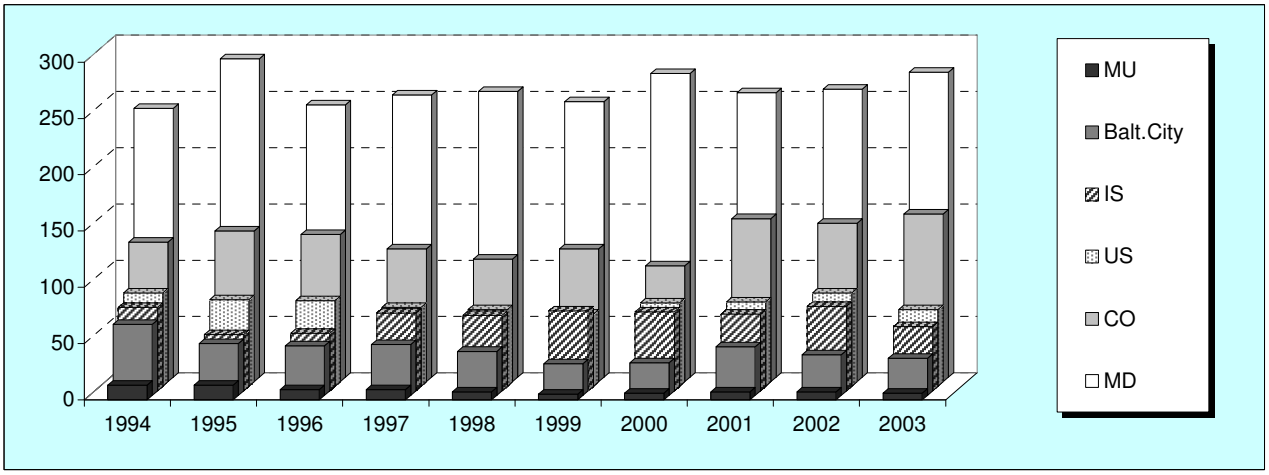
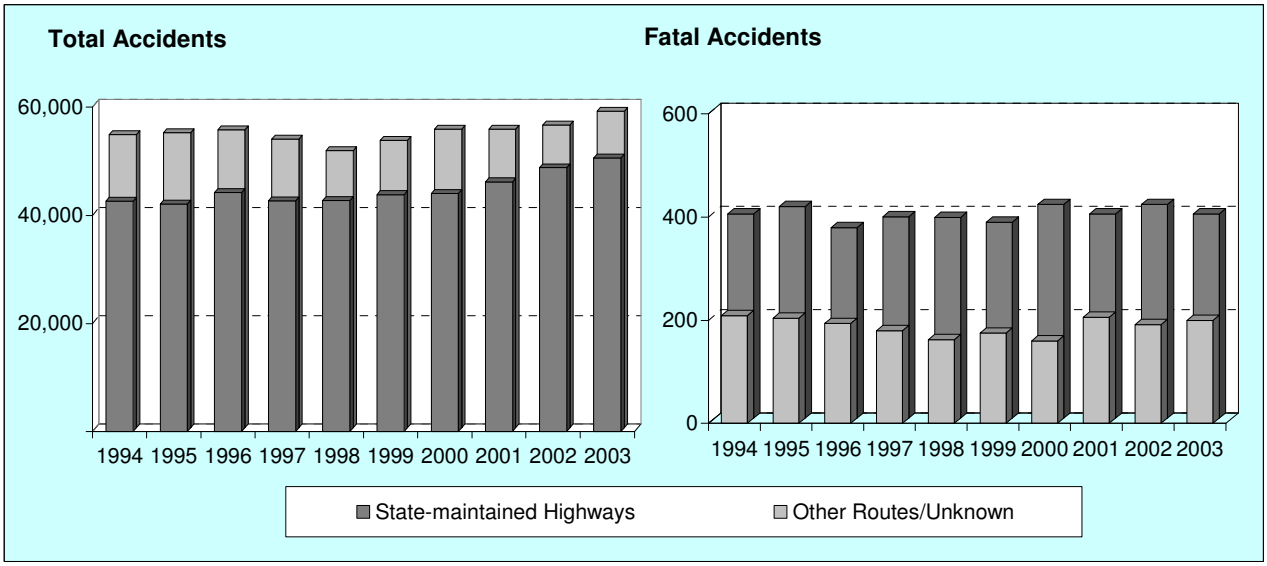


Figure 1.3.3 Total Accidents on the State-Maintained Routes, 1994-2003



2003 Overview

- In 2003, the highest percentage of total accidents (29.7%) as well as the highest percentage of fatal accidents (45.5%) occurred on MD highways.
- The state-maintained highways accounted for 46.4% of total accidents and 66.4% of fatal accidents.

Figure 1.3.4 Total Accidents by Route Types, 2003

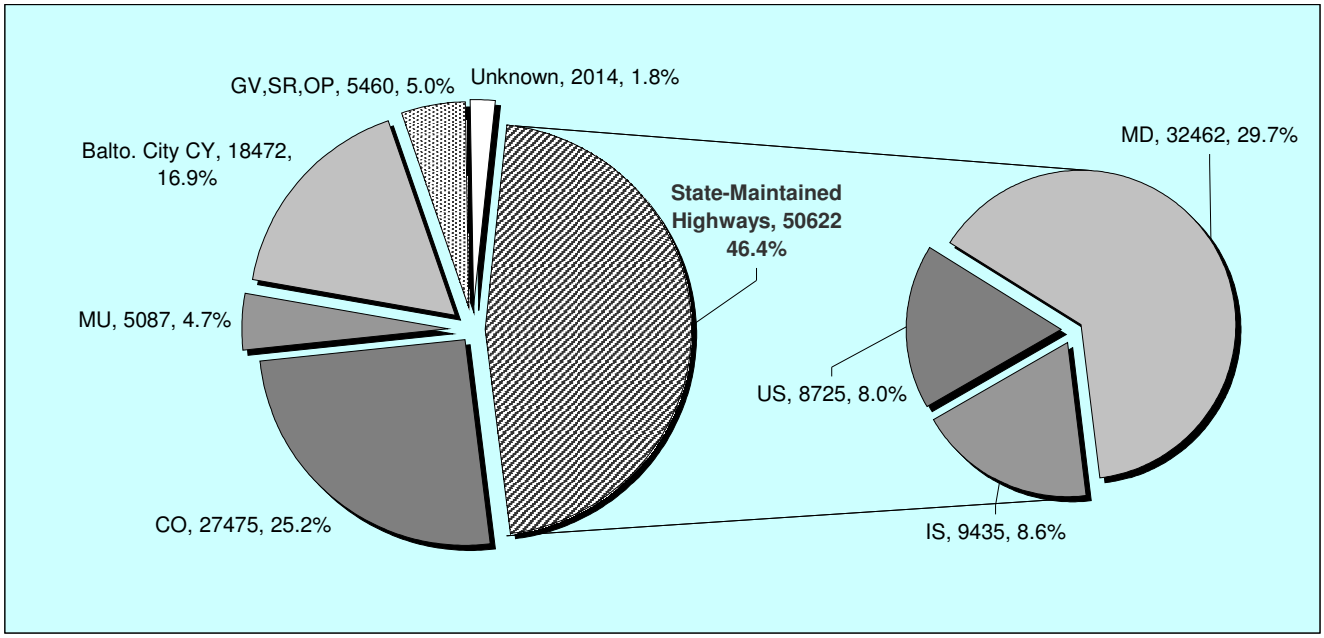
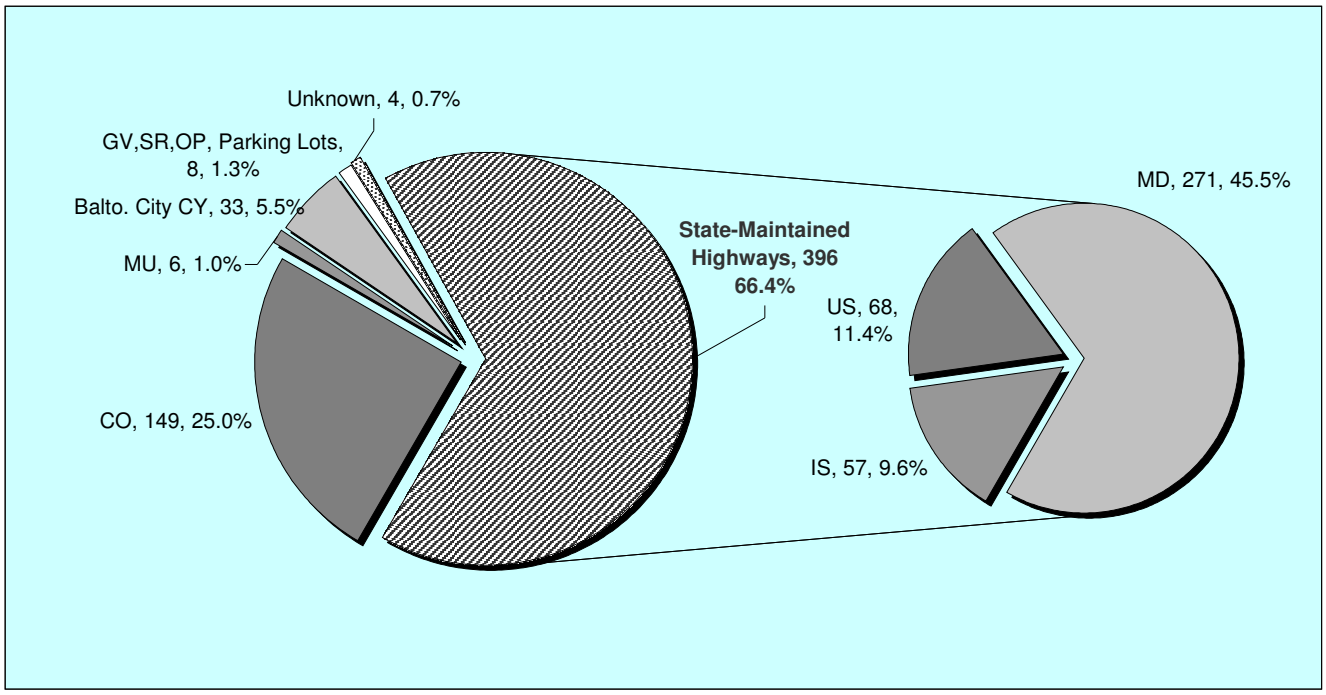


Figure 1.3.5 Fatal Accidents by Route Types, 2003



1.3.2 Regions

Trends

- From 1994 through 2003, the Baltimore Metropolitan area (the Central Maryland) which is comprised of 5 counties and Baltimore City had more total and fatal accidents than any other region.
- The Washington Metropolitan area which is comprised of Montgomery and Prince George's counties had the second most total and fatal accidents among 5 regions. The region that had the lowest numbers of total and fatal accidents was the Southern Metropolitan area.
- Total accidents in most regions had increasing trends from 1999 to 2003. Between 2002 and 2003, the number of fatal accidents in Washington Metro and Eastern Shore decreased, while that in the other regions increased.

Table 1.3.3 Total Accidents by Region, 1994-2003

Regions	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Washington Metro	30,479	29,892	29,242	27,832	27,330	27,045	28,688	30,285	30,315	31,317
Baltimore Metro	47,835	49,397	51,497	49,620	47,790	50,473	51,755	51,922	54,146	56,630
Southern MD	4,626	3,981	4,127	4,146	4,393	4,304	4,310	4,554	4,921	5,265
Western MD	6,918	6,556	7,098	7,084	6,981	7,273	7,246	7,098	7,291	7,486
Eastern Shore	6,994	6,828	7,384	7,438	7,545	7,914	7,303	7,552	8,170	8,432
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**

Figure 1.3.6 Total Accidents by Region, 1994-2003

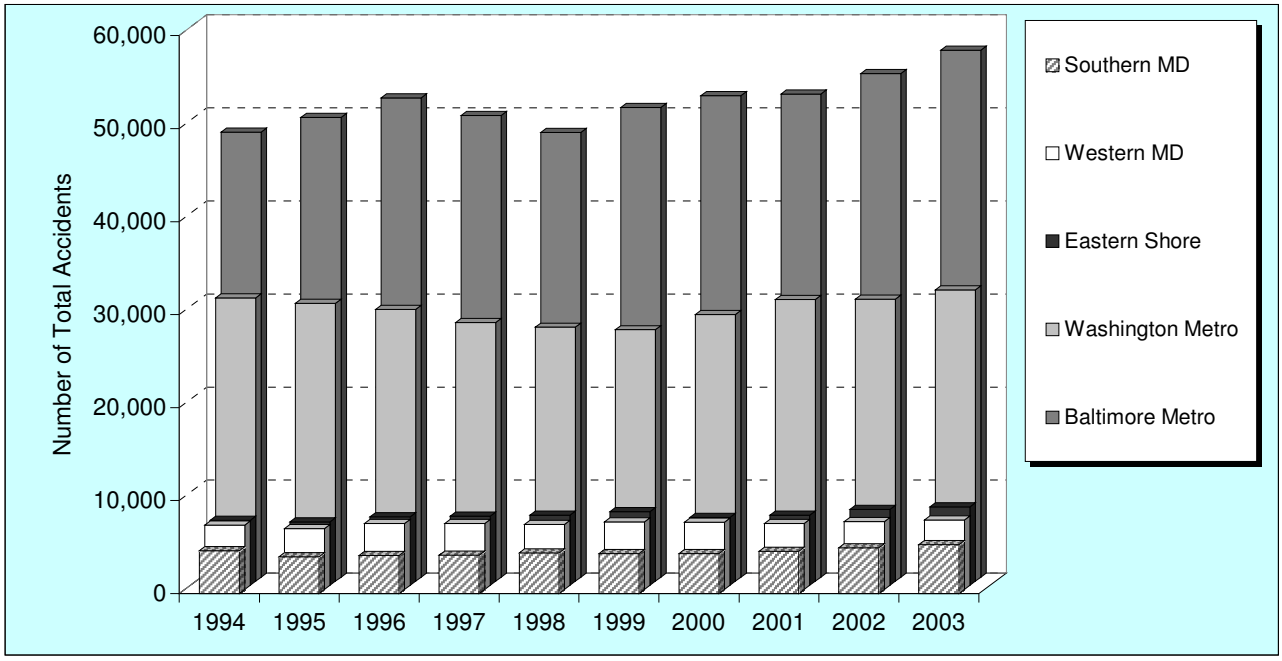
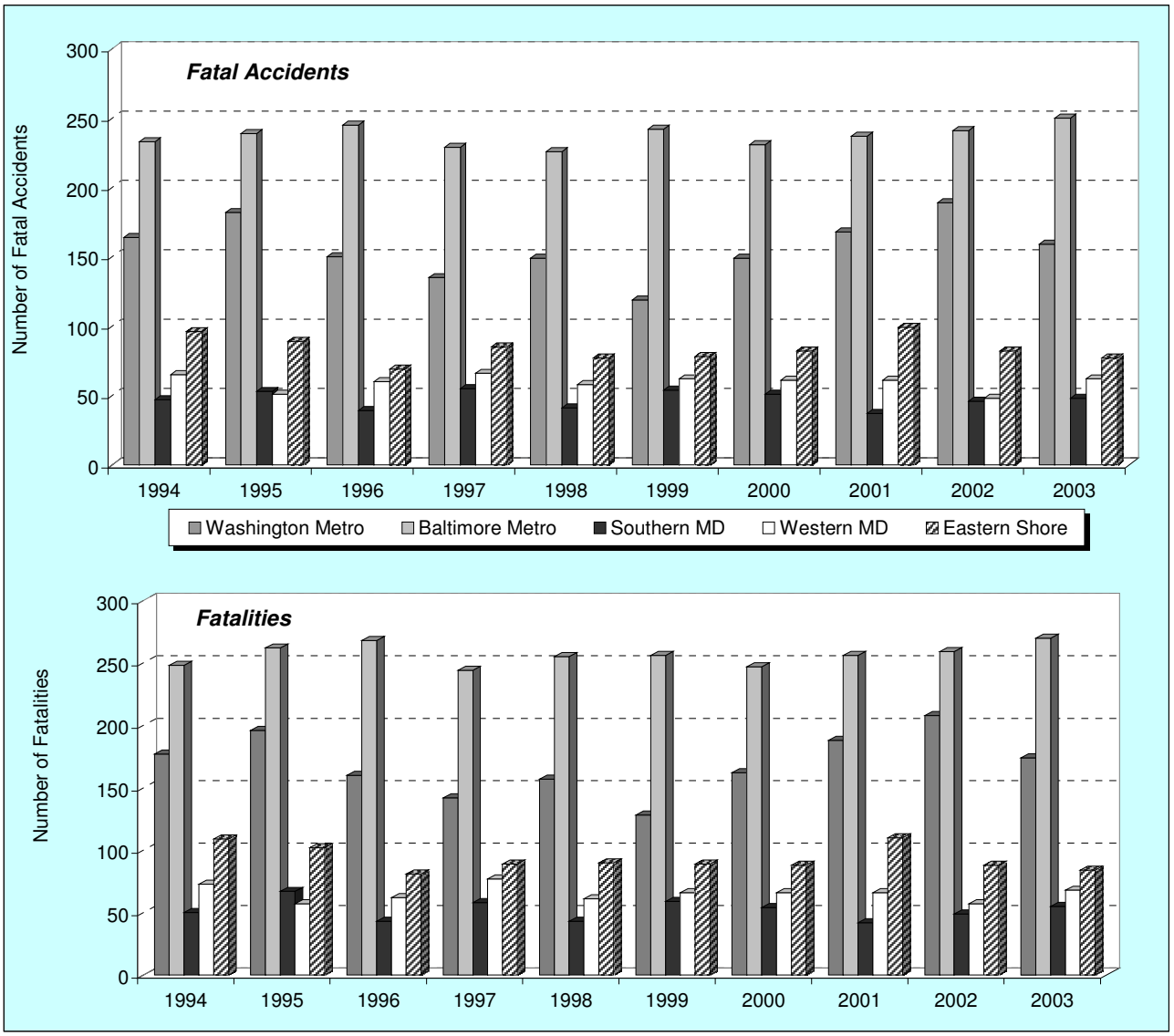


Table 1.3.4 Fatal Accidents and Fatalities by Region, 1994-2003

Regions	Regions	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Fatal Accidents	Washington Metro	164	182	150	135	149	119	149	168	189	159
	Baltimore Metro	233	239	245	229	226	242	231	237	241	250
	Southern MD	47	53	39	55	41	54	51	37	46	48
	Western MD	65	51	60	66	58	62	61	61	48	62
	Eastern Shore	96	89	69	85	77	78	82	99	82	77
	Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**
Fatalities	Washington Metro	177	196	160	142	157	128	162	188	208	174
	Baltimore Metro	248	262	268	244	255	256	247	255	259	270
	Southern MD	50	67	43	58	43	59	54	42	49	55
	Western MD	73	57	62	77	61	66	66	66	57	68
	Eastern Shore	109	102	81	89	90	89	88	110	88	84
	Total	**657**	**684**	**614**	**610**	**606**	**598**	**617**	**661**	**661**	**651**

Figure 1.3.7 Fatal Accidents and Fatalities by Region, 1994-2003



2003 Overview

- More than 50% of accidents occurred in the Baltimore Metropolitan Area. The Washington Metropolitan area accounted for 28.7% of accidents.
- 41.9% of fatal accidents occurred in the Baltimore Metropolitan Area. The Washington Metropolitan area accounted for 26.7% of fatal accidents.
- The Southern Maryland had the least percentages of total and fatal accidents (4.8% and 8.1%, respectively).
- The Washington Metropolitan area had the highest total and fatal accident rates per 100 million VMT (518.67 and 2.88, respectively).

Figure 1.3.8 Total and Fatal Accidents by Region, 2003

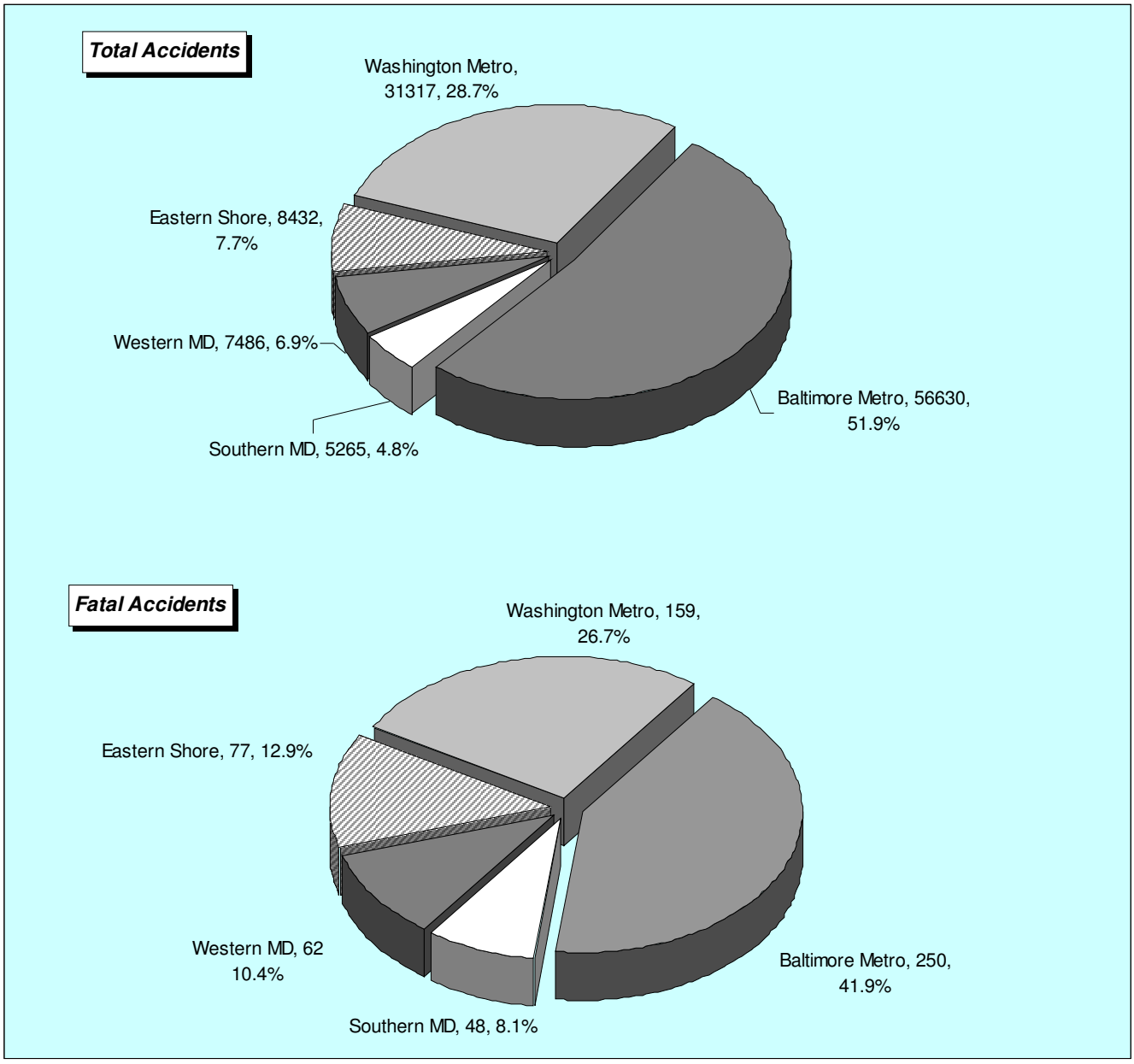


Figure 1.3.9 Total Accident Rates per 100 Million VMT by Region, 2003

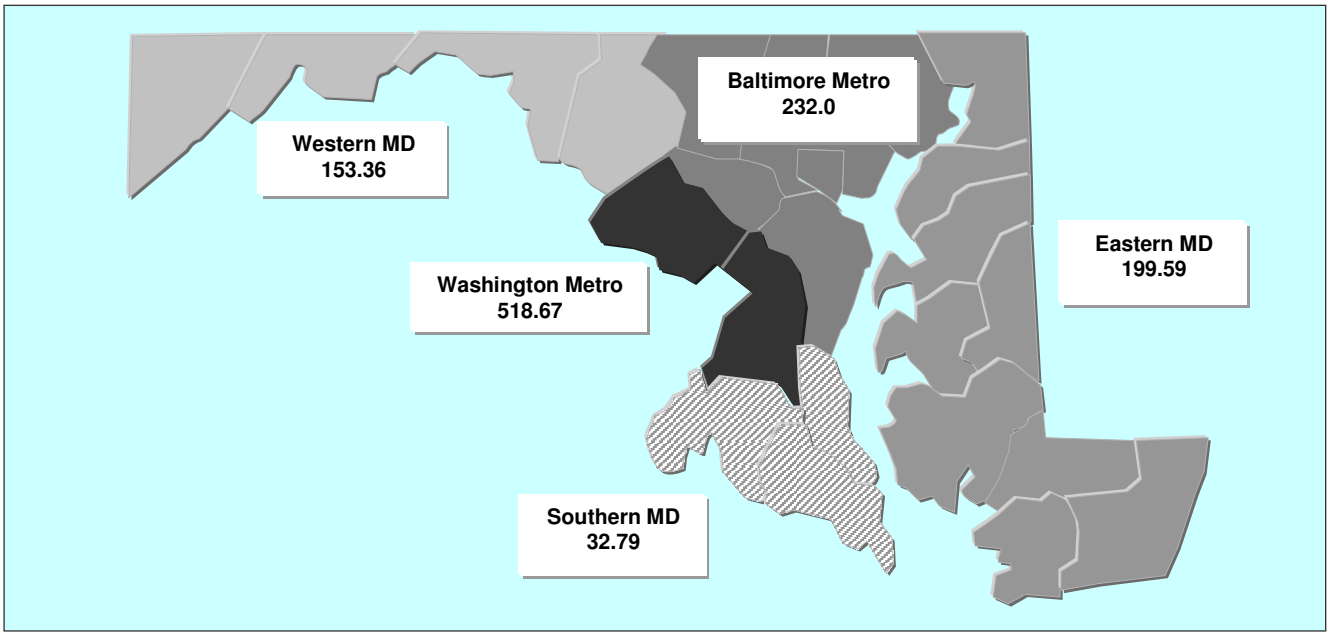
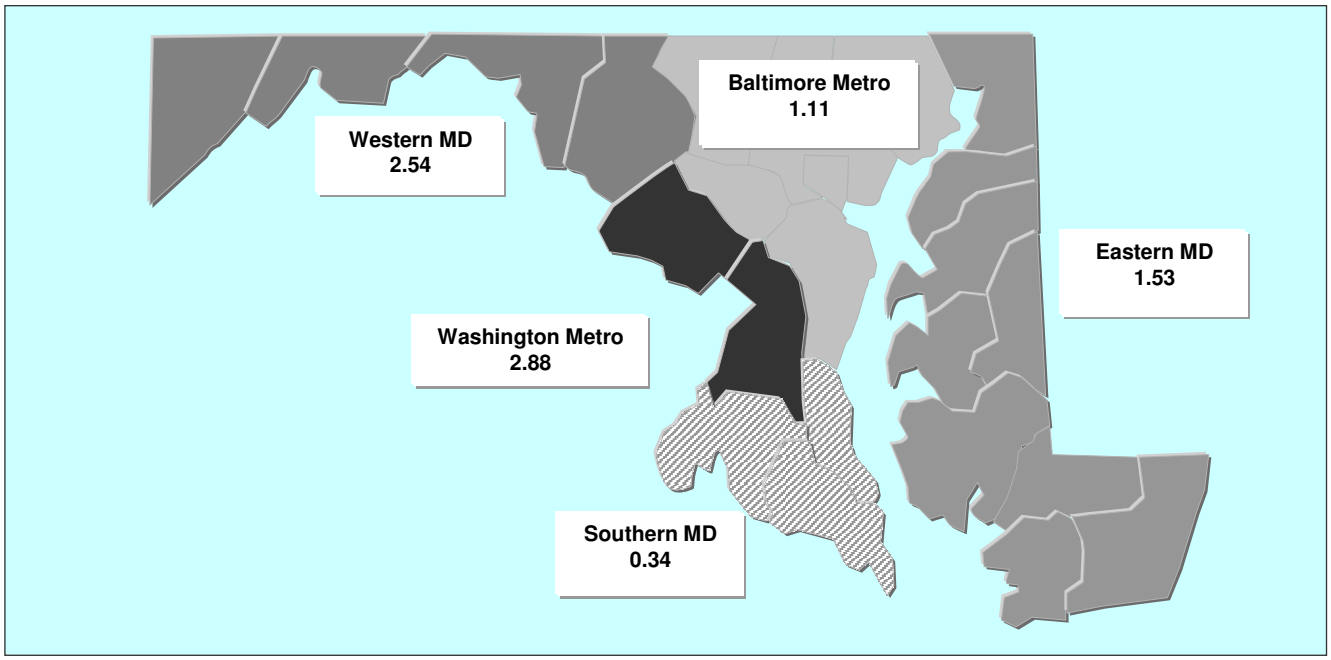


Figure 1.3.10 Fatal Accident Rates per 100 Million VMT by Region, 2003



1.3.3 Counties

Trends

- From 1994 through 2003, Baltimore City had the most accidents, and Prince George's County had the second most accidents. Between 1994 and 2003, the highest increase rate occurred in Talbot County (5.9% per year). Allegany, Dorchester, Prince Georges' and Somerset counties had the fewer accidents in 2003 than in 1994
- During the latest 3 years (from 2001 to 2003), there has been an upward trend for accidents in Prince George's County and Baltimore County.

Table 1.3.5 Total Accidents by County, 1994-2003

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change (%)
Allegany	1,073	1,055	1,027	1,012	1,010	886	899	838	844	938	-1.4
Anne Arundel	8,196	8,166	8,236	8,192	7,992	8,375	8,811	8,986	9,768	10,451	3.1
Baltimore	12,045	11,887	12,869	12,825	12,891	13,200	12,521	13,565	15,073	15,917	3.6
Calvert	776	721	838	809	949	929	932	1,004	1,096	1,132	5.1
Caroline	348	393	434	448	409	422	251	305	473	504	5.0
Carroll	1,640	1,738	1,959	1,838	1,836	1,900	1,844	2,062	2,042	2,274	4.3
Cecil	1,419	1,375	1,350	1,405	1,377	1,500	1,391	1,461	1,473	1,642	1.7
Charles	2,647	2,221	2,114	2,151	2,224	2,194	2,231	2,430	2,578	2,765	0.5
Dorchester	528	459	482	523	517	537	369	439	522	503	-0.5
Frederick	2,640	2,449	2,842	2,867	2,792	2,996	3,076	3,012	3,122	3,168	2.2
Garrett	560	549	574	650	589	607	641	547	637	646	1.7
Harford	2,928	2,878	3,077	2,908	2,967	3,031	3,117	2,999	3,186	3,367	1.7
Howard	3,634	3,951	4,167	4,049	4,060	4,066	4,378	4,740	5,035	4,961	4.1
Kent	204	250	273	224	211	206	184	237	198	205	0.1
Montgomery	13,072	13,205	13,548	13,028	12,756	12,779	13,356	14,240	13,798	14,432	1.2
Prince George's	17,407	16,687	15,694	14,804	14,574	14,266	15,332	16,045	16,517	16,885	-0.3
Queen Anne's	659	580	645	635	689	655	651	658	688	705	0.8
St. Mary's	1,203	1,039	1,175	1,186	1,220	1,181	1,147	1,120	1,247	1,368	1.5
Somerset	438	400	402	400	389	424	410	353	395	385	-1.3
Talbot	625	638	689	747	804	851	740	861	871	959	5.9
Washington	2,645	2,503	2,655	2,555	2,590	2,784	2,630	2,701	2,689	2,734	0.4
Wicomico	1,667	1,548	1,897	1,782	1,840	1,972	1,964	2,010	2,133	2,121	3.0
Worcester	1,106	1,185	1,212	1,274	1,309	1,347	1,343	1,228	1,417	1,408	3.0
Baltimore City	19,392	20,777	21,189	19,808	18,044	19,901	21,084	19,570	19,041	19,660	0.2
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**	**1.4**

- During the past 10 years, most fatal accidents and fatalities have occurred in Prince George's County. Fatalities in Prince George's County increased by 1.6% per year over those years.
- Fatalities in Baltimore County have increased by 4.2% per year during the past 10 years.

Table 1.3.6 Fatal Accidents by County, 1994-2003

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change(%)
Allegany	10	7	11	7	6	11	8	11	9	8	-2.2
Anne Arundel	53	52	53	50	45	53	52	45	53	59	1.3
Baltimore	58	72	74	70	61	77	76	75	76	81	4.4
Calvert	14	10	4	9	8	11	13	10	5	17	2.4
Caroline	4	9	4	11	5	11	8	5	7	8	11.1
Carroll	17	28	23	16	26	14	8	17	19	26	5.9
Cecil	16	21	15	18	23	26	15	18	23	19	2.1
Charles	23	26	18	27	25	26	27	18	25	19	-1.9
Dorchester	6	6	3	5	5	6	6	10	5	7	1.9
Frederick	28	23	20	26	23	29	25	33	15	17	-4.4
Garrett	9	10	12	9	3	7	9	5	3	13	4.9
Harford	23	25	27	22	26	26	27	30	31	31	3.9
Howard	17	14	22	23	24	25	25	19	23	19	1.3
Kent	7	4	1	3	3	-	-	7	4	1	-9.5
Montgomery	66	69	49	53	44	45	58	53	62	47	-3.2
Prince George's	98	113	101	82	105	74	91	115	127	112	1.6
Queen Anne's	15	11	10	12	11	5	12	15	10	12	-2.2
St. Mary's	10	17	17	19	8	17	11	9	16	12	2.2
Somerset	7	8	6	3	4	2	4	8	5	3	-6.3
Talbot	8	8	9	12	7	12	10	9	7	3	-6.9
Washington	18	11	17	24	26	15	19	12	21	24	3.7
Wicomico	16	13	9	6	8	6	14	13	7	15	-0.7
Worcester	17	9	12	15	11	10	13	14	14	9	-5.2
Baltimore City	65	48	46	48	44	47	43	51	39	34	-5.3
Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**	**-0.2**

Table 1.3.7 Fatalities by County, 1994-2003

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change (%)
Allegany	11	7	11	7	6	12	8	11	10	8	-3.0
Anne Arundel	58	55	56	51	57	56	52	46	57	66	1.5
Baltimore	63	80	78	76	66	84	80	82	80	87	4.2
Calvert	14	10	4	9	10	14	13	11	5	19	4.0
Caroline	4	10	4	11	6	12	10	5	7	8	11.1
Carroll	17	33	27	18	29	16	8	19	21	26	5.9
Cecil	16	23	16	19	27	33	17	21	27	23	4.9
Charles	25	33	20	28	25	26	30	21	27	20	-2.2
Dorchester	9	7	4	6	6	6	7	12	5	7	-2.5
Frederick	30	27	20	32	25	32	27	37	18	18	-4.4
Garrett	11	10	13	9	4	7	9	5	3	16	5.1
Harford	24	26	34	25	29	26	28	34	34	35	5.1
Howard	18	16	24	24	30	25	28	21	25	20	1.2
Kent	8	4	1	3	3	0	0	7	4	1	-9.7
Montgomery	70	72	50	55	46	49	60	60	67	52	-2.9
Prince George's	107	124	110	87	111	79	102	128	141	122	1.6
Queen Anne's	18	15	15	12	13	5	13	16	11	14	-2.5
St. Mary's	11	24	19	21	8	19	11	10	17	16	5.1
Somerset	7	9	6	3	4	2	4	9	5	3	-6.3
Talbot	9	10	9	14	9	12	10	11	7	3	-7.4
Washington	21	13	18	29	26	15	22	13	26	26	2.6
Wicomico	21	14	10	6	10	6	14	15	7	16	-2.6
Worcester	17	10	16	15	12	13	13	14	15	9	-5.2
Baltimore City	68	52	49	50	44	49	51	54	42	36	-5.2
Total	**657**	**684**	**614**	**610**	**606**	**598**	**617**	**662**	**661**	**651**	**-0.1**

2003 Overview

- In 2003, Baltimore City accounted for the highest percentages of total accidents and PDO accidents (18.0% and 20.3%, respectively).
- Prince George's County had the largest numbers of fatal accidents, fatalities, and injured persons.
- Five jurisdictions including Baltimore City, Prince George's, Baltimore, Montgomery and Anne Arundel Counties accounted for more than 70% of all accidents, nearly 70% of injury accidents, and 56% of fatal accidents.

Table 1.3.8 Fatal/Injury/PDO Accidents, Fatalities and Injuries by County, 2003

County	Fatal Accidents		Fatalities		Injury Accidents		Injuries		Property Damage Only		Total Accidents	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Allegany	8	1.3	8	1.2	402	1.0	641	1.1	528	0.8	938	0.9
Anne Arundel	59	9.9	66	10.1	3,588	9.3	5,175	8.9	6,804	9.7	10,451	9.6
Baltimore	81	13.6	87	13.4	5,362	13.9	8,104	13.9	10,474	15.0	15,917	14.6
Calvert	17	2.9	19	2.9	550	1.4	892	1.5	565	0.8	1,132	1.0
Caroline	8	1.3	8	1.2	205	0.5	319	0.5	291	0.4	504	0.5
Carroll	26	4.4	26	4.0	899	2.3	1,395	2.4	1,349	1.9	2,274	2.1
Cecil	19	3.2	23	3.5	663	1.7	1,048	1.8	960	1.4	1,642	1.5
Charles	19	3.2	20	3.1	1,060	2.7	1,570	2.7	1,686	2.4	2,765	2.5
Dorchester	7	1.2	7	1.1	211	0.5	333	0.6	285	0.4	503	0.5
Frederick	17	2.9	18	2.8	1,292	3.3	1,944	3.3	1,859	2.7	3,168	2.9
Garrett	13	2.2	16	2.5	220	0.6	384	0.7	413	0.6	646	0.6
Harford	31	5.2	35	5.4	1,355	3.5	2,119	3.6	1,981	2.8	3,367	3.1
Howard	19	3.2	20	3.1	1,463	3.8	2,092	3.6	3,479	5.0	4,961	4.5
Kent	1	0.2	1	0.2	98	0.3	143	0.2	106	0.2	205	0.2
Montgomery	47	7.9	52	8.0	6,019	15.5	8,753	15.1	8,366	12.0	14,432	13.2
Prince George's	**112**	**18.8**	**122**	**18.7**	**6,206**	16.0	**9,414**	**16.2**	10,567	15.1	16,885	15.5
Queen Anne's	12	2.0	14	2.2	277	0.7	433	0.7	416	0.6	705	0.6
St. Mary's	12	2.0	16	2.5	599	1.5	873	1.5	757	1.1	1,368	1.3
Somerset	3	0.5	3	0.5	144	0.4	223	0.4	238	0.3	385	0.4
Talbot	3	0.5	3	0.5	305	0.8	432	0.7	651	0.9	959	0.9
Washington	24	4.0	26	4.0	1,056	2.7	1,580	2.7	1,654	2.4	2,734	2.5
Wicomico	15	2.5	16	2.5	810	2.1	1,297	2.2	1,296	1.9	2,121	1.9
Worcester	9	1.5	9	1.4	502	1.3	749	1.3	897	1.3	1,408	1.3
Baltimore City	34	5.7	36	5.5	5,424	14.0	8,205	14.1	**14,202**	**20.3**	**19,660**	**18.0**
Total	**596**	**100.0**	**651**	**100.0**	**38,710**	**100.0**	**58,118**	**100.0**	**69,824**	**100.0**	**109,130**	**100.0**

Figure 1.3.11 Fatal Accidents and Fatalities by County, 2003

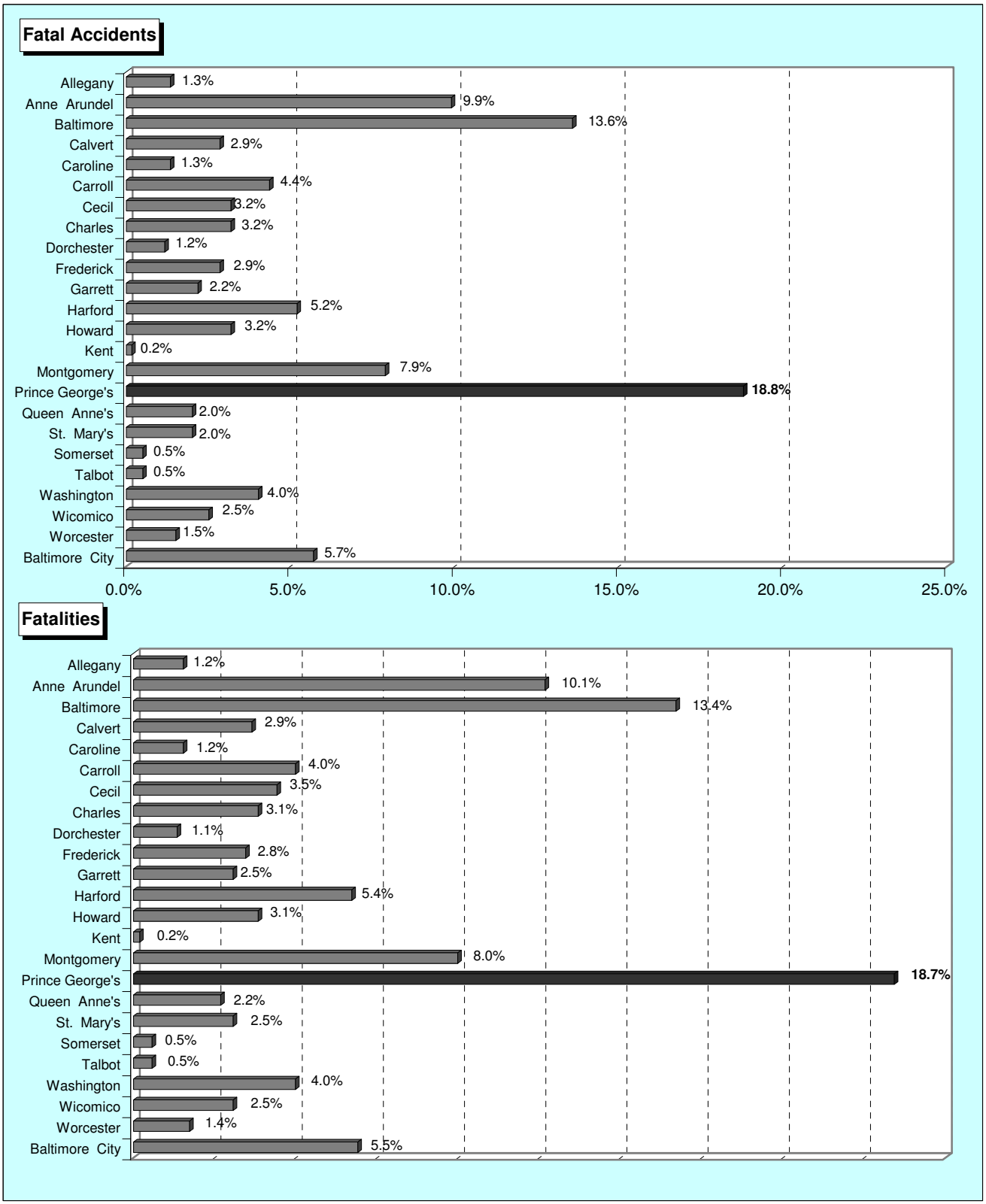


Figure 1.3.12 Injury Accidents and Injuries by County, 2003

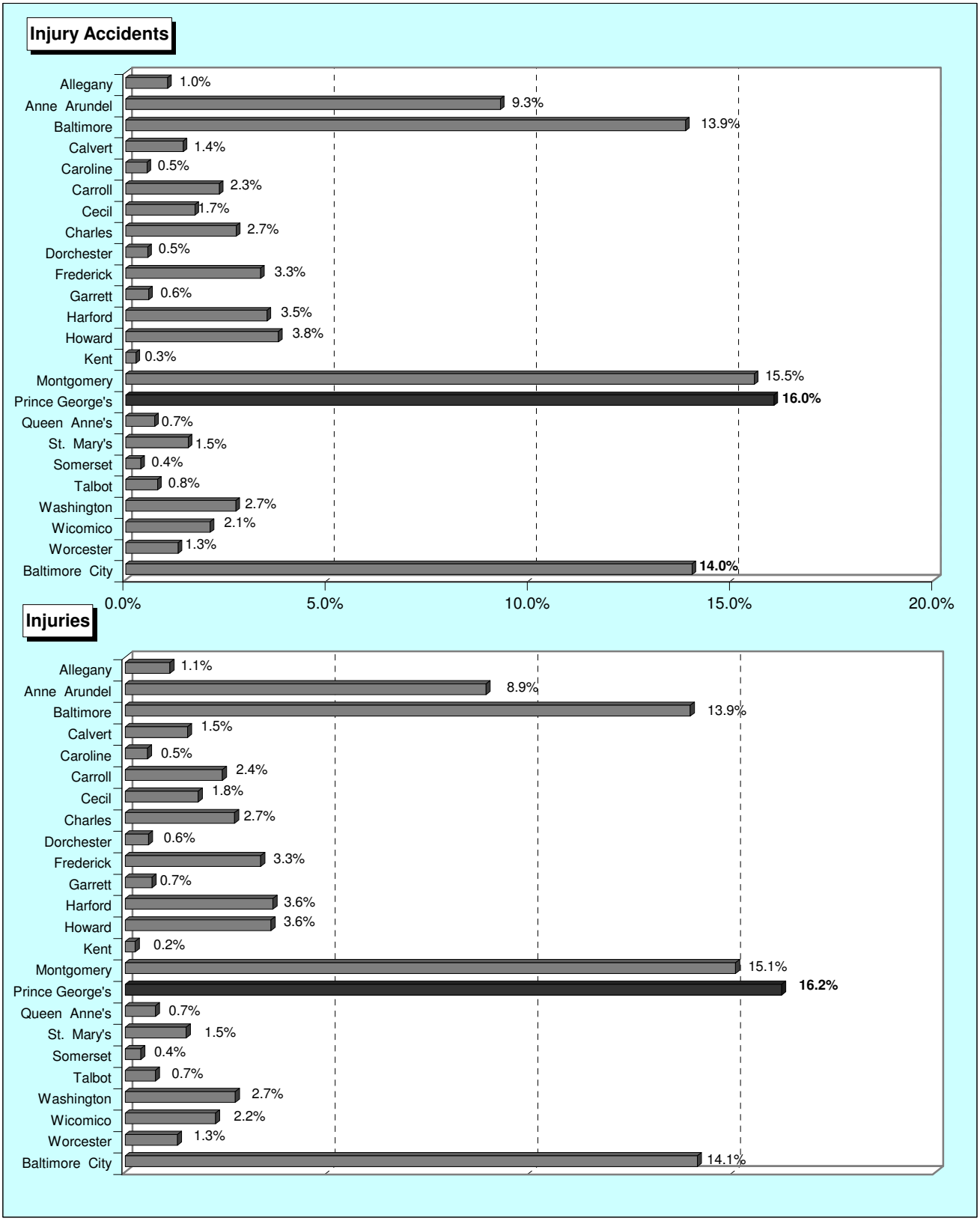
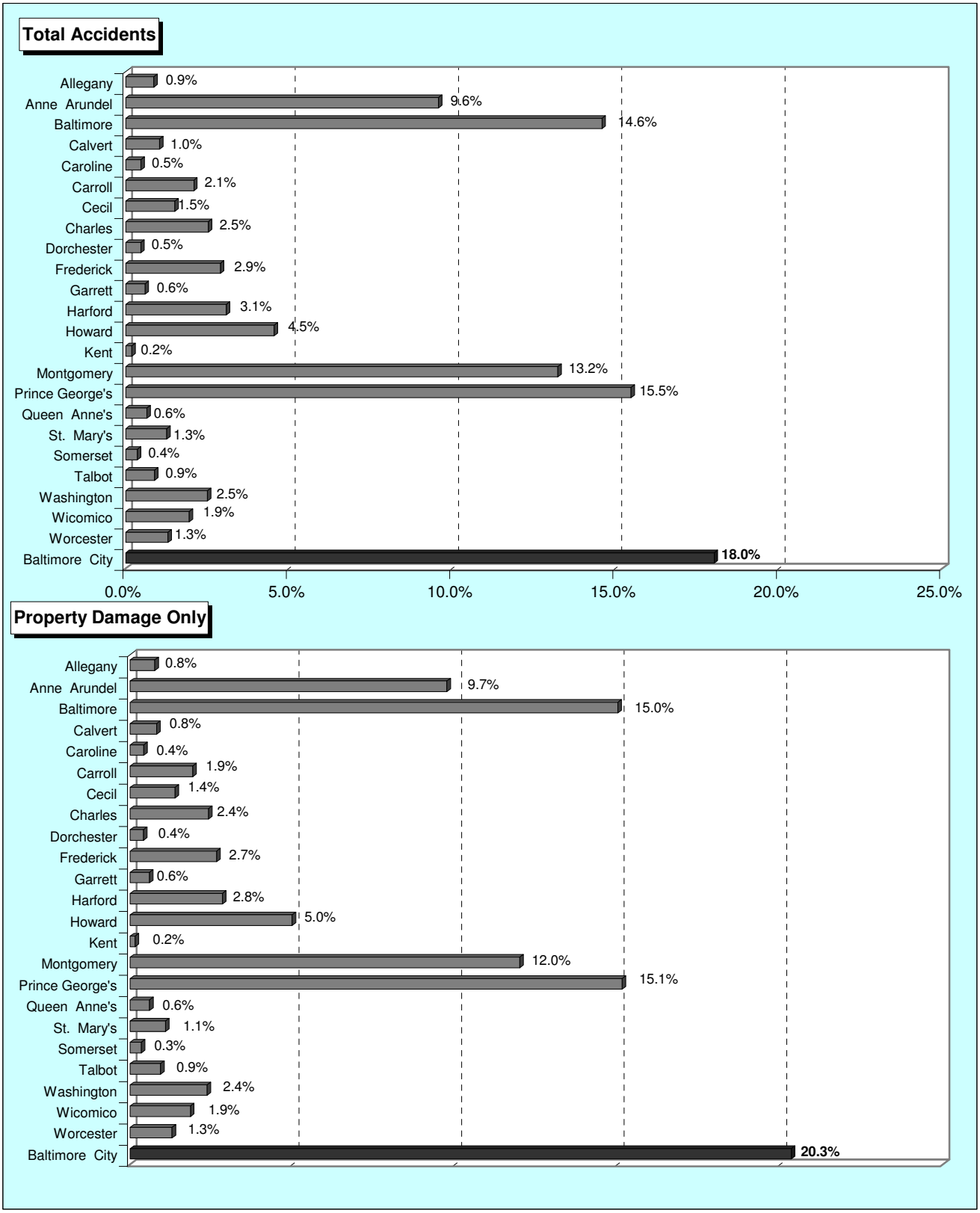
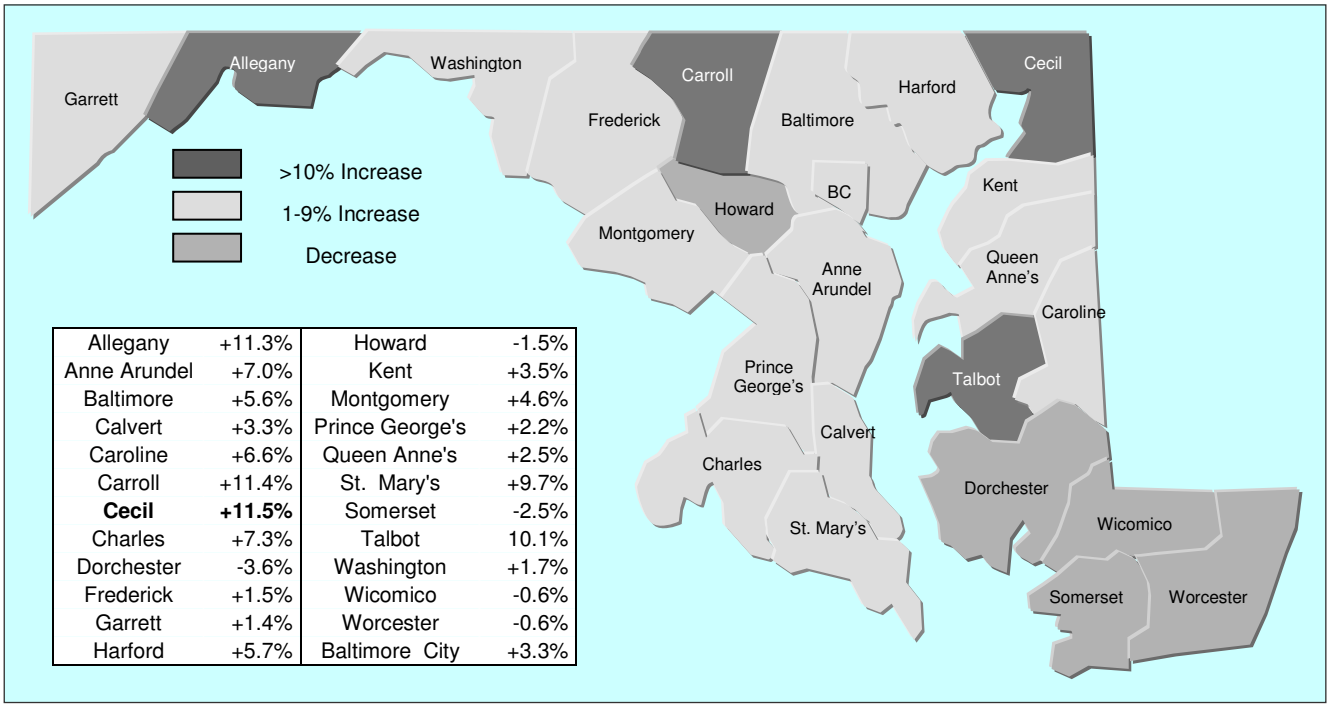


Figure 1.3.13 Total Accidents and Property Damage Only by County, 2003



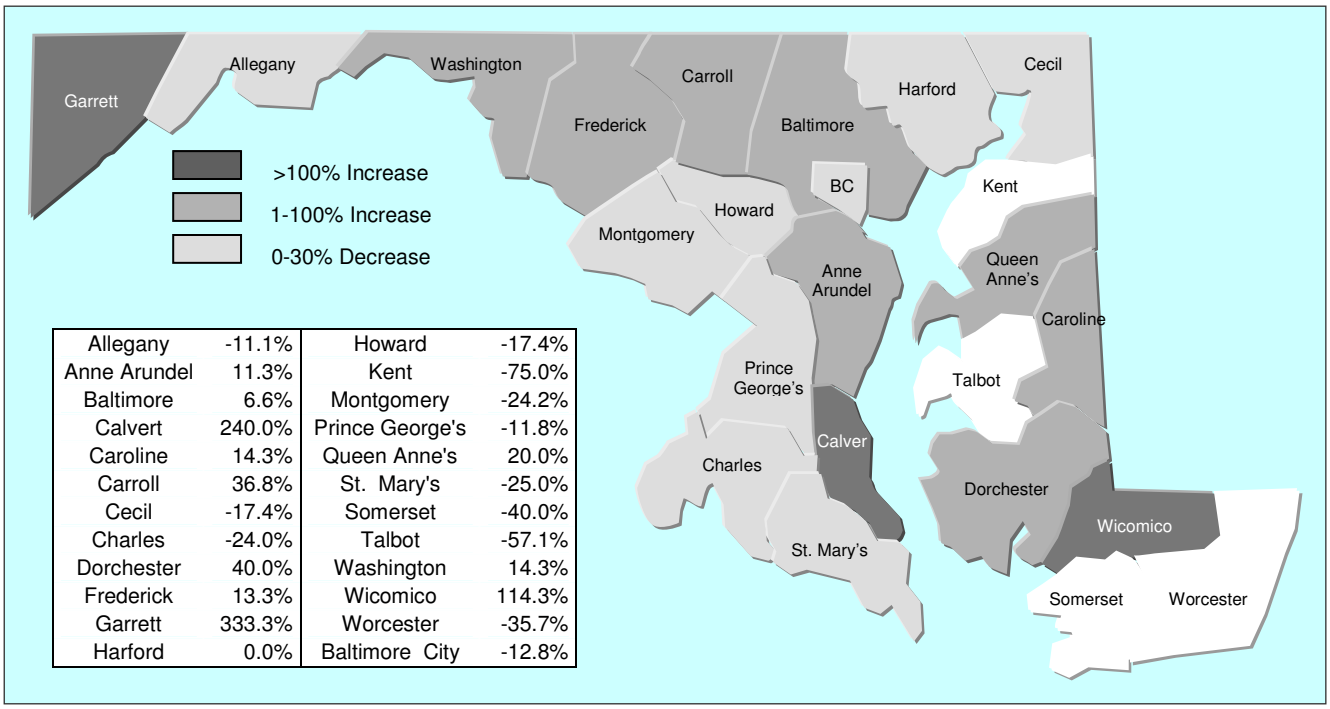
- Between 2002 and 2003, accidents in Cecil, Carroll, Allegany and Talbot counties increased by more than 10%. Between those years, fatal accidents in Garrett, Calvert and Wicomico counties increased by more than 100.0%.

Figure 1.3.14 Total Accident Percent Changes from 2002 to 2003 by County



Allegany	+11.3%	Howard	-1.5%
Anne Arundel	+7.0%	Kent	+3.5%
Baltimore	+5.6%	Montgomery	+4.6%
Calvert	+3.3%	Prince George's	+2.2%
Caroline	+6.6%	Queen Anne's	+2.5%
Carroll	+11.4%	St. Mary's	+9.7%
Cecil	**+11.5%**	Somerset	-2.5%
Charles	+7.3%	Talbot	10.1%
Dorchester	-3.6%	Washington	+1.7%
Frederick	+1.5%	Wicomico	-0.6%
Garrett	+1.4%	Worcester	-0.6%
Harford	+5.7%	Baltimore City	+3.3%

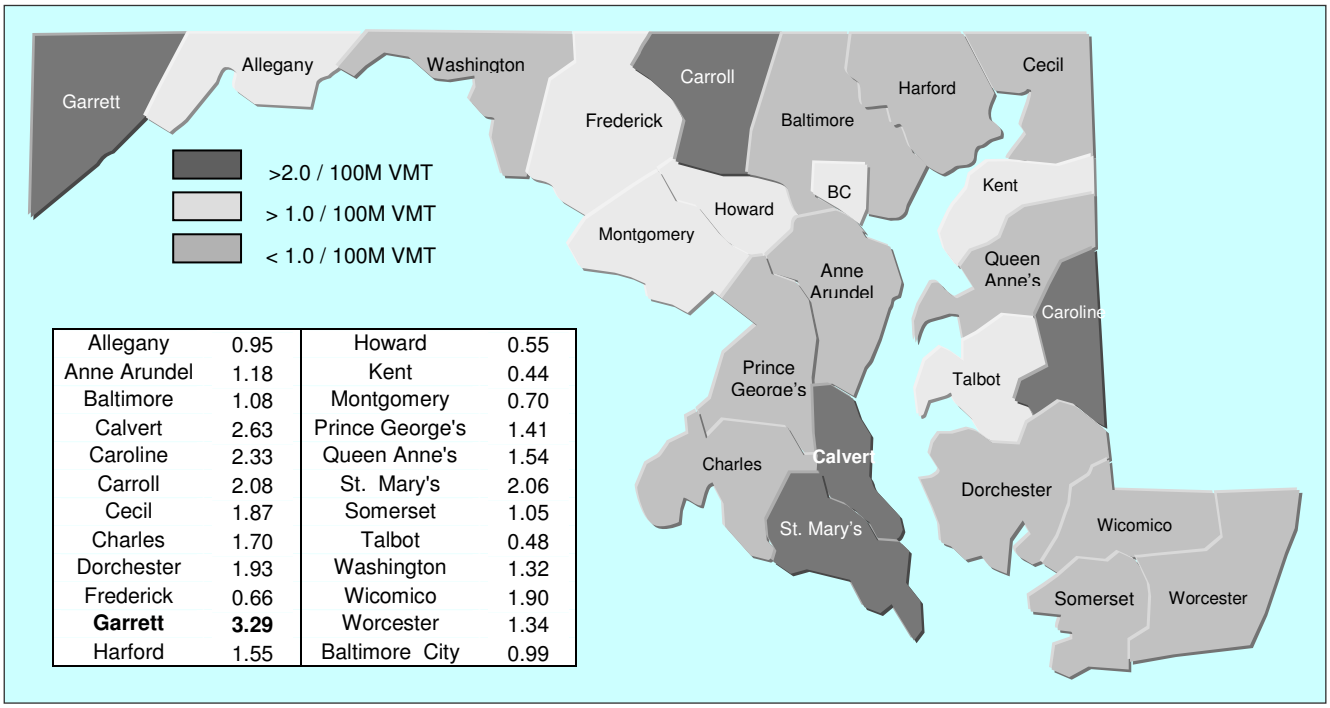
Figure 1.3.15 Fatal Accident Percent Changes from 2002 to 2003 by County



Allegany	-11.1%	Howard	-17.4%
Anne Arundel	11.3%	Kent	-75.0%
Baltimore	6.6%	Montgomery	-24.2%
Calvert	240.0%	Prince George's	-11.8%
Caroline	14.3%	Queen Anne's	20.0%
Carroll	36.8%	St. Mary's	-25.0%
Cecil	-17.4%	Somerset	-40.0%
Charles	-24.0%	Talbot	-57.1%
Dorchester	40.0%	Washington	14.3%
Frederick	13.3%	Wicomico	114.3%
Garrett	333.3%	Worcester	-35.7%
Harford	0.0%	Baltimore City	-12.8%

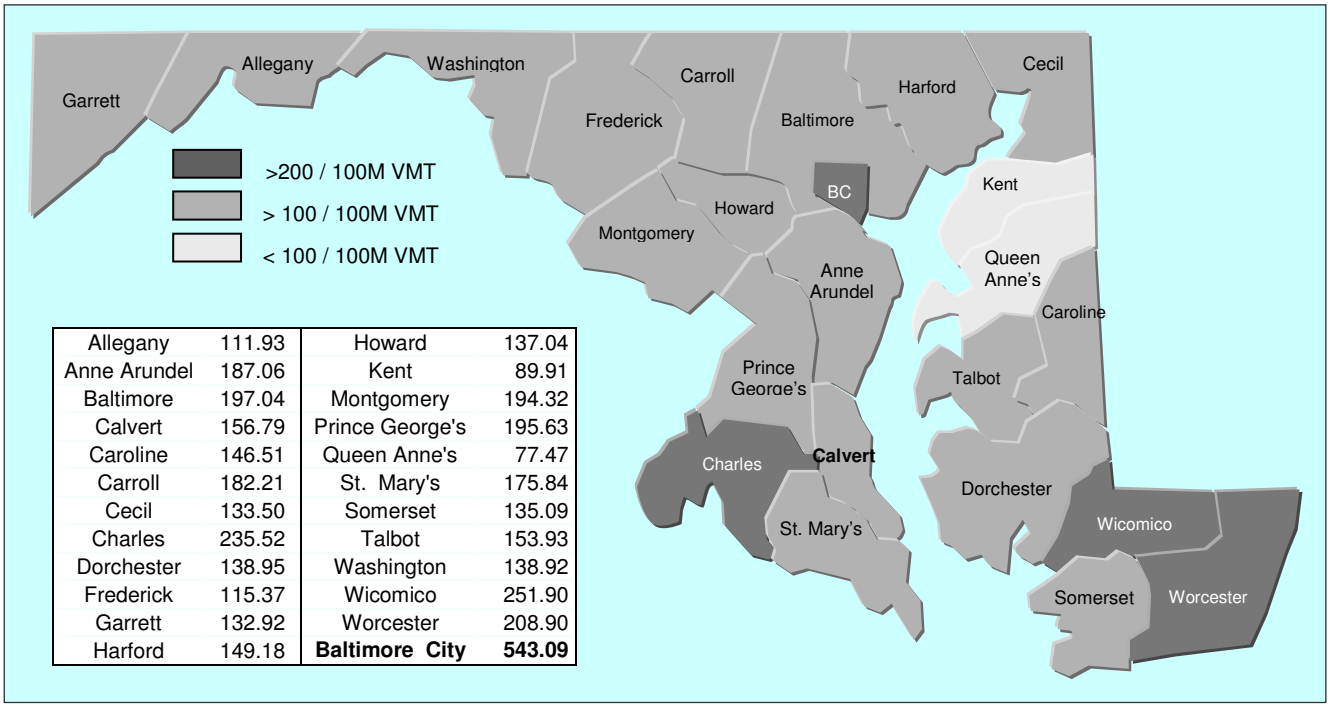
- In 2003, Garrett County and Baltimore City had the highest fatality and total accident rates per VMT. The counties that had the fatality rates more than per 2.0 per 100 million VMT were Garrett, Carroll, Caroline, Calvert and St. Mary's County.
- The counties that had the total accident rates more than per 200.0 per 100 million VMT were Garrett, Carroll, Caroline, Calvert and St. Mary's County.

Figure 1.3.16 Fatality Rates per 100 million VMT by County, 2003



Allegany	0.95	Howard	0.55
Anne Arundel	1.18	Kent	0.44
Baltimore	1.08	Montgomery	0.70
Calvert	2.63	Prince George's	1.41
Caroline	2.33	Queen Anne's	1.54
Carroll	2.08	St. Mary's	2.06
Cecil	1.87	Somerset	1.05
Charles	1.70	Talbot	0.48
Dorchester	1.93	Washington	1.32
Frederick	0.66	Wicomico	1.90
Garrett	**3.29**	Worcester	1.34
Harford	1.55	Baltimore City	0.99

Figure 1.3.17 Total Accident Rates per 100 million VMT by County



Allegany	111.93	Howard	137.04
Anne Arundel	187.06	Kent	89.91
Baltimore	197.04	Montgomery	194.32
Calvert	156.79	Prince George's	195.63
Caroline	146.51	Queen Anne's	77.47
Carroll	182.21	St. Mary's	175.84
Cecil	133.50	Somerset	135.09
Charles	235.52	Talbot	153.93
Dorchester	138.95	Washington	138.92
Frederick	115.37	Wicomico	251.90
Garrett	132.92	Worcester	208.90
Harford	149.18	**Baltimore City**	**543.09**

1.3.4 Municipalities

Trends

- From 1994 to 2003, most municipalities had no significant changes for the numbers of fatal and total accidents. Except in Gaithersburg in 2000, the numbers of fatal accidents in all municipalities for each year have been 5 or below.
- Over the ten years, total accidents for 11 municipalities showed the similar patterns. From 1999 to 2001, the number of total accidents in all municipalities had downward trends, but from 2001 to 2002, increased.
- Between 2002 and 2003, total accidents in Annapolis, Bowie, Laurel, and Salisbury municipalities increased, but in the other municipalities decreased.

Table 1.3.9 Fatal Accident Trends by Municipality, 1994-2003

Municipalities	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Annapolis	-	-	-	2	-	1	-	-	-	-
Bowie	3	3	1	1	2	1	-	-	5	3
College Park	1	2	2	3	1	2	2	4	-	2
Cumberland	-	-	-	-	1	2	2	1	1	-
Frederick	3	2	-	1	-	3	1	2	1	3
Gaithersburg	-	4	4	2	2	2	8	3	1	-
Greenbelt	3	1	2	1	5	2	-	1	5	1
Hagerstown	-	-	2	1	1	2	1	1	1	1
Laurel	1	2	-	1	-	1	1	-	1	1
Rockville	3	3	4	5	3	2	2	3	5	4
Salisbury	3	4	1	1	-	1	2	1	1	1

Table 1.3.10 Total Accident Trends by Municipality, 1994-2003

Municipalities	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Annapolis	N/A	648	679	667	660	742	622	523	793	834
Bowie	383	331	316	297	305	311	302	248	334	368
College Park	523	589	533	576	590	606	551	347	633	585
Cumberland	258	311	259	207	224	169	170	103	111	114
Frederick	806	702	822	832	836	908	795	538	781	746
Gaithersburg	860	868	905	847	855	951	835	605	962	945
Greenbelt	359	372	341	381	389	393	345	247	357	354
Hagerstown	1,273	1,131	1,157	1,075	1,050	1,197	1,026	873	1,091	1,036
Laurel	408	481	411	407	374	414	385	243	412	467
Rockville	1,175	1,110	1,417	1,256	1,196	1,147	1,025	900	1,240	1,209
Salisbury	800	740	832	827	750	972	941	721	970	985

2003 Overview

- In 2003, among the 11 municipalities, the largest number of fatal and total accidents occurred in Rockville City. In most municipalities, the percentages of fatal accidents were 0.4% or below. 0.8% of traffic accidents in Bowie City resulted in a fatality, which is above the statewide average of 0.5%.

Table 1.3.11 Accident Severity by Municipality, 2003

Municipality	Fatal Accidents		Injury Accidents		PDO Accidents		Total	
	Number	%	Number	%	Number	%	Number	%
Annapolis	-	0.0	246	29.5	588	70.5	834	100.0
Bowie	3	**0.8**	142	38.6	223	60.6	368	100.0
College Park	2	0.3	168	28.7	415	70.9	585	100.0
Cumberland	-	0.0	55	48.2	59	51.8	114	100.0
Frederick	3	0.4	325	43.6	418	56.0	746	100.0
Gaithersburg	-	0.0	406	43.0	539	57.0	945	100.0
Greenbelt	1	0.3	176	49.7	177	50.0	354	100.0
Hagerstown	1	0.1	318	30.7	717	69.2	1,036	100.0
Laurel	1	0.2	140	30.0	326	69.8	467	100.0
Rockville	**4**	0.3	449	37.1	756	62.5	**1,209**	100.0
Salisbury	1	0.1	333	33.8	651	66.1	985	100.0

- In most municipalities, the largest numbers of total accidents occurred on MU routes at an average of 39.1%. In Cumberland and Hagerstown municipalities, MU routes accounted for 63.2% and 62.1%, respectively, of total accidents.

Table 1.3.12 Total Accidents by Route Type and Municipality, 2003

Accident Type	Annapolis		Bowie		College Park		Cumberland		Frederick		Gaithersburg	
	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%
IS	-	0.0	30	8.2	69	11.8	10	8.8	32	4.3	78	8.3
US	-	0.0	1	0.3	**162**	**27.7**	4	3.5	182	24.4	-	0.0
MD	197	23.6	**182**	**49.5**	70	12.0	20	17.5	96	12.9	**477**	**50.5**
CO	133	15.9	38	10.3	54	9.2	-	0.0	3	0.4	75	7.9
MU	**393**	**47.1**	103	28.0	70	12.0	**72**	**63.2**	**314**	**42.1**	228	24.1
SR	-	0.0	-	0.0	69	11.8	-	0.0	1	0.1	-	0.0
OP	18	2.2	1	0.3	2	0.3	-	0.0	26	3.5	3	0.3
Parking Lots	75	9.0	12	3.3	79	13.5	4	3.5	68	9.1	66	7.0
Unknown	18	2.2	1	0.3	10	1.7	4	3.5	24	3.2	18	1.9
Total	**834**	**100.0**	**368**	**100.0**	**585**	**100.0**	**114**	**100.0**	**746**	**100.0**	**945**	**100.0**
Accident Type	**Greenbelt**		**Hagerstown**		**Laurel**		**Rockville**		**Salisbury**		**Average**	
	Num.	**%**	**Num.**	**%**	**Num.**	**%**	**Num.**	**%**	**Num.**	**%**	**Num.**	**%**
IS	**115**	**32.5**	-	0.0	-	0.0	70	5.8	-	0.0	37	5.3
US	-	0.0	282	27.2	96	20.6	-	0.0	372	37.8	100	14.4
MD	**115**	**32.5**	7	0.7	156	33.4	**554**	**45.8**	48	4.9	175	25.1
CO	-	0.0	5	0.5	10	2.1	21	1.7	24	2.4	33	4.7
MU	83	23.4	**643**	**62.1**	**157**	**33.6**	474	39.2	**452**	**45.9**	**272**	**39.1**
SR	-	0.0	-	0.0	-	0.0	2	0.2	-	0.0	7	0.9
OP	9	2.5	1	0.1	4	0.9	4	0.3	1	0.1	6	0.9
Parking Lots	25	7.1	65	6.3	39	8.4	63	5.2	66	6.7	51	7.4
Unknown	7	2.0	33	3.2	5	1.1	21	1.7	22	2.2	14	2.1
Total	**354**	**100.0**	**1,036**	**100.0**	**467**	**100.0**	**1,209**	**100.0**	**985**	**100.0**	**695**	**100.0**

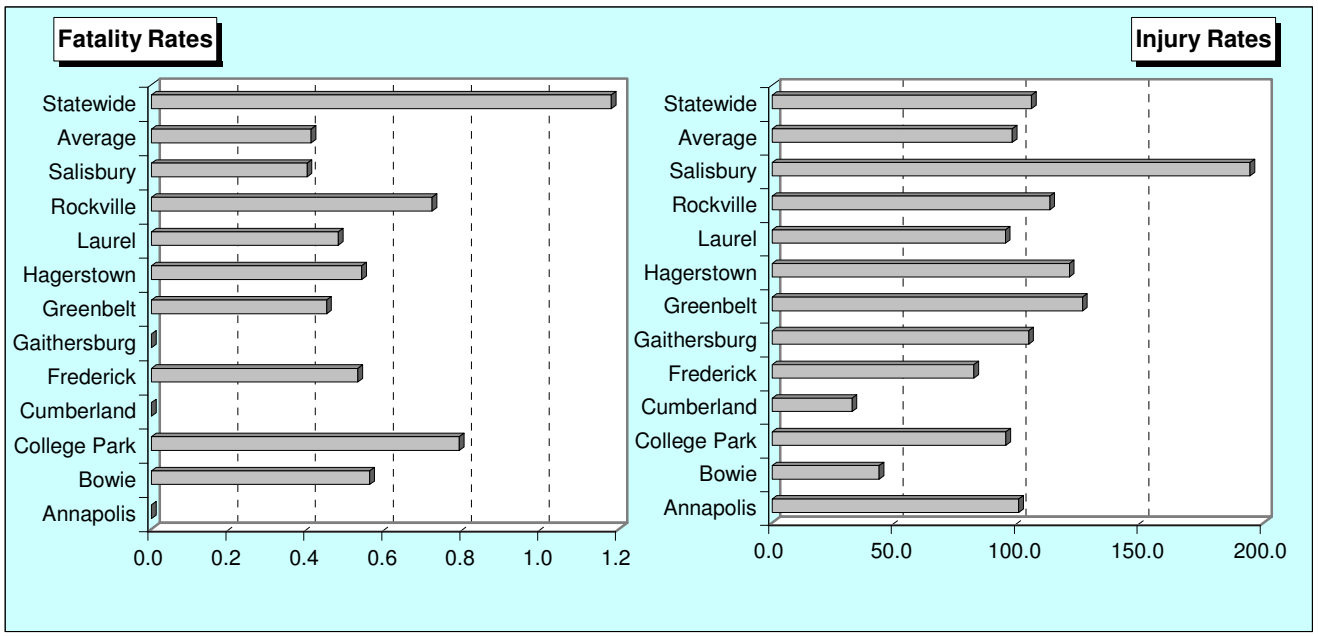
- In 2003, among 11 municipalities, the numbers of fatalities and injured persons were largest in Rockville City. The fatality rate per population was highest in College Park (0.79 per 10,000 population), and the injured person rate per population was highest in Salisbury (194.48 per 10,000 population).
- The average fatality rate of 11 municipalities was 0.41 per 10,000 population, significantly below the statewide average of 1.18. The average injured person rate of 11 municipalities was 97.72 per 10,000 population, below the statewide average of 105.5.

Table 1.3.13 Fatalities, Injured Persons, Fatality Rates, and Injured Person Rates by Municipality, 2003

Municipalities	Fatalities	Injured Persons	Population*	Fatality Rates per 10,000 pop.	Injured Person Rates per 10,000 pop.
Annapolis	-	363	36,178	0.00	100.34
Bowie	3	234	53,660	0.56	43.61
College Park	2	241	25,329	**0.79**	95.15
Cumberland	-	68	20,833	0.00	32.64
Frederick	3	461	56,128	0.53	82.13
Gaithersburg	-	599	57,365	0.00	104.42
Greenbelt	1	279	22,096	0.45	126.27
Hagerstown	2	447	36,953	0.54	120.96
Laurel	1	196	20,653	0.48	94.90
Rockville	**4**	**624**	55,213	0.72	113.02
Salisbury	1	491	25,247	0.40	**194.48**
Average	**2**	**364**	**37,241**	**0.41**	**97.72**
Statewide	**651**	**58,118**	**5,508,909**	**1.18**	**105.50**

* July 1, 2003, Source: Maryland Department of Planning

Figure 1.3.18 Fatality and Injured Person Rates per 10,000 Population by Municipality, 2003



CHAPTER II. ACCIDENTS BY PERSON AND VEHICLE TYPE

2.1 PERSONS

2.2 VEHICLES

2.1 PERSONS

This section describes the person types involved in accidents, such as drivers (including young drivers and older drivers), passengers, pedestrians, and pedalcyclists.

Drivers include motorcycle drivers. In 2003, 383 driver fatalities comprised 58.8% of all fatalities. Specifically, 145 fatalities involving older drivers (age 60 & above) and 146 fatalities involving young drivers (age 16-20) occurred, which represented 44.7% of all traffic fatalities.

In 2003, passenger fatalities accounted for 22.0% of all fatalities. Pedestrian (on foot) fatalities comprised 18.1% of all fatalities. Pedestrians are slow and fragile compared to motor vehicles -- a collision between a vehicle and a pedestrian almost always results in a pedestrian injury and, sometimes, a fatality. In this report, pedestrians do not include pedalcyclists. Pedalcyclists include bicyclists and users of other types of non-motorized vehicles. Pedalcyclist fatalities accounted for 0.9% of all fatalities.

Some of the notable trends are as follows:

- From 1994 to 2000, there was a downward trend for the total numbers of injured and killed drivers. However, these trends turned upward again in the latest 3 years (2001 to 2003). There was a downward trend in total injured and killed passengers from 1994 to 2003.
- Between 2002 and 2003, the number of total injured and killed pedestrians increased by 6.6%. The age groups of 40-44 years, 45-49 years, and 50-54 years had increasing trends of pedestrians involved in the accidents from 1994 to 2003.
- Among pedestrian locations, “On Road Not at Crosswalk” had the highest percentage of total pedestrians involved in accidents and pedestrian fatalities from 1994 to 2003.

Some findings for 2003 are as follows:

- Vehicle drivers (except motorcycle drivers) accounted for 50.7 % of all fatalities, which was the most victim type. The second most victim type among fatalities was passengers. Vehicle passengers accounted for 21.5% of all fatalities.
- The driver age group of 20 - 24 years accounted for the highest percentage of drivers involved in total accidents (11.8%).
- 118 pedestrian fatalities, increased by 16.8% from 2002, accounted for 18.1% of all fatalities.
- There were 6 pedalcyclists killed at traffic accidents, decreased by one fatality from 2002.

2.1.1 Victim Type

Trends

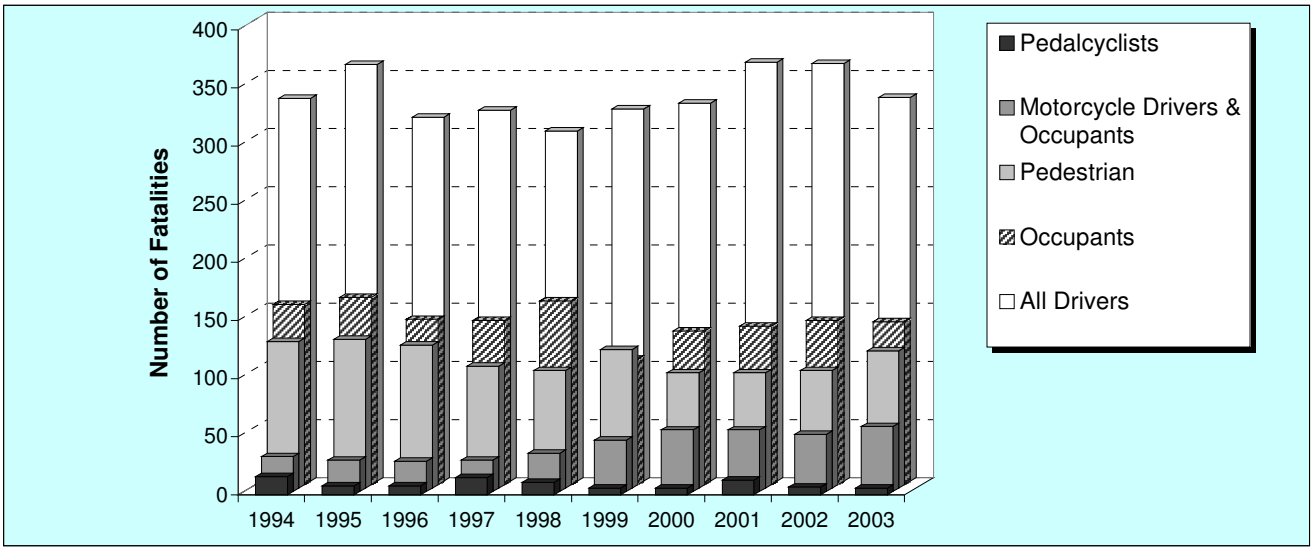
- From 2001 through 2003, the number of all driver fatalities showed a downward trend, while the numbers of passenger and pedestrian fatalities had increasing trends. Between 2002 and 2003, motorcycle driver and passenger fatalities increased, while vehicle driver fatalities and pedalcyclist fatalities decreased.

Table 2.1.1 Fatalities by Victim Type, 1994-2003

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Vehicle Driver Fatalities*	329	358	313	319	301	320	325	360	359	330
Motorcycle Driver Fatalities	26	26	25	25	31	42	48	51	48	53
Moped Driver Fatalities	0	2	2	1	1	1	2	0	1	0
All Drivers killed	**355**	**386**	**340**	**345**	**333**	**363**	**375**	**411**	**408**	**383**
Passenger Fatalities	155	161	142	141	158	108	132	136	141	140
Motorcycle Passenger Fatalities	4	1	1	2	2	2	5	2	1	3
All Passengers killed	**159**	**162**	**143**	**143**	**160**	**110**	**137**	**138**	**142**	**143**
Pedestrian Fatalities†	**126**	**128**	**123**	**105**	**101**	**119**	**99**	**99**	**101**	**118**
Pedalcyclist Fatalities	**16**	**8**	**8**	**15**	**11**	**6**	**6**	**13**	**7**	**6**
Other Fatalities	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**3**	**1**
Total	**657**	**684**	**614**	**610**	**606**	**598**	**617**	**662**	**661**	**651**

* Excludes pedalcycle, motorcycle, and moped drivers † Pedestrians on foot only

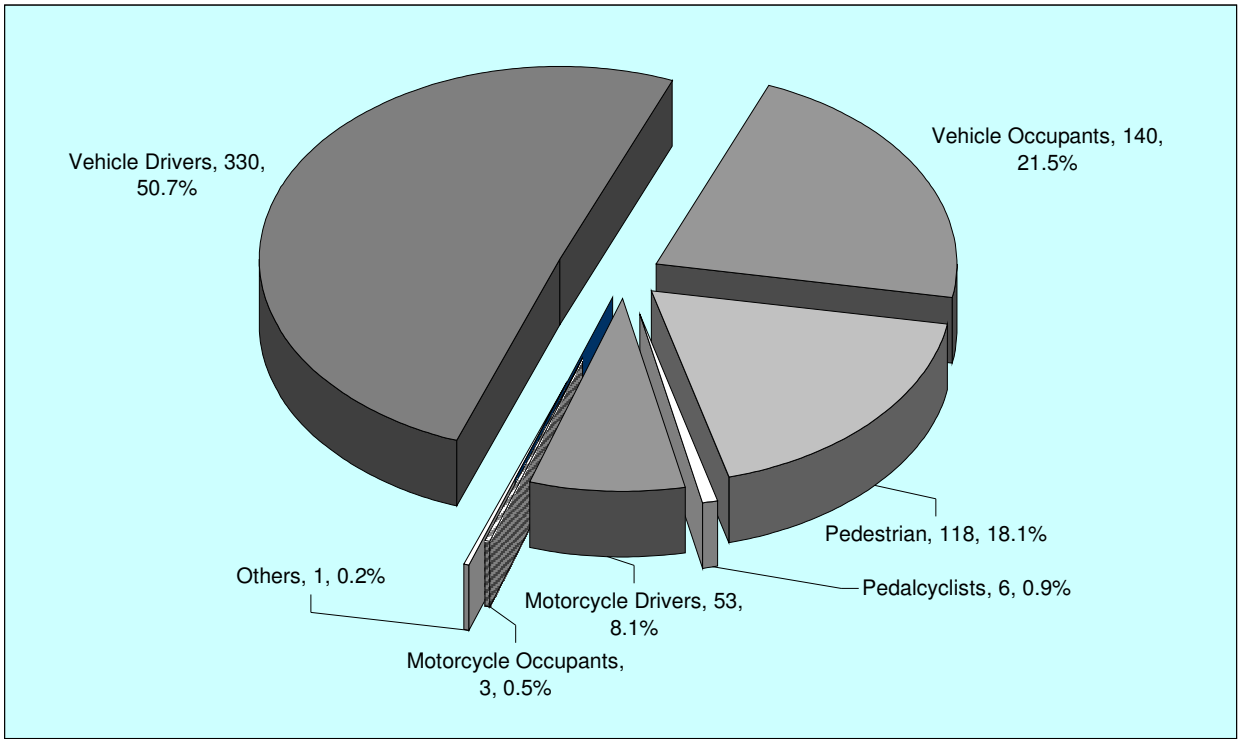
Figure 2.1.1 Fatalities by Victim Type, 1994-2003



2003 Overview

- Vehicle drivers (excluding motorcycle drivers) accounted for 50.7 % of all fatalities, which was the most victim type.
- The second most victims were passengers. Vehicle passengers accounted for 21.5% of all fatalities.
- Motorcycle drivers (53) and passengers (3) accounted for 8.6% of all fatalities.
- In 2003, there were 118 pedestrians killed, increased by 16.8% from 2002. Pedestrians accounted for 18.1% of all fatalities.
- There were 6 pedalcyclists killed at traffic accidents, decreased by one fatality from 2002.

Figure 2.1.2 Fatality by Victim Type, 2003



2.1.2 Drivers

Trends

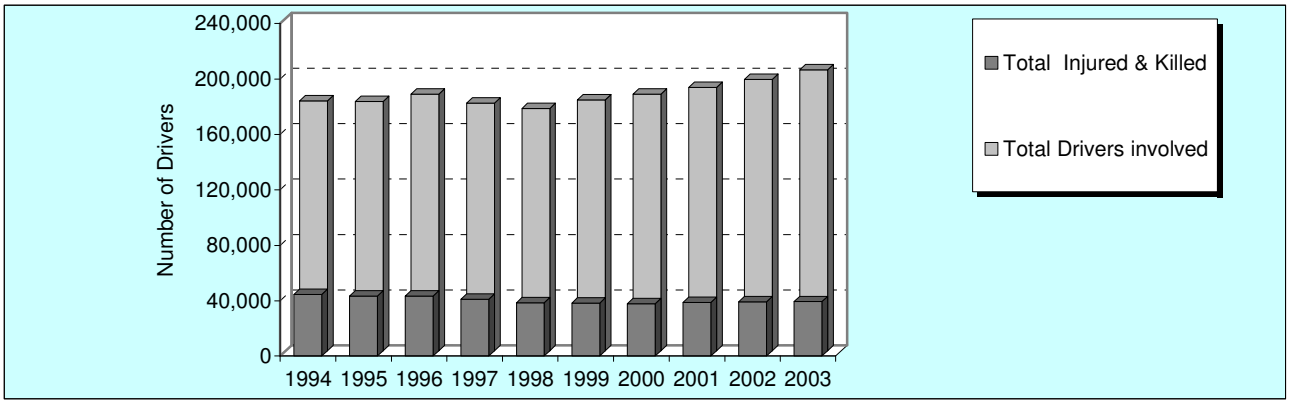
Severity

- From 1994 to 2000, there was a downward trend for the total numbers of injured and killed drivers. However, these trends turned upward again in the latest 3 years (2001 to 2003).
- The trend of total drivers involved in accidents has been increasing in the latest 6 years.

Table 2.1.2 Driver Fatalities and Injured Drivers by Severity, 1994-2003

Year	Fatalities	Incapacitating Injured Drivers	Non-Incapacitating Injured Drivers	Possible Injured Drivers	Total Injured & Killed	Total Drivers Involved in Acc.
1994	355	9,737	13,839	20,526	**44,457**	**180,180**
1995	386	8,544	14,171	20,299	**43,400**	**179,798**
1996	340	8,109	14,699	20,233	**43,381**	**185,120**
1997	345	7,357	14,494	18,914	**41,110**	**178,774**
1998	333	6,888	13,800	17,514	**38,535**	**174,707**
1999	363	6,264	13,988	17,703	**38,318**	**181,024**
2000	375	5,937	13,979	17,541	**37,832**	**185,133**
2001	411	6,051	14,154	18,261	**38,877**	**189,854**
2002	408	5,785	14,572	18,441	**39,206**	**195,926**
2003	383	5,578	14,709	18,682	**39,352**	**202,882**

Figure 2.1.3 Injured and Killed Drivers and Total Drivers Involved in Accidents, 1994-2003



Gender

Table 2.1.3 Drivers by Gender, 1994-2003

Year	Driver Fatalities				Total Drivers			
	Male	Female	Unknown	Total	Male	Female	Unknown	Total
1994	266	89	-	**355**	100,356	57,187	22,637	**180,180**
1995	287	99	-	**386**	97,600	58,791	23,407	**179,798**
1996	245	95	-	**340**	100,193	61,049	23,878	**185,120**
1997	234	110	1	**345**	95,928	61,130	21,716	**178,774**
1998	249	84	-	**333**	93,251	60,452	21,004	**174,707**
1999	269	94	-	**363**	95,955	62,024	23,045	**181,024**
2000	278	97	-	**375**	97,573	62,398	25,162	**185,133**
2001	292	119	-	**411**	100,406	65,287	24,161	**189,854**
2002	312	96	-	**408**	102,132	68,204	25,590	**195,926**
2003	290	93	-	**383**	105,400	68,921	28,561	**202,882**

Age

- For the latest 10 years, the driver age group of 80 and more had the highest increase rate with an average increase rate of 7.9% per year. Between 2002 and 2003, most driver age groups involved in total accidents had increasing numbers, but the driver age groups of 16-19 , 35-39 , 65-69 and 70-79 years had decreasing numbers.
- Between 2002 and 2003, the fatalities of driver age group of 25-29 years and 50-54 years increased by 40.5% and 27.3%, respectively.

Table 2.1.4 Total Drivers Involved in Accidents by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change (%)
15 & Under	512	459	495	471	439	381	374	448	449	489	-0.5
16 - 19	15,238	16,000	16,500	17,059	17,376	18,019	17,302	18,291	19,221	19,191	2.9
20 - 24	20,397	19,862	19,724	18,692	18,445	19,630	20,646	22,128	23,273	24,004	2.0
25 - 29	20,892	20,305	20,528	19,155	18,158	18,062	17,746	17,925	18,034	18,829	-1.1
30 - 34	20,213	20,381	20,630	19,171	17,897	17,773	17,918	17,899	18,021	18,561	-0.9
35 - 39	17,229	17,342	18,618	17,795	17,642	17,988	18,194	18,281	18,399	18,293	0.7
40 - 44	14,023	14,241	15,120	15,256	15,073	15,687	16,102	16,758	17,110	17,834	3.0
45 - 49	11,277	11,688	12,428	12,363	12,083	12,506	12,869	13,391	14,057	14,995	3.7
50 - 54	8,150	8,287	8,773	9,258	9,354	9,852	10,349	10,862	11,224	11,454	4.5
55 - 59	5,887	6,029	6,316	6,384	6,845	7,001	7,188	7,551	8,108	8,786	5.5
60 - 64	4,427	4,421	4,603	4,534	4,597	4,813	4,817	5,202	5,447	5,915	3.7
65 - 69	3,497	3,511	3,622	3,582	3,566	3,529	3,432	3,574	3,734	3,709	0.7
70 - 79	4,643	4,895	5,152	5,111	5,186	5,224	4,955	5,050	5,211	5,125	1.2
80 +	1,368	1,436	1,604	1,696	1,749	1,883	1,892	2,111	2,244	2,335	7.9
Unknown	32,427	30,941	31,007	28,247	26,297	28,676	31,349	30,383	31,394	33,362	0.3
Total	**180,180**	**179,798**	**185,120**	**178,774**	**174,707**	**181,024**	**185,133**	**189,854**	**195,926**	**202,882**	**1.4**

Table 2.1.5 Driver Fatalities by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change (%)
15 & Under	3	6	2	-	-	2	3	2	1	2	-3.7
16 - 19	32	38	33	28	35	48	40	46	35	36	1.4
20 - 24	44	57	45	33	35	51	47	66	56	50	1.5
25 - 29	43	37	38	41	36	43	41	34	42	59	4.1
30 - 34	44	47	37	42	29	27	34	39	35	30	-3.5
35 - 39	33	35	23	33	30	23	36	36	36	25	-2.7
40 - 44	23	27	24	25	27	34	27	25	38	28	2.4
45 - 49	24	21	21	23	22	27	29	23	25	24	0.0
50 - 54	24	25	20	17	22	21	22	27	22	28	1.9
55 - 59	16	6	15	18	21	13	14	29	25	24	5.6
60 - 64	11	20	23	17	19	12	23	16	17	11	0.0
65 - 69	19	22	12	14	8	13	10	12	18	13	-3.5
70 - 79	23	26	23	27	30	29	23	41	30	27	1.9
80 +	14	17	24	26	14	19	26	15	25	25	8.7
Unknown	2	2	-	1	5	1	-	-	3	1	-5.6
Total	**355**	**386**	**340**	**345**	**333**	**363**	**375**	**411**	**408**	**383**	**0.9**

Safety Equipment Used

- The numbers of drivers involved in total accidents, classified by safety equipment used show that most of drivers have used both belt and harness. The use of both air bag and belts has increased consistently. In contrast, the number of drivers who did not have any safety equipment had a downward trend.
- The driver fatalities classified as not using any safety equipment accounted for the highest percentages of all driver fatalities except in 2002.

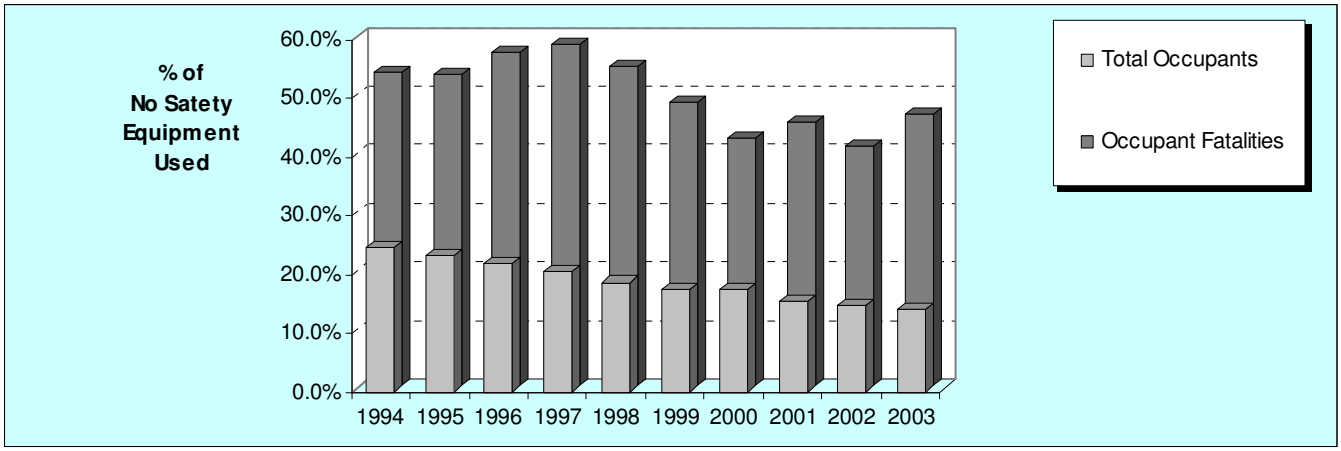
Table 2.1.6 Total Drivers by Safety Equipment Used, 1994-2003

Safety Equipment	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lap Belts Only	4,725	3,595	3,215	2,954	2,759	2,427	2,159	1,889	1,545	1,516
Harness Only	2,148	1,941	1,790	1,566	1,363	1,286	1,539	1,815	1,810	1,834
Belt and Harness	110,384	111,339	112,433	109,245	114,914	117,140	108,635	110,862	118,803	123,619
Air Bag	223	259	299	379	327	307	346	388	465	482
Air Bag and Belts	1,850	2,900	4,199	6,015	8,429	10,623	12,358	14,440	17,243	22,157
Motorcycle Helmet	296	280	258	256	300	302	371	446	437	520
Eye Protection	8	8	15	12	8	16	13	11	15	20
Helmet /Eye Protection	530	455	424	391	410	446	459	495	499	518
None	**12,991**	**11,667**	**10,961**	**9,036**	**6,774**	**6,321**	**5,989**	**5,898**	**5,202**	**4,581**
Not Stated	6,888	7,436	6,412	4,359	4,009	3,211	4,359	4,682	4,694	4,686
Other / Unknown	40,137	39,918	45,114	44,561	35,414	38,945	48,905	48,928	45,213	42,949
Total	**180,180**	**179,798**	**185,120**	**178,774**	**174,707**	**181,024**	**185,133**	**189,854**	**195,926**	**202,882**

Table 2.1.7 Driver Fatalities by Safety Equipment Used, 1994-2003

Safety Equipment	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lap Belts Only	4	2	1	3	1	3	2	2	1	4
Harness Only	6	9	7	6	9	7	8	8	8	6
Belt and Harness	102	99	73	95	100	95	115	117	110	97
Air Bag	8	6	14	18	21	24	22	30	32	47
Air Bag and Belts	7	17	20	24	41	48	49	58	85	58
Motorcycle Helmet	11	11	9	10	9	14	17	21	22	31
Eye Protection	2	-	-	-	-	1	2	-	-	-
Helmet / Eye Protection	12	10	10	12	17	20	23	21	23	19
None	**169**	**207**	**186**	**161**	**116**	**135**	**116**	**129**	**103**	**100**
Not Stated	3	2	2	-	1	3	2	3	2	-
Other / Unknown	31	23	18	16	18	13	19	22	22	21
Total	**355**	**386**	**340**	**345**	**333**	**363**	**375**	**411**	**408**	**383**

Figure 2.1.4 Percentages of No Safety Equipment Used for Drivers and Driver Fatalities, 1994-2003



2003 Overview

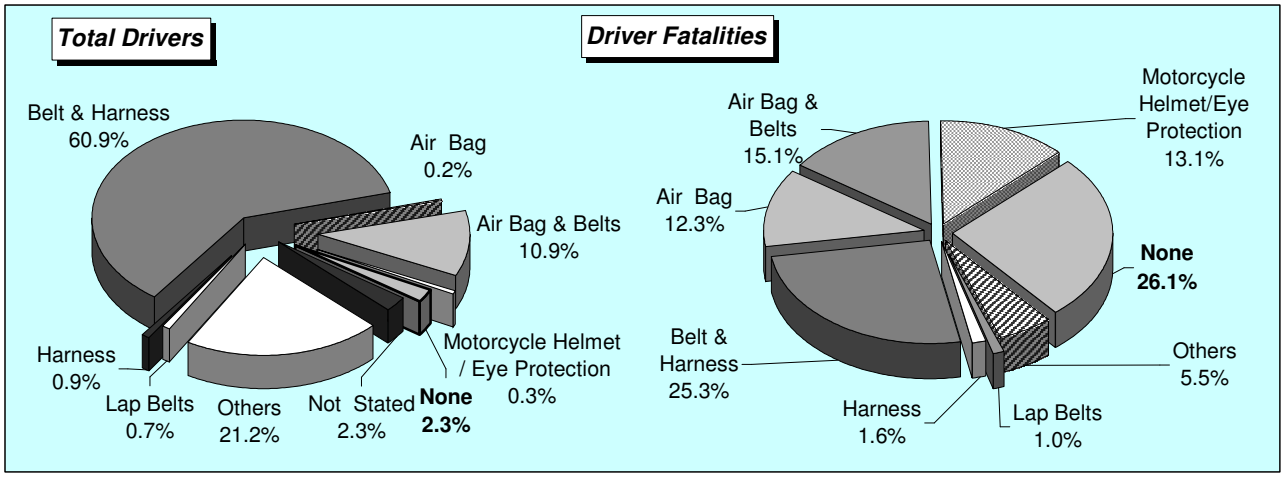
- The age group of 25 - 29 years accounted for the highest percentage of drivers killed (11.8%). 48 out of 59 driver fatalities in the age group of 25-29 years were at-fault drivers (81.4%). 42 out of 50 driver fatalities in the age group of 20-24 years were at-fault drivers (84.0%).
- The age group of 20 - 24 years accounted for the highest percentage of drivers involved in total accidents (11.8%). 56% of 24,004 drivers in the age group of 20-24 years were at-fault drivers.

Table 2.1.8 Driver Information by Driver Age, 2003

Driver Age	Driver Fatalities				Drivers involved in Accidents			
	All		At-Fault		All		At-Fault	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
15 and Under	2	0.5	2	0.7	489	0.2	390	0.4
16 - 19	36	9.4	30	10.5	19,191	9.5	12,789	14.1
20 - 24	50	13.1	42	14.6	**24,004**	**11.8**	**13,453**	**14.8**
25 - 29	**59**	**15.4**	**48**	**16.7**	18,829	9.3	9,019	9.9
30 - 34	30	7.8	21	7.3	18,561	9.1	8,254	9.1
35 - 39	25	6.5	21	7.3	18,293	9.0	7,897	8.7
40 - 44	28	7.3	17	5.9	17,834	8.8	7,541	8.3
45 - 49	24	6.3	17	5.9	14,995	7.4	6,232	6.9
50 - 54	28	7.3	18	6.3	11,454	5.6	4,629	5.1
55 - 59	24	6.3	19	6.6	8,786	4.3	3,623	4.0
60 - 64	11	2.9	7	2.4	5,915	2.9	2,508	2.8
65 - 69	13	3.4	11	3.8	3,709	1.8	1,628	1.8
70 - 79	27	7.0	14	4.9	5,125	2.5	2,820	3.1
80 +	25	6.5	20	7.0	2,335	1.2	1,547	1.7
Unknown	1	0.3	-	0.0	33,362	16.4	8,440	9.3
Total	**383**	**100.0**	**287**	**100.0**	**202,882**	**100.0**	**90,770**	**100.0**

- 25.2% of drivers killed in traffic accidents and 2.3% of drivers involved in total accidents did not use any safety equipment.

Figure 2.1.5 Driver Fatalities and Drivers Involved in Accidents by Safety Equipment Used, 2003



2.1.3 Young Drivers and Older Drivers[3]

Trends

- For the latest 10 years (from 1994 to 2003), on average, total accidents involving young drivers increased by 2.9% per year, and total accidents involving older drivers increased by 2.5% per year.
- Between 2002 and 2003, the fatal accidents involving young drivers increased by 8.7%, while the total accidents and injuries decreased by 0.3 and 6.1%, respectively. The fatal and total accidents involving older drivers increased by 3.9% and 3.1%, respectively, whereas the number of injuries decreased by 2.2%.

Table 2.1.9 Accidents Involving Young Drivers, by Severity, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Injuries
1994	108	9,122	8,462	17,692	121	16,569
1995	120	9,306	8,999	18,425	145	16,732
1996	115	9,483	9,466	19,064	125	16,888
1997	102	9,230	10,063	19,395	111	16,556
1998	108	9,142	10,541	19,791	128	15,699
1999	135	9,134	11,346	20,615	156	15,771
2000	124	8,766	11,253	20,143	134	15,062
2001	121	9,029	12,038	21,188	135	15,059
2002	115	9,368	12,947	22,430	135	15,300
2003	125	8,855	13,374	22,354	146	14,373
Avg. Change (%)	**1.7**	**-0.3**	**6.4**	**2.9**	**2.3**	**-1.5**

Table 2.1.10 Accidents Involving Older Drivers, by Severity, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Injuries
1994	117	6,933	6,017	13,067	132	12,210
1995	131	6,898	6,402	13,431	154	12,169
1996	119	7,114	6,824	14,057	133	12,105
1997	124	6,807	7,019	13,950	132	11,687
1998	116	6,819	7,230	14,165	129	11,281
1999	135	6,795	7,586	14,516	148	11,307
2000	124	6,341	7,717	14,182	140	10,300
2001	131	6,751	8,074	14,956	144	11,027
2002	128	6,928	8,437	15,493	143	11,126
2003	133	6,915	8,919	15,967	145	10,881
Avg. Change (%)	**1.5**	**0.0**	**5.4**	**2.5**	**1.1**	**-1.2**

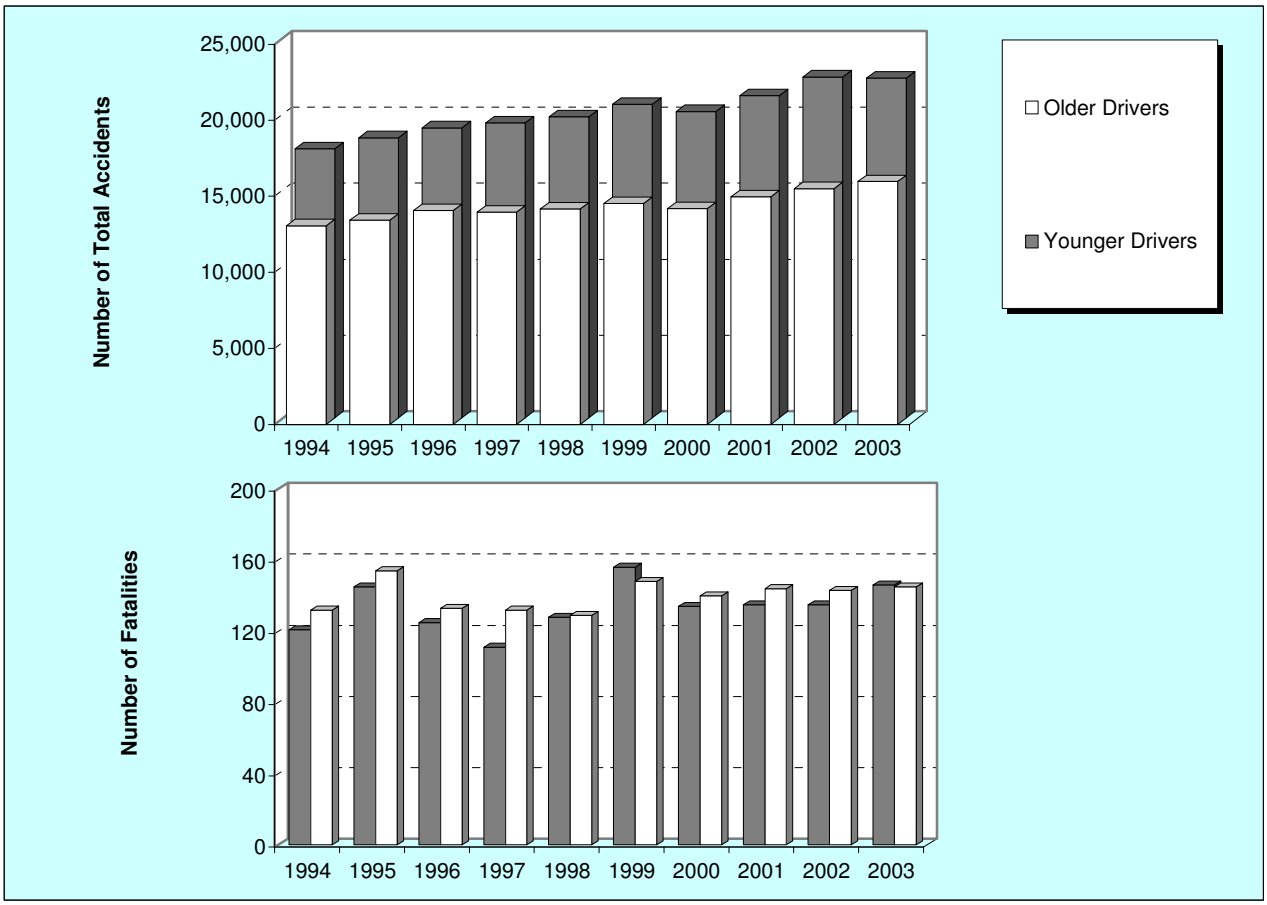
[3] Young drivers and older drivers represent 16-20 year old drivers and 60 years old and above drivers, respectively

- For the latest 10 years, young drivers who lost their lives in traffic accidents have accounted for 6% ~ 11% of statewide fatalities, and older driver fatalities have accounted for 10%~14% of statewide fatalities. Between 2002 and 2003, older driver-involved fatalities increased by 2 fatalities, while older driver fatalities decreased from 90 to 76 fatalities.

Table 2.1.11 Young and Older Driver Fatalities, 1994-2003

Year	Young Driver-Involved Fatalities		Young Driver Fatalities		Older Driver-Involved Fatalities		Older Driver Fatalities		Total Fatalities	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	121	18.4	**43**	6.5	132	20.1	**67**	10.2	657	100.0
1995	145	21.2	**51**	7.5	154	22.5	**85**	12.4	684	100.0
1996	125	20.4	**46**	7.5	133	21.7	**82**	13.4	614	100.0
1997	111	18.2	**38**	6.2	132	21.6	**84**	13.8	610	100.0
1998	128	21.1	**45**	7.4	129	21.3	**71**	11.7	606	100.0
1999	156	26.1	**66**	11.0	148	24.7	**73**	12.2	598	100.0
2000	134	21.7	**51**	8.3	140	22.7	**82**	13.3	617	100.0
2001	135	20.4	**55**	8.3	144	21.8	**84**	12.7	661	100.0
2002	135	20.4	**49**	7.4	143	21.6	**90**	13.6	661	100.0
2003	146	22.4	**52**	8.0	145	22.3	**76**	11.7	651	100.0

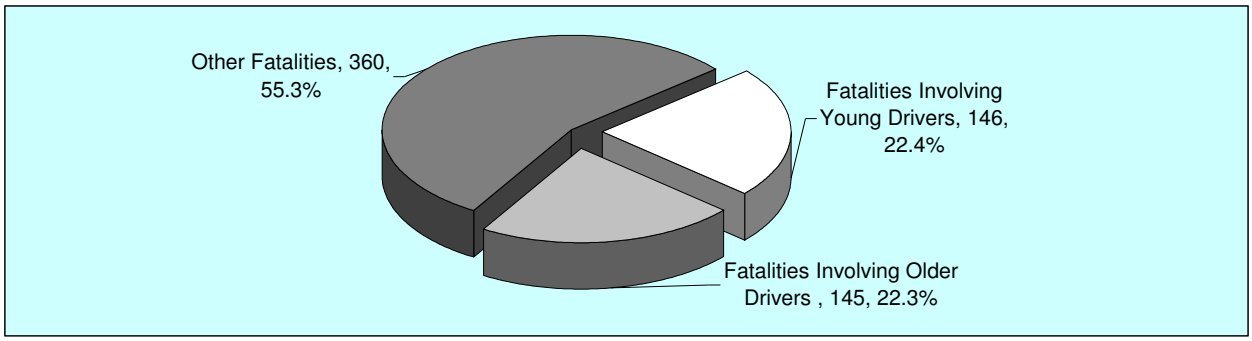
Figure 2.1.6 Total and Fatal Accidents Involving Young Drivers and Older Drivers, 1994-2003



2003 Overview

- Fatalities involving older drivers and young drivers accounted for 44.7% of all fatalities in 2003.

Figure 2.1.7 Fatalities Involving Young Drivers and Older Drivers, 2003



- Among 146 fatalities involving young drivers, 52 young drivers were killed in traffic accidents. 20 years old drivers had the highest percentage (30.8%) of young driver fatalities.
- Among 145 fatalities involving older drivers, 76 older drivers lost their lives in traffic accidents. 70 - 79 years old drivers accounted for 35.5% of 76 older driver fatalities. The older driver age group of 60-64 years had the highest percentage of total older drivers involved in the accidents.

Table 2.1.12 Fatalities and Injured Persons Involving Young Drivers by Victim Type, 2003

Fatalities / Injured Persons	Young / Older Drivers	Passengers	Pedestrians	Other Drivers	Total
Fatalities Involving Young Drivers	52	49	13	32	146
Injured Persons Involving Young Drivers	5,577	4,427	222	4,147	14,373
Total	**5,629**	**4,476**	**235**	**4,179**	**14,519**
Fatalities Involving Older Drivers	76	30	17	22	145
Injured Persons Involving Older Drivers	4,077	2,776	464	3,564	10,881
Total	**4,153**	**2,806**	**481**	**3,586**	**11,026**

Table 2.1.13 Young Driver Information by Age, 2003

Young Driver Age	Young Driver Fatalities		Total Young Drivers Involved in Accidents	
	Number	Percent	Number	Percent
16	5	9.6	3,334	13.8
17	8	15.4	5,236	21.7
18	10	19.2	**5,458**	**22.7**
19	13	25.0	5,140	21.3
20	**16**	**30.8**	4,920	20.4
Total	**52**	**100.0**	**24,088**	**100.0**

Table 2.1.14 Older Driver Information by Age, 2003

Older Driver Age	Older Driver Fatalities		Total Older Drivers Involved in Accidents	
	Number	Percent	Number	Percent
60 - 64	11	14.5	**5,905**	**34.7**
65 - 69	13	17.1	3,705	21.8
70 - 79	**27**	**35.5**	5,117	30.1
80+	25	32.9	2,295	13.5
Total	**76**	**100.0**	**17,022**	**100.0**

- The number of young driver-involved accidents was largest in Baltimore County (16.4%). The number of fatal young driver-involved accidents was largest in Prince George's County and Baltimore County (16.0% each). Garrett County had the highest fatal young accident rates (0.82 per 100 million VMT).
- The number of older driver accidents was largest in Baltimore County (16.3%). Fatal older driver accidents occurred most with 19 in Prince George's County in 2003 (14.3%). The highest fatal older driver accident rate was 0.97 per 100 million VMT in Calvert County.

Table 2.1.15 Total and Fatal Young and Older Driver Accidents and Fatal Accident Rates, 2003

County	Young Driver				Older Driver				VMT (millions)	Fatal Accident Rates (per 100M VMT)	
	Total	Percent	Fatal	Percent	Total	Percent	Fatal	Percent		Young Driver	Older Driver
Allegany	274	1.2	2	1.6	195	1.2	3	2.3	838	0.24	0.36
Anne Arundel	2,609	11.7	9	7.2	1,513	9.5	11	8.3	5,587	0.16	0.20
Baltimore	**3,674**	**16.4**	**20**	**16.0**	**2,607**	**16.3**	12	9.0	8,078	0.25	0.15
Calvert	387	1.7	4	3.2	175	1.1	7	5.3	722	0.55	**0.97**
Caroline	139	0.6	2	1.6	80	0.5	3	2.3	344	0.58	0.87
Carroll	701	3.1	6	4.8	409	2.6	8	6.0	1,248	0.48	0.64
Cecil	444	2.0	4	3.2	260	1.6	6	4.5	1,230	0.33	0.49
Charles	796	3.6	3	2.4	350	2.2	3	2.3	1,174	0.26	0.26
Dorchester	119	0.5	2	1.6	97	0.6	-	0.0	362	0.55	0.00
Frederick	919	4.1	1	0.8	447	2.8	5	3.8	2,746	0.04	0.18
Garrett	165	0.7	4	3.2	114	0.7	3	2.3	486	**0.82**	0.62
Harford	1,001	4.5	9	7.2	552	3.5	13	9.8	2,257	0.40	0.58
Howard	1,323	5.9	7	5.6	705	4.4	2	1.5	3,620	0.19	0.06
Kent	62	0.3	-	0.0	26	0.2	-	0.0	228	-	0.00
Montgomery	2,710	12.1	8	6.4	2,332	14.6	6	4.5	7,427	0.11	0.08
Prince George's	2,650	11.9	**20**	**16.0**	2,122	13.3	**19**	**14.3**	8,631	0.23	0.22
Queen Anne's	185	0.8	1	0.8	129	0.8	4	3.0	910	0.11	0.44
St. Mary's	422	1.9	3	2.4	197	1.2	3	2.3	778	0.39	0.39
Somerset	103	0.5	-	0.0	72	0.5	1	0.8	285	-	0.35
Talbot	212	0.9	1	0.8	228	1.4	1	0.8	623	0.16	0.16
Washington	696	3.1	5	4.0	503	3.2	8	6.0	1,968	0.25	0.41
Wicomico	610	2.7	6	4.8	412	2.6	4	3.0	842	0.71	0.48
Worcester	402	1.8	2	1.6	250	1.6	3	2.3	674	0.30	0.45
Baltimore City	1,751	7.8	6	4.8	2,192	13.7	8	6.0	3,620	0.17	0.22
Total	**22,354**	**100.0**	**125**	**100.0**	**15,967**	**100.0**	**133**	**100.0**	**54,678**	**0.23**	**0.24**

2.1.4 Passengers

Trends

Severity

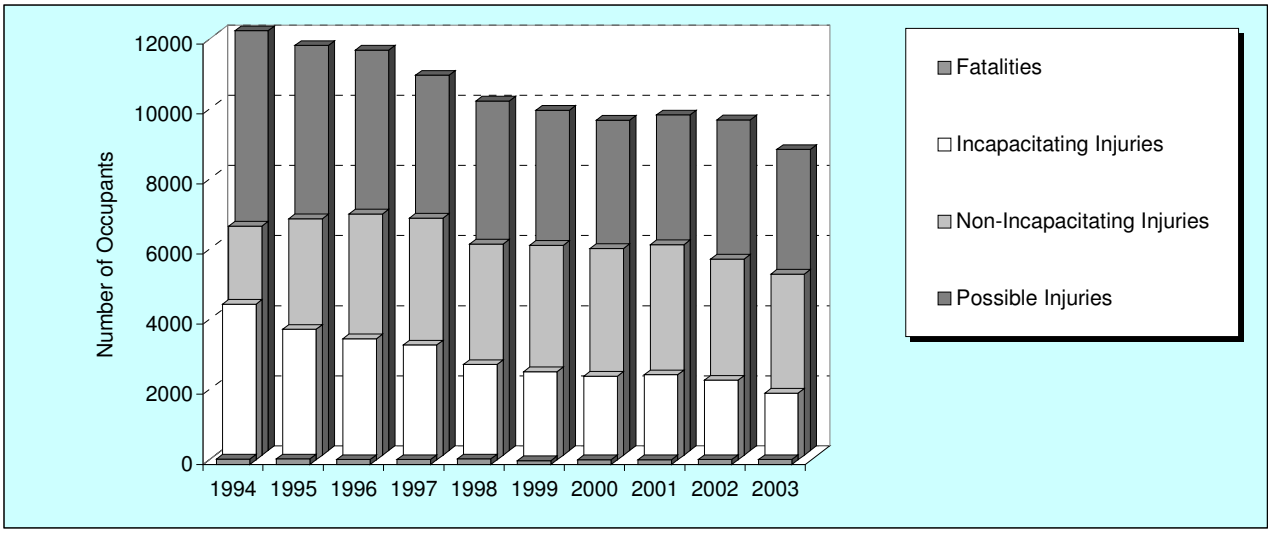
- There was a downward trend in total injured and killed passengers from 1994 to 2003. Between 2002 and 2003, passenger fatalities increased by one fatality, but passengers injured decreased by 9.5%.

Table 2.1.16 Passenger* Killed and Injured by Severity, 1994-2003

Year	Fatalities	Incapacitating Injured Passengers	Non-Incapacitating Injured Passengers	Possible Injured Passengers	Total Injured & Killed	Total Passengers Involved
1994	159	4,443	6,540	11,975	**23,117**	**70,503**
1995	162	3,720	6,750	11,556	**22,188**	**72,933**
1996	143	3,452	6,885	11,424	**21,904**	**74,317**
1997	143	3,275	6,763	10,710	**20,891**	**71,965**
1998	160	2,720	6,019	9,969	**18,868**	**69,555**
1999	110	2,516	5,983	9,705	**18,314**	**69,871**
2000	137	2,386	5,890	9,423	**17,836**	**70,145**
2001	138	2,430	6,000	9,573	**18,141**	**70,949**
2002	142	2,275	5,593	9,433	**17,443**	**70,875**
2003	143	1,896	5,167	8,591	**15,797**	**65,638**

* Passengers include motorcycle passengers

Figure 2.1.8 Passenger Killed and Injured by Severity, 1994-2003



Safety Equipment Used

- Like drivers, most passengers used both belt and harness. Notably, the use of both air bags and belts increased significantly from 1997.
- Among the passengers involved in total accidents, the passengers who did not use any safety equipment at the time of the accident had a downward trend. From 1994 to 2003, the percentages of no safety equipment used among the passengers have consistently decreased.

Table 2.1.17 Total Passengers by Safety Equipment Used, 1994-2003

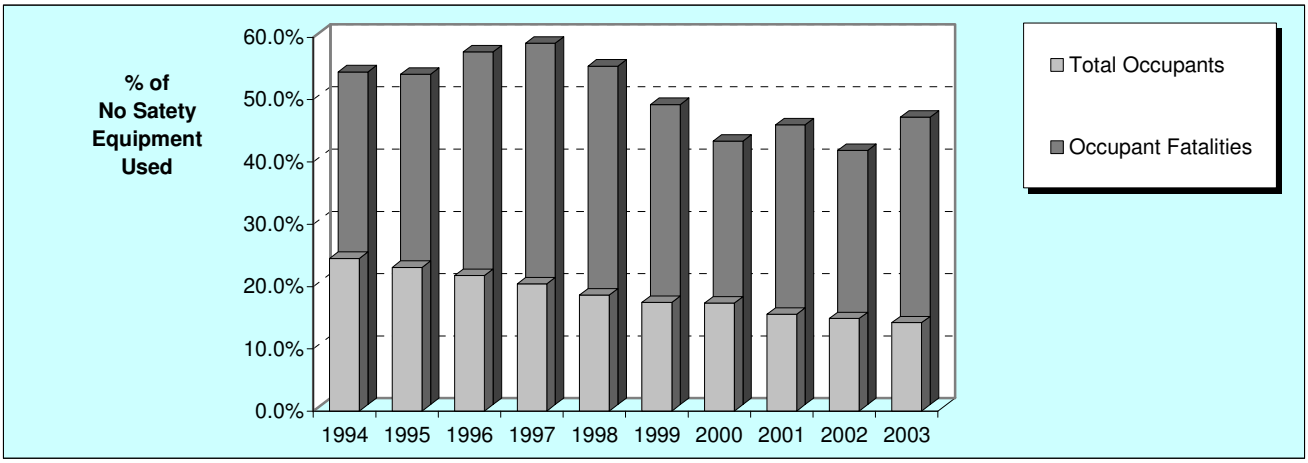
Safety Equipment	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lap Belts Only	6,952	6,127	6,097	5,474	4,726	4,104	3,785	3,442	2,829	2,365
Harness Only	849	776	815	691	644	543	775	906	832	704
Belt and Harness	33,311	34,897	36,192	36,622	37,080	38,358	37,992	38,535	38,776	35,007
Child Restraint	3,783	3,849	3,858	3,987	3,955	4,441	4,425	4,648	4,895	4,933
Air Bag	29	118	208	89	64	70	97	102	114	117
Air Bag and Belts	141	1	-	929	1,394	1,875	2,374	3,141	3,401	3,928
Motorcycle Helmet	57	50	45	43	53	42	54	46	44	73
Eye Protection	2	2	6	4	2	2	5	5	1	7
Helmet / Eye Protection	44	54	47	35	41	36	44	42	43	36
None	**17,276**	**16,827**	**16,165**	**14,710**	**12,966**	**12,209**	**12,170**	**11,055**	**10,530**	**9,306**
Not Stated	2,081	2,787	1,905	1,533	1,665	1,745	1,766	1,680	1,570	1,572
Other / Unknown	5,978	7,445	8,979	7,848	6,965	6,446	6,658	7,347	7,840	7,590
Total	**70,503**	**72,933**	**74,317**	**71,965**	**69,555**	**69,871**	**70,145**	**70,949**	**70,875**	**65,638**

Table 2.1.18 Passenger Fatalities by Safety Equipment Used, 1994-2003

Safety Equipment	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lap Belts Only	3	10	4	5	2	1	1	1	2	1
Harness Only	2	3	2	3	2	2	3	3	2	3
Belt and Harness	45	40	38	33	40	28	40	42	47	36
Child Restraint	6	4	1	1	4	3	4	4	5	6
Air Bag	-	2	4	-	5	4	3	2	4	5
Air Bag and Belts	2		-	5	12	9	10	13	10	13
Motorcycle Helmet	1	1	-	-	1	1	4	1	1	3
Eye Protection	-	-	-	-	-	-	-	-	-	-
Helmet / Eye Protection	2	-	1	1	-	1	-	1	1	-
None	**85**	**86**	**81**	**83**	**87**	**53**	**58**	**62**	**58**	**66**
Not Stated	4	1	1	1	1	-	-	2	1	-
Other / Unknown	9	15	11	11	6	8	14	7	11	10
Total	**159**	**162**	**143**	**143**	**160**	**110**	**137**	**138**	**142**	**143**

- Among passenger fatalities, the percentages of no safety equipment used had an increasing trend from 42.3% in 2000 to 46.2% in 2003.

Figure 2.1.9 Percentages of No Safety Equipment Used for Total Passengers and Passenger Fatalities, 1994-2003



2003 Overview

- 65,638 passengers were involved in Maryland traffic accidents, and 15,797 passengers were injured or killed in 2003.
- 143 passenger fatalities accounted for 22.0% of all statewide fatalities.
- Among the passengers killed or injured, possible injured persons had the highest percentage (54.4%).
- The 16 - 19 years old passenger group had the most passenger fatalities (19.6%). The 15 years and under passenger group had the most passengers involved in accidents (33.8%).

Figure 2.1.10 Passenger Fatalities and Injured Passengers by Severity, 2003

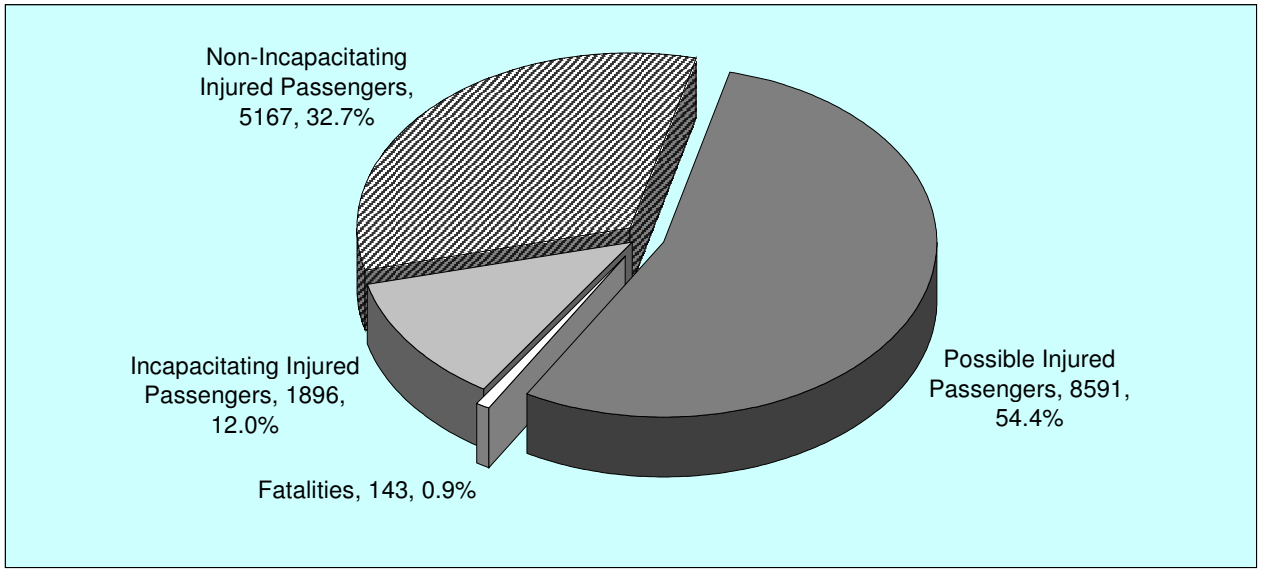


Table 2.1.19 Passenger Fatalities and Total Passengers by Age, 2003

Passenger Age	Passenger Fatalities		Total Passengers	
	Number	Percent	Number	Percent
15 and Under	21	14.7	**22,192**	**33.8**
16 - 19	**28**	**19.6**	9,466	14.4
20 - 24	25	17.5	6,920	10.5
25 - 29	6	4.2	3,879	5.9
30 - 34	8	5.6	3,213	4.9
35 - 39	5	3.5	2,863	4.4
40 - 44	11	7.7	2,580	3.9
45 - 49	5	3.5	2,090	3.2
50 - 54	2	1.4	1,782	2.7
55 - 59	3	2.1	1,284	2.0
60 - 64	3	2.1	962	1.5
65 - 69	3	2.1	688	1.0
70 - 79	6	4.2	1,186	1.8
80 +	13	9.1	1,018	1.6
Unknown	4	2.8	5,515	8.4
Total	**143**	**100.0**	**65,638**	**100.0**

- 46.2% of passenger fatalities were coded as not using any safety equipment, compared to 14.2% of total passengers involved.
- Most passengers killed in traffic accidents sat on the "*Right Front Seat*" (68.5%). The next most passenger seating position was the "*Right Rear Seat*" (14.0%).
- 30.8% of passengers killed were fully or partially ejected.

Table 2.1.20 Passenger Fatalities and Total Passengers by Safety Equipment Used, 2003

Safety Equipment Used	Passenger Fatalities		Total Passengers	
	Number	Percent	Number	Percent
Lap Belts Only	1	0.7	2,365	3.6
Harness Only	3	2.1	704	1.1
Belt and Harness	36	25.2	35,007	53.3
Child Restraint	6	4.2	4,933	7.5
Air Bag	5	3.5	117	0.2
Air Bag and Belts	13	9.1	3,928	6.0
Motorcycle Helmet	3	2.1	73	0.1
Eye Protection	-	0.0	7	0.0
Helmet / Eye Protection	-	0.0	36	0.1
None	**66**	**46.2**	**9,306**	**14.2**
Not Stated	-	0.0	1,572	2.4
Other / Unknown	10	7.0	7,590	11.6
Total	**143**	**100.0**	**65,638**	**100.0**

Table 2.1.21 Passengers by Passenger Seating Position, 2003

Passenger Seating Position	Passengers Killed		Total Passengers	
	Number	Percent	Number	Percent
Not Applicable	-	0.0	7	0.0
Dr/MC Operator Lap	-	0.0	166	0.3
Center Front Seat	3	2.1	1,092	1.7
Right Front Seat	**98**	**68.5**	**30,493**	**46.5**
Left Rear & MC Passenger	13	9.1	7,595	11.6
Center Rear Seat	3	2.1	3,153	4.8
Right Rear Seat	20	14.0	10,167	15.5
Other in Vehicle	3	2.1	9,651	14.7
Cargo Area	2	1.4	297	0.5
Outside Vehicle	-	0.0	129	0.2
Other / Unknown	1	0.7	2,888	4.4
Total	**143**	**100.0**	**65,638**	**100.0**

Table 2.1.22 Passengers by Passenger Ejection, 2003

Passenger Seating Position	Passengers Killed		Total Passengers	
	Number	Percent	Number	Percent
Not Applicable	-	0.0	1,420	2.2
Not Ejected/Trapped	**55**	**38.5**	**61,772**	**94.1**
Fully Ejected	31	21.7	328	0.5
Partially Ejected	13	9.1	62	0.1
Trapped	42	29.4	357	0.5
Other / Unknown	2	1.4	1,699	2.6
Total	**143**	**100.0**	**65,638**	**100.0**

2.1.5 Pedestrians

Trends

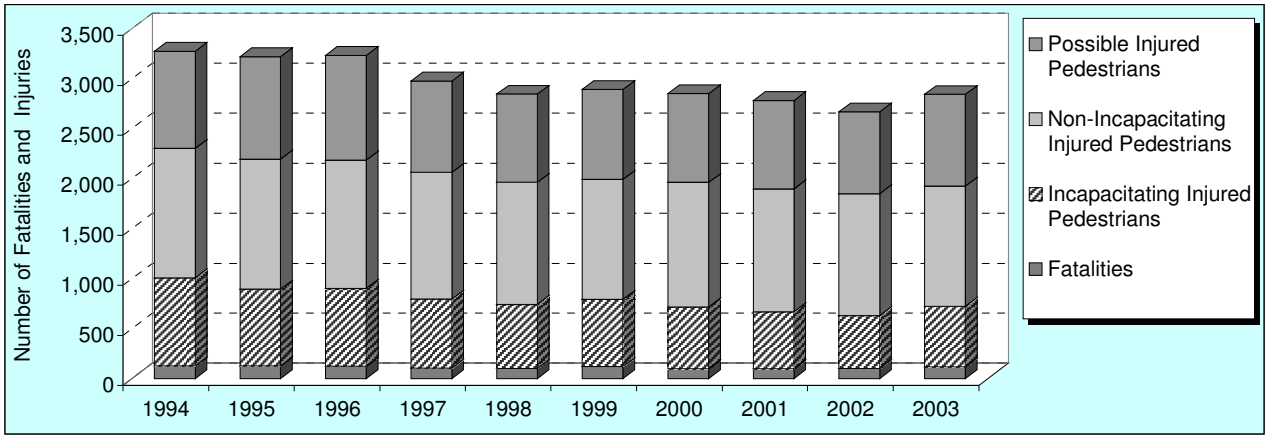
Severity

- From 1994 and 2002, there had been a decreasing trend in the number of total injured or killed pedestrians. However, between 2002 and 2003, the number of total injured or killed pedestrians increased by 6.6%.

Table 2.1.23 Pedestrians Killed and Injured by Severity, 1994-2003

Year	Fatalities	Incapacitating Injured Pedestrians	Non-Incapacitating Injured Pedestrians	Possible Injured Pedestrians	Total Injured or Killed	Total Pedestrians Involved
1994	126	880	1,297	972	**3,275**	**3,594**
1995	128	766	1,302	1,023	**3,219**	**3,593**
1996	123	779	1,285	1,045	**3,232**	**3,594**
1997	105	690	1,269	913	**2,977**	**3,297**
1998	101	641	1,221	882	**2,845**	**3,127**
1999	119	673	1,200	900	**2,892**	**3,290**
2000	99	617	1,246	888	**2,850**	**3,243**
2001	98	570	1,228	882	**2,778**	**3,175**
2002	101	531	1,216	819	**2,667**	**3,060**
2003	118	606	1,200	918	**2,842**	**3,254**

Figure 2.1.11 Pedestrian Fatalities and Injured Pedestrians by Severity, 1994-2003



Gender

Table 2.1.24 Pedestrians Involved in Accidents by Gender, 1994-2003

Year	Pedestrian Fatalities				Total Pedestrians			
	Male	Female	Unknown	Total	Male	Female	Unknown	Total
1994	88	38	-	**126**	2,177	1,391	26	**3,594**
1995	88	40	-	**128**	2,150	1,427	16	**3,593**
1996	95	28	-	**123**	2,124	1,454	16	**3,594**
1997	71	34	-	**105**	1,950	1,330	17	**3,297**
1998	67	34	-	**101**	1,833	1,271	23	**3,127**
1999	82	37	-	**119**	1,920	1,351	19	**3,290**
2000	62	37	-	**99**	1,896	1,331	16	**3,243**
2001	67	31	-	**98**	1,916	1,234	25	**3,175**
2002	66	35	-	**101**	1,795	1,246	19	**3,060**
2003	84	34	-	**118**	1,872	1,363	19	**3,254**

Age

- From 1994 to 2003, the age group of 5-9 years had the most pedestrians involved in total accidents. The age group had a downward trend over those 10 years.
- The age groups of 40-44 years, 45-49 years, and 50-54 years had increasing trends of pedestrians involved in the accidents from 1994 to 2003.
- Between 2002 and 2003, the pedestrian fatalities of the age groups of 40-44 years and 45-49 years increased by 150.0% and 63.6%, respectively.

Table 2.1.25 Total Pedestrians Involved in Accidents by Age, 1994-2003

Pedestrian Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Under 5	165	138	142	115	104	108	104	110	100	87
5 - 9	404	424	414	368	367	349	349	345	278	265
10 - 15	614	559	533	499	460	467	465	443	399	445
16 - 19	242	261	253	288	237	266	258	251	267	252
20 - 24	291	302	286	240	228	262	256	237	264	307
25 - 29	311	309	272	213	222	243	225	201	189	209
30 - 34	348	312	319	267	215	234	246	231	188	213
35 - 39	257	288	307	268	295	288	236	268	255	248
40 - 44	231	227	236	231	193	244	271	250	251	252
45 - 49	146	174	180	194	163	178	193	182	196	229
50 - 54	113	95	121	118	106	144	162	166	166	206
55 - 59	71	70	88	83	102	87	87	96	93	120
60 - 64	60	73	58	64	67	74	53	69	78	89
65 - 69	53	72	68	49	55	72	63	47	50	59
70 - 79	92	105	104	105	111	93	92	83	103	101
80 +	44	46	65	49	60	56	53	66	46	51
Unknown	152	138	148	146	142	125	130	129	137	121
Total	**3,594**	**3,593**	**3,594**	**3,297**	**3,127**	**3,290**	**3,243**	**3,174**	**3,060**	**3,254**

Table 2.1.26 Pedestrian Fatalities by Age, 1994-2003

Pedestrian Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Under 5	2	4	4	3	2	2	4	1	3	2
5 - 9	11	7	5	9	4	4	2	8	3	5
10 - 15	7	10	8	2	3	4	3	6	4	5
16 - 19	6	5	4	4	3	11	5	7	3	3
20 - 24	8	5	11	5	3	8	6	8	7	6
25 - 29	11	9	5	11	4	5	6	2	6	11
30 - 34	12	14	9	5	7	6	8	9	7	2
35 - 39	10	14	9	14	18	12	9	9	11	8
40 - 44	13	13	12	12	9	16	15	8	6	15
45 - 49	8	9	13	10	4	3	12	5	11	18
50 - 54	12	4	6	8	7	13	4	6	10	14
55 - 59	3	4	3	5	6	3	5	3	6	7
60 - 64	3	6	6	4	7	5	4	5	4	5
65 - 69	3	3	4	-	3	7	6	2	6	4
70 - 79	8	14	13	7	9	10	4	6	8	9
80 +	7	5	11	3	10	10	6	13	3	2
Unknown	2	2	-	3	2	-	-	-	3	2
Total	**126**	**128**	**123**	**105**	**101**	**119**	**99**	**98**	**101**	**118**

Pedestrian Location

- Most of pedestrian-involved accidents occurred on roads not at crosswalk. "On Roads Not at Crosswalk" accounted for 53% ~ 57% of total pedestrians involved in accidents and 70% ~ 83% of pedestrian fatalities over the latest 10 years.

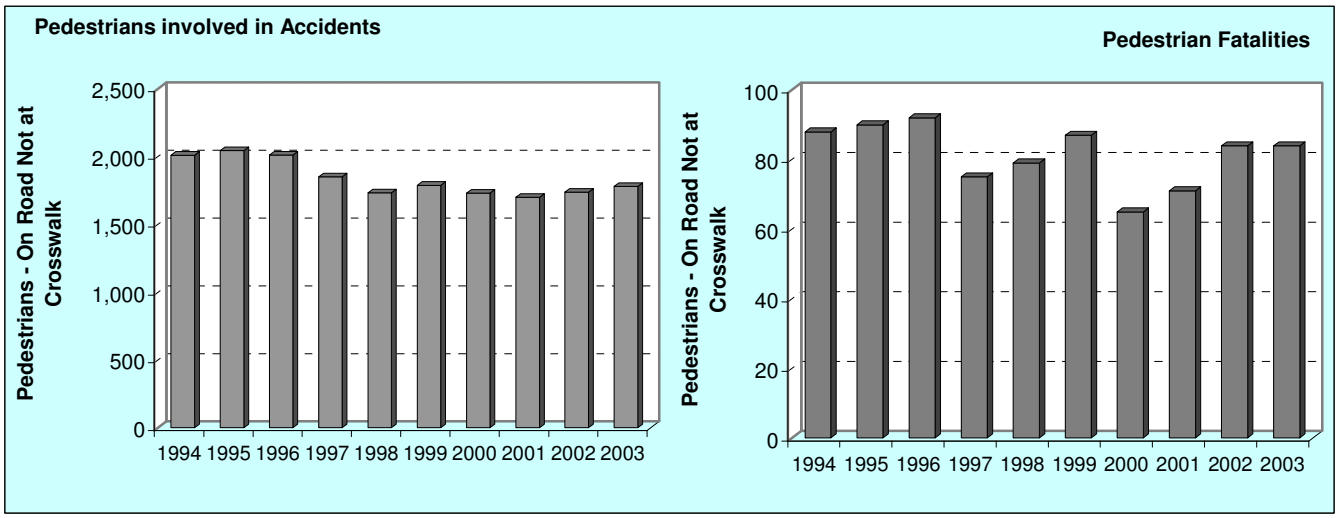
Table 2.1.27 Total Pedestrians Involved in Accidents by Pedestrian Location, 1994-2003

Pedestrian Location	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Not App.	52	57	48	46	74	81	55	45	51	54
Shoulder	202	182	218	180	153	192	222	223	162	145
Curb	134	134	120	107	95	98	124	90	77	85
Sidewalk	187	199	170	145	178	147	131	136	115	111
Outside Right of Way	166	143	181	175	185	183	220	191	177	210
On Rd. at Crosswalk	541	559	547	515	444	500	461	517	487	535
On Rd. Not at Cross.	2,009	2,045	2,010	1,850	1,733	1,788	1,731	1,700	1,738	1,780
In School Bus Zone	11	15	14	12	10	14	8	9	6	21
In Bikeway	4	3	4	2	3	7	2	3	4	2
Other/Unknown	288	256	282	265	252	280	289	261	243	311
Total	**3,594**	**3,593**	**3,594**	**3,297**	**3,127**	**3,290**	**3,243**	**3,175**	**3,060**	**3,254**

Table 2.1.28 Pedestrian Fatalities by Pedestrian Location, 1994-2003

Pedestrian Location	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Not App.	-	2	-	-	-	-	1	-	1	1
Shoulder	9	11	8	11	5	8	5	9	4	6
Curb	1	-	1	3	-	4	2	1	-	1
Sidewalk	2	7	2	-	2	2	5	3	-	4
Outside Right of Way	4	4	1	6	-	4	2	4	1	5
On Rd. at Crosswalk	14	10	14	5	14	9	11	10	4	12
On Rd. Not at Cross.	88	90	92	75	79	87	65	71	84	84
In School Bus Zone	-	-	-	-	-	-	-	-	-	2
In Bikeway	1	-	-	-	-	1	-	-	-	-
Other/Unknown	7	4	5	5	1	4	8	1	7	3
Total	**126**	**128**	**123**	**105**	**101**	**119**	**99**	**99**	**101**	**118**

Figure 2.1.12 Pedestrian Information – On Road Not at Crosswalk, 1994-2003



Pedestrian Movement

- "*Crossing Not at Intersection*" had the highest percentages of total pedestrians involved in accidents and pedestrian fatalities over those years.

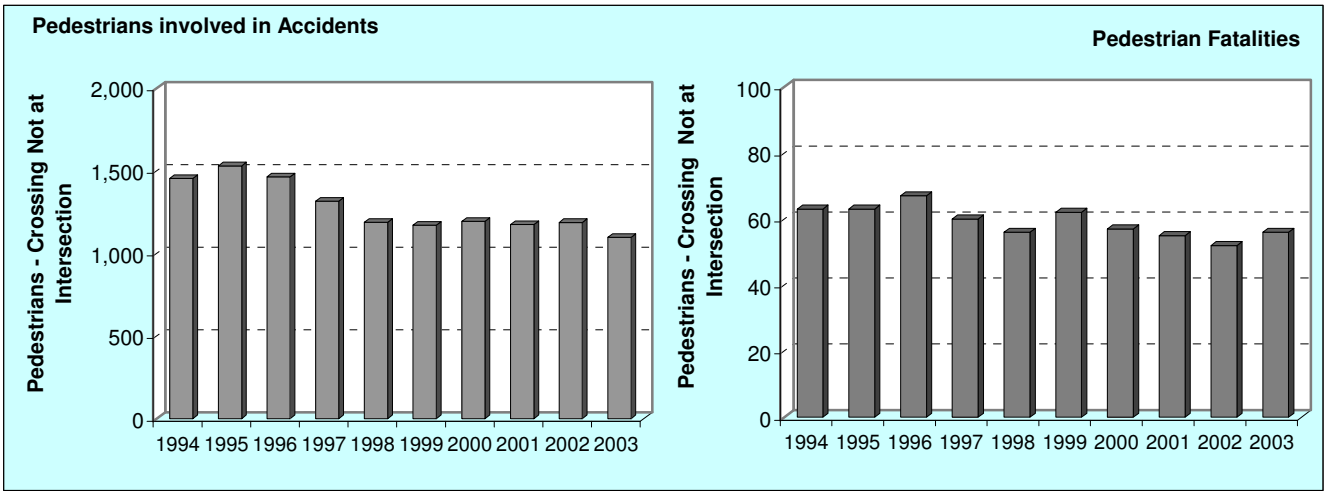
Table 2.1.29 Total Pedestrians involved in Accidents by Pedestrian Movement, 1994-2003

Pedestrian Movement	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Cross. at Intersection	663	734	702	675	554	614	573	647	622	620
Cross. Not at Intersection	1,452	1,531	1,463	1,316	1,188	1,171	1,194	1,174	1,187	1,097
Walk/Ride with Traffic	227	267	251	227	167	190	196	151	150	199
Walk/Ride against Traffic	162	149	192	141	117	141	191	167	148	196
Playing	124	140	137	103	111	114	100	112	93	92
Standing	364	386	432	396	371	361	335	311	326	421
Getting On/Off Vehicles	81	72	105	81	71	73	76	76	64	86
Push/Work on Vehicles	32	41	48	34	35	29	34	31	15	20
Other Working	71	61	72	78	69	62	67	58	58	71
Hitchhiking	6	2	4	2	-	6	1	-	-	3
On/Off School Bus	15	17	8	4	6	9	9	8	4	15
Other/Unknown	397	193	180	240	438	520	467	440	393	434
Total	**3,594**	**3,593**	**3,594**	**3,297**	**3,127**	**3,290**	**3,243**	**3,175**	**3,060**	**3,254**

Table 2.1.30 Pedestrian Fatalities by Pedestrian Movement, 1994-2003

Pedestrian Movement	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Cross. at Intersection	14	16	21	11	22	15	16	17	13	17
Cross. Not at Intersection	63	63	67	60	56	62	57	55	52	56
Walk/Ride with Traffic	10	9	11	7	4	11	8	4	3	11
Walk/Ride against Traffic	4	12	6	2	5	5	5	7	4	5
Playing	2	1	-	1	-	-	-	-	-	2
Standing	7	15	10	10	8	12	3	7	10	9
Getting On/Off Vehicles	1	-	1	3	1	2	1	1	-	6
Push/Work on Vehicles	1	2	2	3	2	1	2	1	-	-
Other Working	2	1	2	2	2	3	2	3	2	2
Hitchhiking	1	-	-	-	-	-	-	-	-	1
On/Off School Bus	2	1	-	-	-	-	-	-	-	-
Other/Unknown	19	8	3	6	1	8	5	4	17	9
Total	**126**	**128**	**123**	**105**	**101**	**119**	**99**	**99**	**101**	**118**

Figure 2.1.13 Pedestrian Information – Crossing Not at Intersection, 1994-2003



Pedestrian Visibility

- "*Mixed Clothing*" and "*Dark Clothing*" accounted for the higher percentage of total pedestrians involved in accidents and pedestrian fatalities than for other visibility types.

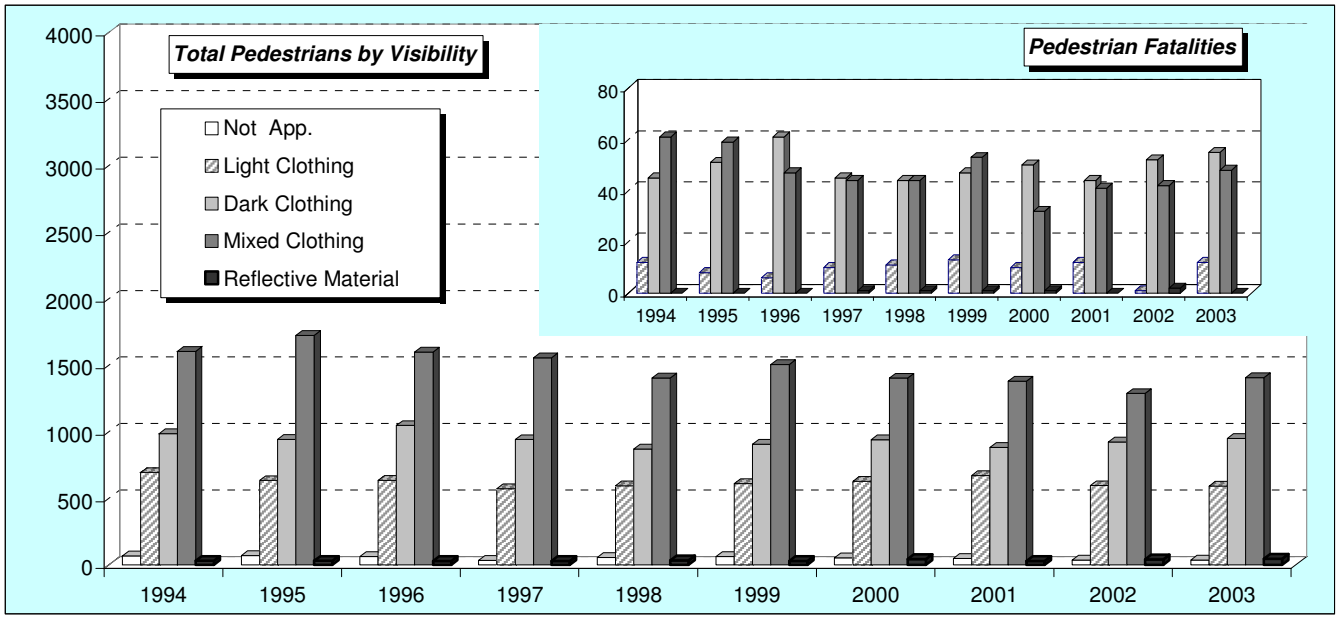
Table 2.1.31 Total Pedestrians Involved in Accidents by Pedestrian Visibility, 1994-2003

Pedestrian Visibility	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Not Applicable	67	69	62	34	56	63	53	47	36	35
Light Clothing	695	633	634	572	594	610	628	671	595	591
Dark Clothing	987	944	1,047	942	872	907	941	884	924	951
Mixed Clothing	1,604	1,724	1,599	1,555	1,406	1,505	1,404	1,382	1,288	1,407
Reflective Material	30	30	28	29	34	29	43	28	40	46
Head Light	3	3	2	3	2	5	2	3	1	2
Rear Reflector	-	-	-	-	-	-	1	-	-	-
Head Light & Reflect.	-	-	-	1	2	2	2	1	-	3
Other/Unknown	208	190	222	161	161	169	169	159	176	219
Total	**3,594**	**3,593**	**3,594**	**3,297**	**3,127**	**3,290**	**3,243**	**3,175**	**3,060**	**3,254**

Table 2.1.32 Pedestrian Fatalities by Pedestrian Visibility, 1994-2003

Pedestrian Visibility	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Not Apparent	2	6	4	-	-	2	-	-	-	-
Light Clothing	12	8	6	10	11	13	10	12	1	12
Dark Clothing	45	51	61	45	44	47	50	44	52	55
Mixed Clothing	61	59	47	44	44	53	32	41	42	48
Reflective Material	-	-	-	1	1	1	1	-	2	-
Head Light	-	-	-	2	-	-	-	-	-	-
Rear Reflector	-	-	-	-	-	-	-	-	-	-
Head Light & Reflect.	-	-	-	-	-	-	-	-	-	-
Other/Unknown	6	4	5	3	1	3	6	2	4	3
Total	**126**	**128**	**123**	**105**	**101**	**119**	**99**	**99**	**101**	**118**

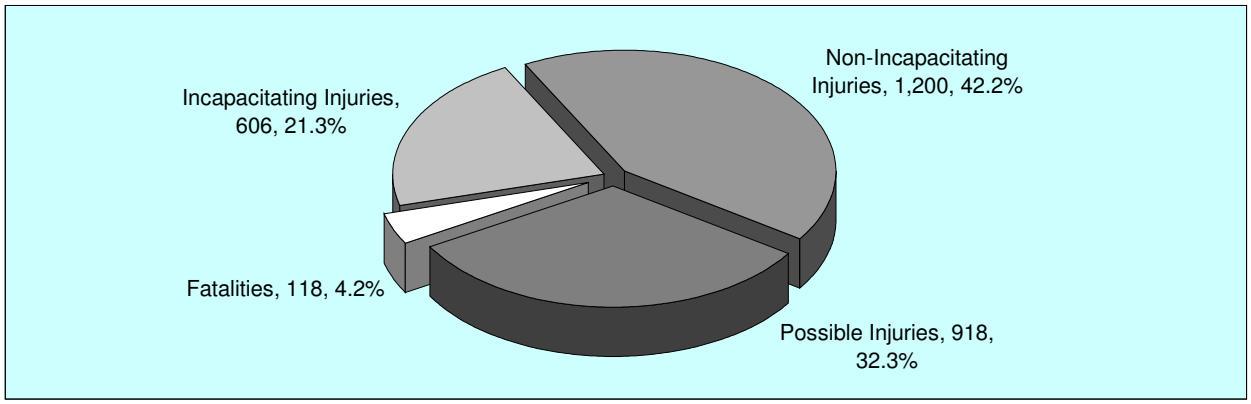
Figure 2.1.14 Pedestrian Fatalities by Pedestrian Visibility, 1994-2003



2003 Overview

- There were 118 pedestrian fatalities in 2003 - an increase by 16.8% than 101 pedestrian fatalities in 2002, and this figure accounted for 4.2% of all pedestrian fatalities and injuries.

Figure 2.1.15 Pedestrian Fatalities and Injuries by Severity, 2003



- The age groups with the most pedestrian fatalities were 45-49 years (15.3%). The pedestrian age group of 10-15 years was the most involved in total pedestrian accidents (13.7%).
- "*On Road Not at Crosswalk*" was the location type with the highest percentages of pedestrians involved in accidents (54.7%) and of pedestrian fatalities (71.3%).
- "*Crossing Not at Intersection*" was the pedestrian movement type with the highest percentages of pedestrians involved in accidents (33.7%) and of pedestrian fatalities (47.5%).
- "*Mixed Clothing*" was the pedestrian visibility type with the highest percentage of pedestrians involved in accidents (43.2%). "Dark Clothing" accounted for 29.2% of pedestrians involved in accidents.
- "*Dark* Clothing" was the pedestrian visibility type with the highest percentage of pedestrian fatalities (46.6%). The "Mixed Clothing" type had 40.7% of pedestrian fatalities.

Table 2.1.33 Pedestrian Information by Pedestrian Location, 2003

Pedestrian Location	Pedestrian Fatalities		Total Pedestrians Involved in Accidents	
	Number	Percent	Number	Percent
Not Applicable	1	0.8	54	1.7
Shoulder	6	5.1	145	4.5
Curb	1	0.8	85	2.6
Sidewalk	4	3.4	111	3.4
Outside Right of Way	5	4.2	210	6.5
On Road at Crosswalk	12	10.2	535	16.4
On Road Not at Cross.	**84**	**71.3**	**1,780**	**54.7**
In School Bus Zone	2	1.7	21	0.6
In Bikeway	-	0.0	2	0.1
Other/Unknown	3	2.5	311	9.5
Total	**118**	**100.0**	**3,254**	**100.0**

- The largest number of pedestrian accidents occurred in Baltimore City (1,030). The largest number of pedestrian fatalities occurred in Prince George's County (30).
- The highest pedestrian fatality rate per vehicle miles of travel was 0.41 per 100 million VMT in Baltimore City. The highest pedestrian fatality rate per population was 0.45 per 10,000 population in Queen Anne's County.

Table 2.1.34 Total and Fatal Pedestrian Accidents, Fatalities and Fatality Rates by County, 2003

County	Pedestrian Accidents				Fatalities	VMT (millions)	Fatality Rate (per 100M VMT)	Population *	Fatality Rate (per 10,000 Pop.)
	Total	Percent	Fatal	Percent					
Allegany	8	0.3	-	0	-	838	-	73,668	-
Anne Arundel	214	6.8	8	6.7	8	5,587	0.14	506,620	0.16
Baltimore	426	13.6	21	17.7	21	8,078	0.26	777,184	0.27
Calvert	20	0.6	1	0.8	1	722	0.14	84,110	0.12
Caroline	7	0.2	-	0	-	344	-	30,861	-
Carroll	32	1.0	2	1.6	2	1,248	0.16	163,207	0.12
Cecil	28	0.9	3	2.5	3	1,230	0.24	92,746	0.32
Charles	37	1.2	2	2.5	2	1,174	0.17	133,049	0.15
Dorchester	16	0.5	1	0.8	1	362	0.28	30,612	0.33
Frederick	48	1.5	4	3.3	4	2,746	0.15	213,662	0.19
Garrett	6	0.2	1	0.8	1	486	0.21	30,049	0.33
Harford	72	2.3	5	4.2	5	2,257	0.22	232,175	0.22
Howard	45	1.4	1	0.8	1	3,620	0.03	264,265	0.04
Kent	8	0.3	-	0	-	228	-	19,680	-
Montgomery	449	14.3	12	10.1	12	7,427	0.16	918,881	0.13
Prince George's	490	15.6	**30**	**25.4**	**30**	8,631	0.35	838,716	0.36
Queen Anne's	7	0.2	2	1.7	2	910	0.22	44,108	**0.45**
St. Mary's	23	0.7	2	1.7	2	778	0.26	92,754	0.22
Somerset	10	0.3	1	0.8	1	285	0.35	25,447	0.39
Talbot	6	0.2	-	-	-	623	-	34,670	-
Washington	50	1.6	3	2.5	3	1,968	0.15	136,796	0.22
Wicomico	32	1.0	2	1.7	2	842	0.24	87,375	0.23
Worcester	67	2.1	2	1.7	2	674	0.30	49,604	0.40
Baltimore City	**1,030**	**32.9**	15	12.7	15	3,620	**0.41**	628,670	0.24
Total	**3,131**	**100.0**	**118**	**100**	**118**	**54,678**	**0.22**	**5,508,909**	**0.21**

1. Source: * Maryland Department of Planning
2. Fatality Rate by VMT is the number of fatalities per 100 million Vehicle Miles of Travel
3. Fatality Rate by Population is the number of fatalities per 10,000 Population.

2.1.6 Pedalcyclists

Trends

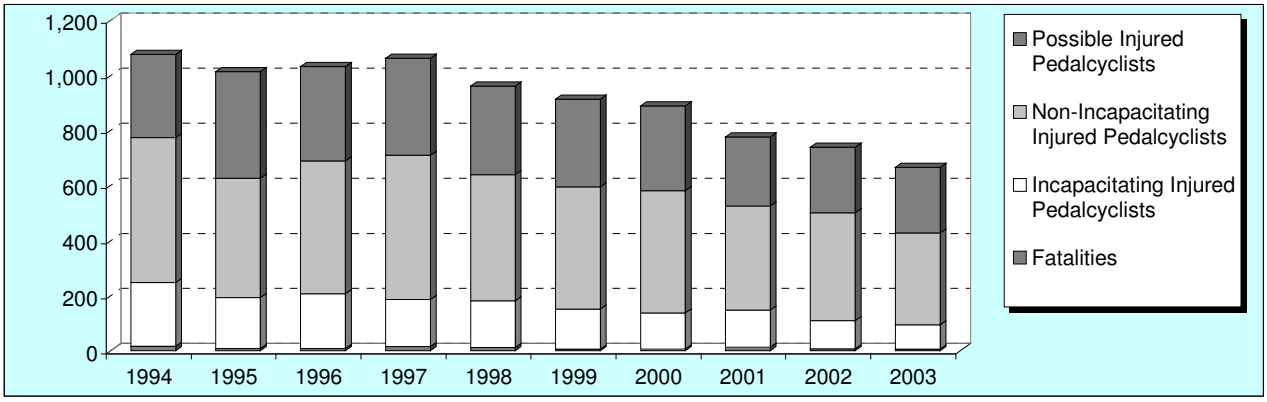
Severity

- The number of total injured or killed pedalcyclists had a downward trend from 1997 to 2003.

Table 2.1.35 Pedalcyclists Killed and Injured by Severity, 1994-2003

Year	Fatalities	Incapacitating Injured Pedalcyclists	Non-Incapacitating Injured Pedalcyclists	Possible Injured Pedalcyclists	Total Injured or Killed	Total Pedalcyclists Involved
1994	16	232	526	302	**1,076**	**1,278**
1995	8	185	433	388	**1,014**	**1,245**
1996	8	199	483	342	**1,032**	**1,240**
1997	15	171	524	352	**1,062**	**1,263**
1998	11	171	457	322	**961**	**1,186**
1999	6	145	444	318	**913**	**1,122**
2000	6	131	444	308	**889**	**1,111**
2001	13	135	377	252	**777**	**975**
2002	7	103	391	239	**740**	**923**
2003	6	89	333	237	**665**	**859**

Figure 2.1.16 Pedalcyclists Killed and Injured by Severity, 1994-2003



Gender

Table 2.1.36 Pedalcyclists by Gender, 1994-2003

Year	Pedalcyclist Fatalities				Total Pedalcyclists			
	Male	Female	Unknown	Total	Male	Female	Unknown	Total
1994	10	6	-	**16**	1,051	212	15	**1,278**
1995	8	-	-	**8**	1,042	187	16	**1,245**
1996	7	1	-	**8**	1,030	198	12	**1,240**
1997	13	2	-	**15**	1,054	195	14	**1,263**
1998	9	2	-	**11**	985	187	14	**1,186**
1999	5	1	-	**6**	919	193	10	**1,122**
2000	6	-	-	**6**	910	190	11	**1,111**
2001	11	2	-	**13**	808	159	8	**975**
2002	7	-	-	**7**	752	159	12	**923**
2003	6	-	-	**6**	729	121	9	**859**

Age

- The number of pedalcyclists involved in accidents for many age groups has decreased since 1994. For the latest 10 years (from 1994 to 2003), the age group of 10-15 years had the most involvement in pedalcycle accidents.
- Pedalcyclist fatalities for many age groups have decreased since 1994.

Table 2.1.37 Total Pedalcyclists by Age, 1994-2003

Pedalcyclist Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Under 5	22	15	15	19	9	15	12	16	9	9
5 - 9	171	213	199	193	175	181	203	127	125	118
10 - 15	436	397	421	381	341	355	331	280	256	264
16 - 19	130	129	144	132	128	116	97	118	101	76
20 - 24	94	97	80	98	86	71	72	65	82	64
25 - 29	96	72	63	86	69	58	61	42	54	44
30 - 34	73	74	66	78	64	58	51	50	41	49
35 - 39	70	81	55	60	73	65	68	56	59	39
40 - 44	44	33	37	33	59	61	48	51	57	53
45 - 49	18	25	30	36	39	41	36	46	31	39
50 - 54	10	7	13	21	22	27	23	26	21	15
55 - 59	9	11	8	10	15	8	11	9	19	19
60 - 64	4	4	4	7	10	4	12	11	8	6
65 - 69	1	8	7	4	2	2	2	7	4	2
70 - 79	6	2	5	5	7	8	3	7	3	4
80 +	5	6	4	3	3	2	2	3	-	7
Unknown	89	71	89	97	84	50	79	61	53	51
Total	**1,278**	**1,245**	**1,240**	**1,263**	**1,186**	**1,122**	**1,111**	**975**	**923**	**859**

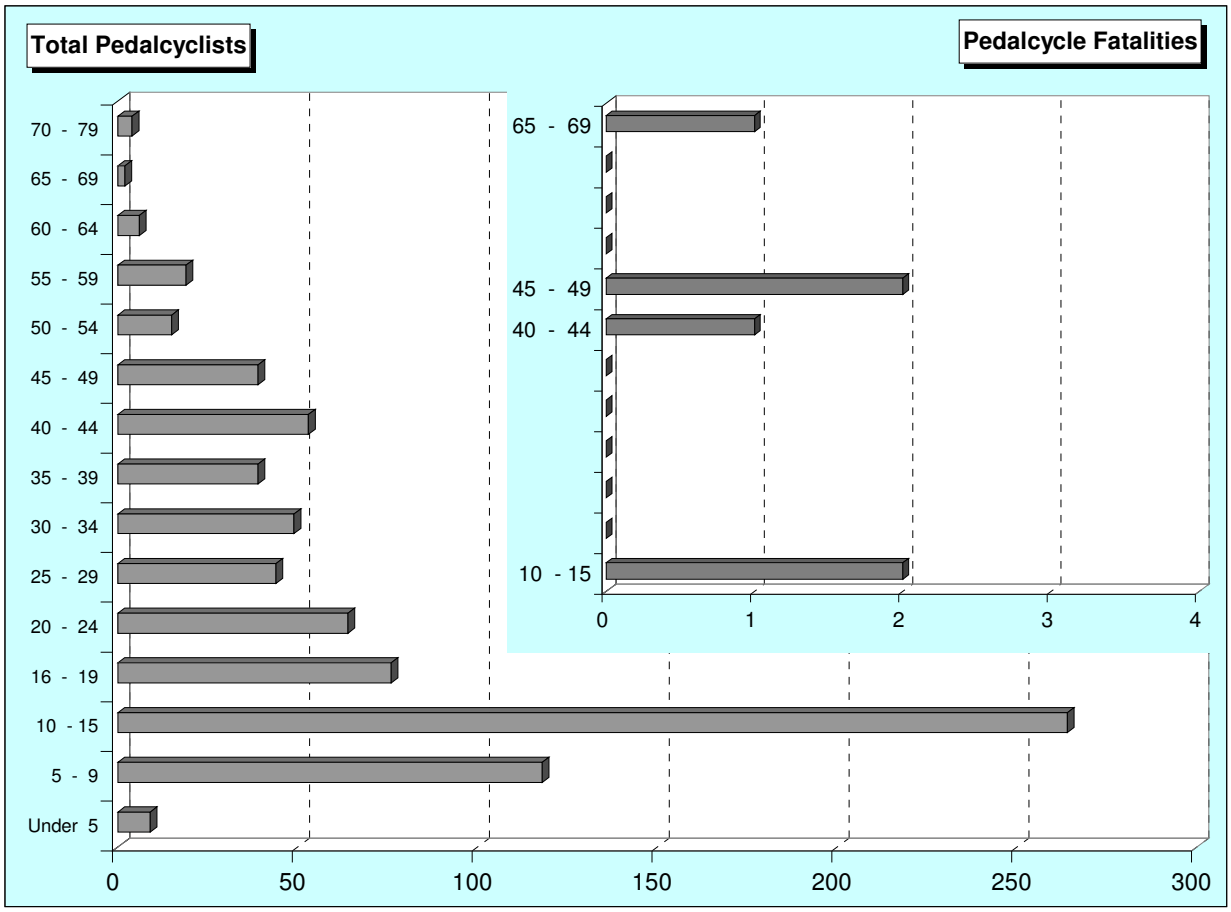
Table 2.1.38 Pedalcyclist Fatalities by Age, 1994-2003

Pedalcyclist Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Under 5	-	-	-	-	-	-	-	1	-	-
5 - 9	1	-	1	2	2	-	-	-	-	-
10 - 15	5	1	3	4	2	1	-	4	1	2
16 - 19	3		1	3		1		1	-	-
20 - 24	1	-	-	2	-	-	1	2	-	-
25 - 29	-	-	-	1	-	-	1	-	3	-
30 - 34	2	2	1	-	2	-	-	-	1	-
35 - 39	1	2	1	1	-	1	2	-	-	-
40 - 44	2	-	-	1	2	1	-	3	1	1
45 - 49	-	-	1	-	-	2	-	1	-	2
50 - 54	1	-	-	-	1	1	-	-	1	-
55 - 59	-	1	-	1	1	-	-	-	-	-
60 - 64	-	2	-	-	1	-	-	-	-	-
65 - 69	-	-	-	-	-	-	1	1	-	1
70 +	-	-	-	-	-	-	-	-	-	-
Total	**16**	**8**	**8**	**15**	**11**	**6**	**6**	**12**	**7**	**6**

2003 Overview

- Pedalcyclist fatalities accounted for 0.9% of total fatalities and injuries.
- All pedalcyclists killed were male. For total pedalcyclists involved in accidents, the percentage of males was almost 85% in 2003.
- 45.5% of total pedalcyclists involved in accidents were in the age group of 15 years and under.

Figure 2.1.17 Total Pedalcyclists and Fatalities by Age, 2003



- Pedalcycle accidents were the highest in Baltimore City at 215. Fatal pedalcycle accidents occurred in only 4 counties (Anne Arundel, Charles, Harford, and Howard) in 2003.
- The pedalcycle accident rate per 100 million VMT as well as the number of total accidents was the highest in Baltimore City, but the accident rate per 10,000 population was the highest in Worchester County.

Table 2.1.39 Total and Fatal Pedalcycle Accidents and Accident Rates by County, 2003

County	Pedalcycle Accidents				VMT (millions)	Total Acc. Rates per 100M VMT	Population *	Total Acc. Rates per 10,000 population
	Total	Percent	Fatal	Percent				
Allegany	6	0.7	-	0.0	838	0.72	73,668	0.81
Anne Arundel	105	12.4	2	33.3	5,587	1.88	506,620	2.07
Baltimore	129	15.2	-	0.0	8,078	1.60	777,184	1.66
Calvert	1	0.1	-	0.0	722	0.14	84,110	0.12
Caroline	4	0.5	-	0.0	344	1.16	30,861	1.30
Carroll	13	1.5	-	0.0	1,248	1.04	163,207	0.80
Cecil	11	1.3	-	0.0	1,230	0.89	92,746	1.19
Charles	17	2.0	1	16.7	1,174	1.45	133,049	1.28
Dorchester	5	0.6	-	0.0	362	1.38	30,612	1.63
Frederick	18	2.1	-	0.0	2,746	0.66	213,662	0.84
Garrett	3	0.4	-	0.0	486	0.62	30,049	1.00
Harford	24	2.8	2	33.3	2,257	1.06	232,175	1.03
Howard	12	1.4	1	16.7	3,620	0.33	264,265	0.45
Kent	-	0.0	-	0.0	228	0.00	19,680	0.00
Montgomery	102	12.0	-	0.0	7,427	1.37	918,881	1.11
Prince George's	91	10.7	-	0.0	8,631	1.05	838,716	1.08
Queen Anne's	2	0.2	-	0.0	910	0.22	44,108	0.45
St. Mary's	6	0.7	-	0.0	778	0.77	92,754	0.65
Somerset	-	0.0	-	0.0	285	0.00	25,447	0.00
Talbot	5	0.6	-	0.0	623	0.80	34,670	1.44
Washington	24	2.8	-	0.0	1,968	1.22	136,796	1.75
Wicomico	23	2.7	-	0.0	842	2.73	87,375	2.63
Worcester	31	3.7	-	0.0	674	4.60	49,604	**6.25**
Baltimore City	**215**	**25.4**	-	0.0	3,620	**5.94**	628,670	3.42
Total	**847**	**100.0**	**6**	**100.0**	**54,678**	**1.55**	**5,508,909**	**1.54**

1. Source: * Maryland Department of Planning

2.2 VEHICLES

This section describes the vehicle types involved in accidents, such as large trucks, buses, motorcycles, and trains at railroad-highway grade crossing.

Large truck-involved fatalities accounted for 10~14% of all accident fatalities related to motor vehicles from 1994 to 2003. Large trucks, which are defined as trucks over 10,000 pounds gross vehicle weight rating, including single unit trucks (2-axles and 3-axles) and truck tractors, require greater stopping distances and turning radii. They are also slow and hard to guide compared to other motor vehicles.

Buses-involved fatalities accounted for 1.5% of all fatalities in 2003. Ten persons were killed in 3,101 police-reported bus accidents compared to the 8 persons killed in 2002. Four out of these persons were killed in school bus-involved accidents. The other six persons were killed in commercial bus accidents.

Motorcyclists accounted for 8.9% of all accident fatalities in 2003. Motorcycles are faster and smaller than other motor vehicles; a collision between a larger vehicle and a motorcycle almost always results in a motorcycle driver or passenger injury, and, sometimes, a fatality.

Some of the notable trends are as follows:

- Recreational vehicles had a steeper increasing trend than any other vehicles. Recreational vehicle-involved accidents increased by 32.7% per year from 1994 to 2003.
- Large truck-involved accidents had a decreasing from 1999 to 2001. However, this trend turned upward again in the latest 3 years (2001 to 2003).
- Between 2002 and 2003, motorcycle-involved fatalities increased by 11.5%, and train-involved accidents increased by 45.7%.

Some results for 2003 are as follows:

- The total and fatal large truck-involved accidents occurred more on weekdays than on weekend days.
- Of 1,333 persons killed or injured in the bus-involved accidents, more than 60% were passengers and 5.2% were pedestrians. Of 474 persons killed or injured in the school bus-involved accidents, 58.0% were passengers and about 2% were pedestrians.
- The percentage of fatal accidents among motorcycle-involved accidents (4.2%) was significantly higher than for any other vehicle types.
- Most train-involved accidents occurred on Baltimore City routes (27.5%), County highways (27.5%), and MD highways (23.5%).

2.2.1 Vehicle Types

Trends

- Automobile have been the most involved in the total and fatal accidents for the latest 10 years, and had an increasing trend from 1999 to 2003.
- Among the vehicle types involved in total and fatal accidents, recreational vehicles had a steeper increasing trend than any other vehicles. Recreational vehicle-involved accidents increased by 32.7% per year from 1994 to 2003.
- The second most vehicle type involved in fatal accidents was motorcycle. Motorcycle-involved accidents increased by 11.5% per year from 1994 to 2003.

Figure 2.2.1 Trends of Some Vehicle Types Involved in Total Accidents, 1994-2003

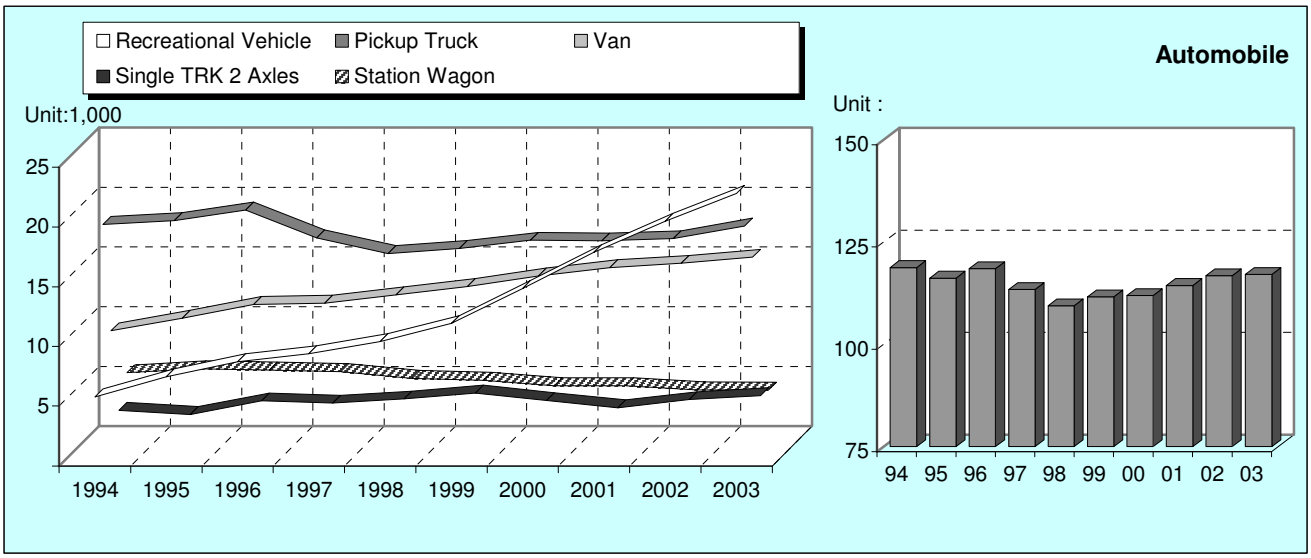


Figure 2.2.2 Vehicle Types Involved in Fatal Accidents, 1994-2003

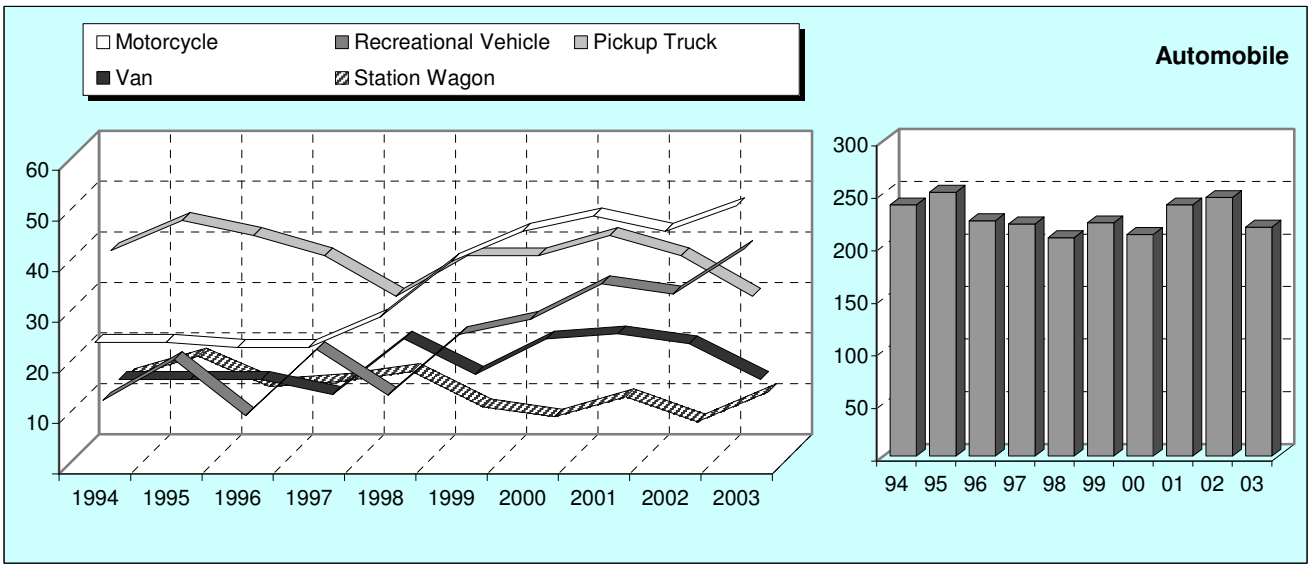


Table 2.2.1 Vehicle Types Involved in Total Accidents, 1994-2003

Vehicle Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Not Applicable	117	68	52	10	1	3	5	8	3	2
Motorcycle	1,097	1,006	906	910	989	1,099	1,183	1,374	1,287	1,361
Automobile	118,727	116,170	118,446	113,383	109,408	111,596	111,904	114,377	116,755	117,076
Station Wagon	5,141	5,472	5,374	5,238	4,668	4,504	4,059	4,056	3,724	3,699
Limousine	99	73	88	65	51	62	48	45	58	65
Single TRK 2 Axles	2,649	2,285	3,440	3,260	3,608	4,118	3,478	2,850	3,544	3,887
Single TRK 3 Axles	1,229	952	1,086	1,079	1,033	1,074	1,084	1,112	948	1,244
Truck Tractor	2,674	2,666	2,890	2,782	2,731	2,971	2,966	2,882	2,728	2,784
Recreational Vehicle	5,780	7,475	8,710	9,378	10,407	11,912	14,863	17,858	20,481	22,814
Farm Vehicle	116	108	154	79	74	86	69	47	60	58
Transit Bus	1,344	1,296	1,425	1,416	1,575	1,508	1,703	1,655	1,458	1,465
Cross Country Bus	43	66	75	70	56	64	79	81	66	69
School Bus	1,118	1,148	1,261	1,029	1,264	1,263	1,359	1,481	1,555	1,657
Ambul. - Emergency	186	170	188	114	174	199	200	184	192	247
Ambul. - Non-Emerg.	123	103	130	92	109	135	130	123	133	141
Fire Veh. - Emerg.	277	221	263	161	212	221	263	262	241	298
Fire Veh. - Non-Emerg.	124	116	136	94	110	119	138	117	115	154
Police - Emerg.	575	580	552	402	608	614	626	673	746	835
Police – Non-Emerg.	1,057	969	991	643	934	946	982	1,244	1,284	1,515
Moped	71	66	77	74	65	88	120	107	130	119
Pickup Truck	19,559	19,865	20,768	18,435	17,103	17,536	18,218	18,164	18,350	19,428
Van	9,965	11,035	12,200	12,294	13,002	13,695	14,558	15,264	15,623	16,130
Other	212	219	294	226	241	255	322	251	273	371
Unknown	7,897	7,669	5,614	7,540	6,284	6,956	6,776	5,639	6,172	7,463
Total Vehicles	**180,180**	**179,798**	**185,120**	**178,774**	**174,707**	**181,024**	**185,133**	**189,854**	**195,926**	**202,882**

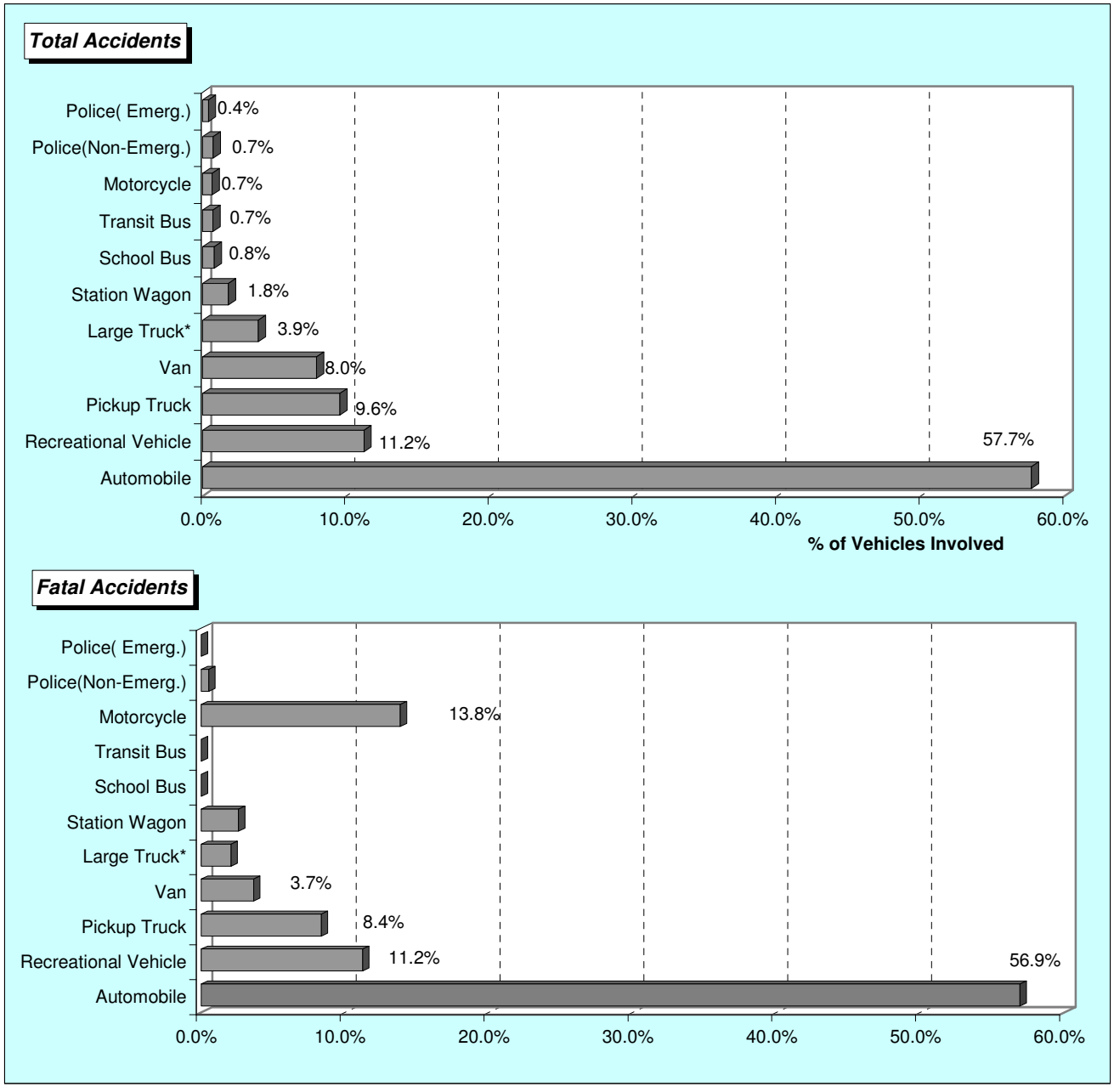
Table 2.2.2 Vehicle Types Involved in Fatal Accidents, 1994-2003

Vehicle Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Not Applicable	-	-	-	-	-	-	-	-		
Motorcycle	26	26	25	25	31	42	48	51	48	53
Automobile	239	251	224	221	208	222	211	239	246	218
Station Wagon	13	17	11	12	14	7	5	9	4	10
Limousine	-	1	-	1	-	-	1	1		
Single TRK 2 Axles	2	3	1	3	5	2	3	2	1	3
Single TRK 3 Axles	-	1	-	1	-	1	1	2	1	2
Truck Tractor	5	1	7	4	1	5	5	3	4	3
Recreational Vehicle	13	21	10	23	14	26	29	36	34	43
Farm Vehicle	-	-	-	1	1	-	-	-	1	
Transit Bus	-	-	-	1	-	-	-	-		
Cross Country Bus	-	-	-	-	-	-	-	-	1	
School Bus	-	-	-	1	-	1	1	-		
Ambul. - Emerg.	-	-	-	-	-	-	-	-		
Ambul. - Non-Emerg.	-	-	-	-	-	-	-	-		
Fire Veh. - Emerg.	-	-	-	-	-	-	-	-		
Fire Veh. - Non-	-	-	-	-	-	-	-	-		
Police - Emerg.	2	1	-	-	-	-	2	-	1	
Police - Non-Emerg.	-	-	-	-	1	1	2	1	1	2
Moped	-	2	2	1	1	1	2	-	1	
Pickup Truck	41	47	44	40	32	40	40	44	40	32
Van	14	14	14	11	22	15	22	23	21	14
Other	-	1	2	-	3	-	3	-	4	3
Unknown	-	-	-	-	-	-	-	-		
Total Vehicles	**355**	**386**	**340**	**345**	**333**	**363**	**375**	**411**	**408**	**383**

2003 Overview

- Most vehicles involved in total accidents were automobiles (57.7%). The next most involved vehicles were the recreational vehicles (RVs), which accounted for 11.2% of total vehicles involved.
- Most vehicles involved in fatal accidents were also the automobiles (56.9%). Motorcycles had the second highest involvement in fatal accidents (13.8%).

Figure 2.2.3 Vehicle Types Involved in Accidents, 2003



* Large Truck includes single trucks 2-axle, single trucks 3-axle, and truck tractors.

2.2.2 Large Trucks

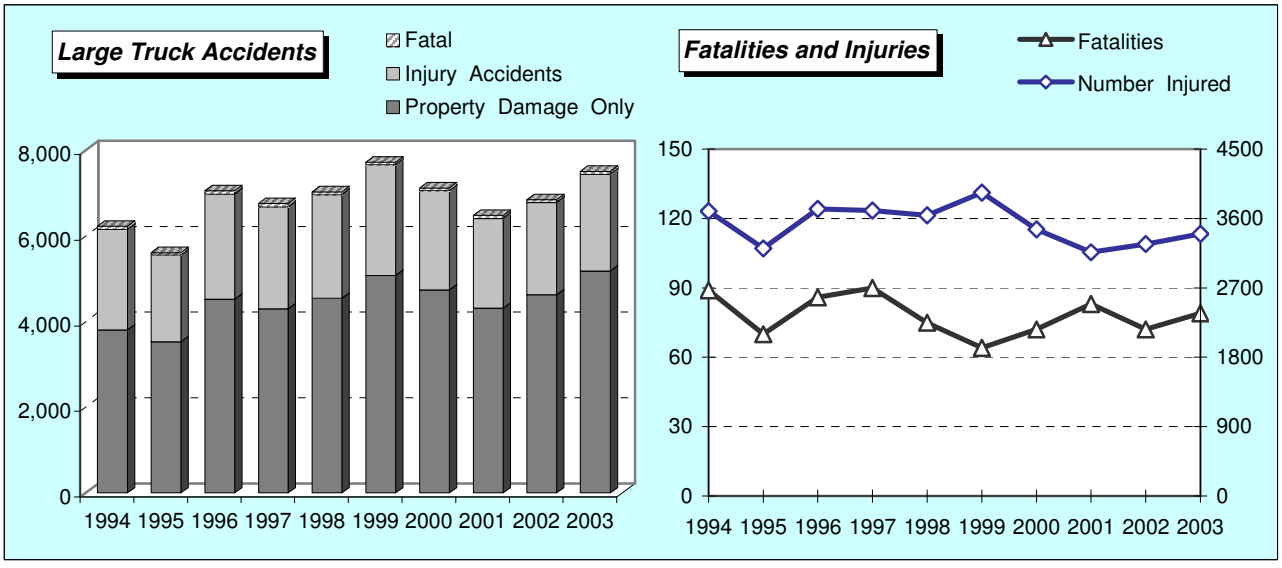
Trends

- The number of large truck-involved accidents had a downward trend from 1999 to 2001. However, this trend turned upward again in the latest 3 years (2001 to 2003).
- From 1997 to 2003, fatal large truck-involved accidents decreased by 16.7%, but between 2002 and 2003, increased by 6.1%.

Table 2.2.3 Large Truck-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	77	2,347	3,807	**6,231**	89	3,696
1995	59	2,025	3,525	**5,609**	70	3,211
1996	80	2,447	4,527	**7,054**	86	3,724
1997	84	2,375	4,301	**6,760**	90	3,702
1998	67	2,418	4,545	**7,030**	75	3,640
1999	60	2,585	5,078	**7,723**	64	3,932
2000	66	2,315	4,739	**7,120**	72	3,458
2001	75	2,092	4,315	**6,482**	83	3,162
2002	66	2,153	4,630	**6,849**	72	3,269
2003	70	2,253	5,183	**7,506**	79	3,402
Avg. Change (%)	-1.0	-0.4	4.0	2.3	-1.2	-0.9

Figure 2.2.4 Large Truck-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003



- From 1997 to 2003, fatal large truck-involved accidents decreased by 16.7%, but between 2002 and 2003, increased by 6.1%.

Table 2.2.4 Large Truck-Involved Fatal Accidents and Fatalities by Large Truck Type, 1994-2003

Year	Single Truck 2 Axles Fatal Accidents	Single Truck 3 Axles Fatal Accidents	Truck Tractor Fatal Accidents	Total Fatal Accidents	Single Truck 2 Axles Fatalities	Single Truck 3 Axles Fatalities	Truck Tractor Fatalities	Total Fatalities
1994	18	13	46	**77**	19	15	55	**89**
1995	15	13	31	**59**	16	17	37	**70**
1996	24	16	40	**80**	25	17	44	**86**
1997	17	11	56	**84**	19	11	60	**90**
1998	18	9	40	**67**	20	11	44	**75**
1999	16	15	29	**60**	19	15	30	**64**
2000	15	11	40	**66**	16	12	44	**72**
2001	20	15	40	**75**	22	15	46	**83**
2002	18	7	41	**66**	21	8	43	**72**
2003	21	14	35	**70**	26	16	37	**79**

2003 Overview

Temporal Patterns

- The total and fatal large truck-involved accidents occurred more on weekdays than on weekend days.
- Total and fatal accidents on Thursdays were higher than on any other weekdays. Total large truck accidents occurred more in daytime (7:00 AM-4:00 PM) than in nighttime (4:00 PM-6:59AM).

Figure 2.2.5 Total and Fatal Large Truck-Involved Accidents by Day of Week, 1994-2003

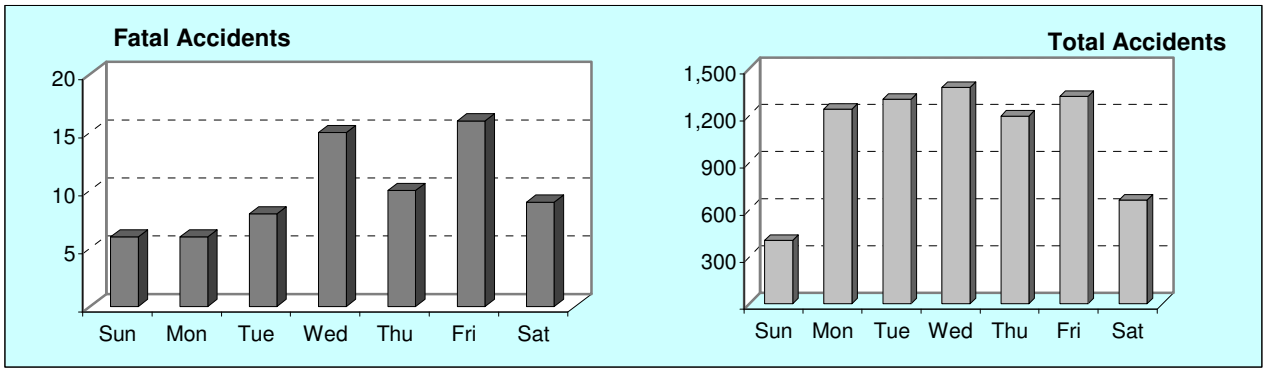
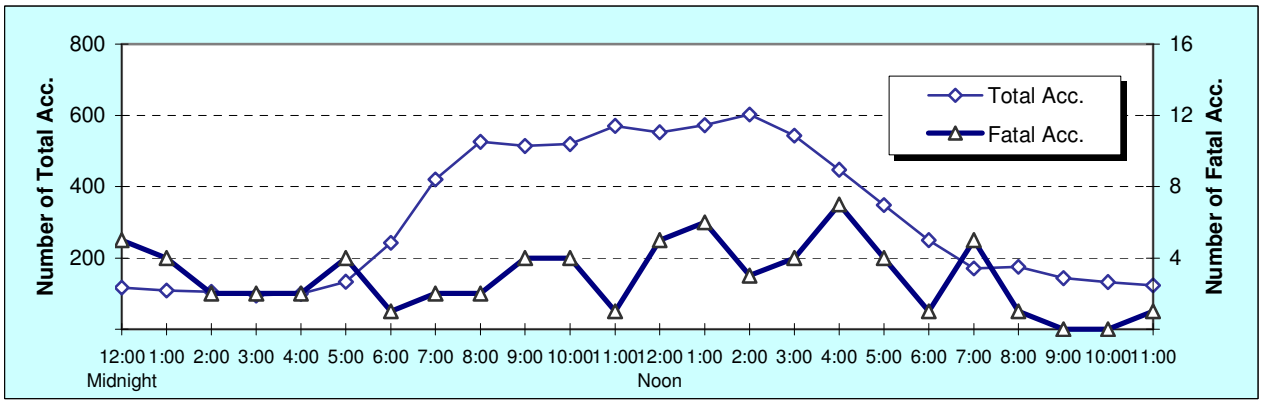


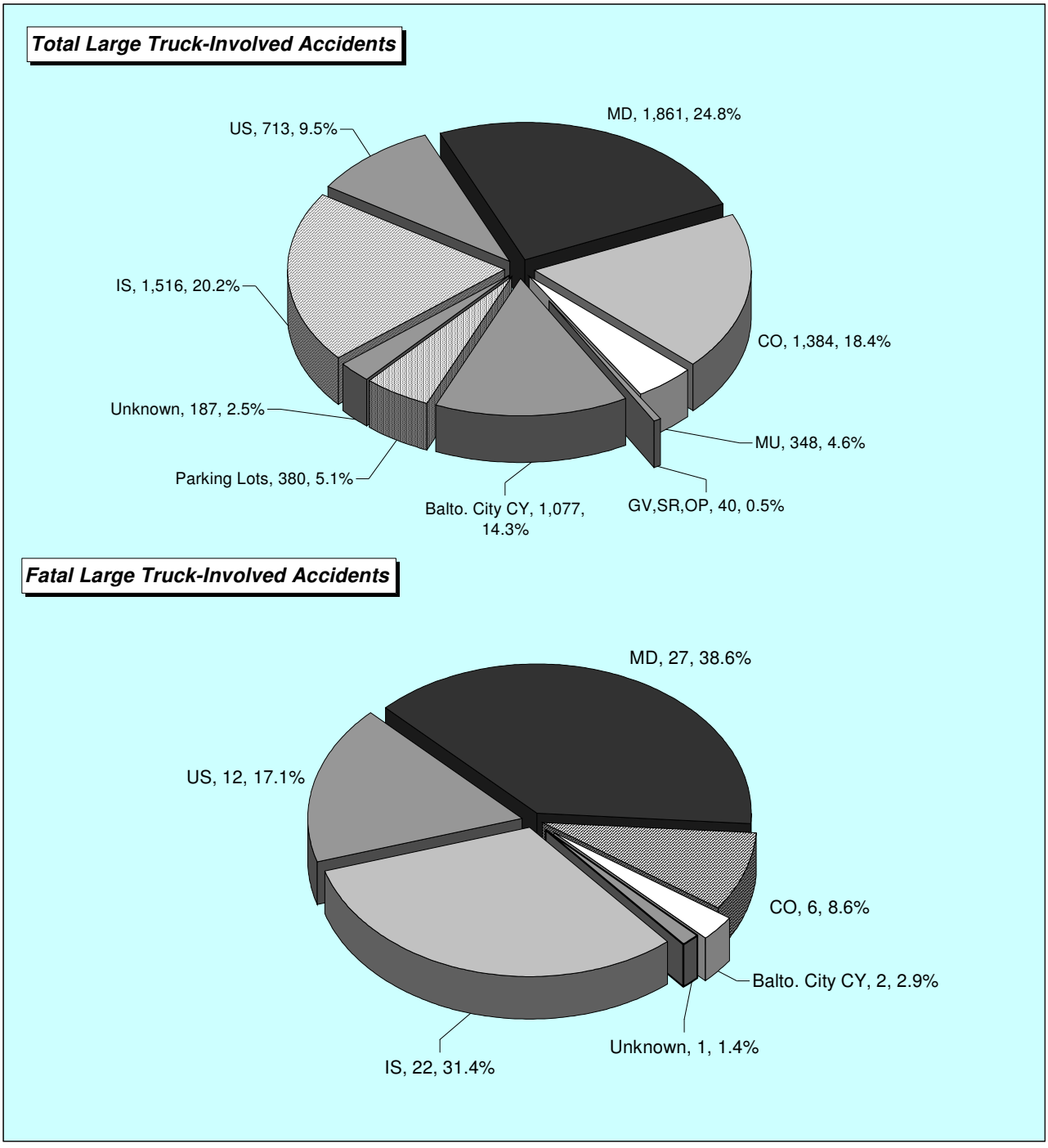
Figure 2.2.6 Total and Fatal Large Truck-Involved Accidents by Time of Day, 1994-2003



Route Types

- Most fatal large truck-involved accidents occurred on MD and Interstate highways, 38.6% and 31.4%, respectively.
- The highest percentage of total large truck-involved accidents occurred on MD highways (24.8%). Interstate highways accounted for 20.2% of total large truck-involved accidents.

Figure 2.2.7 Total and Fatal Large Truck-Involved Accidents by Route Type, 2003



County

- The percentages of total and fatal large truck-involved accidents were highest in Baltimore City (17.1%) and Prince George's County (25.7%), respectively.
- The fatal large truck-involved accident rates were highest in Garrett County (0.62 per 100 million VMT, 1.0 per 10,000 population).

Table 2.2.5 Total and Fatal Large Truck-Involved Accidents, and Fatal Accident Rates by County, 2003

County	Large Truck-Involved Accidents				VMT (millions)	Fatal Acc. Rate (per 100M VMT)	Population *	Fatal Acc. Rate (per 10,000 Pop.)
	Total	Percent	Fatal	Percent				
Allegany	69	0.9	1	1.4	838	0.12	73,668	0.14
Anne Arundel	622	8.3	1	1.4	5,587	0.02	506,620	0.02
Baltimore	1,124	15.0	11	15.7	8,078	0.14	777,184	0.14
Calvert	52	0.7	1	1.4	722	0.14	84,110	0.12
Caroline	27	0.4	2	2.9	344	0.58	30,861	0.65
Carroll	165	2.2	3	4.3	1,248	0.24	163,207	0.18
Cecil	154	2.1	2	2.9	1,230	0.16	92,746	0.22
Charles	131	1.7	2	2.9	1,174	0.17	133,049	0.15
Dorchester	38	0.5	-	0.0	362	-	30,612	-
Frederick	225	3.0	1	1.4	2,746	0.04	213,662	0.05
Garrett	57	0.8	3	4.3	486	**0.62**	30,049	**1.00**
Harford	257	3.4	3	4.3	2,257	0.13	232,175	0.13
Howard	471	6.3	3	4.3	3,620	0.08	264,265	0.11
Kent	10	0.1	-	0.0	228	-	19,680	-
Montgomery	931	12.4	3	4.3	7,427	0.12	918,881	0.03
Prince George's	1,252	16.7	**18**	**25.7**	8,631	0.21	838,716	0.21
Queen Anne's	74	1.0	4	5.7	910	0.44	44,108	0.91
St. Mary's	58	0.8	2	2.9	778	0.26	92,754	0.22
Somerset	28	0.4	-	0.0	285	-	25,447	-
Talbot	64	0.9	-	0.0	623	-	34,670	-
Washington	213	2.8	5	7.1	1,968	0.25	136,796	0.37
Wicomico	112	1.5	1	1.4	842	0.12	87,375	0.11
Worcester	85	1.1	2	2.9	674	0.30	49,604	0.40
Baltimore City	1,287	17.1	2	2.9	3,620	0.06	628,670	0.03
Total	**7,506**	**100.0**	**70**	**100.0**	**54,678**	**0.13**	**5,508,909**	**0.13**

1. Source: * Maryland Department of Planning
2. Fatality Rate by VMT is calculated per 100 Million Vehicle Miles of Travel.
3. Fatality Rate by Population is calculated per 10,000 population.

2.2.3 Buses

Trends

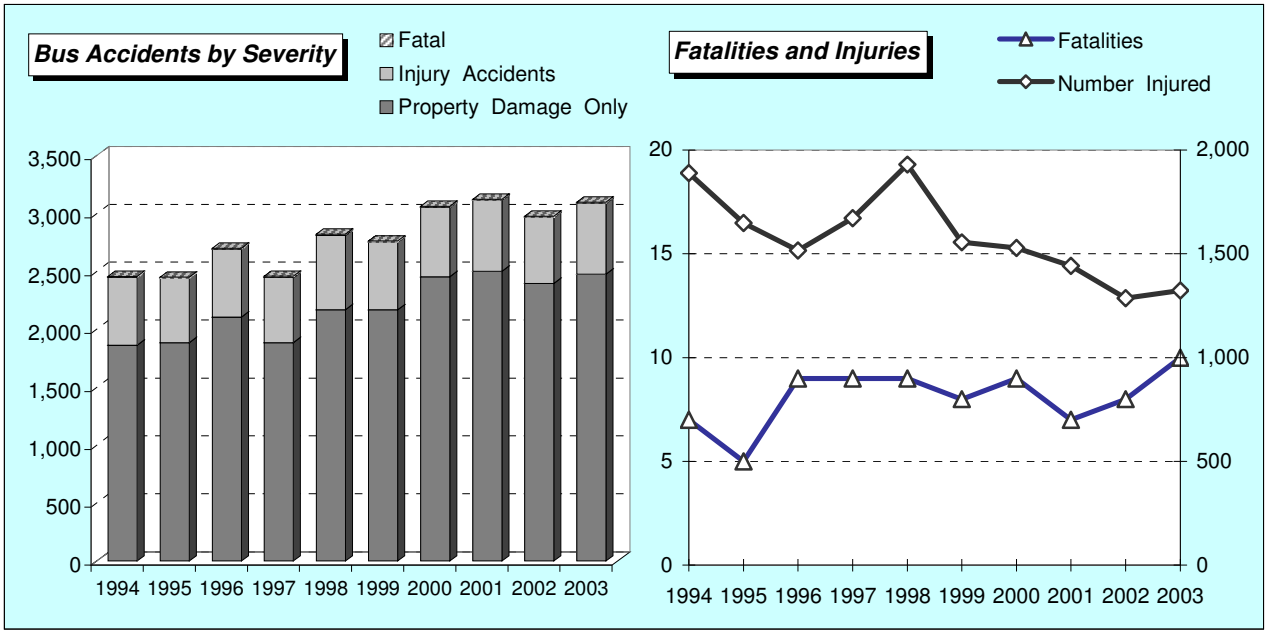
All Buses

- From 1994 to 2003, total bus accidents increased by 2.9% per year. Bus injury accidents increased by 0.5%, while injuries decreased by 3.3% per year.
- Between 2002 and 2003, total bus accidents increased by 4.1%, and fatal bus accidents increased by 42.9% from 7 to 10.

Table 2.2.6 Bus-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	7	586	1,865	**2,458**	7	1,888
1995	5	560	1,887	**2,452**	5	1,649
1996	9	585	2,108	**2,702**	9	1,515
1997	9	564	1,887	**2,460**	9	1,671
1998	9	643	2,172	**2,824**	9	1,929
1999	8	586	2,171	**2,765**	8	1,555
2000	9	600	2,455	**3,064**	9	1,527
2001	7	616	2,502	**3,125**	7	1,442
2002	7	575	2,398	**2,980**	8	1,287
2003	10	612	2,479	**3,101**	10	1,323
Avg. Change(%)	**4.8**	**0.5**	**3.7**	**2.9**	**4.8**	**-3.3**

Figure 2.2.8 Bus-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003



- From 1997 to 2003, among the buses involved in bus accidents, the percentage of transit buses decreased, while the percentage of school buses increased.

Table 2.2.7 Buses Involved in Bus-Involved Accidents by Bus Type, 1994-2003

Vehicle Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Transit Bus	1,344	1,296	1,425	1,416	1,575	1,508	1,703	1,655	1,458	1,465
Percent	53.7	51.6	51.6	56.3	54.4	53.2	54.2	51.4	47.4	45.9
Cross Country Bus	43	66	75	70	56	64	79	81	66	69
Percent	1.7	2.6	2.7	2.8	1.9	2.3	2.5	2.5	2.1	2.2
School Bus	1,118	1,148	1,261	1,029	1,264	1,263	1,359	1,481	1,555	1,657
Percent	44.6	45.7	45.7	40.9	43.7	44.6	43.3	46.0	50.5	51.9
Total Buses Involved	**2,505**	**2,510**	**2,761**	**2,515**	**2,895**	**2,835**	**3,141**	**3,217**	**3,079**	**3,191**
Percent	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Others/Unknown	2,462	2,432	2,631	2,416	2,699	2,678	2,935	3,013	2,875	2,941
Total Vehicles Involved	4,967	4,942	5,392	4,931	5,594	5,513	6,076	6,230	5,954	6,132

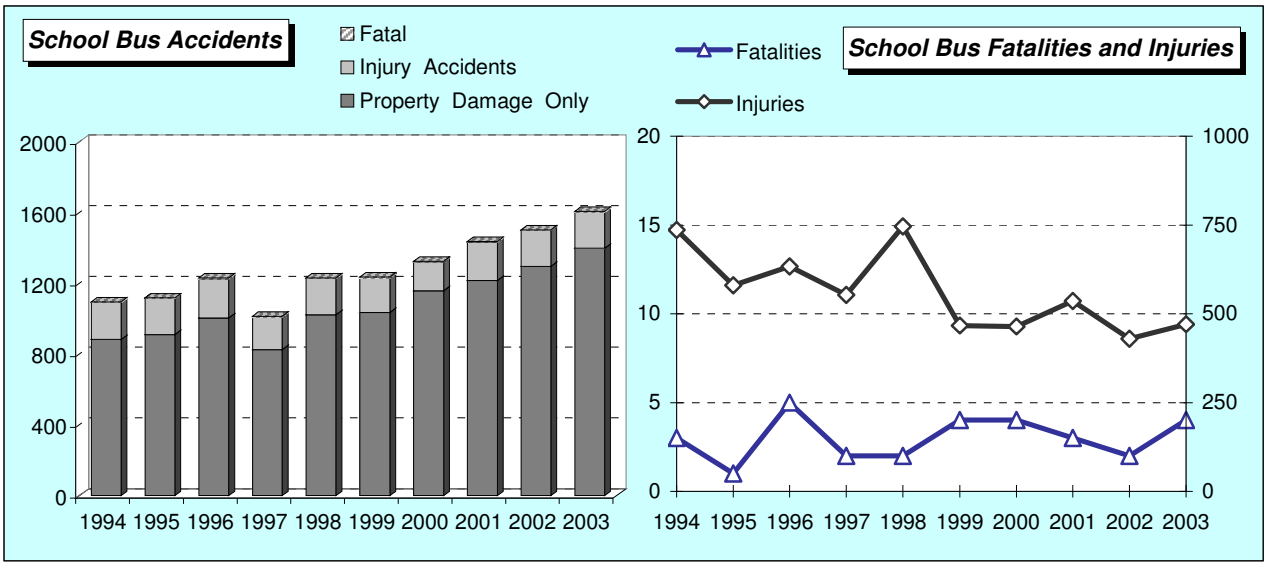
School buses

- School bus-involved accidents had an upward trend from 1994 to 2003 (an increase of 5.2% per year). Between 2002 and 2003, the school bus-involved fatalities increased from 2 to 4.

Table 2.2.8 School Bus-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	3	211	882	**1,096**	3	736
1995	1	207	910	**1,118**	1	580
1996	5	220	1,006	**1,231**	5	633
1997	2	187	825	**1,014**	2	553
1998	2	206	1,023	**1,231**	2	746
1999	4	196	1,036	**1,236**	4	467
2000	4	162	1,159	**1,325**	4	464
2001	3	218	1,217	**1,438**	3	536
2002	2	205	1,296	**1,503**	2	429
2003	4	204	1,399	**1,607**	4	470
Avg. Change(%)	**3.7**	**-0.4**	**6.5**	**5.2**	**3.7**	**-4.0**

Figure 2.2.9 School Bus-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003



2003 Overview

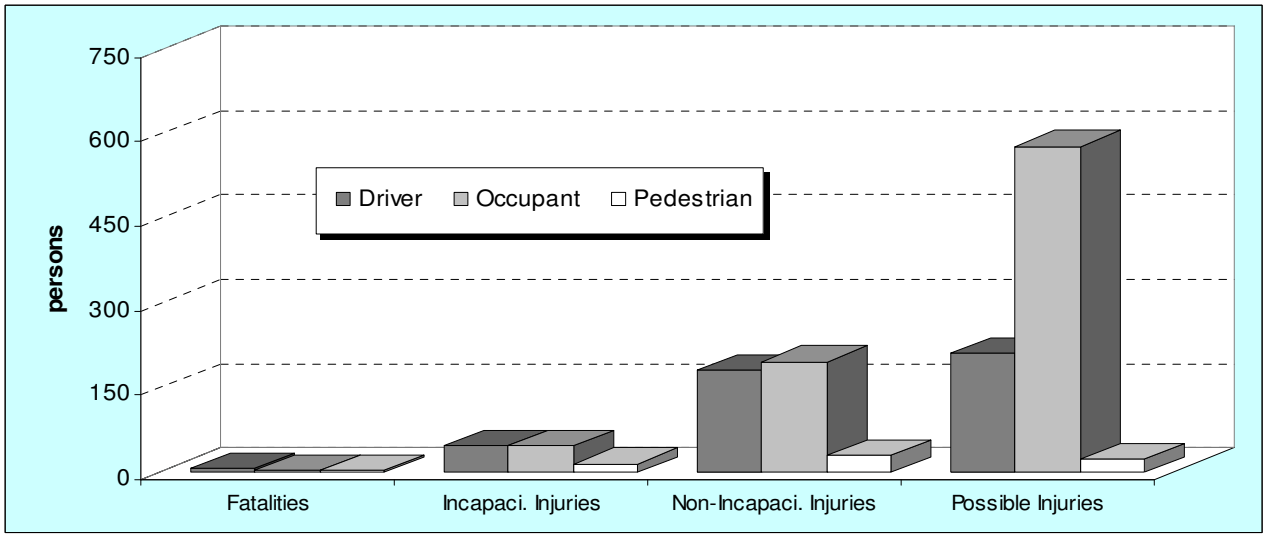
All Buses

- Of 1,333 persons killed or injured in the bus-involved accidents, more than 60% were passengers and 5.2% were pedestrians. Five out of ten fatalities were drivers.

Table 2.2.9 Bus-Involved Fatalities and Injured Persons by Person Type and Severity, 2003

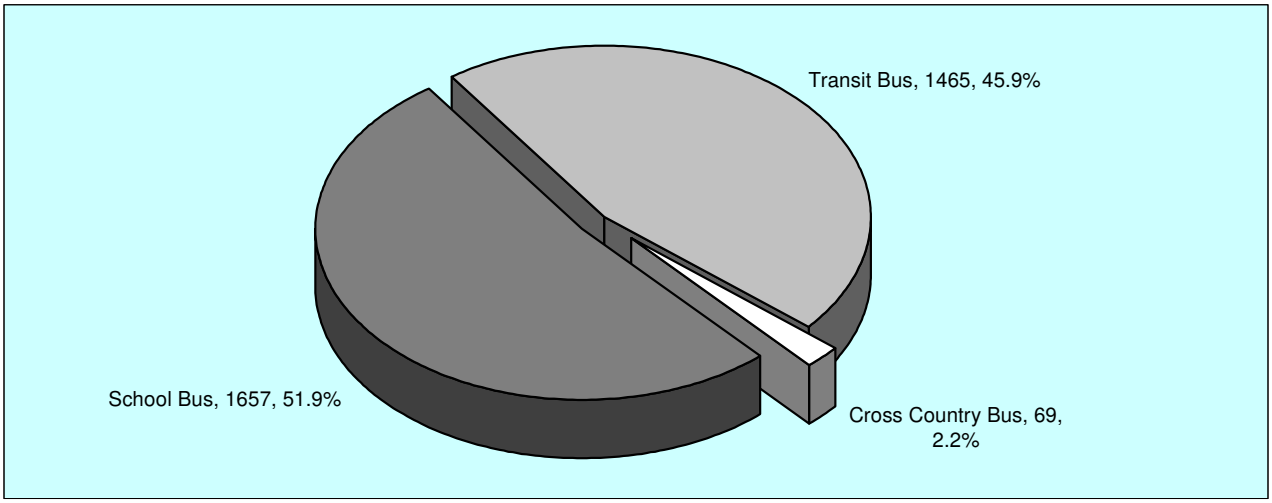
Severity	Drivers		Passengers		Pedestrians		Total (%)	
Fatalities	5	(50.0)	2	(20.0)	3	(30.0)	10	(100.0)
Incapacitating Injured Persons	46	(43.4)	46	(43.4)	14	(13.2)	106	(100.0)
Non-Incapacitating Injured Persons	181	(44.7)	195	(48.1)	29	(7.2)	405	(100.0)
Possible Injured Persons	211	(26.0)	578	(71.2)	23	(2.8)	812	(100.0)
Total Injured & Killed	**443**	**(33.2)**	**821**	**(61.6)**	**69**	**(5.2)**	**1,333**	**(100.0)**

Figure 2.2.10 Bus-Involved Fatalities and Injured Persons by Person Type and Severity, 2003



- School buses had the highest percentage of buses involved in bus accidents (51.9%).

Figure 2.2.11 Buses Involved in Bus Accidents by Bus Type, 2003



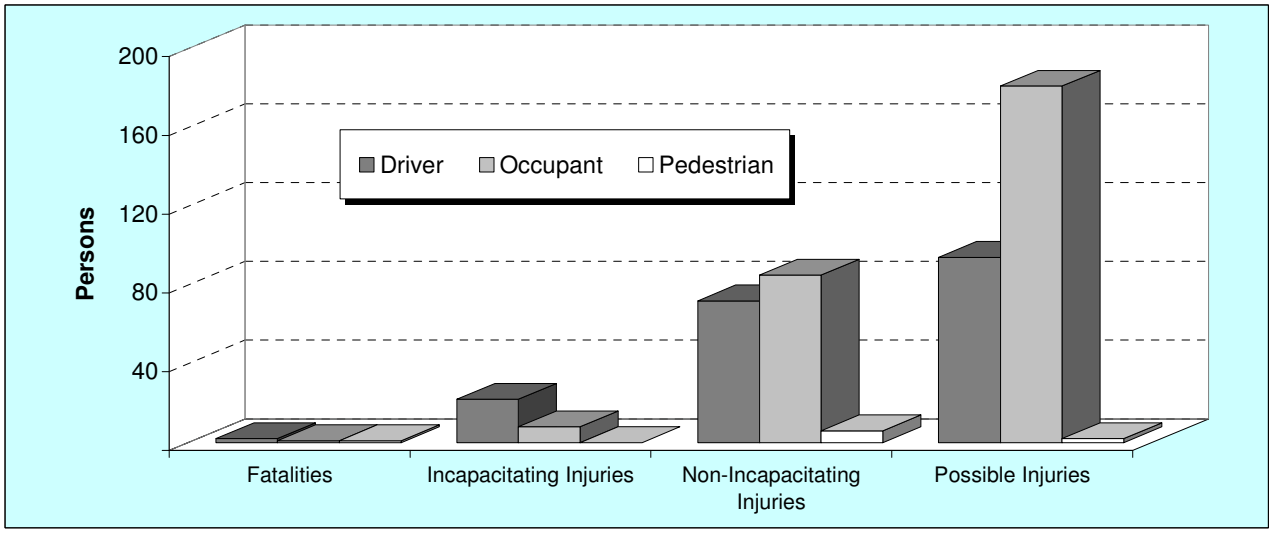
School Bus

- Of 474 persons killed or injured in the school bus-involved accidents, 58.0% were passengers and about 2% were pedestrians. 2 out of 4 fatalities in the school bus-involved accidents were drivers. Most of passengers injured had possible injuries (181 possible injuries).

Table 2.2.10 School Bus-Involved Fatalities and Injuries by Person Type and Severity, 2003

Severity	Drivers		Passengers		Pedestrians		Total (%)	
Fatalities	2	(50.0)	1	(25.0)	1	(25.0)	4	(100.0)
Incapacitating Injured Persons	22	(73.3)	8	(26.7)	0	(0.0)	30	(100.0)
Non-Incapacitating Injured Persons	72	(44.2)	85	(52.1)	6	(3.7)	163	(100.0)
Possible Injured Persons	94	(33.9)	181	(65.3)	2	(0.7)	277	(100.0)
Total Injured & Killed	**190**	**(40.1)**	**275**	**(58.0)**	**9**	**(1.9)**	**474**	**(100.0)**

Figure 2.2.11 School Bus Fatalities and Injured Persons by Person Type and Severity, 2003



- Bus-involved accidents in Montgomery County, Prince George's County, and Baltimore City accounted for almost 70% of total bus-involved accidents. These three counties also had higher bus accident rates than any other counties. Montgomery County had the highest bus accident rates both per VMT and per population.
- Most school bus-involved accidents occurred in Montgomery County and Prince George's County. Montgomery County had the highest school bus-involved accident rate per VMT (5.09 per 100 million VMT). Prince George's County had the highest school bus accident rate per population (4.49 per 10,000 population).

Table 2.2.11 Total Buses and School Bus Accidents, and Accident Rates by County, 2003

County	Total Accidents				VMT (millions)	Population	Total Bus Accident Rates		Total School Bus Accident Rates	
	All Buses	%	School Bus	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	13	0.4	10	0.6	838	73,668	1.55	1.76	1.19	1.36
Anne Arundel	212	6.8	117	7.3	5,587	506,620	3.79	4.18	2.09	2.31
Baltimore	359	11.6	238	14.8	8,078	777,184	4.44	4.62	2.95	3.06
Calvert	9	0.3	8	0.5	722	84,110	1.25	1.07	1.11	0.95
Caroline	5	0.2	3	0.2	344	30,861	1.45	1.62	0.87	0.97
Carroll	46	1.5	42	2.6	1,248	163,207	3.69	2.82	3.37	2.57
Cecil	23	0.7	18	1.1	1,230	92,746	1.87	2.48	1.46	1.94
Charles	37	1.2	23	1.4	1,174	133,049	3.15	2.78	1.96	1.73
Dorchester	7	0.2	4	0.2	362	30,612	1.93	2.29	1.10	1.31
Frederick	66	2.1	46	2.9	2,746	213,662	2.40	3.09	1.68	2.15
Garrett	12	0.4	9	0.6	486	30,049	2.47	3.99	1.85	3.00
Harford	53	1.7	42	2.6	2,257	232,175	2.35	2.28	1.86	1.81
Howard	88	2.8	68	4.2	3,620	264,265	2.43	3.33	1.88	2.57
Kent	1	0.0	-	0.0	228	19,680	0.44	0.51	-	-
Montgomery	**903**	**29.1**	**378**	**23.5**	7,427	918,881	12.16	**9.83**	**5.09**	4.11
Prince George's	663	21.4	377	23.5	8,631	838,716	7.68	7.90	4.37	**4.49**
Queen Anne's	6	0.2	4	0.2	910	44,108	0.66	1.36	0.44	0.91
St. Mary's	22	0.7	14	0.9	778	92,754	2.83	2.37	1.80	1.51
Somerset	4	0.1	2	0.1	285	25,447	1.40	1.57	0.70	0.79
Talbot	6	0.2	4	0.2	623	34,670	0.96	1.73	0.64	1.15
Washington	30	1.0	17	1.1	1,968	136,796	1.52	2.19	0.86	1.24
Wicomico	27	0.9	13	0.8	842	87,375	3.21	3.09	1.54	1.49
Worcester	31	1.0	5	0.3	674	49,604	4.60	6.25	0.74	1.01
Baltimore City	478	15.4	165	10.3	3,620	628,670	**13.20**	7.60	4.56	2.62
Total Accidents	**3,101**	**100.0**	**1,607**	**100.0**	**54,678**	**5,508,909**	**5.67**	**5.63**	**2.94**	**2.92**

1. Source: * Maryland Department of Planning
2. Fatality Rate by VMT is the number of fatalities per 100 Million Vehicle Miles of Travel
3. Fatality Rate by Population is the number of fatalities per 10,000 Population

2.2.4 Motorcycles

Trends

- Motorcycle-involved accidents increased from 1997 to 2003. Between 2002 and 2003, motorcycle-involved accidents increased by 5.2%, and motorcycle-involved fatalities increased by 11.5%.

Table 2.2.12 Motorcycle-Involved Accidents by Severity, Fatalities and Injured Persons, 1994-2003

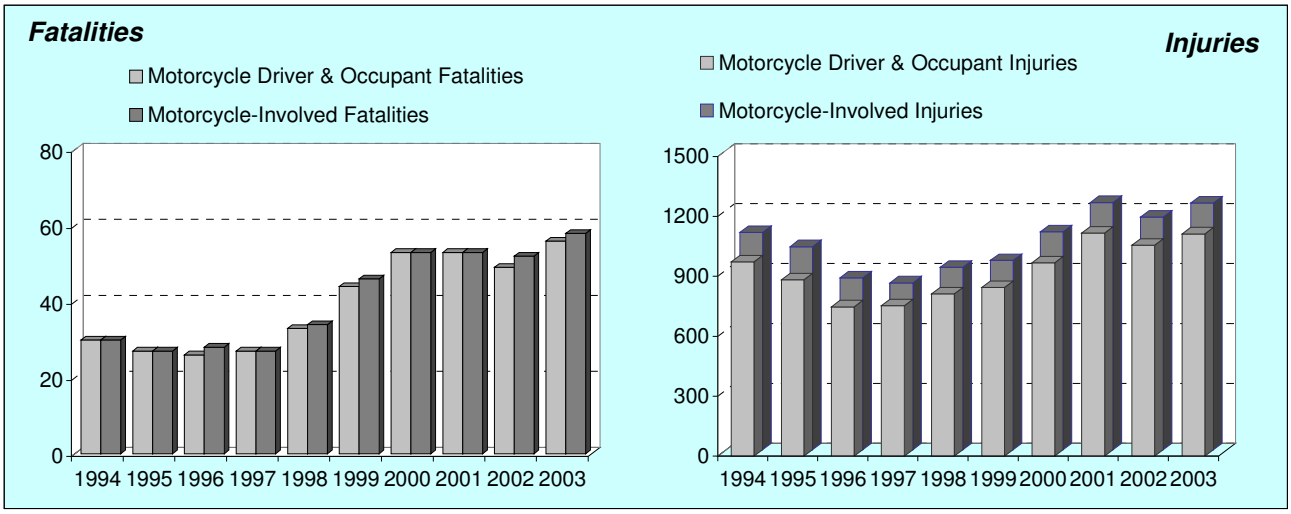
Year	Fatal Accidents	Injury Accidents	PDO	Total Accidents	Fatalities*	Injured Persons*	Fatalities Riding Motorcycle	Injured Persons Riding Motorcycle
1994	29	889	165	**1,083**	30	1,088	30	972
1995	27	800	162	**989**	27	1,017	27	883
1996	24	695	170	**889**	28	860	26	748
1997	26	690	182	**898**	27	835	27	754
1998	34	744	188	**966**	34	913	33	813
1999	44	770	256	**1,070**	46	947	44	844
2000	51	897	214	**1,162**	53	1,091	53	967
2001	53	1031	255	**1,339**	53	1,237	53	1,117
2002	52	992	214	**1,258**	52	1,165	49	1,057
2003	56	1,026	241	**1,323**	58	1,235	56	1,113
Avg.Change (%)	**10.3**	**1.7**	**5.1**	**2.5**	**10.4**	**1.5**	**9.6**	**1.6**

* Numbers represent all persons killed or injured in motorcycle-involved accidents

Table 2.2.13 Motorcycle Driver and Passenger Fatalities, 1994-2003

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Motorcycle Driver Fatalities	26	26	25	25	31	42	48	51	48	53
Motorcycle Passenger Fatalities	4	1	1	2	2	2	5	2	1	3
Fatalities Riding Motorcycle	**30**	**27**	**26**	**27**	**33**	**44**	**53**	**53**	**49**	**56**

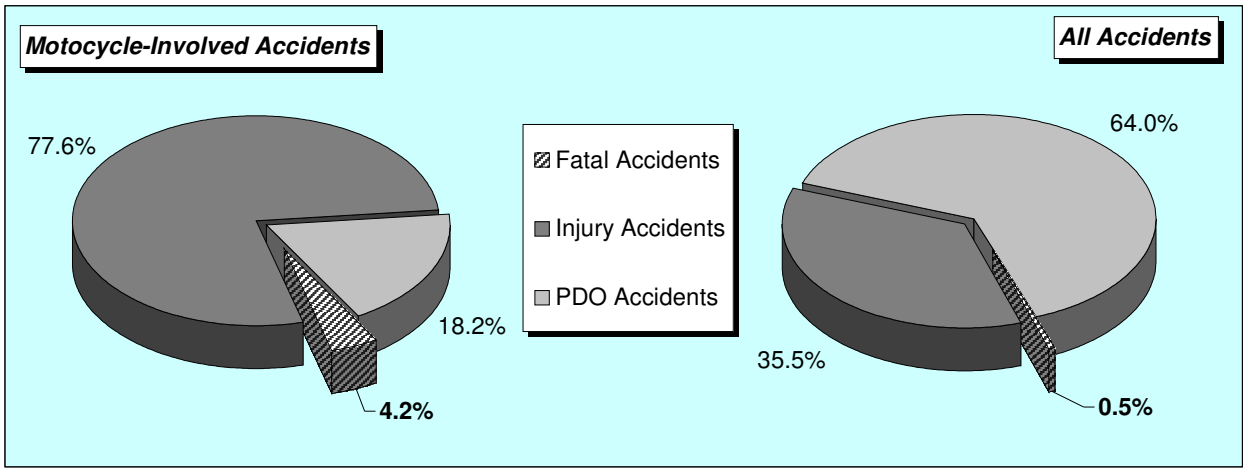
Figure 2.2.12 Motorcycle Fatalities and Injuries, 1994-2003



2003 Overview

- The percentage of fatal motorcycle-involved accidents among total motorcycle-involved accidents (4.2%) was significantly higher than for any other vehicle types. Overall, fatal accidents accounted for 0.5% of total accidents.

Figure 2.2.13 Severity of Motorcycle Accidents and All Types of Accidents, 2003



- 58 motorcyclist-involved fatalities accounted for 8.9% of all traffic fatalities. There were 53 motorcycle driver fatalities and 3 motorcycle passenger fatalities in 2003.
- The motorcycle driver age groups of 25-29 and 30-34 years had the most motorcycle driver fatalities (17.0% each). The motorcycle driver age group 25-29 years had the most motorcycle drivers involved in accidents (14.1%).

Table 2.2.14 Motorcycle Drivers Involved in Accidents by Driver Age, 2003

Driver Age	Driver Fatalities		Total Drivers Involved in Accidents	
	Number	Percent	Number	Percent
15 and Under	-	0.0	13	1.0
16 - 19	-	0.0	66	4.9
20 - 24	6	11.3	190	14.0
25 - 29	**9**	**17.0**	**191**	**14.1**
30 - 34	**9**	**17.0**	172	12.7
35 - 39	6	11.3	169	12.4
40 - 44	7	13.2	150	11.0
45 - 49	6	11.3	133	9.8
50 - 54	6	11.3	96	7.1
55 - 59	1	1.9	59	4.3
60 - 64	2	3.8	25	1.8
65 - 69	-	0.0	9	0.7
70 - 79	1	1.9	6	0.4
80 +	-	0.0	1	0.1
Unknown	-	0.0	79	5.8
Total	**53**	**100.0**	**1,359**	**100.0**

- "*Motorcycle Helmet*" had the highest percentage of safety equipment use in motorcycle driver and passenger fatalities (58.5% and 100.0%, respectively). 9.6% of drivers and 15.0% of passengers involved in motorcycle accidents did not use any driver safety equipment.

Table 2.2.15 Motorcycle Drivers and Passengers by Safety Equipment, 2003

Safety Equipment Used		Driver / Passenger Fatalities		Total Drivers / Passengers Involved in Accidents	
		Number	Percent	Number	Percent
Motorcycle Drivers	Motorcycle Helmet	31	58.5	492	36.2
	Eye Protection	-	0.0	16	1.2
	Helmet / Eye Protection	19	35.8	496	36.5
	None	**2**	**3.8**	**131**	**9.6**
	Not Stated	-	0.0	96	7.1
	Other/ Unknown	1	1.9	128	9.4
	Total	**53**	**100.0**	**1,359**	**100.0**
Motorcycle Passengers	Motorcycle Helmet	3	100.0	64	48.1
	Eye Protection	-	0.0	3	2.3
	Helmet / Eye Protection	-	0.0	35	26.3
	None	-	0.0	**20**	**15.0**
	Not Stated	-	0.0	8	6.0
	Other/ Unknown	-	0.0	3	2.3
	Total	**3**	**100.0**	**133**	**100.0**

- The most contributing factor of motorcycle accidents was "Not paying attention". For motorcycle fatalities, "Exceed speed limit" as well as "Not paying attention" was one of the main contributing circumstances.

Table 2.2.16 Motorcycle Driver Information by Primary Contributing Circumstance*, 2003

Contributing Circumstance	Driver Fatalities		Drivers involved in Accidents	
	Number	Percent	Number	Percent
Not Paying Attention	9	17.0	384	28.3
Too Fast for Conditions	6	11.3	90	6.6
Exceed Speed Limit	9	17.0	64	4.7
Influence of Alcohol	3	5.7	61	4.5
Animal	-	0.0	34	2.5
Fail to Yield Right of Way	-	0.0	31	2.3
Failure to Drive in Single Lane	4	7.5	29	2.1
Debris on Rd	-	0.0	25	1.8
Non-Comp. Lic. Restrictions	1	1.9	19	1.4
Followed Too Close	-	0.0	15	1.1
Fail to Keep Right of Center	4	7.5	13	1.0
Wet Rd	-	0.0	10	0.7
Ruts / Holes / Bumps in Rd	-	0.0	9	0.7
Improper Lane Change	-	0.0	7	0.5
Improper Passing	1	1.9	6	0.4
Unknown	14	26.4	485	35.7
Others	2	3.8	77	5.7
Total	**53**	**100.0**	**1,359**	**100.0**

* Contributing Circumstance 1

- In 2003, the number of total motorcycle accidents was highest in Prince George's County (14.5%). The number of fatal motorcycle accidents was highest in Anne Arundel County and Baltimore City (13.2% each).
- The highest fatal motorcycle accident rate was 0.51 per 100 million vehicle miles of travel in Charles County. For fatal motorcycle rate per motorcycle miles traveled, Charles County also had the highest rate (60.84 per 100 million motorcycle miles traveled).

Table 2.2.17 Total and Fatal Motorcycle Accidents and Fatal Accident Rates by County, 2003

County	Motorcycle Accidents				Total VMT (millions)	Fatal Accident Rates (per 100 MVMT)	Motorcycle Miles Traveled (millions)	Fatal Acc. Rates (per 100M MMT)*
	Total	Percent	Fatal	Percent				
Allegany	17	1.3	1	1.9	838	0.12	7	14.21
Anne Arundel	159	12.0	**7**	**13.2**	5,587	0.13	47	14.92
Baltimore	183	13.8	6	11.3	8,078	0.07	68	8.84
Calvert	22	1.7	3	5.7	722	0.42	6	49.47
Caroline	5	0.4	-	-	344	-	3	-
Carroll	48	3.6	3	5.7	1,248	0.24	10	28.62
Cecil	31	2.3	2	3.8	1,230	0.16	10	19.36
Charles	67	5.1	6	11.3	1,174	**0.51**	10	**60.84**
Dorchester	5	0.4	-	-	362	-	3	-
Frederick	70	5.3	2	3.8	2,746	0.07	23	8.67
Garrett	13	1.0	1	1.9	486	0.21	4	24.50
Harford	59	4.5	2	3.8	2,257	0.09	19	10.55
Howard	60	4.5	4	7.5	3,620	0.11	30	13.15
Kent	2	0.2	-	-	228	-	2	-
Montgomery	108	8.2	4	7.5	7,427	0.05	62	6.41
Prince George's	**192**	**14.5**	6	11.3	8,631	0.07	73	8.28
Queen Anne's	11	0.8	1	1.9	910	0.11	8	13.08
St. Mary's	36	2.7	1	1.9	778	0.13	7	15.30
Somerset	3	0.2	-	-	285	-	2	-
Talbot	8	0.6	-	-	623	-	5	-
Washington	35	2.6	-	-	1,968	-	7	-
Wicomico	22	1.7	-	-	842	-	7	-
Worcester	26	2.0	-	-	674	-	6	-
Baltimore City	141	10.7	**7**	**13.2**	3,620	0.19	30	23.02
Total	**1,323**	**100.0**	**53**	**100.0**	**54,678**	**0.10**	**450**	**11.78**

1. *: per 100 Million Motorcycle Miles Traveled

2.2.5 Train-Involved Accidents (Railroad-Highway Crossings)

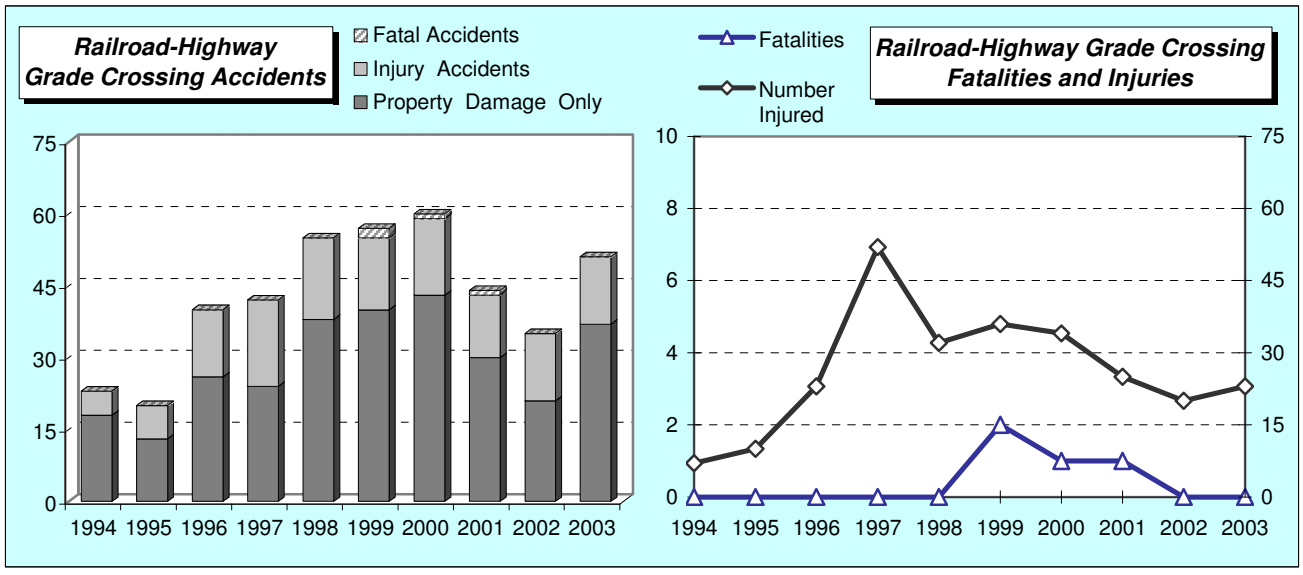
Trends

- There was an increasing trend for train-involved accidents from 1994 to 2000. Although this trend turned downward again in the 2001 and 2002, between 2002 and 2003, train-involved accidents increased by 45.7%.
- No fatal accidents occurred in 2002 and 2003.

Table 2.2.18 Train-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	-	5	18	**23**	-	7
1995	-	7	13	**20**	-	10
1996	-	14	26	**40**	-	23
1997	-	18	24	**42**	-	52
1998	-	17	38	**55**	-	32
1999	2	15	40	**57**	2	36
2000	1	16	43	**60**	1	34
2001	1	13	30	**44**	1	25
2002	-	14	21	**35**	-	20
2003	-	14	37	**51**	-	23

Figure 2.2.14 Train-Involved Accident by Severity, Fatalities and Injuries, 1994-2003



- For the latest 10 years, automobiles have been the most involved in train-involved accidents among the vehicle types. Pick-up trucks and recreational vehicles have been also more involved in train-involved accidents, compared with other vehicle types.

Table 2.2.19 Vehicles Involved in Train-Involved Accidents by Vehicle Type, 1994-2003

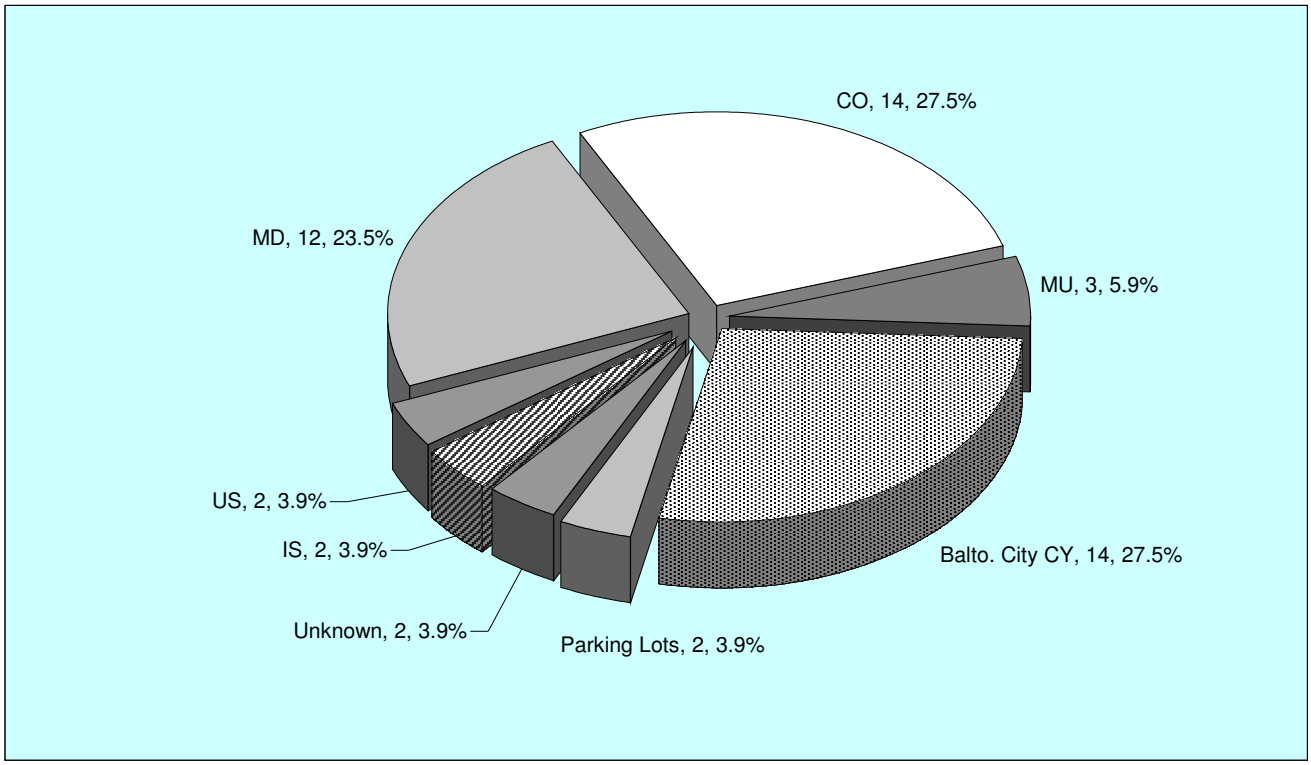
Vehicle Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Motorcycle& Moped	-	-	-	2	-	-	-	-	1	-
Automobile	14	9	25	31	37	43	42	28	25	40
Station Wagon	1	1	1	2	1	1	2	1	1	2
Large Trucks*	-	4	5	8	3	5	6	4	2	3
Recreational Vehicle	1	1	3	2	5	4	7	6	3	6
Bus**	1	-	-	1	1	2	4	-	1	-
Ambulance	-	-	1	-	-	-	-	-	-	-
Fire Vehicles	-	-	-	-	-	-	1	-	-	-
Police Vehicles	-	-	-	-	1	-	-	-	1	3
Pickup Truck	5	2	3	6	6	8	7	7	7	7
Van	2	2	6	2	8	5	4	1	3	4
Others	19	14	20	24	29	33	38	29	12	27
Unknown	3	4	3	5	4	3	4	3	2	2
Total	**46**	**37**	**67**	**83**	**95**	**104**	**115**	**79**	**58**	**94**

* Large truck includes single 2 axle truck, 3 axle truck and truck tractor.
** Bus includes transit bus, cross country bus and school bus.

2003 Overview

- Most train-involved accidents occurred on Baltimore City routes (27.5%), County highways (27.5%), and MD highways (23.5%).

Figure 2.2.15 Train-Involved Accidents by Route Type, 2003



- The largest number of train-involved accidents occurred in Baltimore County and Baltimore City (20). The second most number of the accidents occurred in Prince George's County (8). Baltimore County and Baltimore City had the largest number of rail-road crossings at grade (249).
- Montgomery County had five train-involved accidents, but the highest train-involved accident rates (0.29 per railroad-highway grade crossing).

Table 2.2.20 Train-Involved Accidents and Accident Rates by County, 2003

County	Train-Involved Accidents		Rail-Highway Grade Crossings*		Accident Rates per Grade Crossing
	Number	Percent	Number	Percent	
Allegany	1	2.0	93	6.7	0.01
Anne Arundel	2	3.9	30	2.2	0.07
Baltimore & Baltimore City[1)]	20	39.2	249	17.9	0.08
Calvert	-	0.0	-	0.0	-
Caroline	-	0.0	39	2.8	-
Carroll	2	3.9	132	9.5	0.02
Cecil	3	5.9	18	1.3	0.17
Charles	1	2.0	63	4.5	0.02
Dorchester	-	0.0	95	6.8	-
Frederick	2	3.9	131	9.4	0.02
Garrett	-	0.0	16	1.1	-
Harford	2	3.9	18	1.3	0.11
Howard	2	3.9	17	1.2	0.12
Kent	1	2.0	64	4.6	0.02
Montgomery	5	9.8	17	1.2	**0.29**
Prince George's	8	15.7	53	3.8	0.15
Queen Anne's	-	0.0	55	3.9	-
St. Mary's	1[2)]	2.0	-	0.0	-
Somerset	-	0.0	36	2.6	-
Talbot	-	0.0	12	0.9	-
Washington	-	0.0	120	8.6	-
Wicomico	-	0.0	68	4.9	-
Worcester	1	2.0	68	4.9	0.01
Total	**51**	**100.0**	**1,394[3)]**	**100.0**	**0.04**

* Source: Office of Safety Analysis, Federal Railroad Administration

Note 1) 15 Accidents occurred in Baltimore City, and 5 accidents occurred in Baltimore County in 2003.

2) One accident in St. Mary's County did not occur in rail-road grade crossing

3) Public crossings: 695, Private crossings: 692, Pedestrian Crossings: 7

CHAPTER III. CONTRIBUTING FACTORS IN CRASHES

3.1 ALCOHOL

3.2 ENVIRONMENT

3.3 HIGHWAY FEATURES

3.4 DRIVER BEHAVIOR-RELATED FACTORS

3.1 ALCOHOL

According to the definition of "alcohol-related" provided by the National Highway Traffic Safety Administration (Traffic Safety Facts 2002, National Highway Traffic Safety Administration, U.S. Department of Transportation), a fatal traffic accident is alcohol-related if either a driver or an involved non-passenger (e.g., pedestrian) had a blood alcohol concentration (BAC) of 0.01 grams per deciliter (g/dl) or greater in a police-reported traffic accident.

This section describes alcohol-related accidents, including their severity, temporal patterns, spatial patterns, and the involved drivers and pedestrians.

Some of the notable trends are as follows:

- The percentage of fatal accidents accounted for by alcohol was much higher, compared to that of all accidents.
- In most years, the largest number of alcohol-related accidents occurred in the fourth quarter. However, in 2003, the largest number of alcohol-related accidents occurred in the second quarter. The fewest alcohol-related accidents occurred in the first quarter.
- The alcohol-related accidents that occurred on most route types had increasing trends except for route types GV, SR, Baltimore City roads and Parking Lots. Those on Interstate highways (IS) had an average increase of 3.2% per year from 1994 to 2003.
- There has been a downward trend for total impaired drivers involved in alcohol-related accidents. In most years, the driver age group of 20-24 years has had the highest percentages of driver fatalities and drivers involved in alcohol-related accidents.

Some results for 2003 are as follows:

- 179 persons lost their lives in alcohol-related accidents in 2003– a decrease of 8.2 percent from the previous year. 179 alcohol-related fatalities account for 27.4% of 651 total traffic fatalities.
- 1.8% of alcohol-related accidents resulted in fatal accidents. This is significantly higher than for other accidents, since only 0.5 % of all traffic accidents resulted in fatal accidents.
- Fatal accidents related to alcohol or drugs on MD and County highways accounted for 76.0% of all alcohol-related fatal accidents.

3.1.1 Severity

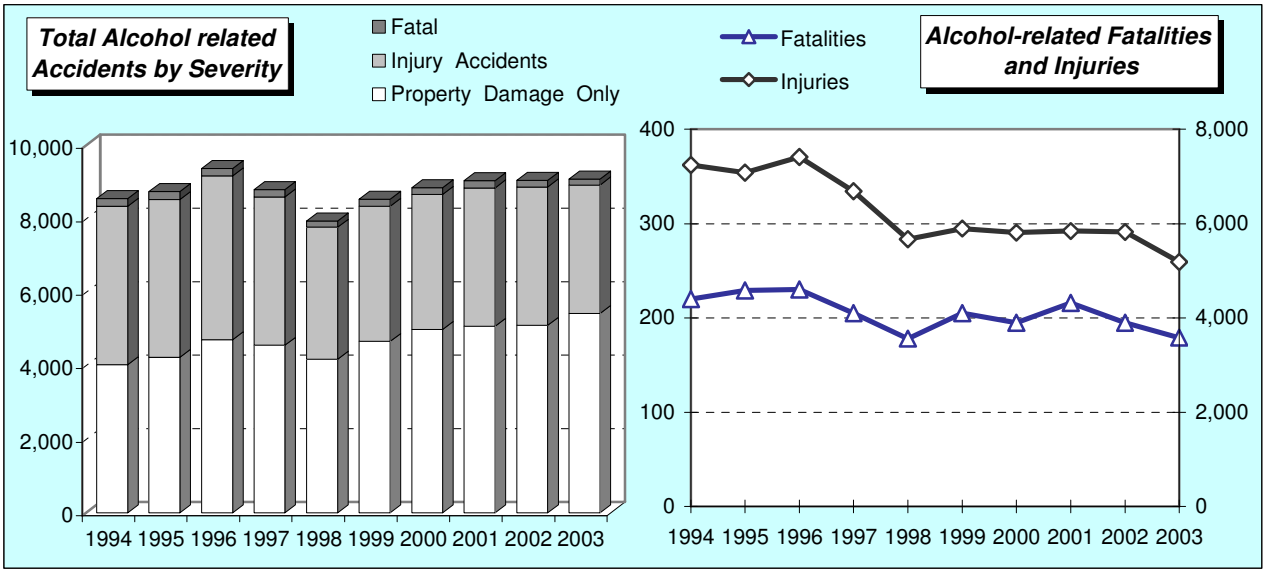
Trends

- Alcohol-related accidents had an upward trend from 1999 to 2003. The number of persons killed or injured due to alcohol-related accidents had a downward trend over the period.

Table 3.1.1 Alcohol-Related Accidents by Accident Severity, 1997-2003

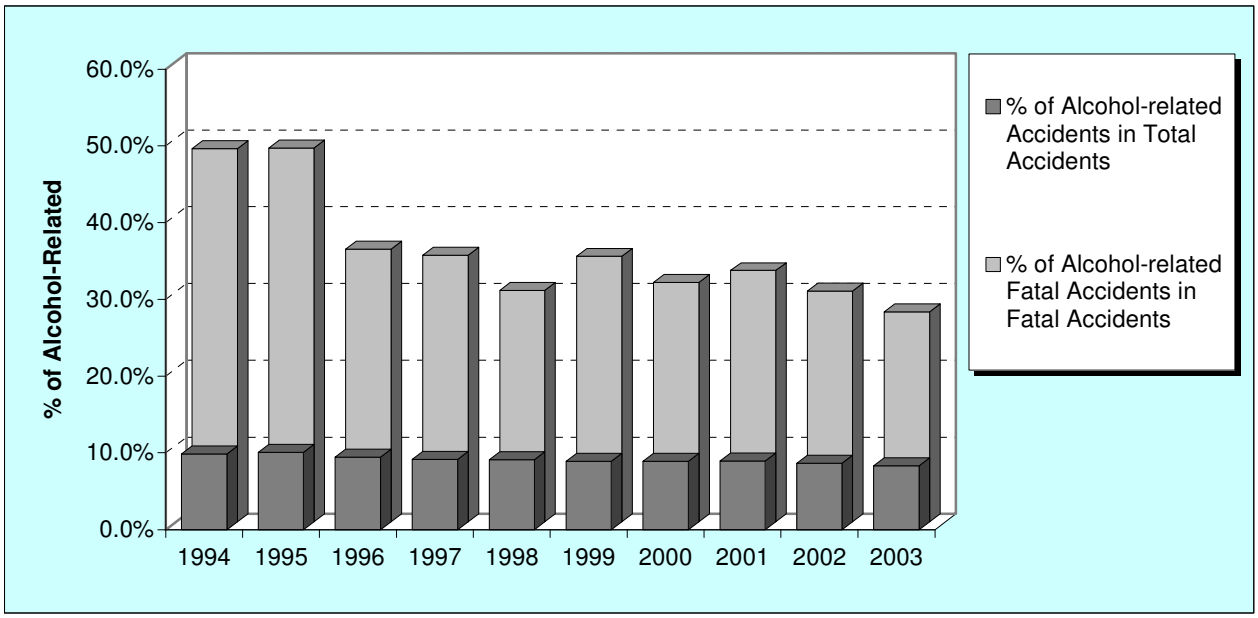
Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total	Fatalities	Number Injured
1994	203	4,315	4,035	**8,553**	220	7,240
1995	212	4,301	4,234	**8,747**	229	7,077
1996	204	4,449	4,721	**9,374**	230	7,413
1997	197	4,036	4,564	**8,797**	205	6,688
1998	166	3,600	4,179	**7,945**	178	5,667
1999	192	3,679	4,669	**8,540**	205	5,894
2000	179	3,675	4,996	**8,850**	195	5,806
2001	197	3,762	5,086	**9,045**	216	5,844
2002	182	3,765	5,109	**9,056**	195	5,821
2003	163	3,500	5,426	**9,089**	179	5,187
Avg.Change (%)	-2.2	-2.1	3.8	0.7	-2.1	-3.2

Figure 3.1.1 Total and Fatal Alcohol-Related Accidents, 1994-2003



- The percentage of fatal accidents involving alcohol or drugs among fatal accidents ranged from 49% to 27% from 1994 to 2003. The percentage showed a downward trend over the years.
- From 1994 to 2003, 8% ~10% of all accidents was alcohol-related accidents.

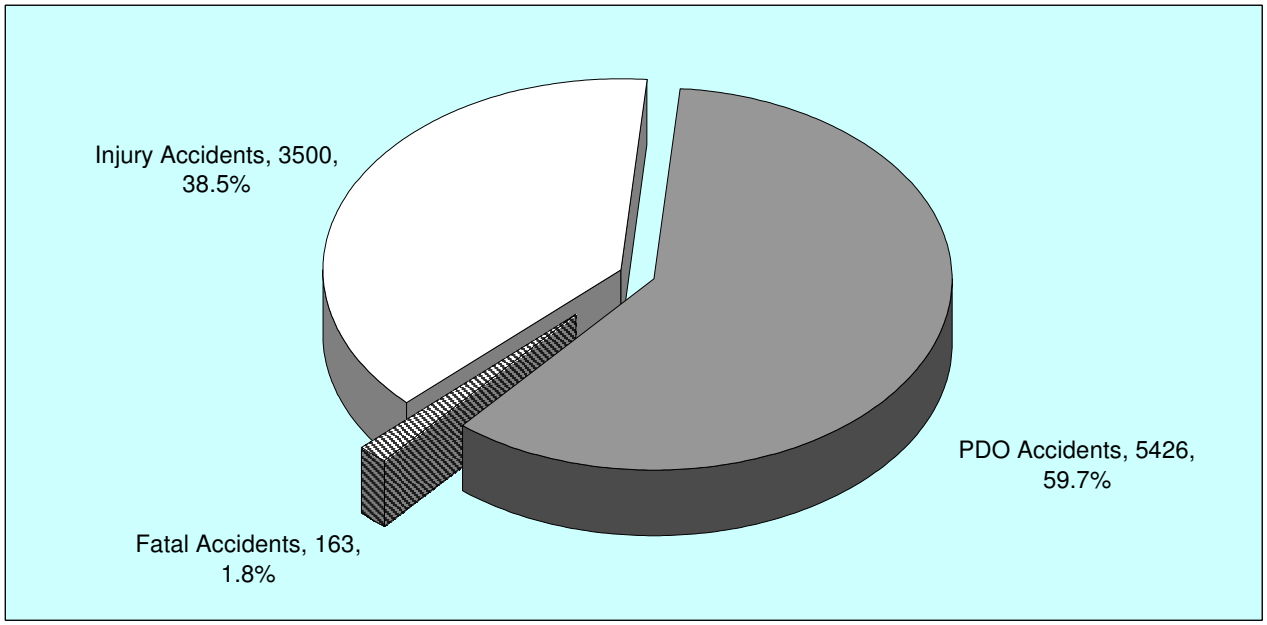
Figure 3.1.2 Percentage of Alcohol-Related Total and Fatal Accidents, 1994-2003



2003 Overview

- 179 persons lost their lives in alcohol-related accidents in 2003– a decrease of 8.2 percent from the previous year. 179 alcohol-related fatalities account for 27.4% of 651 total traffic fatalities.
- 1.8% of alcohol-related accidents resulted in fatal accidents. This is significantly higher than for other accidents, since only 0.5 % of all traffic accidents resulted in fatal accidents.

Figure 3.1.3 Alcohol-Related Accidents by Accident Severity, 2003



3.1.2 Temporal Patterns

Trends

- In most years, the largest number of alcohol-related accidents occurred in the fourth quarter. However, in 2003, the largest number of alcohol-related accidents occurred in the second quarter. The fewest alcohol-related accidents occurred in the first quarter.
- Alcohol-related fatal accidents had no consistent patterns by month and quarter.

Table 3.1.2 Total Alcohol-Related Accidents by Month and Quarter, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
January	668	730	740	666	726	627	737	703	643	683
February	578	680	739	599	524	611	636	713	600	660
March	674	697	745	800	634	700	722	719	752	748
April	704	696	709	712	639	676	739	747	715	751
May	771	734	846	808	744	737	677	762	770	881
June	670	679	748	719	600	683	770	783	737	779
July	776	702	774	735	607	717	850	764	803	776
August	689	701	737	815	674	687	753	756	752	800
September	706	797	760	627	629	733	760	733	850	705
October	749	730	841	731	728	839	731	755	840	746
November	764	791	837	802	700	759	697	780	800	815
December	804	810	898	783	740	771	778	830	794	745
Ist Qtr. Jan. – Mar.	1,920	2,107	2,224	2,065	1,884	1,938	2,095	2,135	1,995	2,091
2nd Qtr. Apr. – Jun.	2,145	2,109	2,303	2,239	1,983	2,096	2,186	2,292	2,222	2,411
3rd Qtr. Jul. – Sep.	2,171	2,200	2,271	2,177	1,910	2,137	2,363	2,253	2,405	2,281
4th Qtr. Oct. – Dec.	2,317	2,331	2,576	2,316	2,168	2,369	2,206	2,365	2,434	2,306
Total	**8,553**	**8,747**	**9,374**	**8,797**	**7,945**	**8,540**	**8,850**	**9,045**	**9,056**	**9,089**

Table 3.1.3 Fatal Alcohol-Related Accidents by Month and Quarter, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
January	16	21	10	7	15	16	16	11	9	10
February	10	18	13	8	9	15	9	10	10	8
March	11	18	14	15	17	12	11	16	12	11
April	15	19	19	19	13	11	9	21	14	9
May	20	14	13	15	14	17	15	17	14	17
June	14	21	18	19	17	11	10	21	34	13
July	26	18	16	16	16	13	18	8	15	17
August	12	19	24	16	14	18	16	21	21	23
September	22	18	17	23	18	16	21	18	16	15
October	20	20	19	14	11	18	20	21	13	11
November	17	12	26	21	9	24	21	18	11	21
December	20	14	15	24	13	21	13	15	12	8
Ist Qtr. Jan. – Mar.	37	57	37	30	41	43	36	37	31	29
2nd Qtr. Apr. – Jun.	49	54	50	53	44	39	34	59	62	39
3rd Qrt. Jul. – Sep.	60	55	57	55	48	47	55	47	52	55
4th Qrt. Oct. – Dec.	57	46	60	59	33	63	54	54	36	40
Total	**203**	**212**	**204**	**197**	**166**	**192**	**179**	**197**	**181**	**163**

- In all years, the most number of alcohol-related accidents occurred on Saturdays. In most years, the most number of fatal alcohol-related accidents also occurred on Saturdays.

Table 3.1.4 Total and Fatal Alcohol-Related Accidents by Day of Week, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Accidents										
Sunday	1,632	1,634	1,696	1,641	1,493	1,576	1,666	1,727	1,774	1,701
Monday	873	853	948	861	778	854	872	989	887	924
Tuesday	775	867	956	850	797	847	875	884	917	873
Wednesday	874	963	1,002	985	850	859	927	950	938	994
Thursday	1,023	1,025	1,169	1,073	986	1,006	1,054	1,073	1,114	1,145
Friday	1,400	1,469	1,635	1,502	1,253	1,469	1,457	1,460	1,478	1,466
Saturday	1,976	1,936	1,968	1,885	1,788	1,929	1,999	1,962	1,948	1,986
Total	**8,553**	**8,747**	**9,374**	**8,797**	**7,945**	**8,540**	**8,850**	**9,045**	**9,056**	**9,089**
Fatal Accidents										
Sunday	42	46	37	45	33	38	32	32	46	31
Monday	12	17	15	16	18	21	14	20	21	13
Tuesday	15	12	19	15	16	16	16	17	10	11
Wednesday	17	24	20	27	11	17	15	13	19	19
Thursday	30	27	22	25	20	25	14	24	23	13
Friday	37	32	36	24	27	30	37	30	25	25
Saturday	50	54	55	45	41	45	51	61	37	51
Total	**203**	**212**	**204**	**197**	**166**	**192**	**179**	**197**	**181**	**163**

- In all years, alcohol-related accidents were most frequent between 8:00 PM and midnight or between midnight and 04:00 AM. The most number of fatal alcohol-related accidents were most frequent between midnight and 04:00 AM.

Table 3.1.5 Total and Fatal Alcohol-Related Accidents by Time of Day, 1994-2003

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Accidents										
Midnight-03:59AM	2,444	2,408	2,543	2,476	2,263	2,418	2,549	2,569	2,687	2,800
04:00AM-07:59AM	514	545	634	579	606	619	650	685	660	639
08:00AM-11:59AM	489	480	639	532	419	571	595	605	589	524
Noon - 03:59PM	870	850	1,052	893	778	911	933	968	910	849
04:00PM-07:59PM	1,783	1,818	1,903	1,866	1,584	1,712	1,777	1,862	1,753	1,783
08:00PM-Midnight	2,453	2,645	2,601	2,451	2,295	2,307	2,346	2,356	2,457	2,492
Unknown	-	1	2	-	-	2	-	-	-	2
Total	**8,553**	**8,747**	**9,374**	**8,797**	**7,945**	**8,540**	**8,850**	**9,045**	**9,056**	**9,089**
Fatal Accidents										
Midnight-03:59AM	61	73	66	72	45	66	73	71	60	61
04:00AM-07:59AM	19	15	17	17	27	21	10	18	17	9
08:00AM-11:59AM	6	8	6	4	5	8	5	8	5	8
Noon - 03:59PM	19	12	24	10	12	10	5	18	15	8
04:00PM-07:59PM	36	34	38	36	21	35	32	30	31	28
08:00PM-Midnight	62	70	53	58	56	52	54	52	53	49
Total	**203**	**212**	**204**	**197**	**166**	**192**	**179**	**197**	**181**	**163**

2003 Overview

- The largest number of alcohol-related accidents occurred in the second quarter. The largest number of alcohol-related fatal accidents occurred in the third quarter.
- Fatal and total alcohol-related accidents occurred more on weekend days than on week days.
- Fatal and total alcohol-related accidents were most frequent between midnight and 4:00 AM (37.4% and 30.8%, respectively)
- The fatal accidents between 8:00PM – 3:59AM accounted for almost 70% of fatal alcohol-related accidents.

Figure 3.1.4 Alcohol-Related Total and Fatal Accidents by Day of Week, 2003

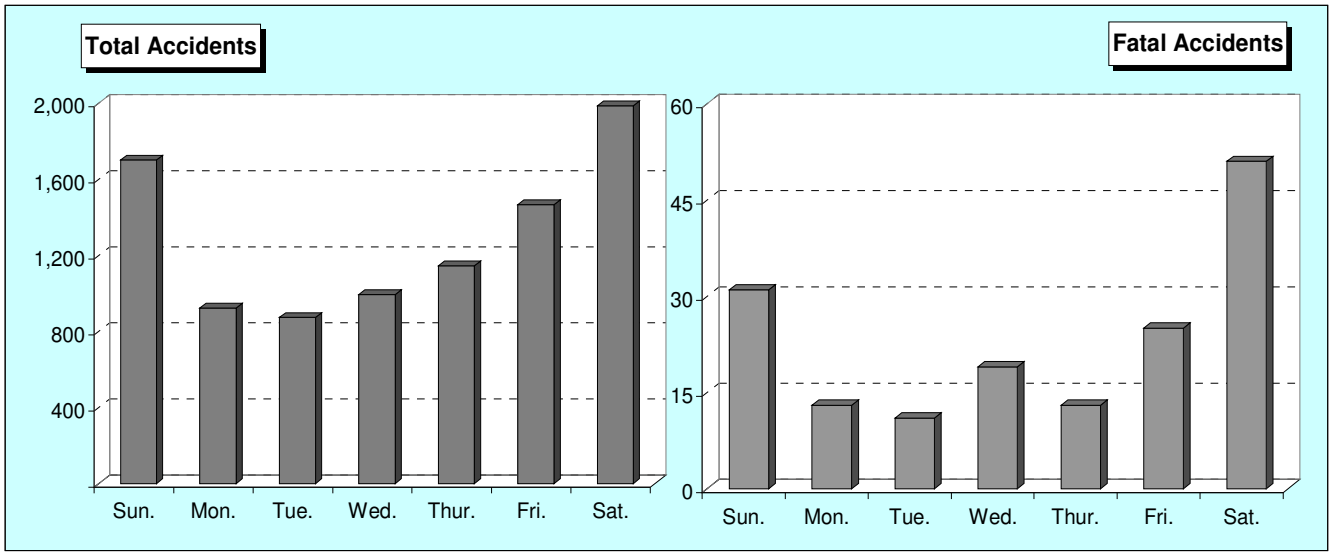
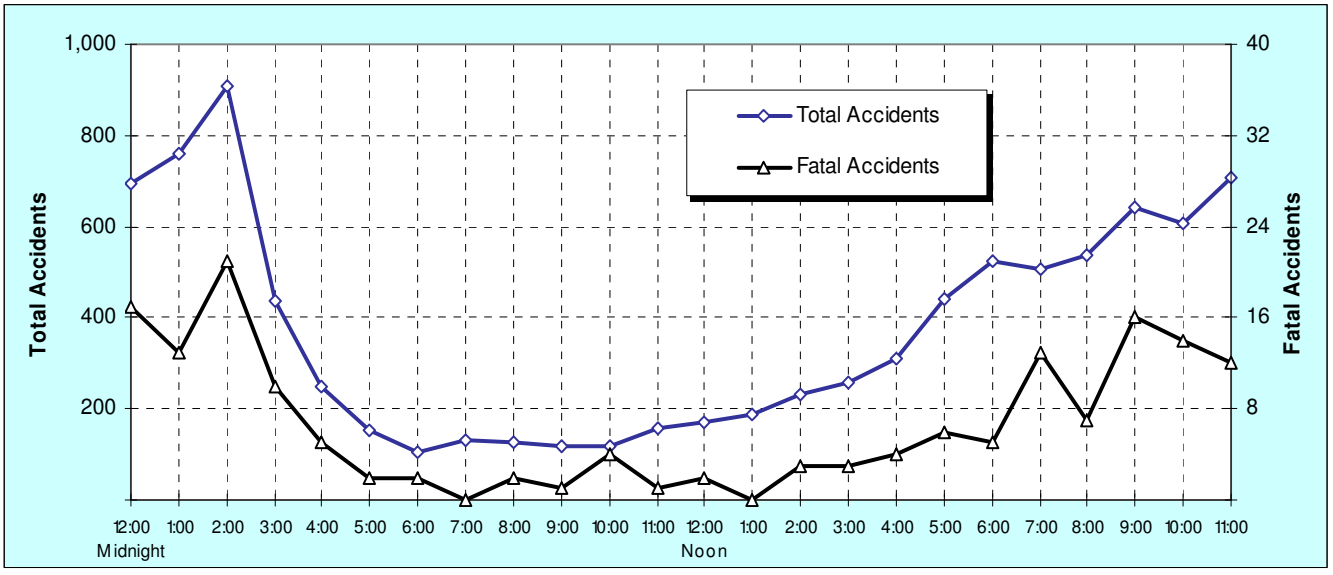


Figure 3.1.5 Alcohol-Related Total and Fatal Accidents by Time of Day, 2003



3.1.3 Spatial Patterns

Trends

- The alcohol-related accidents that occurred on most route types had increasing trends except for route types GV, SR, Baltimore City roads and Parking Lots. Those on Interstate highways (IS) had an average increase of 3.2% per year from 1994 to 2003.
- Fatal alcohol-related accidents had downward trends for all types of routes. Between 2002 and 2003, the fatal alcohol-related accidents on County highways increased by 22.0% from 45 to 55.

Table 3.1.6 Total Alcohol-Related Accidents by Route Types, 1994-2003

Route Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change(%)
IS	561	624	605	556	562	644	709	717	725	723	3.2
US	745	714	823	751	651	711	736	729	748	746	0.0
MD	2,776	2,764	2,903	2,771	2,502	2,636	2,539	2,758	2,886	2,858	0.3
CO	2,357	2,526	2,574	2,534	2,312	2,288	2,444	2,628	2,625	2,670	1.5
MU	463	467	452	438	434	472	521	532	512	534	1.7
GV	7	9	9	8	3	5	7	6	2	13	9.5
SR	6	12	12	9	5	8	10	5	5	8	3.7
OP	48	51	46	36	54	45	47	76	67	67	4.4
Baltimore City, CY	1,119	1,117	1,359	1,127	948	1,190	1,291	1,078	1,000	944	-1.7
Parking Lots	340	359	441	360	240	326	345	285	322	337	-0.1
Other/Unknown	131	104	150	207	234	215	201	231	164	189	4.9
Total	**8,553**	**8,747**	**9,374**	**8,797**	**7,945**	**8,540**	**8,850**	**9,045**	**9,056**	**9,089**	**0.7**

* Avg. Change(%) : Average Rate of Change per Year from 1994 to 2003

Table 3.1.7 Fatal Alcohol-Related Accidents by Route Types, 1994-2003

Route Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change(%)
IS	24	20	15	15	12	25	23	24	20	8	-7.4
US	23	26	27	21	14	22	20	25	28	17	-2.9
MD	78	92	88	88	89	86	84	86	70	69	-1.3
CO	49	54	54	50	38	41	37	49	45	55	1.4
MU	6	5	2	2	2	1	2	-	-	2	-7.4
GV	-	1	1	-	-	-	-	1	-	-	-
SR	-	-	-	-	-	-	-	-	-	-	-
OP	-	-	-	-	-	-	-	-	-	1	-
Baltimore City, CY	19	14	15	19	9	10	10	11	15	10	-5.3
Parking Lots	2	-	-	1	1	1	-	-	2	-	-11.1
Other / Unknown	2	-	2	1	1	6	3	1	1	1	-5.6
Total	**203**	**212**	**204**	**197**	**166**	**192**	**179**	**197**	**181**	**163**	**-2.2**

- Nearly two-thirds of alcohol-related accidents have occurred in five jurisdictions; Baltimore, Prince George's, Montgomery and Anne Arundel County and Baltimore City. For the 10 years, alcohol-related accidents in Prince George's County had a downward trend, while alcohol-related accidents in Baltimore and Anne Arundel County had increasing trends.

- From 1994 to 2003, the counties that had the highest increase rate of alcohol-related accidents were Calvert and Caroline County (6.5% each).

Table 3.1.8 Total Alcohol-Related Accidents by County, 1994-2003

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change(%)
Allegany	142	154	155	123	141	101	128	105	97	111	-2.4
Anne Arundel	817	782	848	876	745	810	878	907	930	1,005	2.6
Baltimore	1,172	1,212	1,322	1,315	1,167	1,209	1,155	1,281	1,355	1,402	2.2
Calvert	92	119	123	113	100	132	103	135	148	146	6.5
Caroline	51	56	56	67	63	62	38	42	78	81	6.5
Carroll	167	193	215	189	190	176	184	247	225	235	4.5
Cecil	221	229	224	268	231	218	203	228	201	232	0.6
Charles	280	250	251	250	248	229	265	250	286	260	-0.8
Dorchester	64	63	50	56	65	55	56	62	59	51	-2.3
Frederick	302	317	349	310	306	274	293	321	342	332	1.1
Garrett	75	83	67	82	69	64	75	71	58	58	-2.5
Harford	334	347	373	342	347	362	352	342	367	391	1.9
Howard	289	292	321	303	291	302	351	371	359	350	2.3
Kent	36	34	33	33	28	31	27	31	32	28	-2.5
Montgomery	1,034	1,042	1,131	1,012	899	1,009	1,073	1,121	1,079	1,120	0.9
Prince George's	1,362	1,441	1,453	1,280	1,149	1,228	1,299	1,307	1,299	1,279	-0.7
Queen Anne's	60	59	68	77	68	78	72	78	86	91	5.7
St. Mary's	147	137	134	141	139	139	134	136	158	145	-0.2
Somerset	74	41	48	40	42	55	58	48	59	37	-5.6
Talbot	64	71	89	103	87	82	63	81	87	83	3.3
Washington	263	300	234	280	237	282	249	290	271	228	-1.5
Wicomico	176	165	212	182	176	189	229	242	197	190	0.9
Worcester	190	196	189	192	182	209	202	200	216	231	2.4
Baltimore City	1,141	1,164	1,429	1,163	975	1,244	1,363	1,149	1,067	1,003	-1.3
Total	**8,553**	**8,747**	**9,374**	**8,797**	**7,945**	**8,540**	**8,850**	**9,045**	**9,056**	**9,089**	**0.7**

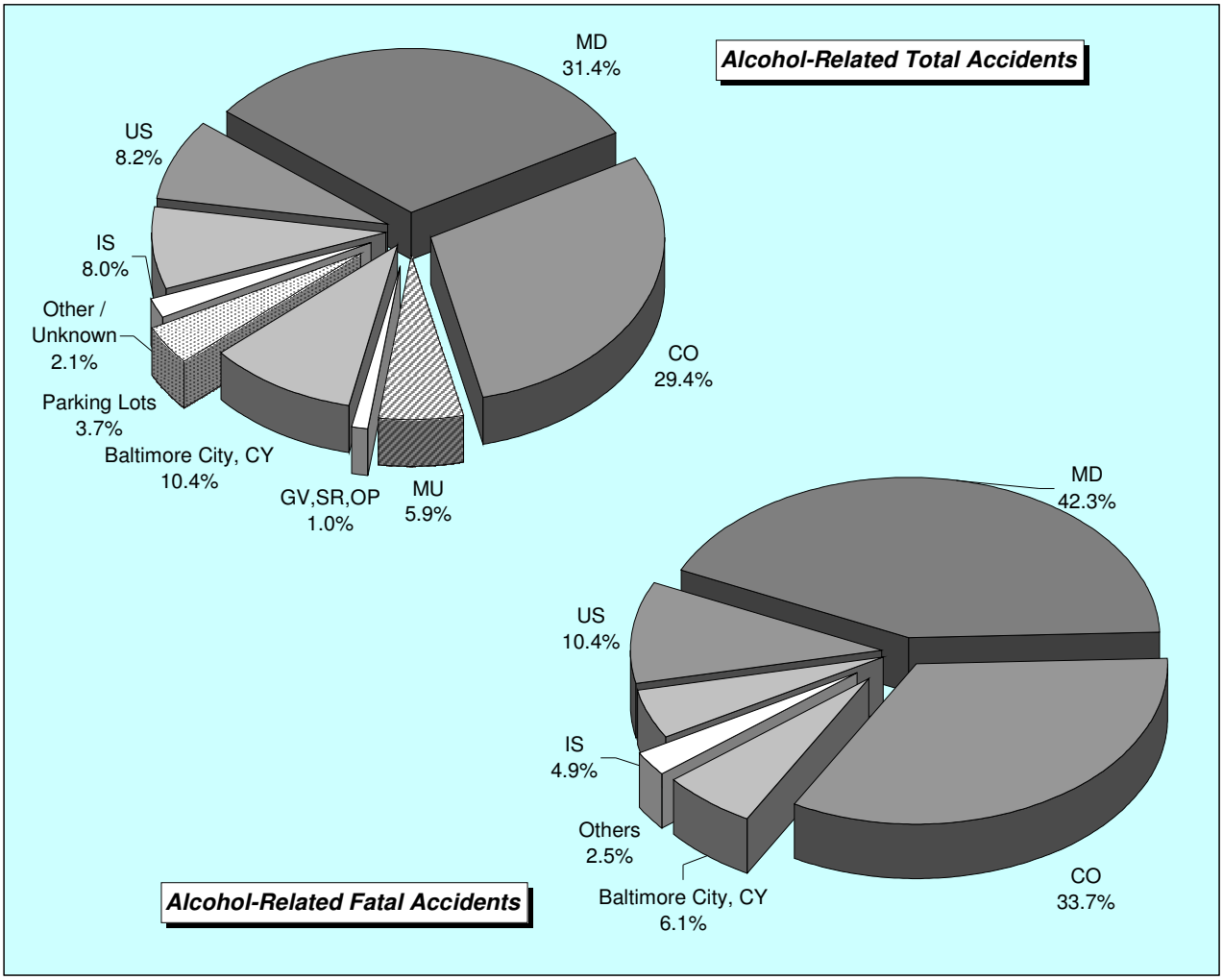
Table 3.1.9 Fatal Alcohol-Related Accidents by County, 1994-2003

County	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg. Change(%)
Allegany	2	-	3	3	1	6	3	2	6	2	0.0
Anne Arundel	18	18	21	22	16	17	17	15	11	23	3.1
Baltimore	19	28	26	20	19	25	25	26	27	25	3.5
Calvert	2	3	3	3	2	3	4	6	1	5	16.7
Caroline	-	-	3	9	2	5	4	3	4	3	-
Carroll	7	10	6	5	8	6	1	4	4	4	-4.8
Cecil	6	9	11	6	7	13	7	9	8	7	1.9
Charles	15	6	12	11	7	12	13	5	11	6	-6.7
Dorchester	-	2	2	1	3	1	2	6	2	4	-
Frederick	11	7	7	6	5	5	6	9	4	4	-7.1
Garrett	1	7	5	3	1	1	3	3	2	3	22.2
Harford	7	9	8	9	5	11	8	10	4	3	-6.3
Howard	2	5	6	9	9	11	8	3	7	2	0.0
Kent	4	1	-	2	2	-	-	1	1	-	-11.1
Montgomery	21	21	11	15	13	12	16	17	10	7	-7.4
Prince George's	36	42	44	27	39	23	28	32	35	26	-3.1
Queen Anne's	1	1	-	4	1	1	3	4	5	4	33.3
St. Mary's	5	7	9	7	3	8	1	6	3	6	2.2
Somerset	3	5	-	2	2	-	1	2	3	1	-7.4
Talbot	1	1	1	2	1	6	4	4	3	1	0.0
Washington	5	4	4	6	4	6	3	4	9	6	2.2
Wicomico	9	5	6	1	4	-	3	8	2	7	-2.5
Worcester	8	6	1	4	3	4	5	6	4	4	-5.6
Baltimore City	20	15	15	20	9	16	14	12	15	10	-5.6
Total	**203**	**212**	**204**	**197**	**166**	**192**	**179**	**197**	**181**	**163**	**-2.2**

2003 Overview

- The largest numbers of total and fatal alcohol-related accidents occurred on MD highways (total: 2,758 accidents, 43.7%; fatal: 86 accidents, 30.4%).
- Fatal accidents related to alcohol or drugs on MD and County highways accounted for 76.0% of all alcohol-related fatal accidents.

Figure 3.1.6 Alcohol-Related Total and Fatal Accidents by Route Type, 2003

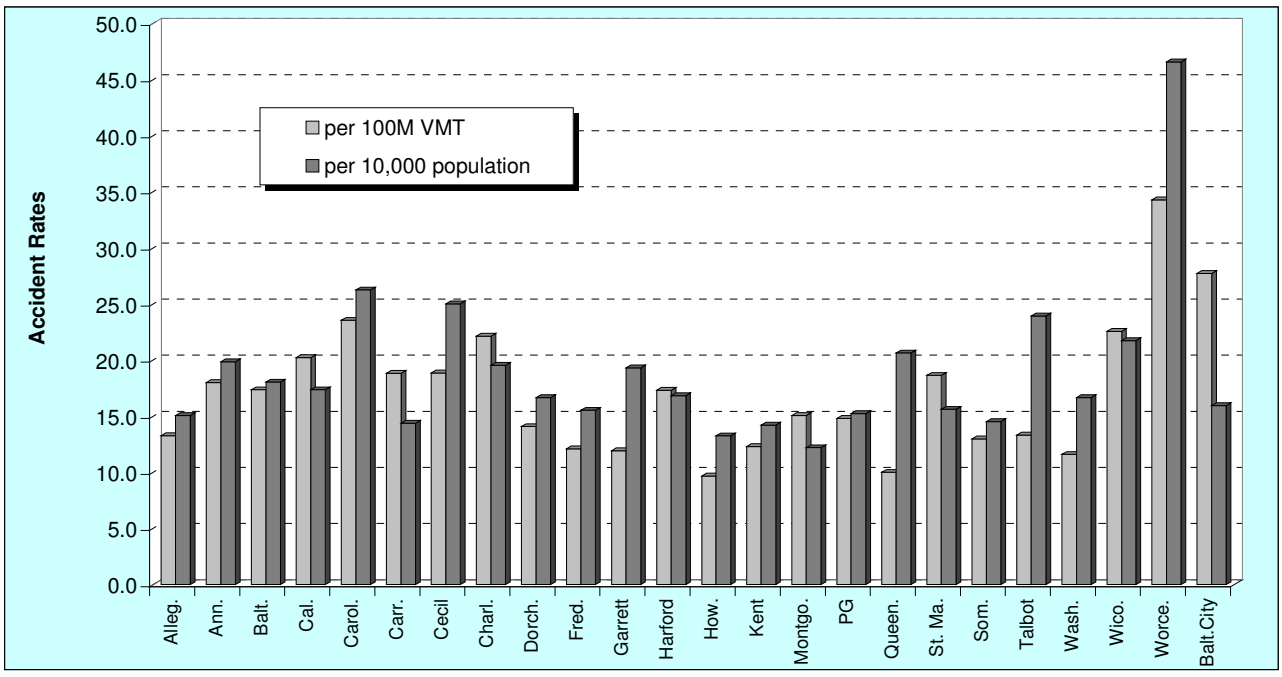


- Baltimore County had the largest number of total alcohol-related accidents in 2003, and Prince George's County had the most fatal alcohol-related accidents.
- Worchester County had the highest alcohol-related total accident rates (34.27 per 100 million VMT, 46.57 per 10,000 population), and Dorchester County had the highest fatal alcohol-related accident rates (1.10 per 100 million VMT, 1.31 per 10,000 population).

Table 3.1.10 Total and Fatal Alcohol-Related Accident Rates by County, 2003

County	Alcohol-Related Accidents				VMT (millions)	Population	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	111	1.2	2	1.2	838	73,668	13.25	15.07	0.24	0.27
Anne Arundel	1,005	11.1	23	14.1	5,587	506,620	17.99	19.84	0.41	0.45
Baltimore	**1,402**	**15.4**	25	15.3	8,078	777,184	17.36	18.04	0.31	0.32
Calvert	146	1.6	5	3.1	722	84,110	20.22	17.36	0.69	0.59
Caroline	81	0.9	3	1.8	344	30,861	23.55	26.25	0.87	0.97
Carroll	235	2.6	4	2.5	1,248	163,207	18.83	14.40	0.32	0.25
Cecil	232	2.6	7	4.3	1,230	92,746	18.86	25.01	0.57	0.75
Charles	260	2.9	6	3.7	1,174	133,049	22.15	19.54	0.51	0.45
Dorchester	51	0.6	4	2.5	362	30,612	14.09	16.66	**1.10**	**1.31**
Frederick	332	3.7	4	2.5	2,746	213,662	12.09	15.54	0.15	0.19
Garrett	58	0.6	3	1.8	486	30,049	11.93	19.30	0.62	1.00
Harford	391	4.3	3	1.8	2,257	232,175	17.32	16.84	0.13	0.13
Howard	350	3.9	2	1.2	3,620	264,265	9.67	13.24	0.06	0.08
Kent	28	0.3	-	0.0	228	19,680	12.28	14.23	-	-
Montgomery	1,120	12.3	7	4.3	7,427	918,881	15.08	12.19	0.09	0.08
Prince George's	1,279	14.1	**26**	**16.0**	8,631	838,716	14.82	15.25	0.30	0.31
Queen Anne's	91	1	4	2.5	910	44,108	10.00	20.63	0.44	0.91
St. Mary's	145	1.6	6	3.7	778	92,754	18.64	15.63	0.77	0.65
Somerset	37	0.4	1	0.6	285	25,447	12.98	14.54	0.35	0.39
Talbot	83	0.9	1	0.6	623	34,670	13.32	23.94	0.16	0.29
Washington	228	2.5	6	3.7	1,968	136,796	11.59	16.67	0.30	0.44
Wicomico	190	2.1	7	4.3	842	87,375	22.57	21.75	0.83	0.80
Worcester	231	2.5	4	2.5	674	49,604	**34.27**	**46.57**	0.59	0.81
Baltimore City	1,003	11	10	6.1	3,620	628,670	27.71	15.95	0.28	0.16
Total Accidents	**9,089**	**100.0**	**163**	**100.0**	**54,678**	**5,508,909**	**16.62**	**16.50**	**0.30**	**0.30**

Figure 3.1.7 Alcohol-Related Total Accident Rates by County, 2003



3.1.4 Drivers and Pedestrians[4]

Trends

- From 2001 through 2003, alcohol-related driver fatalities and the percentage of alcohol-related driver fatalities decreased. Between 2002 and 2003, alcohol-related pedestrian fatalities and the percentage of alcohol-related pedestrian fatalities decreased.

Table 3.1.11 Driver and Pedestrian Fatalities Involved in Alcohol-Related Accidents, 1994-2003

Year	Driver* Fatalities			Pedestrian Fatalities		
	Alcohol-related Driver Fatalities (A)	Total Driver Fatalities (B)	Percent (A/B)	Alcohol-related Pedestrian Fatalities (A)	Total Pedestrian Fatalities	Percent (A/B)
1994	109	355	30.7	35	143	24.5
1995	129	386	33.4	28	136	20.6
1996	120	340	35.3	32	131	24.4
1997	117	345	33.9	31	122	25.4
1998	82	333	24.6	28	113	24.8
1999	110	363	30.3	36	125	28.8
2000	90	375	24.0	35	105	33.3
2001	106	411	25.8	29	113	25.7
2002	99	408	24.3	35	111	31.5
2003	71	383	18.5	28	125	22.4
Avg .Change(%)	**-34.9**	**7.9**	**-39.6**	**-20.0**	**-12.6**	**-8.6**

*Motorcycle drivers are included.

- There has been a downward trend for total impaired drivers involved in alcohol-related accidents. In most years, the driver age group of 20-24 years has had the highest percentage of driver fatalities and drivers involved in alcohol-related accidents.

Table 3.1.12 Total Impaired Drivers Involved in Alcohol-Related Accidents by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	27	18	28	20	17	18	27	25	16	13
16 - 19	572	647	655	692	725	698	687	800	843	751
20 - 24	1,518	1,436	1,358	1,278	1,366	1,390	1,549	1,681	1,734	1,726
25 - 29	1,521	1,556	1,308	1,224	1,170	1,105	1,052	1,030	1,062	1,109
30 - 34	1,488	1,624	1,390	1,271	1,105	1,066	1,050	1,024	1,001	960
35 - 39	1,205	1,210	1,293	1,158	1,180	1,132	1,197	1,063	1,046	1,008
40 - 44	932	881	923	902	929	900	927	1,011	964	972
45 - 49	626	710	635	672	644	651	690	706	707	765
50 - 54	449	432	404	392	439	443	431	428	462	463
55 - 59	280	278	270	216	246	268	239	269	293	316
60 - 64	209	204	174	192	184	169	158	186	157	164
65 - 69	130	134	142	139	114	111	115	110	103	103
70 - 79	140	136	146	117	127	118	118	119	112	105
80 +	34	28	29	29	25	33	39	47	56	36
Unknown	673	683	642	457	499	504	520	506	456	442
Total	**9,804**	**9,977**	**9,397**	**8,759**	**8,770**	**8,606**	**8,799**	**9,005**	**9,012**	**8,933**

[4] Pedestrians in this section include not only pedestrians on foot, but also pedalcyclists and other machine operators

Table 3.1.13 Driver Fatalities in Fatal Alcohol-Related Accidents by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	-	1	-	-	-	1	-	-	-	-
16 - 19	8	6	12	10	10	9	12	14	6	5
20 - 24	21	27	23	15	17	21	18	23	17	13
25 - 29	23	20	23	18	12	16	9	13	15	12
30 - 34	19	26	17	16	9	15	13	11	13	10
35 - 39	9	13	12	19	12	12	13	13	11	8
40 - 44	11	14	11	13	6	10	11	10	14	8
45 - 49	5	5	8	9	5	9	2	6	9	5
50 - 54	5	8	5	7	4	7	6	4	4	3
55 - 59	4	3	2	3	5	2		4	2	2
60 - 64	1	2	3	2	-	2	2	2	2	2
65 - 69	1	3	4	2	-	2	1	3	2	2
70 - 79	-	1	-	3	1	3	1	3	1	1
80 +	1	-	-	-	-	1	2	-	1	-
Unknown	1	-	-	-	1	-	-	-	2	-
Total	**109**	**129**	**120**	**117**	**82**	**110**	**90**	**106**	**99**	**71**

- Between 2002 and 2003, alcohol-impaired pedestrian fatalities and pedestrians involved in alcohol-related accidents increased. Between those years, for the pedestrian age groups of 10-15 years, 50-54 years and 55-59 years, pedestrians involved in alcohol-related accidents increased by almost twice.

Table 3.1.14 Pedestrians Involved in Alcohol Related Accidents by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Under 5	1	7	2	7	2	2	5	1	5	6
5 - 9	-	9	8	6	4	7	4	8	5	8
10 - 15	4	18	15	12	7	7	13	19	11	20
16 - 19	8	11	21	23	14	13	15	14	19	17
20 - 24	39	49	35	18	22	34	36	35	42	40
25 - 29	47	42	34	33	28	31	29	28	22	27
30 - 34	51	45	55	49	38	31	26	33	33	34
35 - 39	51	55	50	63	59	63	44	47	50	52
40 - 44	33	31	36	46	41	43	51	49	41	56
45 - 49	17	29	38	30	31	28	24	24	34	50
50 - 54	10	18	15	22	18	27	22	19	15	32
55 - 59	11	7	11	9	11	13	5	9	8	17
60 - 64	3	4	6	5	3	5	8	7	6	10
65 - 69	3	4	2	1	10	4	6	4	2	1
70 - 79	1	5	5	6	9	4	6	5	3	6
80 +	1	2	2	2	-	-	3	1	-	6
Unknown	7	6	18	23	22	12	14	20	23	14
Total	**287**	**342**	**353**	**355**	**319**	**324**	**311**	**323**	**319**	**396**

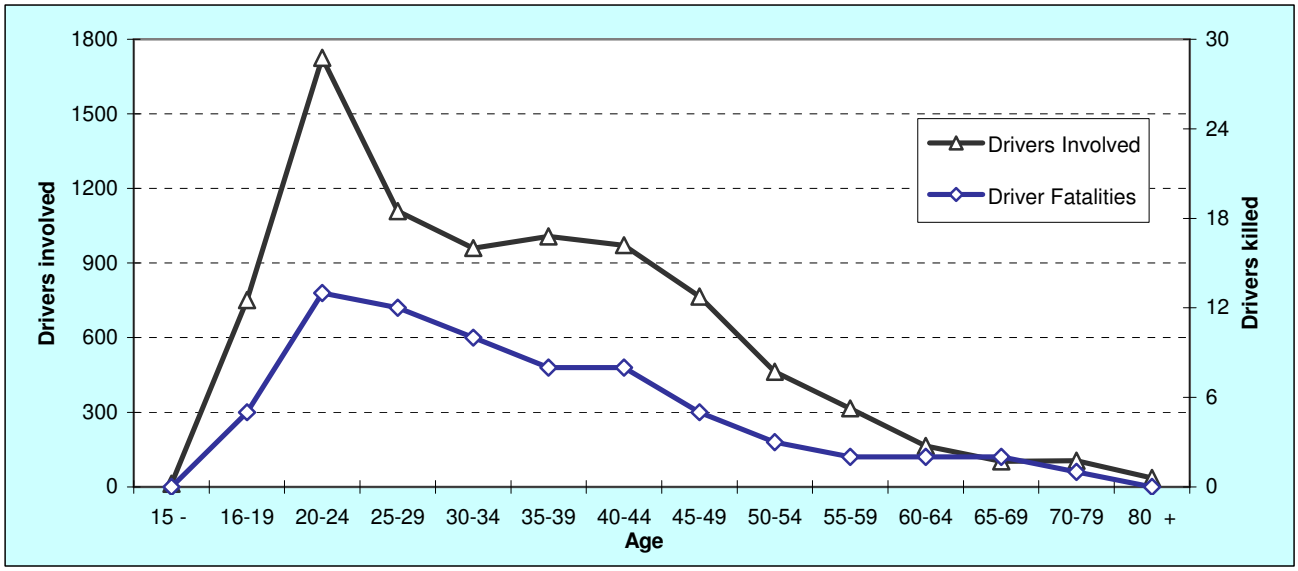
Table 3.1.15 Pedestrian Fatalities in Alcohol Related Accidents by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Under 5	-	-	-	1	-	-	-	-	-	-
5 - 9	-	-	-	-	-	1	-	-	-	1
10 - 15	-	-	-	-	-	-	-	-	-	-
16 - 19	1	-	2	1	-	1	3	2	1	-
20 - 24	6	3	2	2	-	2	3	4	3	1
25 - 29	3	1	1	4	1	2	4	2	3	4
30 - 34	4	4	8	2	4	4	5	6	5	-
35 - 39	6	8	4	9	10	6	3	2	7	2
40 - 44	7	4	5	5	5	9	7	5	3	4
45 - 49	2	2	7	1	3	2	4	2	3	10
50 - 54	3	1	1	3	2	4	1	1	4	2
55 - 59	1	1	1	1	-	2	1	1	3	2
60 - 64	-	2	1	-	-	1	1	1	1	-
65 - 69	1	1	-	-	-	2	2	-	-	-
70 - 79	-	1	-	1	2	-	1	2	-	2
80 +	1	-	-	-	-	-	-	1	-	-
Unknown	-	-	-	1	1	-	-	-	2	-
Total	**35**	**28**	**32**	**31**	**28**	**36**	**35**	**29**	**35**	**28**

2003 Overview

- 24.3% of driver fatalities and 31.5% of pedestrian fatalities were alcohol-related.
- The driver age group of 21-24 years had the highest percentage of drivers involved in alcohol-related accidents.

Figure 3.1.8 Driver Fatalities and Drivers Involved in Alcohol-Related Accidents by Age, 2003



- The 40-44 years age group had the highest percentage of pedestrians involved in alcohol-related accidents, and the 45-49 years age had the highest percentage of pedestrian fatalities.

3.2 ENVIRONMENT

This section describes the environment in which accidents occurred, including such characteristics as visibility, roadway surface, surface wetness, and illumination.

52% of all fatalities in Maryland in 2003 occurred at nighttime, while only 31.4% of total traffic accidents occurred at nighttime. Nighttime is defined as the time period after dusk and before dawn's first light. By time of day, it runs from 4:00 P.M. to 6:59 A.M.

Wet surface accident fatalities accounted for 22.1% of all fatalities in Maryland in 2003. There was a total of 28,066 wet surface accidents, of which 123 were fatal accidents.

Some of the notable trends are as follows:

- The percentage of nighttime accidents among all accidents was about 30% from 1994 through 2003, while that of nighttime fatal accidents among all fatal accidents was more than 45%. In 2003, fatal nighttime accidents accounted for 52.5% of all fatal accidents.
- Between 2002 and 2003, total and fatal accidents on dry roadway surface decreased, while on wet, snowy, icy roadway surface significantly increased.
- Wet surface accidents had a downward trend from 1996 to 2001, but had been trending up from 2001 to 2003.
- For the latest 10 years, the largest number of animal-involved accidents occurred in 2003.

Some results for 2003 are as follows:

- About 41.6% of fatal nighttime accidents and 27.9% of total nighttime accidents were alcohol-related.
- Most total wet surface accidents occurred in daylight (60.1%), while most fatal wet surface accidents occurred under "Dark" condition (56.0%).
- 31.4% of total accidents occurred in "Dark" illumination, whereas 52.5% of fatal accidents. "Dark" illumination.
- More than half of animal-involved accidents occurred during three consecutive months (October, November and December). Most animal-involved accidents occurred under "Dark" condition (64.2%).

3.2.1 Nighttime

Trends

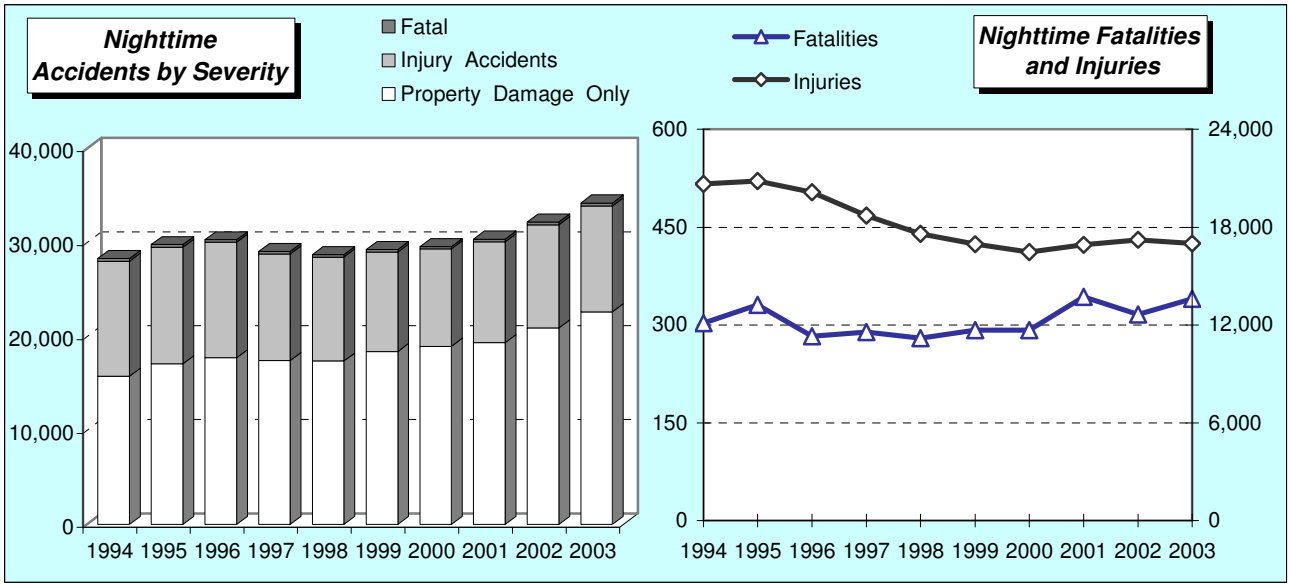
Severity

- From 1994 to 2003, the number of nighttime accidents had been trending up (an increase of 2.3% per year). Over those years, the number of nighttime fatalities had been almost holding steady, while between 2002 and 2003, nighttime fatalities increased by 7.6% from 316 to 340.

Table 3.2.1 Nighttime Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	282	12,263	15,767	**28,312**	303	20,657
1995	307	12,398	17,105	**29,810**	331	20,822
1996	257	12,277	17,775	**30,309**	283	20,139
1997	275	11,338	17,445	**29,058**	289	18,718
1998	253	11,061	17,406	**28,720**	280	17,590
1999	272	10,559	18,430	**29,261**	292	16,948
2000	269	10,347	18,976	**29,592**	292	16,471
2001	306	10,719	19,370	**30,395**	343	16,915
2002	287	10,996	20,935	**32,218**	316	17,222
2003	313	11,270	22,652	**34,235**	340	16,983
Avg. Change(%)	**1.2%**	**-0.9%**	**4.9%**	**2.3%**	**1.4%**	**-2.0%**

Figure 3.2.1 Nighttime Accidents by Severity, Fatalities and Injuries, 1994-2003



- The percentage of nighttime accidents among all accidents was about 30% over the years, while that of nighttime fatal accidents among all fatal accidents was more than 45%. In 2003, fatal nighttime accidents accounted for 52.5% of all fatal accidents.

Table 3.2.2 Percentage of Nighttime Accidents among All Accidents, 1994-2003

Year	Fatal Accidents		Fatalities		Total Accidents	
	Nighttime	% of All Fatal Accidents	Nighttime	% of All Fatalities	Nighttime	% of All Accidents
1994	282	46.6	303	46.1	28,312	29.2
1995	307	50.0	331	48.4	29,810	30.8
1996	257	45.6	283	46.1	30,309	30.5
1997	275	48.2	289	47.4	29,058	30.2
1998	253	45.9	280	46.2	29,720	31.6
1999	272	49.0	292	48.8	29,261	30.2
2000	269	46.9	292	47.3	29,592	29.8
2001	306	50.8	343	51.9	30,395	30.0
2002	287	47.4	316	47.8	32,218	30.7
2003	313	52.5	340	52.2	34,235	31.4

Collision Type

- At night, most collisions involved fixed objects, parked vehicles, rear-end, and angle crashes.
- For fatal nighttime accidents, collisions with pedestrians were the second most accident type, and opposite direction was the third most accident type over the latest 10 years.

Table 3.2.3 Total Nighttime Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	1,106	939	960	801	799	713	798	766	846	950
Rear End	4,828	4,627	4,161	4,260	4,315	4,406	4,321	4,497	4,773	4,735
Left Turn	1,547	1,539	1,547	1,463	1,421	1,345	1,211	1,307	1,439	1,566
Sideswipe	1,738	1,528	1,264	1,092	1,079	1,022	1,073	1,140	1,216	1,255
Angle	3,234	3,102	2,860	2,734	2,651	2,639	2,460	2,653	2,798	2,860
Parked Vehicle	4,703	4,636	4,645	4,281	4,217	4,630	4,932	4,513	4,726	4,889
Pedestrian	940	989	1,029	983	911	873	891	896	890	1,000
Pedalcycle	245	244	217	221	239	220	192	198	188	179
Other Conveyance	14	20	17	15	18	28	15	23	23	24
Railway Train	6	8	11	12	21	12	19	12	10	19
Animal	813	842	938	875	878	901	807	905	842	957
Fixed Object	7,392	7,918	7,937	7,842	7,741	7,663	7,695	7,904	8,460	9,002
Other Object	284	361	448	359	379	423	414	405	440	502
Overturned	363	305	337	314	332	295	287	324	346	401
Spilled Cargo	4	7	4	9	11	11	10	4	7	4
Jacknife	15	11	12	16	14	8	10	15	7	8
Units Separate	4	5	4	6	8	7	2	4	9	5
Other Non Collision	215	213	208	171	138	124	134	99	96	126
Run Off Road	17	28	66	130	199	328	498	601	774	933
Down Hill Runaway	-	-	-	1	2	3	2	2	2	3
Explosion or Fire	35	43	31	60	64	84	86	88	81	79
U-Turn	274	311	295	257	226	262	274	292	296	274
Backing	207	226	195	195	210	183	203	186	223	225
Other/unknown	328	1,908	3,123	2,961	2,847	3,081	3,258	3,561	3,726	4,239
Total	**28,312**	**29,810**	**30,309**	**29,058**	**28,720**	**29,261**	**29,592**	**30,395**	**32,218**	**34,235**

Table 3.2.4 Fatal Nighttime Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	31	40	41	22	31	31	25	29	31	36
Rear End	10	13	12	18	12	13	16	13	13	15
Left Turn	6	7	9	9	13	9	9	8	13	14
Sideswipe	5	3	6	10	2	2	6	4	2	7
Angle	20	29	19	18	17	22	17	23	21	19
Parked Vehicle	22	5	6	9	8	4	10	7	5	8
Pedestrian	70	66	66	62	55	69	61	59	69	84
Pedalcycle	6	6	2	4	3	4	5	3	3	2
Other Conveyance	-	-	-	1	-	-	-	-	-	-
Railway Train	-	-	-	-	-	1	1	-	-	-
Animal	2	1	-	1	-	1	1	-	1	-
Fixed Object	94	126	91	106	96	103	101	131	111	96
Other Object	1	2	-	1	1	1	2	1	2	2
Overturned	8	-	2	8	8	4	5	8	3	10
Jacknife	-	-	-	-	-	-	-	-	1	-
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	3	4	1	2	2	-	2	2	1	1
Run Off Road	-	-	-	2	1	3	4	9	7	8
Explosion or Fire	-	-	-	-	-	-	-	1	-	-
Backing	1	2	-	2	3	2	1	2	1	2
Other/unknown	3	3	2	-	1	3	3	6	3	9
Total	**282**	**307**	**257**	**275**	**253**	**272**	**269**	**306**	**287**	**313**

2003 Overview

- Alcohol or drugs accounted for 24.7% of all nighttime driver fatalities, and 9.1% of total drivers involved in nighttime accidents.

Table 3.2.5 Drivers Involved in Nighttime Accidents by Driver Condition, 2003

Driver Condition	Driver Fatalities		Total Drivers Involved in Accidents	
	Number	Percent	Number	Percent
Not Stated	1	0.5	1,733	2.9
No Apparent Defects	98	53.8	37,643	63.5
Alcohol	44	24.2	5,202	8.8
Drugs	1	0.5	178	0.3
Physical Handicap	-	0.0	64	0.1
Illness	-	0.0	55	0.1
Fatigue	-	0.0	160	0.3
Apparently Asleep	1	0.5	195	0.3
Unknown	37	20.3	14,055	23.7
Total	**182**	**100.0**	**59,285**	**100.0**

- About 41.6% of fatal nighttime accidents and 27.9% of total nighttime accidents were alcohol-related.

Table 3.2.6 Nighttime Accidents by Accident Condition, 2003

Accident Condition	Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent
Alcohol	112	35.8	5,624	16.4
Drugs	4	1.3	375	1.1
Both (Alcohol & Drugs)	14	4.5	153	0.4
No	183	58.4	28,083	82.1
Total	**313**	**100.0**	**34,235**	**100.0**

- Baltimore City had the highest number of nighttime accidents and Prince George's County had the highest number of fatal nighttime accidents. Baltimore City also had the highest total accident rate per VMT.
- Dorchester County had the highest fatal accident rates per VMT and population. (1.38 per 100 million VMT and 1.63 per population).

Table 3.2.7 Total and Fatal Nighttime Accidents and Accident Rates by County, 2003

County	Nighttime Accidents				VMT (millions)	Population*	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	271	0.8	4	1.3	838	73,668	32.34	36.79	0.48	0.54
Anne Arundel	3,311	9.7	36	11.5	5,587	506,620	59.26	65.35	0.64	0.71
Baltimore	5,281	15.4	44	14.1	8,078	777,184	65.38	67.95	0.54	0.57
Calvert	377	1.1	9	2.9	722	84,110	52.22	44.82	1.25	1.07
Caroline	152	0.4	2	0.6	344	30,861	44.19	49.25	0.58	0.65
Carroll	620	1.8	12	3.8	1,248	163,207	49.68	37.99	0.96	0.74
Cecil	562	1.6	9	2.9	1,230	92,746	45.69	60.60	0.73	0.97
Charles	945	2.8	9	2.9	1,174	133,049	80.49	71.03	0.77	0.68
Dorchester	153	0.4	5	1.6	362	30,612	42.27	49.98	1.38	1.63
Frederick	1,005	2.9	6	1.9	2,746	213,662	36.60	47.04	0.22	0.28
Garrett	172	0.5	6	1.9	486	30,049	35.39	57.24	1.23	2.00
Harford	1,125	3.3	10	3.2	2,257	232,175	49.84	48.45	0.44	0.43
Howard	1,287	3.8	7	2.2	3,620	264,265	35.55	48.70	0.19	0.26
Kent	71	0.2	-	0.0	228	19,680	31.14	36.08	-	-
Montgomery	4,048	11.8	27	8.6	7,427	918,881	54.50	44.05	0.36	0.29
Prince George's	5,691	16.6	71	22.7	8,631	838,716	65.94	67.85	0.82	0.85
Queen Anne's	244	0.7	6	1.9	910	44,108	26.81	55.32	0.66	1.36
St. Mary's	446	1.3	5	1.6	778	92,754	57.33	48.08	0.64	0.54
Somerset	130	0.4	1	0.3	285	25,447	45.61	51.09	0.35	0.39
Talbot	251	0.7	2	0.6	623	34,670	40.29	72.40	0.32	0.58
Washington	829	2.4	8	2.6	1,968	136,796	42.12	60.60	0.41	0.58
Wicomico	598	1.7	10	3.2	842	87,375	71.02	68.44	1.19	1.14
Worcester	490	1.4	7	2.2	674	49,604	72.70	98.78	1.04	1.41
Baltimore City	6,176	18.0	17	5.4	3,620	628,670	170.61	98.24	0.47	0.27
Total	**34,235**	**100.0**	**313**	**100.0**	**54,678**	**5,508,909**	**62.61**	**62.14**	**0.57**	**0.57**

1. Source: * Maryland Department of Planning
2. Accident Rate by VMT is the number of total accidents per 100 Million VMT (Vehicle Miles of Travel)
3. Accident Rate by Population is the number of total accidents per 10,000 Population.

3.2.2 Roadway Surface

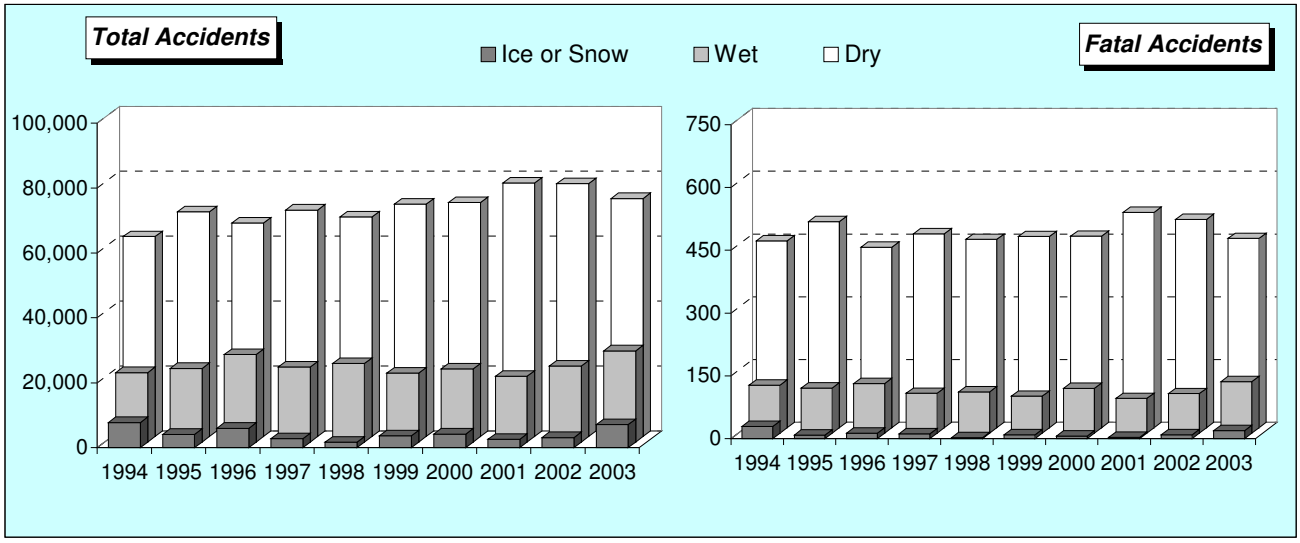
Trends

- Roadway surfaces which affect traffic accidents were divided into six categories. Most of the total and fatal accidents occurred on dry roadways.
- Between 2002 and 2003, total and fatal accidents on dry roadway surface decreased, while on wet, snowy, icy roadway surface significantly increased. Notably, total accidents on snowy and icy roadway surfaces increased by more than 100% between two years.
- Between 2002 and 2003, fatal accidents on snowy roadway surface increased from 3 to 8, and on icy roadway surfaces increased from 6 to 11.

Table 3.2.8 Total and Fatal Accidents by Roadway Surface Condition, 1994-2003

Roadway Surface	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Accidents										
Wet	21,386	22,705	26,973	23,140	24,194	21,266	22,526	20,293	23,404	28,066
Dry	61,594	69,252	65,834	69,766	67,684	71,589	72,084	78,072	77,898	73,348
Snow	1,790	1,595	3,542	1,476	741	1,945	2,500	1,754	1,727	4,028
Ice	5,931	2,456	2,382	1,262	940	1,687	1,679	811	1,358	3,040
Mud	35	-	-	-	-	-	-	-	-	-
Other / Unknown	6,116	646	617	476	480	522	513	481	456	648
Total Accidents	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**
Fatal Accidents										
Wet	115	108	119	95	99	88	107	83	94	123
Dry	446	493	431	464	450	457	458	515	498	452
Snow	10	5	5	7	1	5	1	2	3	8
Ice	19	3	8	4	1	4	5	1	6	11
Mud	-	-	-	-	-	-	-	-	-	-
Other / Unknown	15	5	-	-	-	1	3	1	5	2
Total Accidents	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**

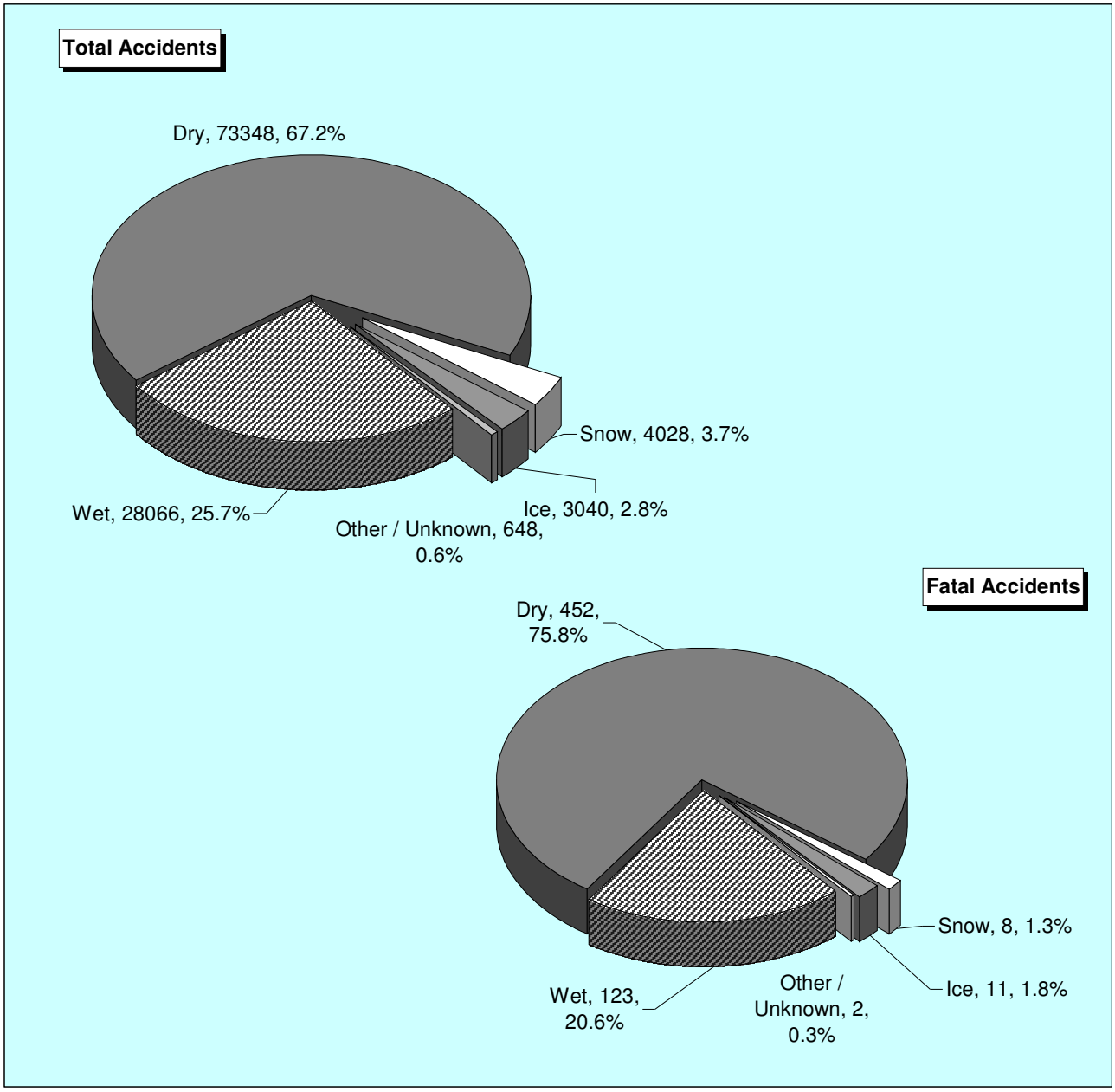
Figure 3.2.2 Trends of Total and Fatal Accidents by Roadway Surface, 1994-2003



2003 Overview

- In 2003, 25.7% of total accidents and 20.6% of fatal accidents occurred on wet surfaces.
- 6.5% of total accidents and 3.1% of fatal accidents occurred on snowy or icy roadway surfaces.

Figure 3.2.3 Total and Fatal Accidents by Roadway Surface, 2003



3.2.3 Wet Surface

Trends

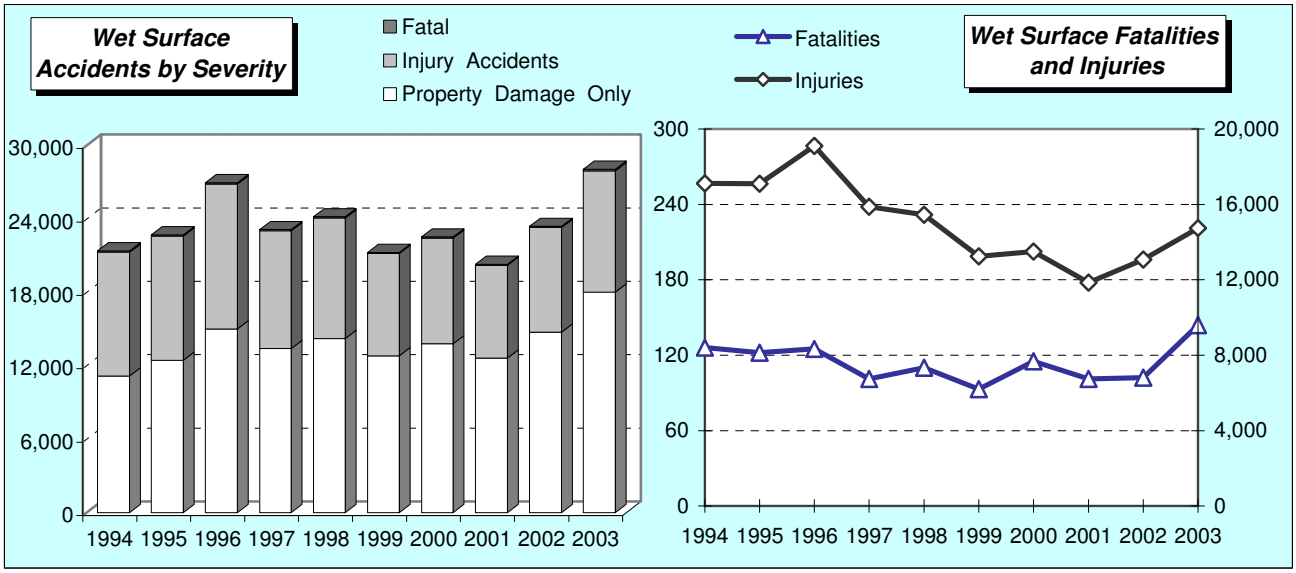
Severity

- Wet surface accidents had a downward trend from 1996 to 2001, but had been trending up from 2001 to 2003.
- Between 2002 and 2003, wet surface fatalities increased by 41.2% from 102 to 144.

Table 3.2.9 Wet Surface Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	115	10,110	11,161	**21,386**	126	17,121
1995	108	10,144	12,453	**22,705**	122	17,098
1996	119	11,833	15,021	**26,973**	125	19,098
1997	95	9,633	13,412	**23,140**	101	15,885
1998	99	9,848	14,247	**24,194**	110	15,458
1999	88	8,378	12,800	**21,266**	93	13,238
2000	107	8,618	13,801	**22,256**	115	13,492
2001	83	7,581	12,629	**20,293**	101	11,862
2002	94	8,544	14,766	**23,404**	102	13,070
2003	123	9,920	18,023	**28,066**	144	14,744
Avg. Change(%)	**0.8 %**	**-0.2 %**	**6.8 %**	**3.5 %**	**1.6 %**	**-1.5 %**

Figure 3.2.4 Wet Surface Accidents by Severity, Fatalities and Injuries, 1994-2003



- Over the latest 10 years, the percentages of wet surface accidents among all accidents ranged from 20% to 27%, while those of wet surface fatal accidents among all fatal accidents ranged from 14% to 21%.

Table 3.2.10 Percentage of Wet Surface Accidents with Respect to All Accidents, 1994-2003

Year	Fatal Accidents		Fatalities		Total Accidents	
	Fatal Wet Surface Accidents	% of All Fatal Accidents	Wet Surface Fatalities	% of All Fatalities	Total Wet Surface Accidents	% of All Accidents
1994	115	19.0	126	19.2	21,386	22.1
1995	108	17.6	122	17.8	22,705	23.5
1996	119	21.1	125	20.4	26,973	27.1
1997	95	16.7	101	16.6	23,140	24.1
1998	99	18.0	110	18.2	24,194	25.7
1999	88	15.9	93	15.6	21,266	21.9
2000	107	18.6	115	18.6	22,526	22.7
2001	83	13.8	101	15.3	20,293	20.0
2002	94	15.5	102	15.4	23,404	23.1
2003	123	20.6	144	22.1	28,066	25.7

Collision Type

- Among wet surface accidents, rear-end, fixed object and angle collisions occurred most frequently over the latest 10 years.
- Among fatal accidents on wet surfaces, opposite direction and pedestrian collisions as well as fixed object collisions accounted for most collisions.

Table 3.2.11 Total Wet Surface Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	1,204	1,125	1,266	1,040	1,180	934	1,010	935	1,050	1,124
Rear End	6,168	5,818	6,642	5,895	6,279	5,354	5,608	4,744	5,590	6,668
Left Turn	1,402	1,298	1,589	1,242	1,201	1,008	957	941	1,068	1,419
Sideswipe	1,496	1,272	1,298	981	1,006	889	967	847	969	1,238
Angle	3,370	3,276	3,830	2,977	3,029	2,718	2,543	2,274	2,730	3,344
Parked Vehicle	1,845	2,078	2,325	1,856	1,830	1,771	1,950	1,777	1,775	2,361
Pedestrian	525	517	647	481	515	446	470	362	468	578
Pedalcycle	131	129	130	140	127	137	120	86	97	114
Other Conveyance	7	11	16	12	6	13	12	15	18	25
Railway Train	3	6	14	5	13	5	10	9	8	8
Animal	145	168	214	190	166	162	149	124	195	193
Fixed Object	3,994	4,656	5,415	5,262	5,710	4,849	5,366	4,978	5,774	6,271
Other Object	181	210	270	197	216	220	213	198	214	307
Overturned	126	163	191	186	214	169	194	188	232	246
Spilled Cargo	2	6	8	6	7	4	8	2	6	7
Jacknife	5	23	33	19	23	29	15	17	16	15
Units Separate	2	2	5	3	8	4	6	5	3	6
Other Non Collision	107	138	149	102	99	95	69	70	69	93
Run Off Road	9	15	52	88	140	219	319	367	493	590
Down Hill Runaway	-	-	-	1	1	2	1	2	1	3
Explosion or Fire	14	14	22	32	25	33	33	31	31	40
U-Turn	211	254	297	225	224	195	249	156	204	246
Backing	187	187	242	170	203	150	176	153	171	229
Other/unknown	252	1,339	2,318	2,030	1,972	1,860	2,081	2,012	2,222	2,941
Total	**21,386**	**22,705**	**26,973**	**23,140**	**24,194**	**21,266**	**22,526**	**20,293**	**23,404**	**28,066**

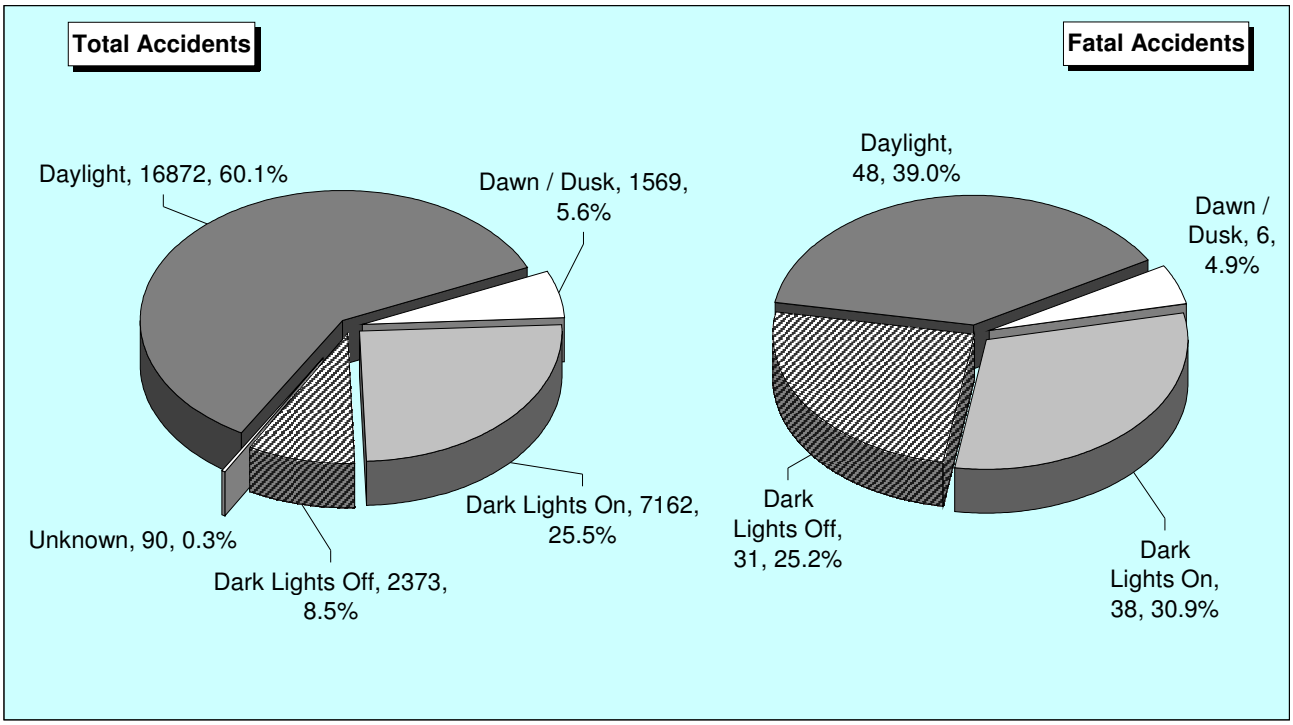
Table 3.2.12 Fatal Wet Surface Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	32	26	22	22	16	28	20	15	17	25
Rear End	3	2	8	8	6	4	4	3	5	7
Left Turn	4	5	10	2	3	3	5	4	3	10
Sideswipe	3	4	3	3	-	-	2	1	2	1
Angle	7	14	13	15	20	7	13	9	10	10
Parked Vehicle	4	4	5	2	4	2	3	2	2	3
Pedestrian	19	19	27	18	12	10	15	11	17	20
Pedalcycle	1	1	1	1	1	-	1	1	-	1
Other Conveyance	-	-	-	1	-	-	-	-	-	-
Fixed Object	36	29	27	19	33	32	39	28	31	36
Other Object	-	-	-	-	2	-	1	-	-	1
Overturned	-	-	-	2	-	1	2	2	2	1
Other Non Collision	2	1	-	1	-	-	-	-	1	2
Run Off Road	1	-	-	-	-	-	2	2	3	2
Backing	1	1	2	1	2	-	-	2	-	1
Other/unknown	2	2	1	-	-	1	-	3	1	3
Total	**115**	**108**	**119**	**95**	**99**	**88**	**107**	**83**	**94**	**123**

2003 Overview

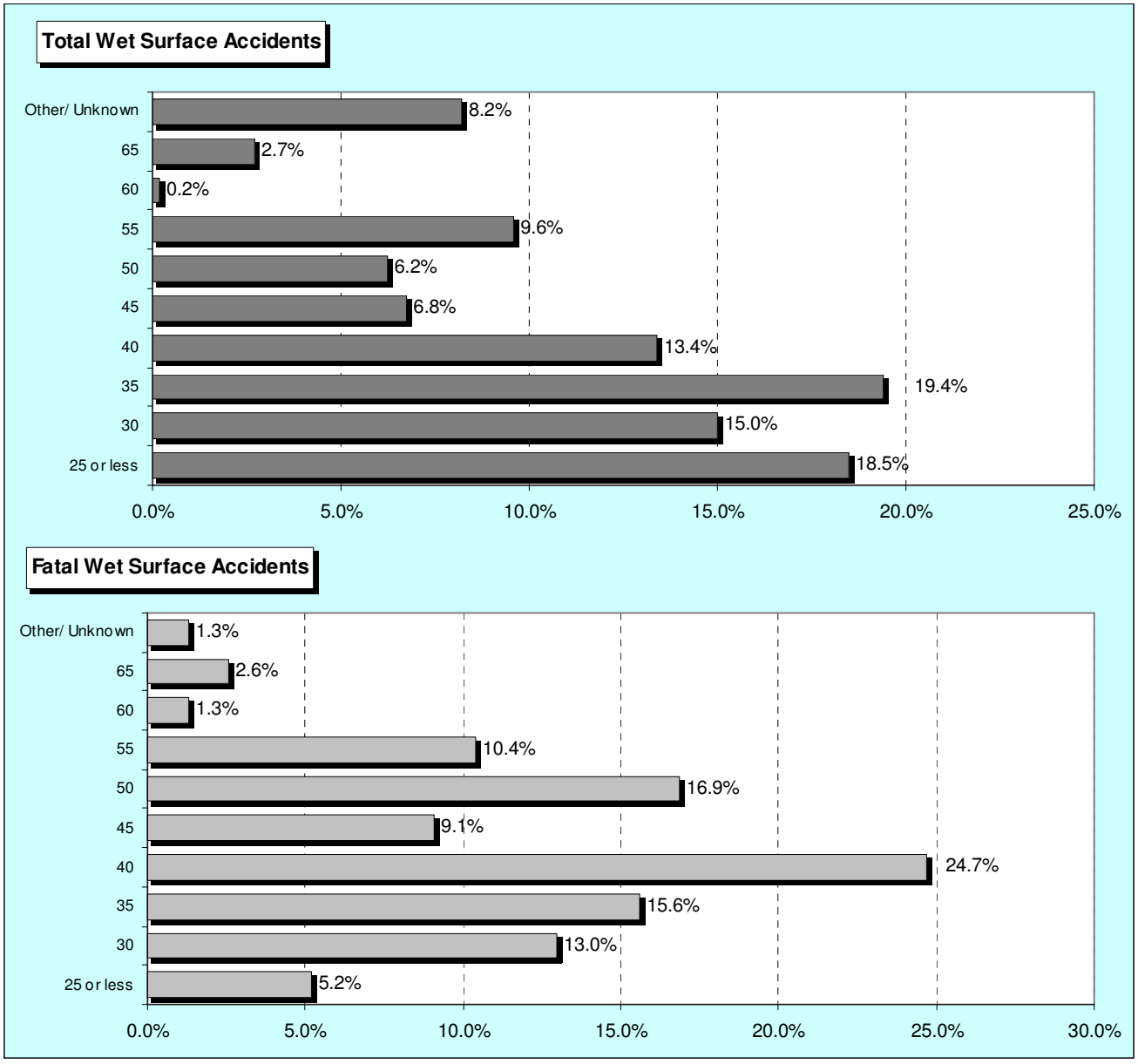
- Most total wet surface accidents occurred in daylight (60.1%), while most fatal wet surface accidents occurred under "Dark" condition (56.0%). 30.8% of fatal accidents and 25.5% of total accidents occurred under "Dark Lights On" condition. 25.2% of fatal accidents and 8.5% of total accidents occurred under "Dark Lights Off" condition.

Figure 3.2.5 Total and Fatal Wet Surface Accidents by Illumination, 2003



- Nearly two-thirds of the wet surface accidents occurred on roads of which speed limit was 40 miles per hour or less.
- The highest percentage of fatal wet surface accidents occurred on roads of which speed limit was 40 miles per hour (24.7%).

Figure 3.2.6 Vehicles Involved in Total and Fatal Wet Surface Accidents by Posted Speed Limit, 2003



- The number of wet surface accidents was largest in Prince George's County (4,631). The fatal wet surface accidents were also largest in Prince George's County (22).
- Baltimore City had the highest wet surface accident rates (125.17 per 100 million VMT and 72.07 per 10,000 population).
- The highest fatal wet surface accident rates were 1.03 per 100 million VMT and 1.66 per 10,000 population in Garrett County.

Table 3.2.13 Total and Fatal Wet Surface Accidents and Accident Rates by County, 2003

County	Wet Surface Accidents				VMT (millions)	Population*	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	231	0.8	3	2.4	838	73,668	27.57	31.36	0.36	0.41
Anne Arundel	2,877	10.3	12	9.8	5,587	506,620	51.49	56.79	0.21	0.24
Baltimore	3,946	14.1	13	10.6	8,078	777,184	48.85	50.77	0.16	0.17
Calvert	279	1.0	4	3.3	722	84,110	38.64	33.17	0.55	0.48
Caroline	126	0.4	-	-	344	30,861	36.63	40.83	-	-
Carroll	552	2.0	3	2.4	1,248	163,207	44.23	33.82	0.24	0.18
Cecil	392	1.4	4	3.3	1,230	92,746	31.87	42.27	0.33	0.43
Charles	774	2.8	1	0.8	1,174	133,049	65.93	58.17	0.09	0.08
Dorchester	110	0.4	-	-	362	30,612	30.39	35.93	-	-
Frederick	695	2.5	3	2.4	2,746	213,662	25.31	32.53	0.11	0.14
Garrett	160	0.6	5	4.1	486	30,049	32.92	53.25	**1.03**	**1.66**
Harford	793	2.8	7	5.7	2,257	232,175	35.14	34.16	0.31	0.30
Howard	1,418	5.1	6	4.9	3,620	264,265	39.17	53.66	0.17	0.23
Kent	40	0.1	-	-	228	19,680	17.54	20.33	-	-
Montgomery	4,328	15.4	15	12.2	7,427	918,881	58.27	47.10	0.20	0.16
Prince George's	**4,613**	**16.4**	**22**	**17.9**	8,631	838,716	53.45	55.00	0.25	0.26
Queen Anne's	152	0.5	2	1.6	910	44,108	16.70	34.46	0.22	0.45
St. Mary's	307	1.1	1	0.8	778	92,754	39.46	33.10	0.13	0.11
Somerset	79	0.3	1	0.8	285	25,447	27.72	31.04	0.35	0.39
Talbot	206	0.7	1	0.8	623	34,670	33.07	59.42	0.16	0.29
Washington	605	2.2	3	2.4	1,968	136,796	30.74	44.23	0.15	0.22
Wicomico	519	1.8	3	2.4	842	87,375	61.64	59.40	0.36	0.34
Worcester	333	1.2	2	1.6	674	49,604	49.41	67.13	0.30	0.40
Baltimore City	4,531	16.1	12	9.8	3,620	628,670	**125.17**	**72.07**	0.33	0.19
Total Accidents	**28,066**	**100.0**	**123**	**100.0**	**54,678**	**5,508,909**	**51.33**	**50.95**	**0.22**	**0.22**

1. Source: * Maryland Department of Planning
2. Accident Rate by VMT is the number of total accidents per 100 Million VMT (Vehicle Miles of Travel)
3. Accident Rate by Population is the number of total accidents per 10,000 Population.

3.2.4 Illumination

Trends

- Four types of highway illumination are considered. Among these types, over the past 10 years, "Daylight" had the highest percentages of total accidents, and "Dark Lights On" had the second highest percentages.

- However, fatal accidents had occurred more in "Dark" illumination than in "Daylight" illumination; notably, "Dark Lights Off" had relatively accounted for higher percentages than for total accidents.

Table 3.2.14 Total Accidents by Illumination, 1994-2003

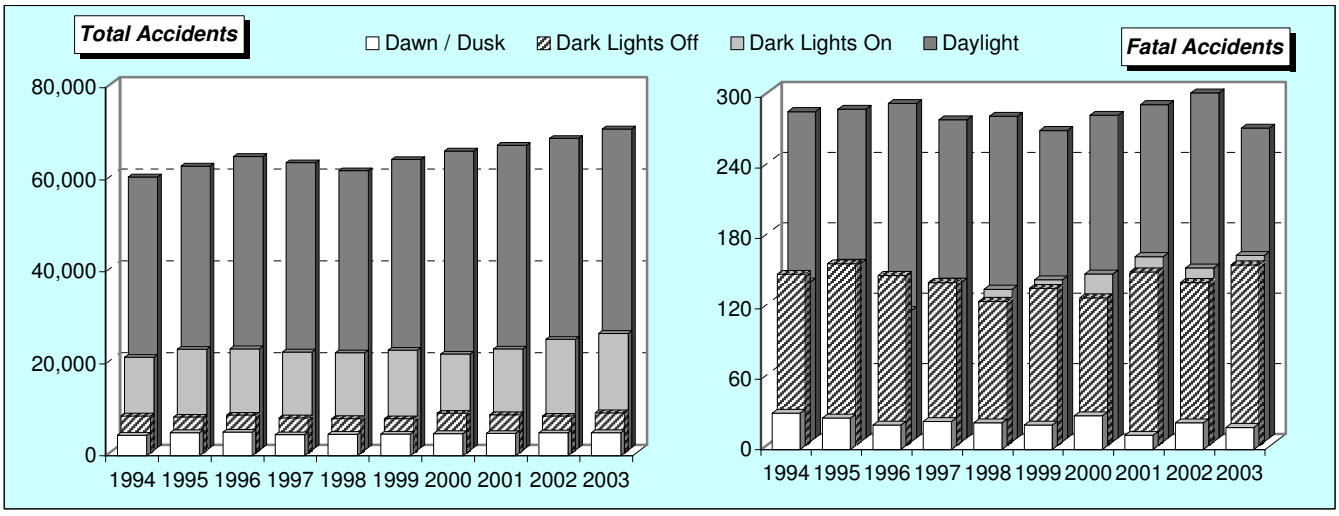
Illumination	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Daylight	58,843	61,275	63,330	61,997	60,234	62,672	64,539	65,779	67,281	69,291
Dawn / Dusk	4,460	5,010	5,128	4,557	4,670	4,701	4,798	4,838	4,983	5,013
Dark Lights On*	20,208	21,966	22,049	21,385	21,198	21,753	20,919	22,026	24,160	25,458
Dark Lights Off*	8,104	7,844	8,260	7,673	7,522	7,508	8,673	8,369	8,058	8,777
Other / Unknown	5,237	559	581	508	415	375	373	399	361	591
Total	**96,852**	**96,654**	**99,348**	**96,120**	**94,039**	**97,009**	**99,302**	**101,411**	**104,843**	**109,130**

* The sums of "Dark Lights On" and "Dark Lights Off" accidents are the total numbers of nighttime accidents.

Table 3.2.15 Fatal Accidents by Illumination, 1994-2003

Illumination	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Daylight	278	280	285	271	274	262	275	284	294	264
Dawn / Dusk	31	27	21	24	23	21	29	12	23	19
Dark Lights On	136	152	112	136	130	138	143	158	148	159
Dark Lights Off	146	155	145	139	123	134	126	148	139	154
Other / Unknown	14	-	-	-	1	-	1	-	2	-
Total	**605**	**614**	**563**	**570**	**551**	**555**	**574**	**602**	**606**	**596**

Figure 3.2.7 Total and Fatal Accidents by Illumination, 1994-2003



2003 Overview

- 31.4% of total accidents occurred in “Dark” illumination, whereas 52.5% of fatal accidents. “Dark” illumination.
- “Dark Light-off” accounted for 25.8% of fatal accidents, while “Dark Light-off” accounted for 8.0% of total accidents.
- “Dawn / Dusk” accounted for 4.6% of total accidents and 3.2% of fatal accidents.

Figure 3.2.8 Total Accidents by Illumination, 2003

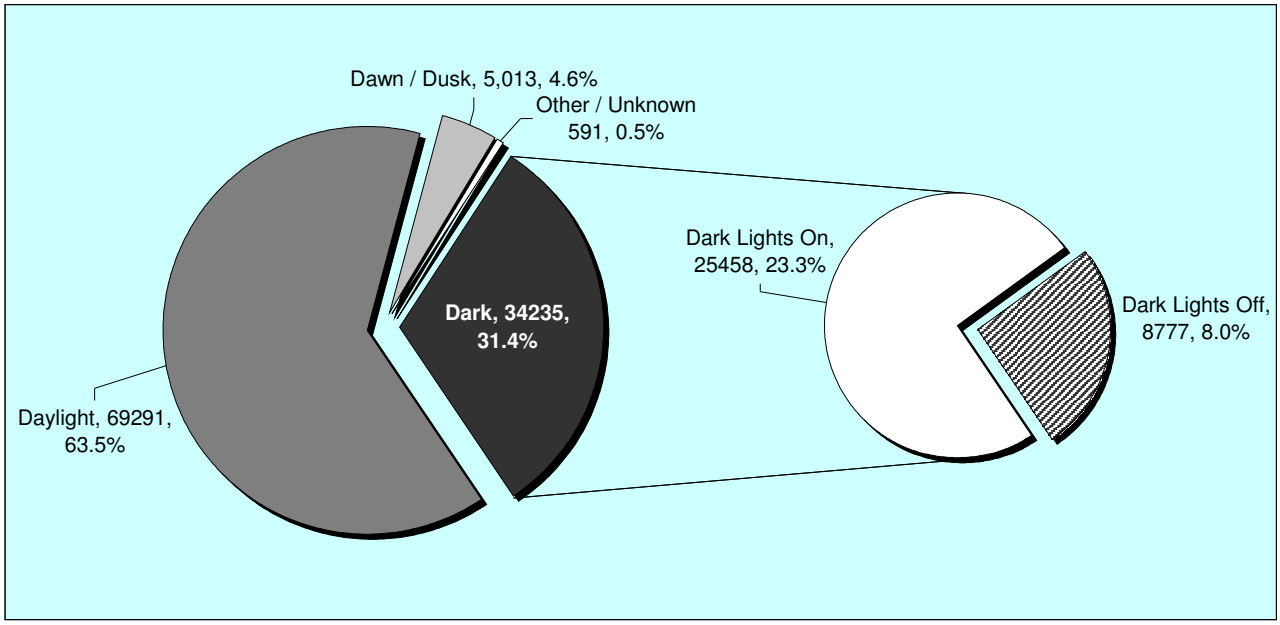
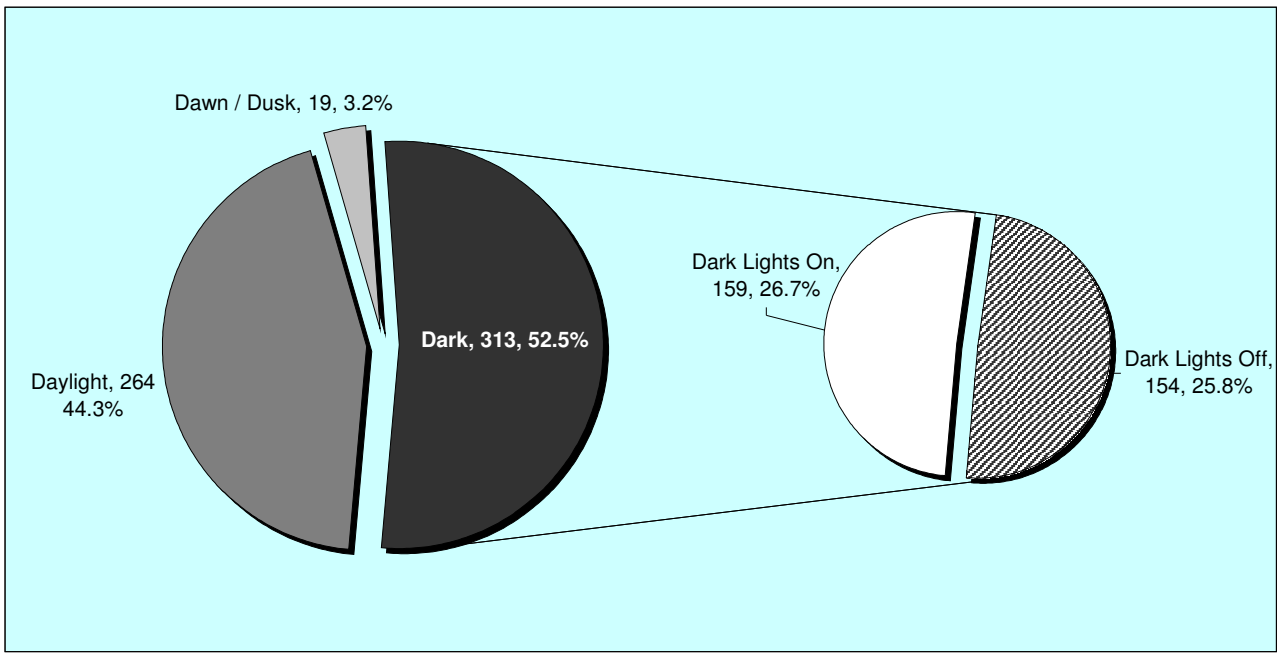


Figure 3.2.9 Fatal Accidents by Illumination, 2003



3.2.5 Animals

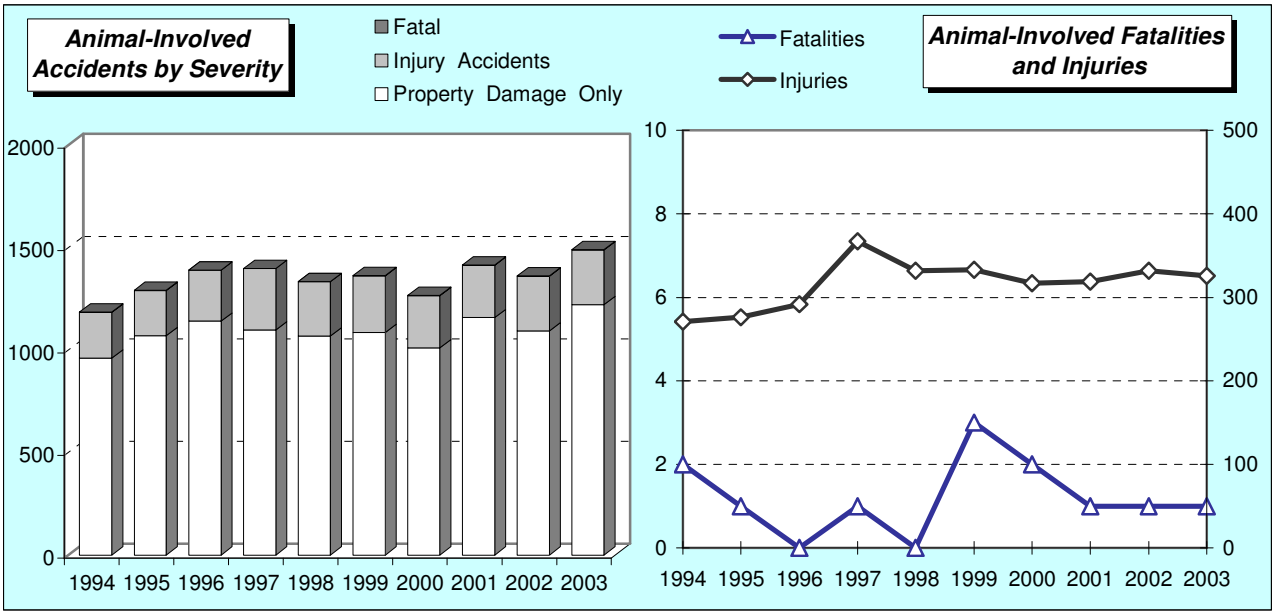
Trends

- For the latest 10 years, the highest number of animal-involved accidents occurred in 2003. Between 2002 and 2003, animal-related accidents increased by 9.4%.
- There was one animal-involved fatality in each year from 2001 to 2003.

Table 3.2.16 Animal-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	2	224	961	1,187	2	271
1995	1	221	1,070	1,292	1	276
1996	-	249	1,141	1,390	-	292
1997	1	300	1,098	1,399	1	367
1998	-	266	1,069	1,335	-	332
1999	2	276	1,086	1,364	3	333
2000	2	255	1,011	1,268	2	317
2001	1	255	1,159	1,415	1	319
2002	1	268	1,093	1,362	1	332
2003	1	267	1,222	1,490	1	326
Avg. Change (%)	**-5.6**	**2.1**	**3.0**	**2.8**	**-5.6**	**2.3**

Figure 3.2.10 Animal-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003



- Over the latest 10 years, the percentages of animal-involved accidents among all accidents ranged from 1.2% to 1.5%, while those of fatal animal-involved accidents among all fatal accidents ranged from 0.2% to 0.4%.

Table 3.2.17 Percentage of Animal-Involved Accidents with Respect to All Accidents, 1994-2003

Year	Fatal Accidents		Fatalities		Total Accidents	
	Animal-Involved Fatal Accidents	% of All Fatal Accidents	Animal-Involved Fatalities	% of All Fatalities	Animal-Involved Total Accidents	% of All Accidents
1994	2	0.3	2	0.3	1,187	1.2
1995	1	0.2	1	0.1	1,292	1.3
1996	-	0.0	-	0.0	1,390	1.4
1997	1	0.2	1	0.2	1,399	1.5
1998	-	0.0	-	0.0	1,335	1.4
1999	2	0.4	3	0.5	1,364	1.4
2000	2	0.3	2	0.3	1,268	1.3
2001	1	0.2	1	0.2	1,415	1.4
2002	1	0.2	1	0.2	1,362	1.3
2003	1	0.2	1	0.2	1,490	1.4

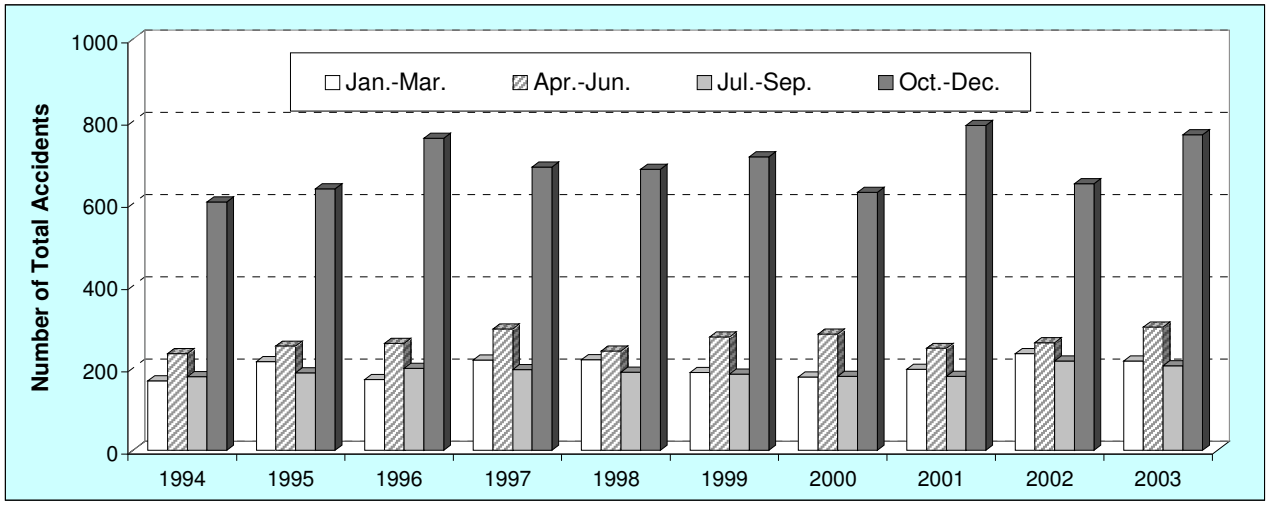
- Over the latest 10 years, most animal-involved accidents occurred during nighttime.

Table 3.2.18 Animal-Involved Accidents by Night/Day, 1994-2003

Night / day	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Nighttime	813	842	938	875	878	901	807	905	842	957
(Percent)	68.5	65.2	67.5	62.5	65.8	66.1	63.6	64.0	61.8	64.2
Daytime	366	447	449	522	457	463	457	508	519	530
(Percent)	30.8	34.6	32.3	37.3	34.2	33.9	36.0	35.9	38.1	35.6
Unknown	8	3	3	2	-	-	4	2	1	3
(Percent)	0.7	0.2	0.2	0.1	0.0	0.0	0.3	0.1	0.1	0.2
Total	**1,187**	**1,292**	**1,390**	**1,399**	**1,335**	**1,364**	**1,268**	**1,415**	**1,362**	**1,490**
(Percent)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

- Over the latest 10 year, most animal-involved accidents occurred between October and December.

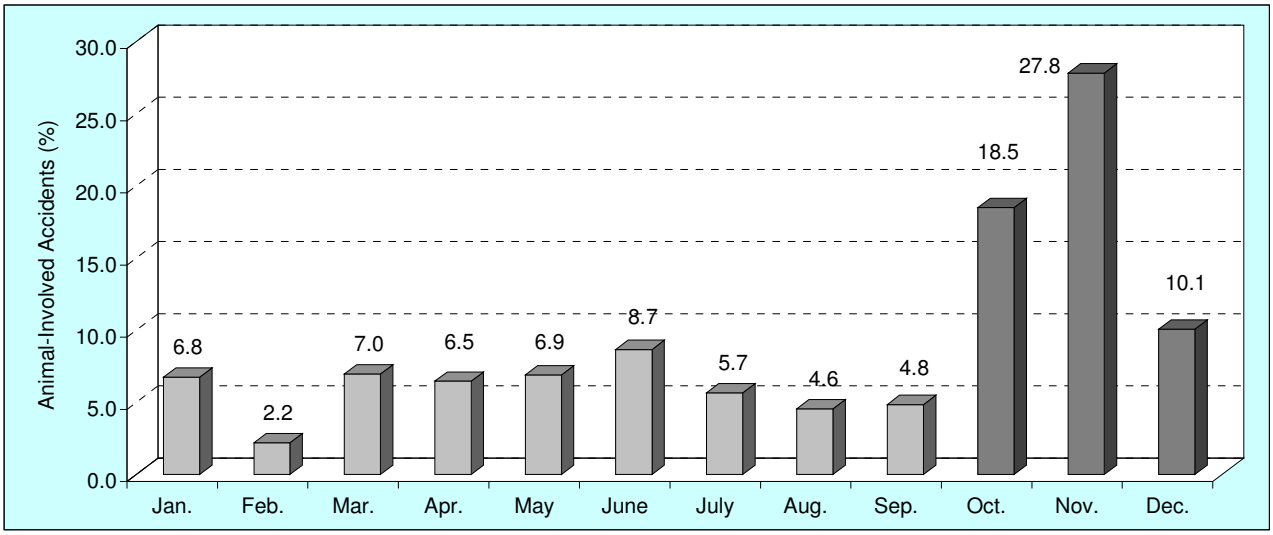
Figure 3.2.11 Animal-Involved Accidents by Quarter, 1994-2003



2003 Overview

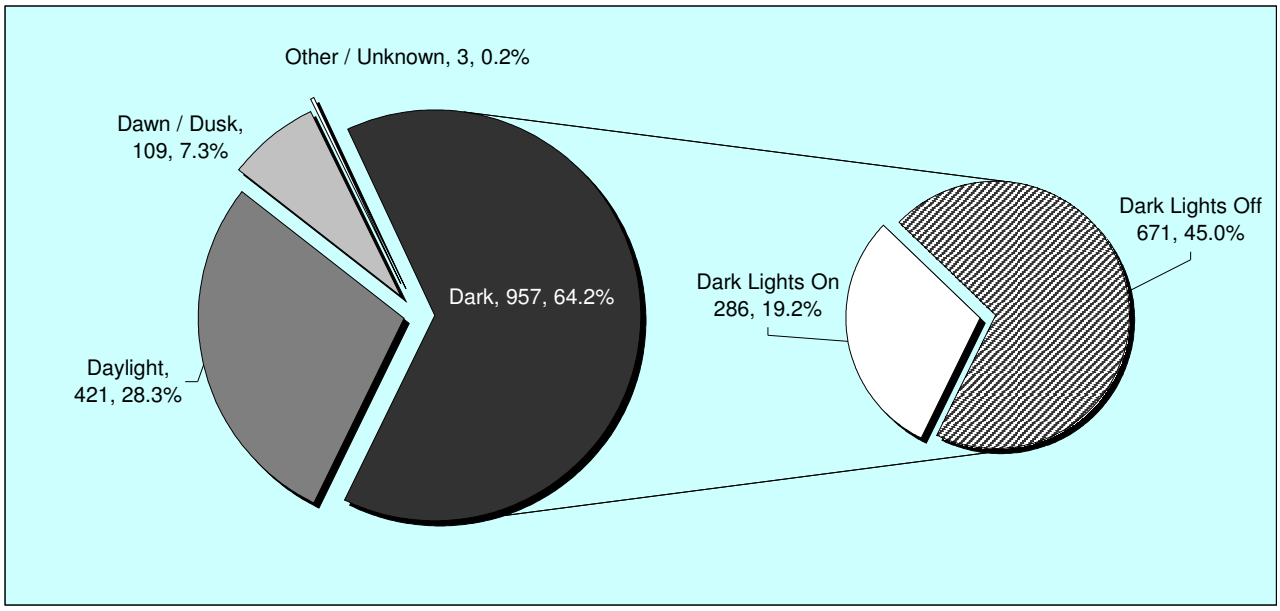
- Animal-involved accidents were most frequent in November (27.8%).
- More than half of animal-involved accidents occurred during three consecutive months (October, November and December).

Figure 3.2.12 Animal-Involved Accidents by Month, 2003



- Most animal-involved accidents occurred under "Dark" condition (64.2%).
- 45.0% of animal-involved accidents occurred under "Dark Lights Off" condition.

Figure 3.2.13 Animal-Involved Accidents by Illumination, 2003



- Animal-involved accidents were the most frequent in Anne Arundel County (8.3%). The second most animal-involved accidents were in Montgomery County (7.9%).
- One fatal animal-involved accident occurred. It happened in Howard County in 2003.
- Charles County had the highest animal-involved accident rate per VMT (9.63 per 100 million VMT). Garrett County had the highest animal-involved accident rates per population (14.64 per 10,000 population).

Table 3.2.19 Total and Fatal Animal-Involved Accidents, and Accident Rates by County, 2003

County	Large Truck Accidents				VMT (millions)	Total Acc. Rate (per 100M VMT)	Population *	Total Acc. Rate (per 10,000 Pop.)
	Total	Percent	Fatal	Percent				
Allegany	29	1.9	-	-	838	3.46	73,668	3.94
Anne Arundel	**124**	**8.3**	-	-	5,587	2.22	506,620	2.45
Baltimore	100	6.7	-	-	8,078	1.24	777,184	1.29
Calvert	52	3.5	-	-	722	7.20	84,110	6.18
Caroline	26	1.7	-	-	344	7.56	30,861	8.42
Carroll	64	4.3	-	-	1,248	5.13	163,207	3.92
Cecil	50	3.4	-	-	1,230	4.07	92,746	5.39
Charles	113	7.6	-	-	1,174	**9.63**	133,049	8.49
Dorchester	14	0.9	-	-	362	3.87	30,612	4.57
Frederick	107	7.2	-	-	2,746	3.90	213,662	5.01
Garrett	44	3.0	-	-	486	9.05	30,049	**14.64**
Harford	61	4.1	-	-	2,257	2.70	232,175	2.63
Howard	97	6.5	1	100.0	3,620	2.68	264,265	3.67
Kent	19	1.3	-	-	228	8.33	19,680	9.65
Montgomery	117	7.9	-	-	7,427	1.58	918,881	1.27
Prince George's	96	6.4	-	-	8,631	1.11	838,716	1.14
Queen Anne's	48	3.2	-	-	910	5.27	44,108	10.88
St. Mary's	70	4.7	-	-	778	9.00	92,754	7.55
Somerset	21	1.4	-	-	285	7.37	25,447	8.25
Talbot	46	3.1	-	-	623	7.38	34,670	13.27
Washington	85	5.7	-	-	1,968	4.32	136,796	6.21
Wicomico	51	3.4	-	-	842	6.06	87,375	5.84
Worcester	42	2.8	-	-	674	6.23	49,604	8.47
Baltimore City	14	0.9	-	-	3,620	0.39	628,670	0.22
Total	**1,490**	**100.0**	1	**100.0**	**54,678**	**2.73**	**5,508,909**	**2.70**

1. Source: * Maryland Department of Planning
2. Fatality Rate by VMT is calculated per 100 Million Vehicle Miles of Travel.
3. Fatality Rate by Population is calculated per 10,000 population.

3.3 HIGHWAY FEATURES

This section describes the accidents related to highway features, including intersection, fixed object, work zone, run-off-the-road accidents, and speed limits. In 2003, 24.0% of all fatalities occurred at intersections, and 28.3% of all fatalities were involved in fixed object accidents. Work zone is defined as an area that highway construction or maintenance activities are going on, and run-off-the-road is defined as involuntarily leaving the lanes of travel. The posted speed limits of the road on which accidents occurred are classified into 9 categories from 25 miles per hour or under to 65 miles per hour.

Some of the notable trends are as follows:

- Over the latest 10 years, 33%~37% of all traffic accidents and 23%~28% of all fatal accidents occurred at intersections.
- From 1994 to 2003, total fixed object accidents involving guardrail-barrier collisions have accounted for largest percentage of total fixed object accidents, and have continued to increase. Tree-shrubbery has been the most frequent object type in fatal fixed object accidents from 1994 to 2003.
- Total work zone accidents had a downward trend from 1994 to 1998, but this trend turned upward in the latest five years (from 1999 to 2003).
- Over the latest 10 years, the percentage of fatal run-off-the-road accidents among all fatal accidents range from 20% to 32%.

Some results for 2003 are as follows:

- 33.2% of total accidents and 23.8% of fatal accidents occurred at intersections. 66.5% of total intersection accidents involved angle, rear-end or left turn collisions. 74.6% of fatal intersection accidents involved angle, left turn or pedestrian collisions.
- Rear end (30.1%) was the most frequent collision type in work zone accidents.
- The highest percentage of total and fatal run-off-the-road accidents occurred on County highways (37.3% and 44.1%, respectively).
- Among the speed limits of the roads on which vehicles involved in fatal accidents had driven, the highest percentage of the speed limits of the roads occurred on the road of which speed limit is 50 miles/hour (22.5%).

3.3.1 Intersections

Trends

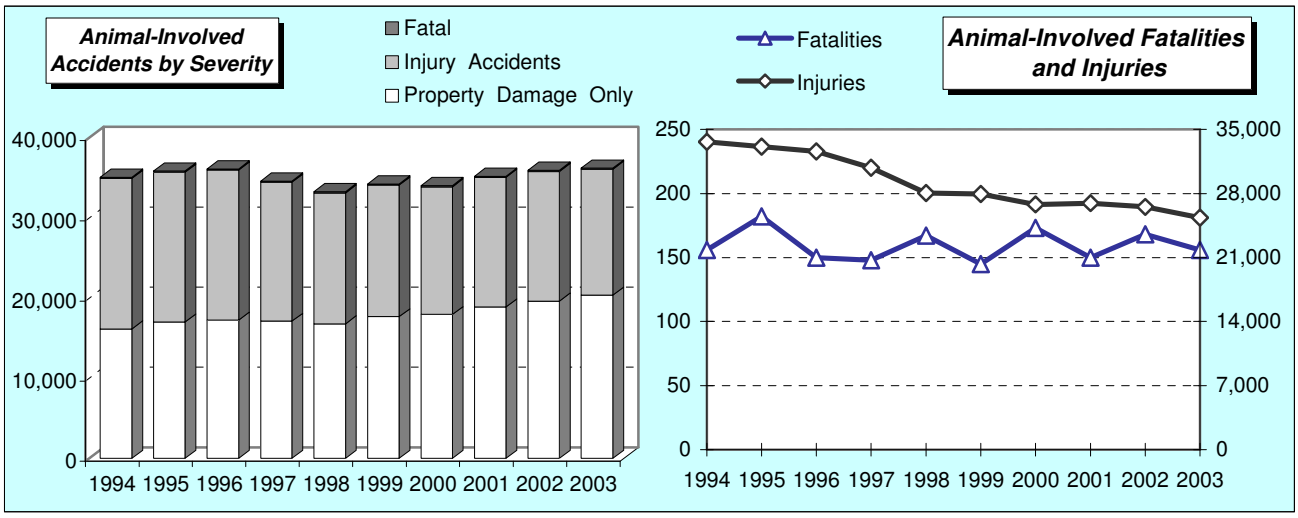
Severity

- There were no significant changes in total and fatal intersection accidents for the latest 10 years.
- Over those years, injury accidents and injuries had a deceasing trend, while property damage only accidents had an increasing trend.

Table 3.3.1 Intersection Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	141	18,798	16,146	**35,085**	156	33,656
1995	164	18,691	17,014	**35,869**	182	33,118
1996	141	18,734	17,248	**36,123**	150	32,589
1997	140	17,363	17,105	**34,608**	148	30,812
1998	156	16,362	16,781	**33,299**	167	28,077
1999	133	16,444	17,679	**34,256**	145	27,956
2000	160	15,946	17,947	**34,053**	173	26,808
2001	136	16,167	18,914	**35,217**	150	26,947
2002	156	16,171	19,637	**35,964**	168	26,519
2003	142	15,694	20,385	**36,221**	156	25,341
Avg. Change(%)	**0.1**	**-1.8**	**2.9**	**0.4**	**-**	**-2.7**

Figure 3.3.1 Total Intersection Accidents by Severity, Fatalities and Injuries, 1994-2003



- Over the latest 10 years, 33%~37% of all traffic accidents and 23%~28% of all fatal accidents occurred at intersections.

Table 3.3.2 Fatal and Total Accidents and Fatalities in Intersections, 1994-2003

Year	Fatal Accidents		Fatalities		Total Accidents	
	Fatal Intersection Accidents	% of All Fatal Accidents	Intersection Fatalities	% of All Fatalities	Intersection Accidents	% of All Accidents
1994	141	23.3	156	23.7	35,085	36.2
1995	164	26.7	182	26.6	35,869	37.1
1996	141	25.0	150	24.4	36,123	36.4
1997	140	24.6	148	24.3	34,608	36.0
1998	156	28.3	167	27.6	33,299	35.4
1999	133	24.0	145	24.2	34,257	35.3
2000	160	27.9	173	28.0	34,054	34.3
2001	136	22.6	150	22.7	35,217	34.7
2002	156	25.7	168	25.4	35,964	34.3
2003	142	23.8	156	24.0	36,221	33.2

Collision Type

- The most frequent collision type in intersection accidents was angle collisions, which accounted for about 30% of intersection accidents from 1994 to 2003.

Table 3.3.3 Total Intersection Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	704	820	863	854	871	837	907	930	940	903
Rear End	9,063	8,922	8,572	8,540	8,481	8,532	8,998	8,971	9,241	8,623
Left Turn	5,211	4,979	4,988	4,745	4,562	4,525	4,163	4,473	4,575	4,829
Sideswipe	2,315	2,052	1,726	1,627	1,549	1,514	1,549	1,577	1,566	1,529
Angle	12,091	11,729	11,110	10,680	9,963	10,477	9,780	10,161	10,290	10,644
Parked Vehicle	810	701	708	618	604	710	785	714	779	701
Pedestrian	898	912	884	810	758	821	781	827	815	794
Pedalcycle	628	559	543	558	506	513	453	428	399	408
Other Conveyance	8	17	14	14	16	19	20	26	20	17
Railway Train	9	3	13	13	20	24	21	16	15	18
Animal	21	29	31	34	25	44	22	33	33	39
Fixed Object	1,966	2,179	2,011	1,903	1,879	1,829	1,861	1,984	2,096	2,004
Other Object	72	88	112	96	97	99	101	126	105	110
Overturned	73	77	85	76	53	72	65	86	86	88
Spilled Cargo	3	5	6	6	1	4	3	1	5	2
Jacknife	4	4	11	3	4	6	4	5	3	3
Units Separate	2	1	1	1	1	3	4	6	2	2
Other Non Collision	73	88	89	63	54	42	72	51	49	67
Run Off Road	3	4	14	16	23	37	61	71	96	107
Down Hill Runaway	-	-	1	2	2	1	-	1	3	-
Explosion or Fire	10	11	8	11	10	19	19	17	21	12
U-Turn	401	330	312	273	249	258	247	265	257	288
Backing	365	333	372	300	342	321	338	346	372	366
Other/unknown	355	2,026	3,649	3,365	3,229	3,549	3,799	4,102	4,196	4,667
Total	**35,085**	**35,869**	**36,123**	**34,608**	**33,299**	**34,256**	**34,053**	**35,217**	**35,964**	**36,221**

- For fatal intersection accidents, most collision types were angle, left turn and pedestrian collisions.

Table 3.3.4 Fatal Intersection Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	4	9	5	8	5	8	6	2	8	10
Rear End	7	9	6	13	9	8	10	6	25	8
Left Turn	34	28	28	27	32	21	36	29	19	29
Sideswipe	2	5	2	3	2	1	-	-	1	2
Angle	57	77	63	62	67	59	68	58	64	50
Parked Vehicle	-	2	1	-	1		-	-	1	1
Pedestrian	20	13	26	15	28	20	18	23	18	27
Pedalcycle	6	4	2	2	3	4	3	5	1	-
Other Conveyance	-	-	-	-	-	-	-	-	-	-
Railway Train	-	-	-	-	-	-	1	-	-	-
Animal	-	-	-	-	-	-	-	1	-	-
Fixed Object	7	15	7	5	5	8	11	7	10	8
Other Object	-	-	-	-	-	-	-	1	-	-
Overturned	-	-	-	2	-	-	1	1	-	1
Spilled Cargo	-	-	-	-	-	-	-	-	-	-
Jacknife	-	1	-	-	-	-	-	-	-	-
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	1	1	-	-	1	-	-	-	1	-
Run Off Road	-	-	-	-	-	-	1	1	1	-
Down Hill Runaway	-	-	-	-	-	-	-	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	-	-	-
U-Turn	-	-	-	-	-	-	-	-	-	-
Backing	2	-	1	1	2	2	-	-	1	1
Other/unknown	1	-	-	2	1	2	5	3	6	5
Total	**141**	**164**	**141**	**140**	**156**	**133**	**160**	**137**	**156**	**142**

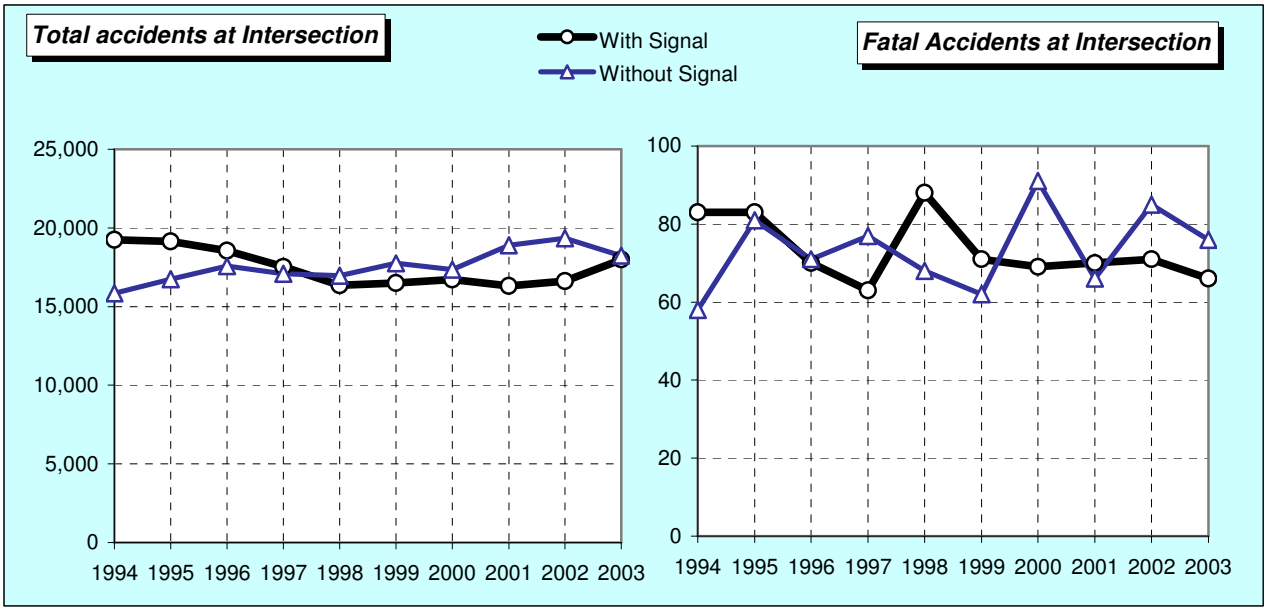
Signal

- Total accidents occurring at signalized intersections had a downward trend from 1994 to 2001. From 2001 to 2003, however, the total intersection accidents with signal were trending up.
- Fatal accidents at signalized intersections decreased slightly from 1994 to 2003.

Table 3.3.5 Intersection Accidents with and without Signals, 1994-2003

Signal	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Accidents										
Yes	19,251	19,136	18,567	17,528	16,341	16,500	16,710	16,305	16,608	17,994
No	15,834	16,733	17,556	17,080	16,958	17,756	17,343	18,912	19,356	18,227
Total	35,085	35,869	36,123	34,608	33,299	34,256	34,053	35,217	35,964	36,221
Fatal Accidents										
Yes	83	83	70	63	88	71	69	70	71	66
No	58	81	71	77	68	62	91	66	85	76
Total	141	164	141	140	156	133	160	136	156	142

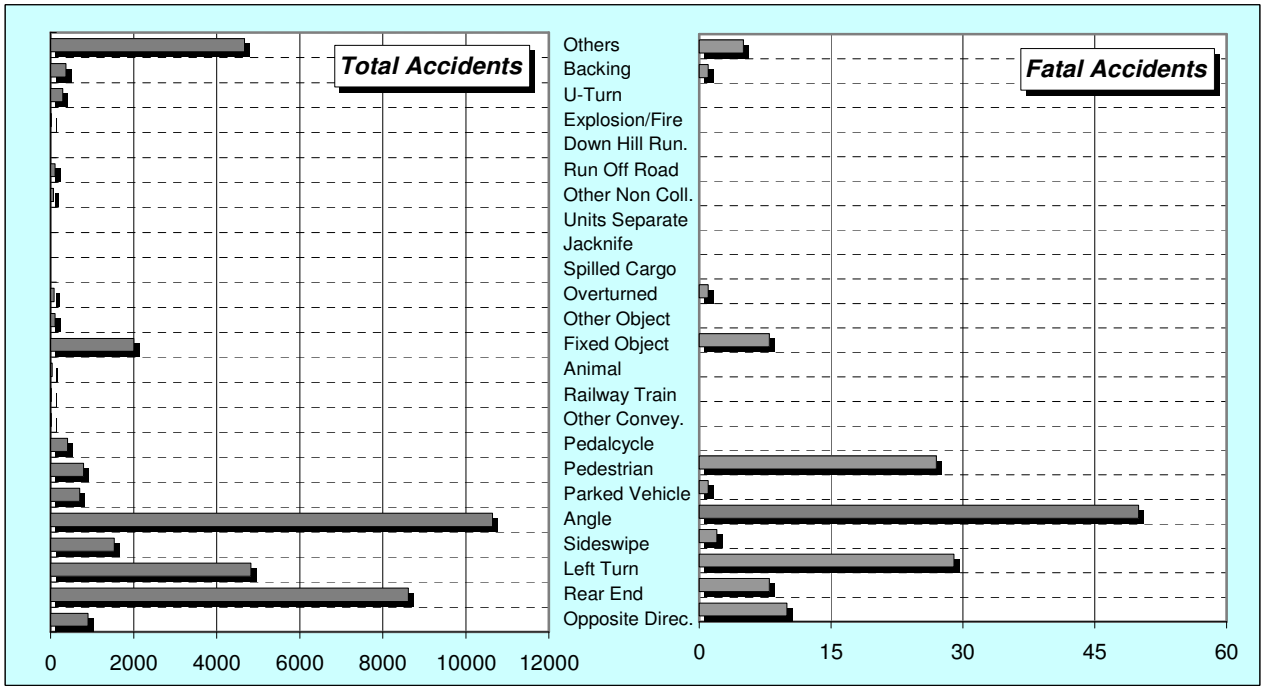
Figure 3.3.2 Total and Fatal Intersection Accidents with and without Signals, 1994-2003



2003 Overview

- In 2003, 33.2% of total accidents and 23.8% of fatal accidents occurred at intersections.
- 66.5% of intersection accidents involved angle, rear-end or left turn collisions. 74.6% of fatal intersection accidents involved angle, left turn or pedestrian collisions.

Figure 3.3.3 Total and Fatal Intersection Accidents by Collision Type, 1994-2003



- The number of total intersection accidents was largest in Baltimore City at 6,968. The number of fatal intersection accidents was largest in Prince George's Counties at 27.
- Baltimore City had the highest intersection accident rates per VMT and per population. The highest fatal intersection accident rates were 1.11 per 100 million VMT and 0.95 per 10,000 population in Calvert County.

Table 3.3.6 Intersection Accidents and Accident Rates by County, 2003

County	Intersection Accidents				VMT (millions)	Population *	Total Acc. Rates		Fatal Acc. Rates	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	257	0.7	1	0.7	838	73,668	30.67	34.89	0.12	0.14
Anne Arundel	3,262	9.0	13	9.2	5,587	506,620	58.39	64.39	0.23	0.26
Baltimore	4,576	12.6	15	10.6	8,078	777,184	56.65	58.88	0.19	0.19
Calvert	418	1.2	8	5.6	722	84,110	57.89	49.70	**1.11**	**0.95**
Caroline	135	0.4	1	0.7	344	30,861	39.24	43.74	0.29	0.32
Carroll	777	2.1	5	3.5	1,248	163,207	62.26	47.61	0.40	0.31
Cecil	453	1.3	1	0.7	1,230	92,746	36.83	48.84	0.08	0.11
Charles	798	2.2	1	0.7	1,174	133,049	67.97	59.98	0.09	0.08
Dorchester	150	0.4	1	0.7	362	30,612	41.44	49.00	0.28	0.33
Frederick	837	2.3	7	4.9	2,746	213,662	30.48	39.17	0.25	0.33
Garrett	128	0.4	1	0.7	486	30,049	26.34	42.60	0.21	0.33
Harford	1,062	2.9	5	3.5	2,257	232,175	47.05	45.74	0.22	0.22
Howard	1,742	4.8	4	2.8	3,620	264,265	48.12	65.92	0.11	0.15
Kent	44	0.1	-	0.0	228	19,680	19.30	22.36	-	-
Montgomery	6,114	16.9	21	14.8	7,427	918,881	82.32	66.54	0.28	0.23
Prince George's	5,202	14.4	**27**	**19.0**	8,631	838,716	60.27	62.02	0.31	0.32
Queen Anne's	185	0.5	2	1.4	910	44,108	20.33	41.94	0.22	0.45
St. Mary's	446	1.2	3	2.1	778	92,754	57.33	48.08	0.39	0.32
Somerset	95	0.3	-	0.0	285	25,447	33.33	37.33	-	-
Talbot	338	0.9	-	0.0	623	34,670	54.25	97.49	-	-
Washington	868	2.4	7	4.9	1,968	136,796	44.11	63.45	0.36	0.51
Wicomico	861	2.4	4	2.8	842	87,375	102.26	98.54	0.48	0.46
Worcester	505	1.4	2	1.4	674	49,604	74.93	101.81	0.30	0.40
Baltimore City	**6,968**	**19.2**	13	9.2	3,620	628,670	**192.49**	**110.84**	0.36	0.21
Total Accidents	**36,221**	**100.0**	**142**	**100.0**	**54,678**	**5,508,909**	**66.24**	**65.75**	**0.26**	**0.26**

1. Source: * Maryland Department of Planning
2. Accident Rate by VMT is the number of total accidents per 100 Million VMT (Vehicle Miles of Travel)
3. Accident Rate by Population is the number of total accidents per 10,000 Population.

3.3.2 Fixed Objects

Trends

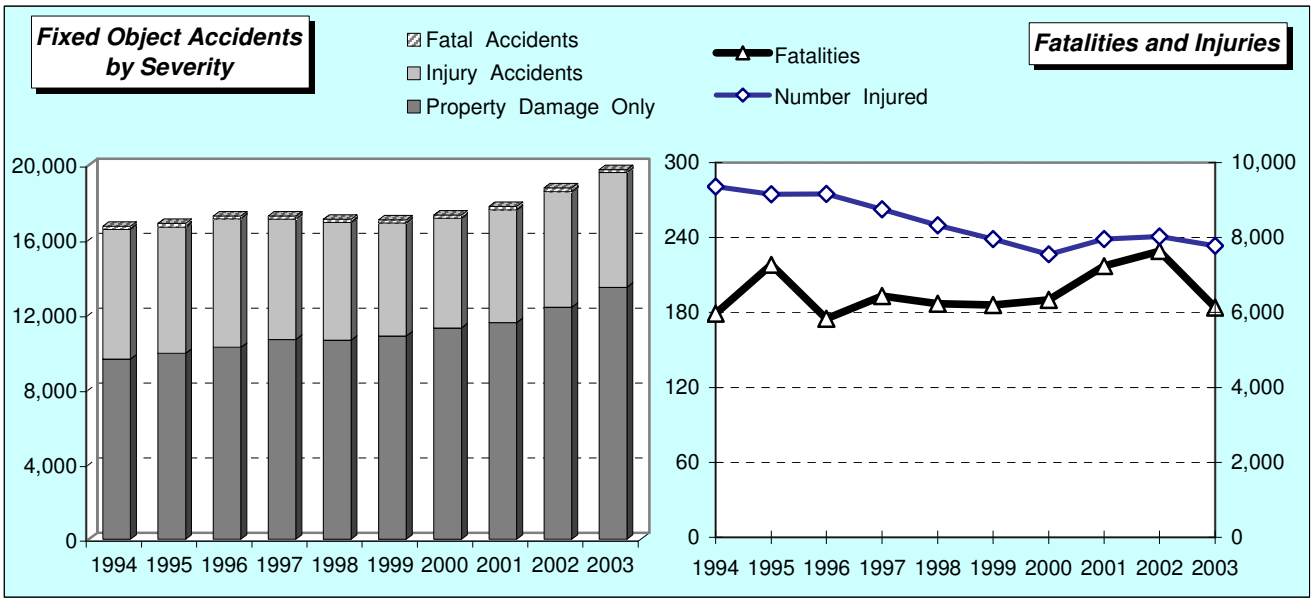
Severity

- Fixed object collision accidents have continued to increase by 2.0% per year from 1994 to 2003. From 1996 to 2002, fatal fixed object collision accidents had been trending up, but between 2002 and 2003, decreased from 204 to 169.
- The number of injured persons had been a downward trend for the latest 10 years.

Table 3.3.7 Fixed Object Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	165	6,949	9,618	**16,732**	179	9,354
1995	203	6,746	9,929	**16,878**	218	9,151
1996	162	6,857	10,257	**17,276**	175	9,158
1997	178	6,412	10,689	**17,279**	193	8,752
1998	171	6,286	10,652	**17,109**	187	8,328
1999	174	6,036	10,866	**17,076**	186	7,957
2000	184	5,843	11,304	**17,331**	190	7,549
2001	199	6,010	11,581	**17,790**	217	7,956
2002	204	6,158	12,406	**18,768**	229	8,024
2003	169	6,133	13,466	**19,768**	184	7,782
Avg. Change (%)	**0.3**	**-1.3**	**4.4**	**2.0**	**0.3**	**-1.9**

Figure 3.3.4 Fixed Object Accidents by Severity, Fatalities and Injuries, 1994-2003



- The percentage of fatal fixed object collision accidents ranged from approximately 27% to 34%, while that of total fixed object collision accidents ranged from approximately 17% to 18%.

Table 3.3.8 Percentage of Fixed Object Accidents among Total Accidents

Year	Fatal Accidents			Fatalities			Total Accidents		
	Fatal Fixed Object Accidents	Total Fatal Accidents	Percent	Fixed Object Fatalities	Total Fatalities	Percent	Total Fixed Object Accidents	Total Accidents	Percent
1994	165	605	27.3	179	657	27.2	16,732	96,864	17.3
1995	203	614	33.1	218	684	31.9	16,878	96,681	17.5
1996	162	563	28.8	175	614	28.5	17,276	99,355	17.4
1997	178	570	31.2	193	610	31.6	17,279	96,121	18.0
1998	171	551	31.0	187	606	30.9	17,109	94,039	18.2
1999	174	555	31.4	186	598	31.1	17,076	97,012	17.6
2000	184	574	32.1	190	617	30.8	17,331	99,302	17.5
2001	199	602	33.1	217	662	32.8	17,790	101,411	17.5
2002	204	606	33.7	229	661	34.6	18,768	104,843	17.9
2003	169	596	28.4	184	651	28.3	19,768	109,130	18.1

Fixed Object Types

- From 1994 to 2003, total fixed object accidents involving guardrail-barrier collisions have accounted for largest percentage of total fixed object accidents, and have continued to increase. Curb-wall was the second most frequent collision type over those years.

- Tree-shrubbery has been the most frequent object type in fatal fixed object accidents from 1994 to 2003.

Table 3.3.9 Total Fixed Object Accidents by Fixed Object Type, 1994-2003

Object Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bridge Overpass	217	212	204	193	207	209	200	196	218	202
Building	464	491	472	518	455	481	523	532	571	596
Culvert-Ditch	1,562	1,458	1,560	1,574	1,639	1,538	1,298	1,250	1,359	1,468
Curb-Wall	2,321	2,638	2,564	2,720	2,765	2,556	2,649	2,915	3,077	3,032
Guardrail-Barrier	2,612	2,730	2,858	2,885	3,008	3,217	3,303	3,440	3,639	4,051
Embankment	1,293	1,135	1,162	1,022	1,049	977	1,003	956	982	1,079
Fence	900	819	760	785	769	746	767	817	879	970
LightPole	1,116	1,057	1,141	1,180	1,105	1,136	1,174	1,194	1,198	1,321
Sign Post	873	876	933	891	889	906	862	891	957	867
Other Pole	2,258	2,181	2,200	2,208	2,025	2,171	2,123	2,071	2,230	2,336
Tree-Shrubbery	2,420	2,416	2,500	2,429	2,361	2,339	2,458	2,451	2,570	2,803
Construction Barrier	51	56	57	49	48	48	49	49	62	94
Crash Attenuator	36	36	53	44	32	33	37	29	40	42
Other/unknown	609	773	812	781	757	719	885	999	986	907
Total	**16,732**	**16,878**	**17,276**	**17,279**	**17,109**	**17,076**	**17,331**	**17,790**	**18,768**	**19,768**

Table 3.3.10 Fatal Fixed Object Accidents by Object Type, 1994-2003

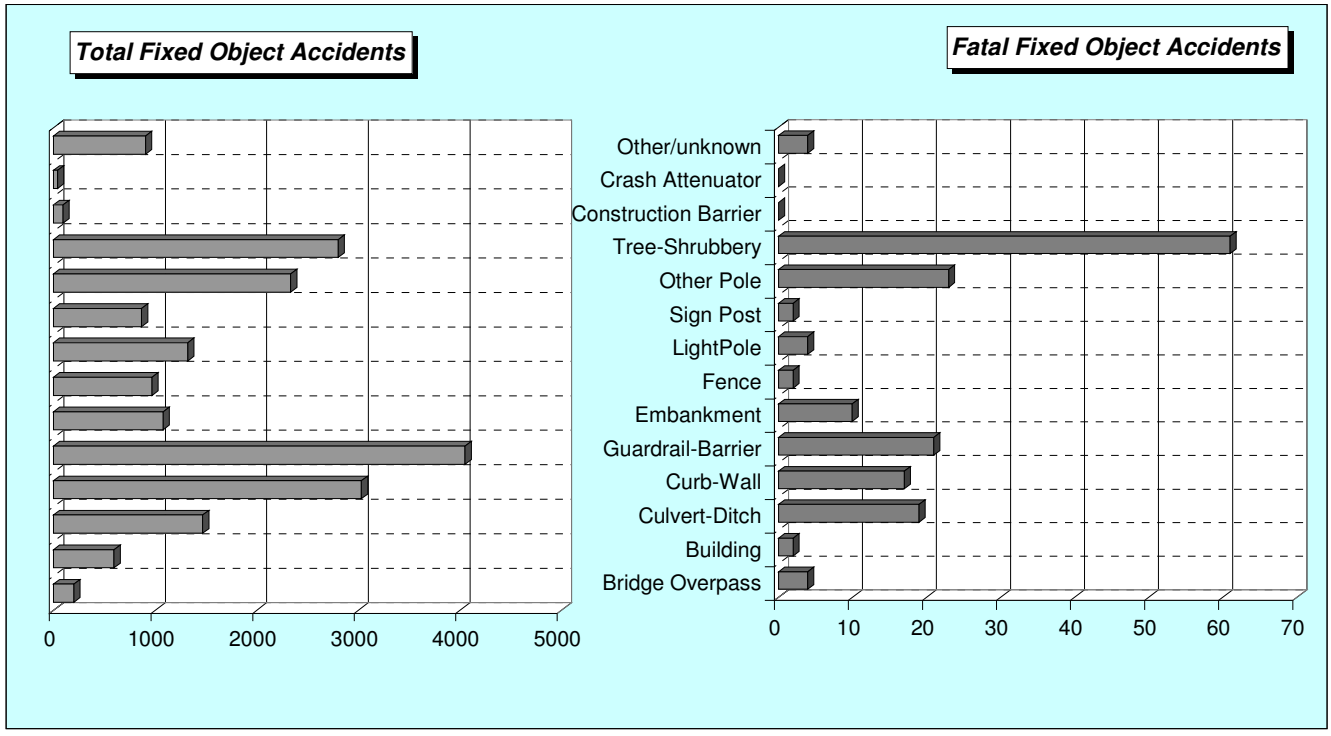
Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Bridge Overpass	5	3	3	6	3	2	-	3	2	4
Building	3	3	4	1	-	3	2	1	1	2
Culvert-Ditch	13	17	15	11	20	18	16	14	16	19
Curb-Wall	16	24	21	25	12	17	19	30	24	17
Guardrail-Barrier	25	28	21	24	29	24	29	33	36	21
Embankment	13	17	13	16	13	8	20	11	13	10
Fence	2	9	2	7	5	6	4	3	2	2
LightPole	6	7	7	6	8	11	5	9	10	4
Sign Post	5	5	6	3	6	3	3	5	4	2
Other Pole	21	28	14	30	22	24	23	21	22	23
Tree-Shrubbery	53	57	52	43	47	55	58	63	67	61
Construction Barrier	-	-	1	-	-	-	-	1	1	0
Crash Attenuator	-	1	-	-	-	-	-	1		0
Other/unknown	3	4	3	6	6	3	5	4	6	4
Total	**165**	**203**	**162**	**178**	**171**	**174**	**184**	**199**	**204**	**169**

2003 Overview

Fixed Object Types

- Guardrail-barrier collisions (4,051 accidents, 20.5%) were the most frequent collision type in fixed object accidents. Tree-shrubbery collisions (61 accidents, 36.1%) were the most frequent collision type in fatal fixed object accidents.

Figure 3.3.5 Fixed Object Accidents by Object Type, 2003



Other Factors

- Non-daylight accidents accounted for about 60% of fatal fixed object accidents and 50% of total fixed object accidents, which are higher than for all type of accidents.

Table 3.3.11 Comparison of Fixed Object Accidents and All Accidents by Illumination, 2003

Illumination	Fixed Object Accidents				All types of Accidents			
	Fatal Accidents		Total Accidents		Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Daylight	68	40.2	9,755	49.3	264	44.3	69,291	63.5
Dawn / Dusk	5	3.0	959	4.9	19	3.2	5,013	4.6
Dark Lights On	34	20.1	5,545	28.1	159	26.7	25,458	23.3
Dark Lights Off	62	36.7	3,457	17.5	154	25.8	8,777	8.0
Unknown	0	0.0	52	0.3	-	0.0	591	0.5
Total	**169**	**100.0**	**19,768**	**100.0**	**596**	**100.0**	**109,130**	**100.0**

Figure 3.3.6 Comparison of Fixed Object Accidents and All Accidents by Illumination, 2003

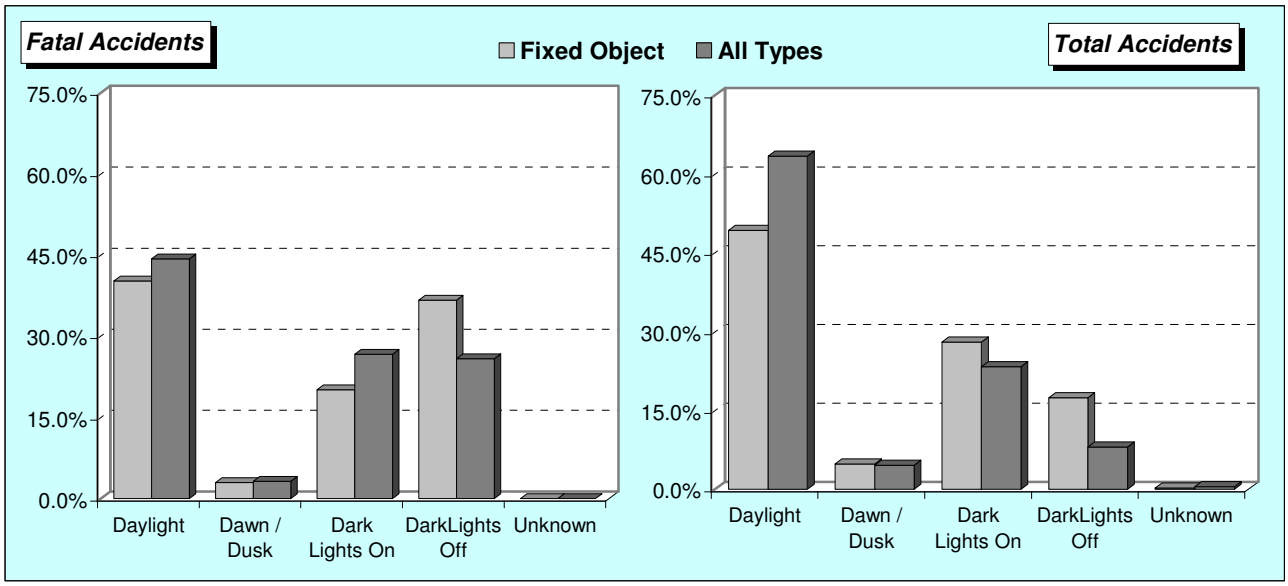


Table 3.3.12 Comparison of Fixed Object Accidents and All Accidents by Roadway Surface, 2003

Roadway Surfaces	Fixed Object Accidents				All types of Accidents			
	Fatal Accidents		Total Accidents		Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Wet	36	21.3	6,271	31.7	123	20.6	28,066	25.7
Dry	121	71.5	10,707	54.1	452	75.8	73,348	67.2
Snow	5	2.9	1,301	6.6	8	1.3	4,028	3.7
Ice	6	3.5	1,396	7.1	11	1.8	3,040	2.8
Mud	0	0.0	0	0.0	-	-	-	-
Other / Unknown	1	0.6	93	0.5	2	0.3	648	0.6
Total Accidents	**169**	**100.0**	**19,768**	**100.0**	**596**	**100.0**	**109,130**	**100.0**

County

- The number of fixed object accidents was largest in Baltimore County at 3,432. The number of fatal fixed object accidents was largest in Prince George's County at 29.
- Charles County had the highest fixed object accident rate per VMT (60.99 per 100 million vehicle miles of travel).
- The highest fatal fixed object accident rate per VMT was 0.83 per 100 million VMT in Calvert County. Somerset County had the highest fatal fixed object accident rate per population (0.79 per 10,000 population).

Table 3.3.13 Total and Fatal Fixed Object Accidents, and Accident Rates by County, 2003

County	Fixed Object Accidents				VMT (millions)	Population*	Total Acc. Rates		Fatal Acc. Rates	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	291	1.5	3	1.8	838	73,668	34.73	39.50	0.36	0.41
Anne Arundel	2,281	11.5	21	12.4	5,587	506,620	40.83	45.02	0.38	0.41
Baltimore	**3,432**	**17.4**	28	16.6	8,078	777,184	42.49	44.16	0.35	0.36
Calvert	290	1.5	6	3.6	722	84,110	40.17	34.48	**0.83**	0.71
Caroline	128	0.6	2	1.2	344	30,861	37.21	41.48	0.58	0.65
Carroll	535	2.7	7	4.1	1,248	163,207	42.87	32.78	0.56	0.43
Cecil	484	2.4	9	5.3	1,230	92,746	39.35	52.19	0.73	0.97
Charles	716	3.6	5	3.0	1,174	133,049	**60.99**	53.81	0.43	0.38
Dorchester	155	0.8	2	1.2	362	30,612	42.82	50.63	0.55	0.65
Frederick	748	3.8	3	1.8	2,746	213,662	27.24	35.01	0.11	0.14
Garrett	207	1.0	2	1.2	486	30,049	42.59	68.89	0.41	0.67
Harford	868	4.4	3	1.8	2,257	232,175	38.46	37.39	0.13	0.13
Howard	914	4.6	5	3.0	3,620	264,265	25.25	34.59	0.14	0.19
Kent	55	0.3	1	0.6	228	19,680	24.12	27.95	0.44	0.51
Montgomery	2,180	11.0	13	7.7	7,427	918,881	29.35	23.72	0.18	0.14
Prince George's	2,662	13.5	**29**	**17.2**	8,631	838,716	30.84	31.74	0.34	0.35
Queen Anne's	178	0.9	3	1.8	910	44,108	19.56	40.36	0.33	0.68
St. Mary's	353	1.8	5	3.0	778	92,754	45.37	38.06	0.64	0.54
Somerset	102	0.5	2	1.2	285	25,447	35.79	40.08	0.70	**0.79**
Talbot	214	1.1	-	0.0	623	34,670	34.35	61.72	0.00	0.00
Washington	632	3.2	10	5.9	1,968	136,796	32.11	46.20	0.51	0.73
Wicomico	470	2.4	3	1.8	842	87,375	55.82	53.79	0.36	0.34
Worcester	366	1.9	3	1.8	674	49,604	54.30	**73.78**	0.45	0.60
Baltimore City	1,507	7.6	4	2.4	3,620	628,670	41.63	23.97	0.11	0.06
Total Accidents	**19,768**	**100.0**	**169**	**100.0**	**54,678**	**5,508,909**	**36.15**	**35.88**	**0.31**	**0.31**

1. Source: * Maryland Department of Planning
2. Accident Rate by VMT is the number of total accidents per 100 Million VMT (Vehicle Miles of Travel)
3. Accident Rate by Population is the number of total accidents per 10,000 population.

3.3.3 Work Zones

Trends

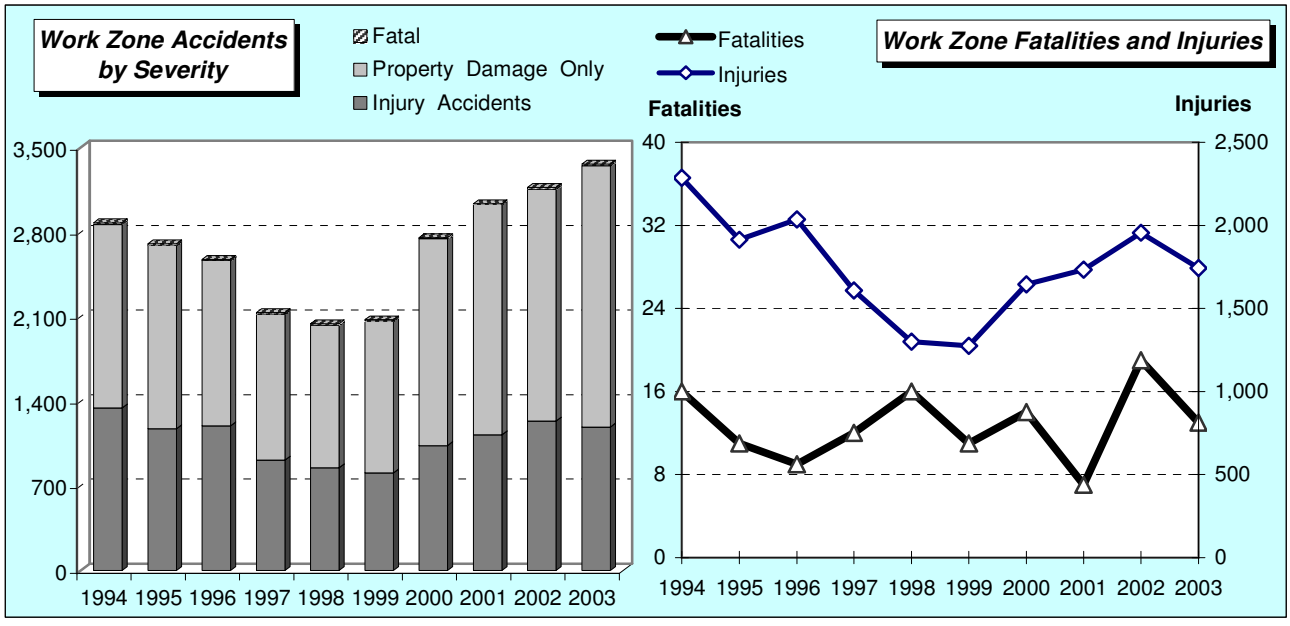
Severity

- Work zone accidents had a downward trend from 1994 to 1998, but this trend turned upward in the latest five years (from 1999 to 2003).
- The proportion of work zone accidents among all types of accidents was approximately 2~3 percent over the years, and that of work zone fatalities among all types of fatalities was less than 3 percent.

Table 3.3.14 Work Zone Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	15	1,343	1,519	**2,877**	16	2,285
1995	10	1,173	1,518	**2,701**	11	1,913
1996	8	1,197	1,368	**2,573**	9	2,036
1997	12	915	1,207	**2,134**	12	1,608
1998	14	851	1,176	**2,041**	16	1,298
1999	11	808	1,255	**2,074**	11	1,274
2000	12	1,034	1,709	**2,755**	14	1,644
2001	7	1,122	1,906	**3,035**	7	1,733
2002	17	1,236	1,916	**3,169**	19	1,956
2003	13	1,187	2,161	**3,361**	13	1,742
Avg. Change (%)	**-1.5**	**-1.3**	**4.7**	**1.9**	**-2.1**	**-2.6**

Figure 3.3.7 Work Zone Accidents by Severity, Fatalities and Injuries, 1994-2003



Collision Type

Table 3.3.15 Total Work Zone Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	87	61	77	57	56	56	71	63	65	64
Rear End	877	785	797	657	624	569	762	934	920	1,012
Left Turn	251	174	174	136	132	128	162	208	176	174
Sideswipe	298	254	200	137	130	123	175	235	236	242
Angle	426	399	344	285	273	273	316	358	381	326
Parked Vehicle	251	257	212	161	190	233	288	271	270	322
Pedestrian	97	105	56	54	58	71	87	98	97	102
Pedalcycle	21	20	22	13	14	22	22	17	17	16
Other Conveyance	-	4	3	1	1	4	7	5	6	5
Railway Train	-	2	1	-	1	-	-	2	1	1
Animal	9	5	12	9	7	9	8	2	11	7
Fixed Object	335	330	280	236	236	218	331	339	420	463
Other Object	47	39	33	51	38	44	54	45	54	61
Overturned	14	6	14	17	8	21	20	13	16	17
Spilled Cargo	1	-	4	1	1	3	3	2	2	1
Jacknife	1	1	-	-	-	1	-	1	1	2
Units Separate	2	2	1	-	2	-	-	-	2	2
Other Non Collision	16	15	17	8	9	10	21	9	10	12
Run Off Road	1	-	3	3	4	7	7	10	24	12
Down Hill Runaway	-	-	-	-	-	1	-	-	-	
Explosion or Fire	2	1	1	5	3	1	1	4	1	1
U-Turn	54	49	36	35	28	42	58	30	51	51
Backing	32	30	30	23	20	11	29	21	20	24
Other/unknown	55	162	256	245	206	227	333	368	388	444
Total	**2,877**	**2,701**	**2,573**	**2,134**	**2,041**	**2,074**	**2,755**	**3,035**	**3,169**	**3,361**

Table 3.3.16 Fatal Work Zone Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	1	2	3	1	-	1	-	-	2	-
Rear End	1	-	1	1	2	-	3	1	1	3
Left Turn	2	2	2	-	-	-	-	1	1	-
Sideswipe	-	-	-	-	-	1	-	1	-	-
Angle	3	-	-	2	2	3	1	1	2	-
Parked Vehicle	2	1	-	-	1	1	1	-	-	2
Pedestrian	4	1	-	5	5	5	2	2	5	2
Pedalcycle	-	-	-	1	1	-	-	-	-	-
Other Conveyance	-	-	-	-	-	-	-	-	-	-
Railway Train	-	-	-	-	-	-	-	-	-	-
Animal	-	-	-	-	-	-	-	-	-	-
Fixed Object	2	4	1	1	3	-	3	-	4	4
Other Object	-	-	-	1	-	-	-	-	1	-
Overturned	-	-	-	-	-	-	-	-	-	-
Spilled Cargo	-	-	-	-	-	-	-	-	-	-
Jacknife	-	-	-	-	-	-	-	-	-	-
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	-	-	1	-	-	-	1	1	-	-
Run Off Road	-	-	-	-	-	-	-	-	-	-
Down Hill Runaway	-	-	-	-	-	-	-	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	-	-	-
U-Turn	-	-	-	-	-	-	-	-	-	-
Backing	-	-	-	-	-	-	-	-	1	-
Other/unknown	-	-	-	-	-	-	1	-	-	2
Total	**15**	**10**	**8**	**12**	**14**	**11**	**12**	**7**	**17**	**13**

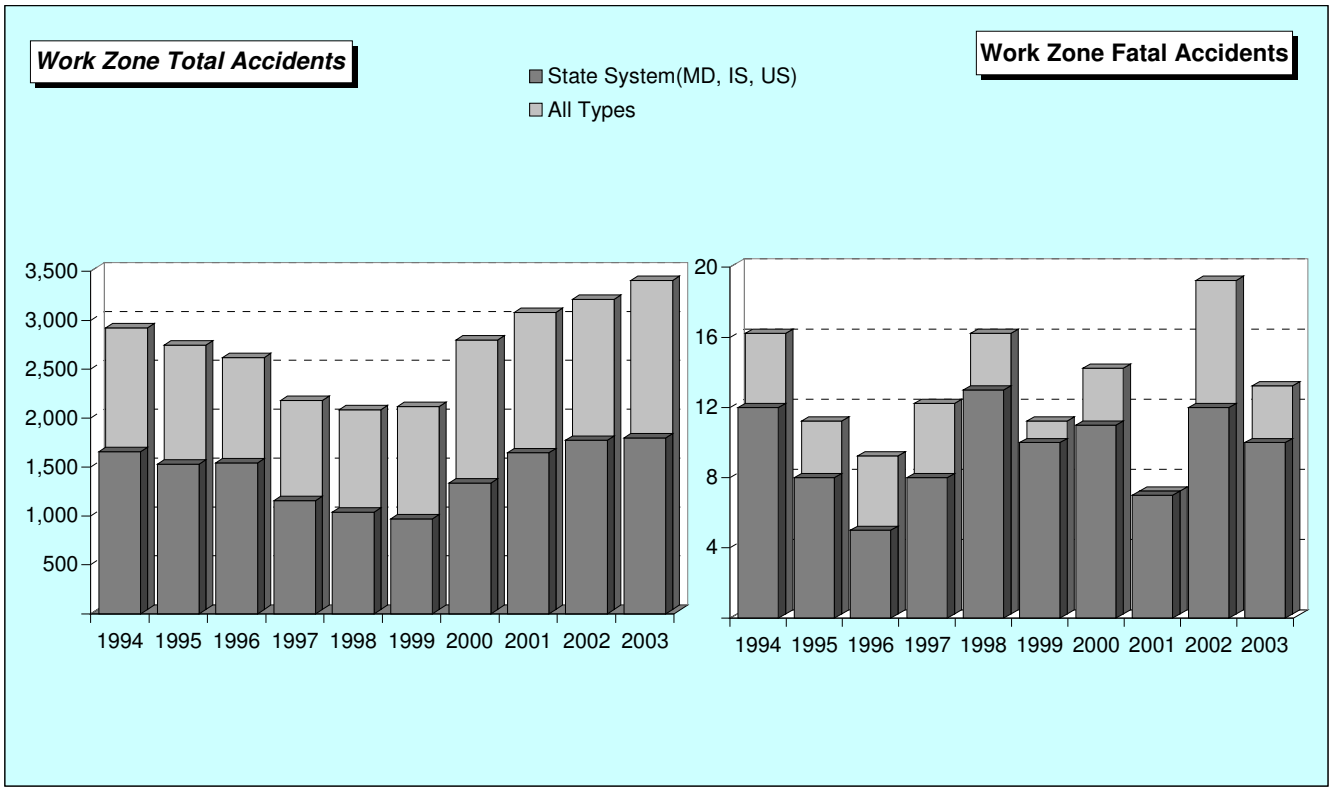
Work Zone Accidents on the State-Maintained Routes (MD, US and IS highways)

- Total work zone accidents for the state-maintained routes from 1994 to 2003 were similar in pattern to total work zone accidents for all routes. The percentage of work zone accidents on the state-maintained routes among work zone accidents on all routes was 48%~60% from 1994 to 2003.
- The percentage of fatal work zone accidents on the state-maintained routes among all fatal work zone accidents on all routes was 63%~100% from 1994 to 2003.

Table 3.3.17 Work Zone Accidents on the State-Maintained Routes (MD, IS and US Highways), 1994-2003

Route Type		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total Work Zone Accidents	State-System Routes	1,655	1,527	1,541	1,157	1,038	971	1,335	1,644	1,773	1,798
	(% of All Routes)	(57.5)	(56.5)	(59.9)	(54.2)	(50.9)	(46.8)	(48.5)	(54.2)	(55.9)	(53.5)
	All Routes	2,877	2,701	2,573	2,134	2,041	2,074	2,755	3,035	3,169	3,361
Fatal Work Zone Accidents	State-System Routes	11	8	5	8	11	10	9	7	11	10
	(% of All Routes)	(73.3)	(80.0)	(62.5)	(66.7)	(78.6)	(90.9)	(75.0)	(100.0)	(64.7)	(76.9)
	All Routes	15	10	8	12	14	11	12	7	17	13
Fatalities for Work Zone	State-System Routes	12	8	5	8	13	10	11	7	12	10
	(% of All Routes)	(75.0)	(72.7)	(55.6)	(66.7)	(81.3)	(90.9)	(78.6)	(100.0)	(63.2)	(76.9)
	All Routes	16	11	9	12	16	11	14	7	19	13

Figure 3.3.8 Work Zone Accidents on the State-Maintained Routes (MD, IS and US Highways), 1994-2003



2003 Overview

- Rear end (30.1%) was the most frequent collision type in work zone accidents.
- For fatal work zone accidents, the most frequent collision type involved fixed objects in 2003. The second most frequent collision type of fatal work zone accidents involved rear ends.

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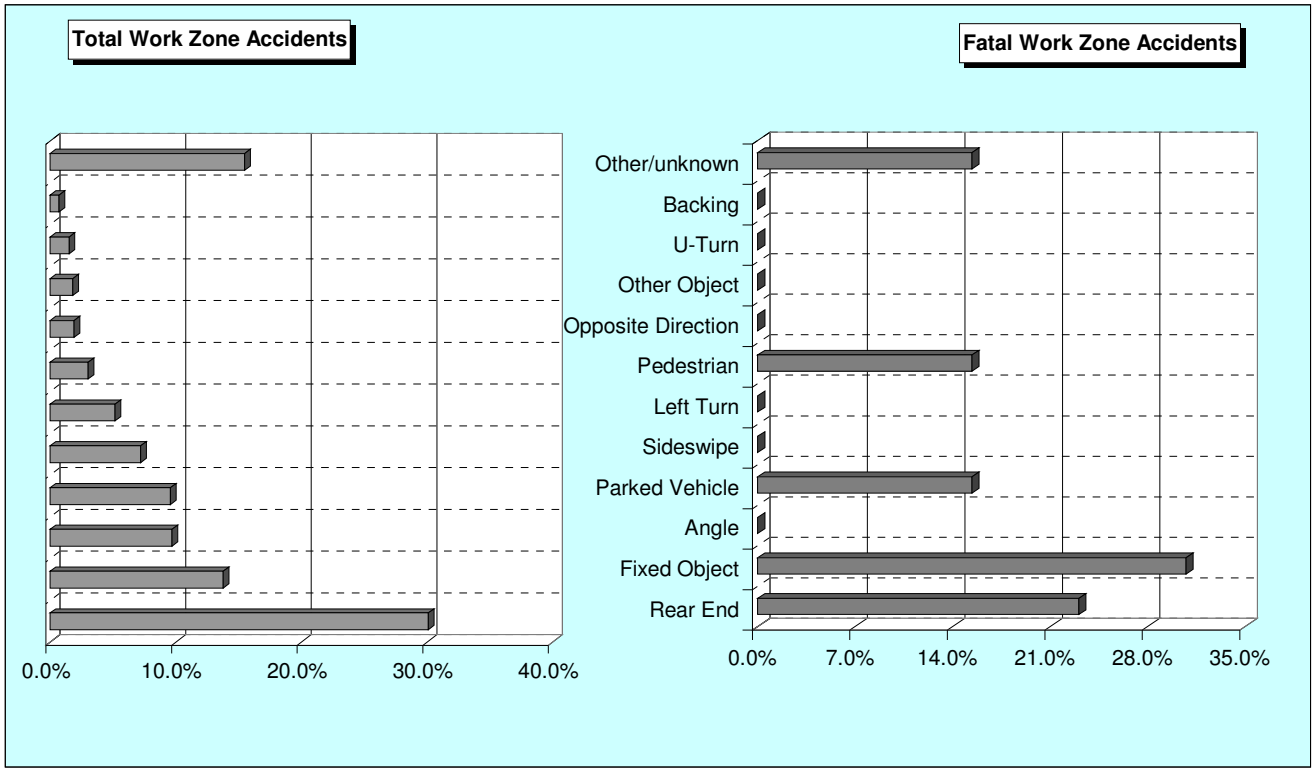
Figure 3.3.9 Total and Fatal Work Zone Accidents by Collision Type, 2003



- Most fatal work zone accidents occurred in work zone areas under dark light-on illumination (53.8%). Most total work zone accidents occurred under daylight illumination (68.2%).

Table 3.3.18 Work Zone Accidents by Illumination, 2003

Illumination	Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent
Daylight	4	30.8	2,291	68.2
Dawn / Dusk	1	7.7	127	3.8
Dark Lights On	7	53.8	770	22.9
Dark Lights Off	1	7.7	157	4.7
Unknown		0.0	16	0.5
Total	**13**	**100.0**	**3,361**	**100.0**

- The number of total work zone accidents was largest in Baltimore City at 916. Baltimore City also had the highest total work zone accident rates per VMT and population.
- Baltimore County had the largest number of fatal work zone accidents (5), and highest fatal work zone accident rates per VMT and population.

Table 3.3.19 Total and Fatal Work Zone Accidents, and Accident Rates by County, 2003

County	Work Zone Accidents				VMT (millions)	Population*	Total Acc. Rates		Fatal Acc. Rates	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	24	0.7	-	0.0	838	73,668	2.86	3.26	0.00	0.00
Anne Arundel	393	11.7	2	15.4	5,587	506,620	7.03	7.76	0.04	0.04
Baltimore	538	16.0	**5**	**38.5**	8,078	777,184	6.66	6.92	**0.06**	**0.06**
Calvert	40	1.2	-	0.0	722	84,110	5.54	4.76	0.00	0.00
Caroline	11	0.3	-	0.0	344	30,861	3.20	3.56	0.00	0.00
Carroll	36	1.1	-	0.0	1,248	163,207	2.88	2.21	0.00	0.00
Cecil	39	1.2	-	0.0	1,230	92,746	3.17	4.21	0.00	0.00
Charles	10	0.3	-	0.0	1,174	133,049	0.85	0.75	0.00	0.00
Dorchester	6	0.2	-	0.0	362	30,612	1.66	1.96	0.00	0.00
Frederick	26	0.8	-	0.0	2,746	213,662	0.95	1.22	0.00	0.00
Garrett	9	0.3	-	0.0	486	30,049	1.85	3.00	0.00	0.00
Harford	81	2.4	-	0.0	2,257	232,175	3.59	3.49	0.00	0.00
Howard	242	7.2	-	0.0	3,620	264,265	6.69	9.16	0.00	0.00
Kent	1	0.0	-	0.0	228	19,680	0.44	0.51	0.00	0.00
Montgomery	336	10.0	3	23.1	7,427	918,881	4.52	3.66	0.04	0.03
Prince George's	506	15.1	2	15.4	8,631	838,716	5.86	6.03	0.02	0.02
Queen Anne's	20	0.6	-	0.0	910	44,108	2.20	4.53	0.00	0.00
St. Mary's	35	1.0	-	0.0	778	92,754	4.50	3.77	0.00	0.00
Somerset	1	0.0	-	0.0	285	25,447	0.35	0.39	0.00	0.00
Talbot	10	0.3	-	0.0	623	34,670	1.61	2.88	0.00	0.00
Washington	42	1.2	-	0.0	1,968	136,796	2.13	3.07	0.00	0.00
Wicomico	13	0.4	-	0.0	842	87,375	1.54	1.49	0.00	0.00
Worcester	26	0.8	-	0.0	674	49,604	3.86	5.24	0.00	0.00
Baltimore City	**916**	**27.3**	1	7.7	3,620	628,670	**25.30**	**14.57**	0.03	0.02
Total Accidents	**3,361**	**100.0**	**13**	**100.0**	**54,678**	**5,508,909**	**6.15**	**6.10**	**0.02**	**0.02**

1. Source: * Maryland Department of Planning
2. Accident Rate by VMT is the number of total accidents per 100 Million VMT(Vehicle Miles of Travel)
3. Accident Rate by Population is the number of total accidents per 10,000 Population.

3.3.4 Run-Off-the-Road

Trends

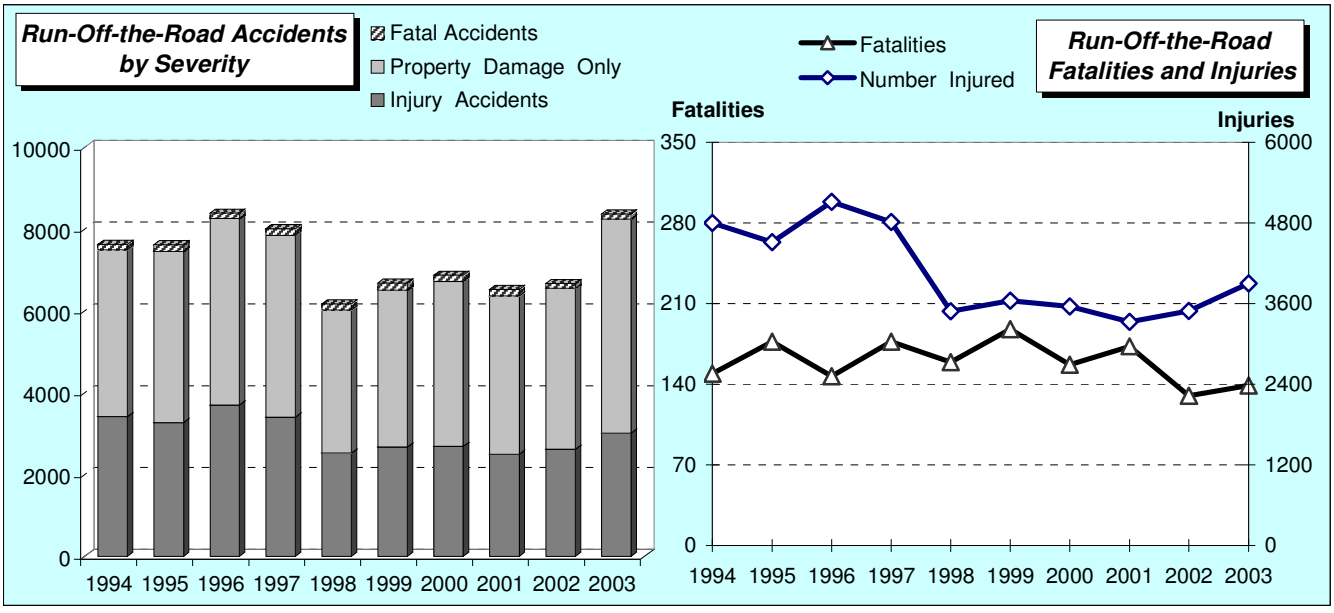
Severity

- The number of run-off-the-road accidents had been under 7,000 from 1998 to 2002, but was increased to more than 8,300 in 2003. Between 2002 and 2003, run-off-the-road accidents increased by 25.5%. Run-off-the-road-involved fatalities increased from 130 in 2002 to 139 in 2003.

Table 3.3.20 Run-Off-the-Road Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	136	3,418	4,079	7,633	149	4,799
1995	164	3,273	4,187	7,624	177	4,517
1996	135	3,704	4,553	8,392	147	5,113
1997	163	3,407	4,442	8,012	177	4,812
1998	147	2,520	3,507	6,174	159	3,485
1999	175	2,671	3,836	6,682	188	3,641
2000	154	2,689	4,029	6,872	157	3,557
2001	158	2,495	3,870	6,523	173	3,329
2002	116	2,620	3,933	6,669	130	3,491
2003	127	3,017	5,228	8,372	139	3,899
Avg.Change(%)	**-0.7**	**-1.3**	**3.1**	**1.1**	**-0.7**	**-2.1**

Figure 3.3.10 Run-Off-the-Road Accidents by Severity, Fatalities and Injuries, 1994-2003



- Over the latest 10 years, the percentage of run-off-the-road accidents among all types of accidents range from 6% to 9% from 1994 to 2003. For fatal run-off-the-road accidents among all fatal accidents, the fraction was in 20~32% over those years.

Table 3.3.21 Percentage of Run-Off-the-Road Accidents in All Type of Accidents, 1994-2003

Year	Fatal Accidents			Fatalities			Total Accidents		
	Fatal Run-Off-the-Road Accidents	All Fatal Accidents	Percent	Fatal Run-Off-the-Road Accidents	All Fatalities	Percent	Total Run-off-the-Road Acc	All Accidents	Percent
1994	136	605	22.5	149	657	22.7	7,633	96,864	7.9
1995	164	614	26.7	177	684	25.9	7,624	96,681	7.9
1996	135	563	24.0	147	614	23.9	8,392	99,355	8.4
1997	163	570	28.6	177	610	29.0	8,012	96,121	8.3
1998	147	551	26.7	159	606	26.2	6,174	94,039	6.6
1999	175	555	31.5	188	598	31.4	6,682	97,012	6.9
2000	154	574	26.8	157	617	25.4	6,872	99,302	6.9
2001	158	602	26.2	173	662	26.1	6,523	101,411	6.4
2002	116	606	19.1	130	661	19.7	6,669	104,843	6.4
2003	127	596	21.3	139	651	21.4	8,372	109,130	7.7

Collision Types

- The collision type which most affected run-off-the-road accidents involved fixed objects, but this type had a downward trend with an average change rate of -9.3% per year from 1994 to 2002.

- The collision type most related to fatal run-off-the-road accidents also involved fixed objects. Fixed object collisions had a significantly downward trend over those years.

Table 3.3.22 Total Run-Off-the-Road Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	66	51	51	53	30	21	17	6	17	21
Rear End	127	104	92	109	61	63	44	47	36	34
Left Turn	7	25	36	31	33	18	25	10	10	11
Sideswipe	59	42	40	48	31	21	23	25	17	24
Angle	31	96	105	128	86	69	49	33	38	38
Parked Vehicle	499	406	305	313	246	212	186	151	131	120
Pedestrian	68	56	58	51	36	33	31	14	19	14
Pedalcycle	35	33	30	36	25	23	16	11	4	9
Other Conveyance	4	2	4	2	1	5	3	5	4	6
Railway Train		3	5	3	5	3	5	1	1	4
Animal	32	34	37	39	27	33	27	23	31	32
Fixed Object	6,203	6,266	6,977	6,539	5,036	5,446	5,577	5,281	5,431	6,716
Other Object	100	99	151	103	68	98	90	78	59	73
Overturned	214	160	196	203	174	153	165	132	113	127
Spilled Cargo	1	5	2	2	2	3	2	1		1
Jacknife	8	8	11	11	4	14	8	5	8	5
Units Separate	3	3	5	3	7	5	3	1	3	8
Other Non Collision	87	81	85	72	43	43	44	29	25	33
Run Off Road	18	20	56	108	141	275	463	599	659	1,002
Down Hill Runaway			1		2	1	1	2		1
Explosion or Fire	18	6	10	11	6	11	9	3	2	3
U-Turn	18	16	15	12	9	8	6	4	2	6
Backing	8	8	7	7	2	7	3	1	4	1
Other/unknown	27	100	113	128	99	117	75	61	55	83
Total	**7,633**	**7,624**	**8,392**	**8,012**	**6,174**	**6,682**	**6,872**	**6,523**	**6,669**	**8,372**

Table 3.3.23 Fatal Run-Off-the-Road Accidents by Collision Type, 1994-2003

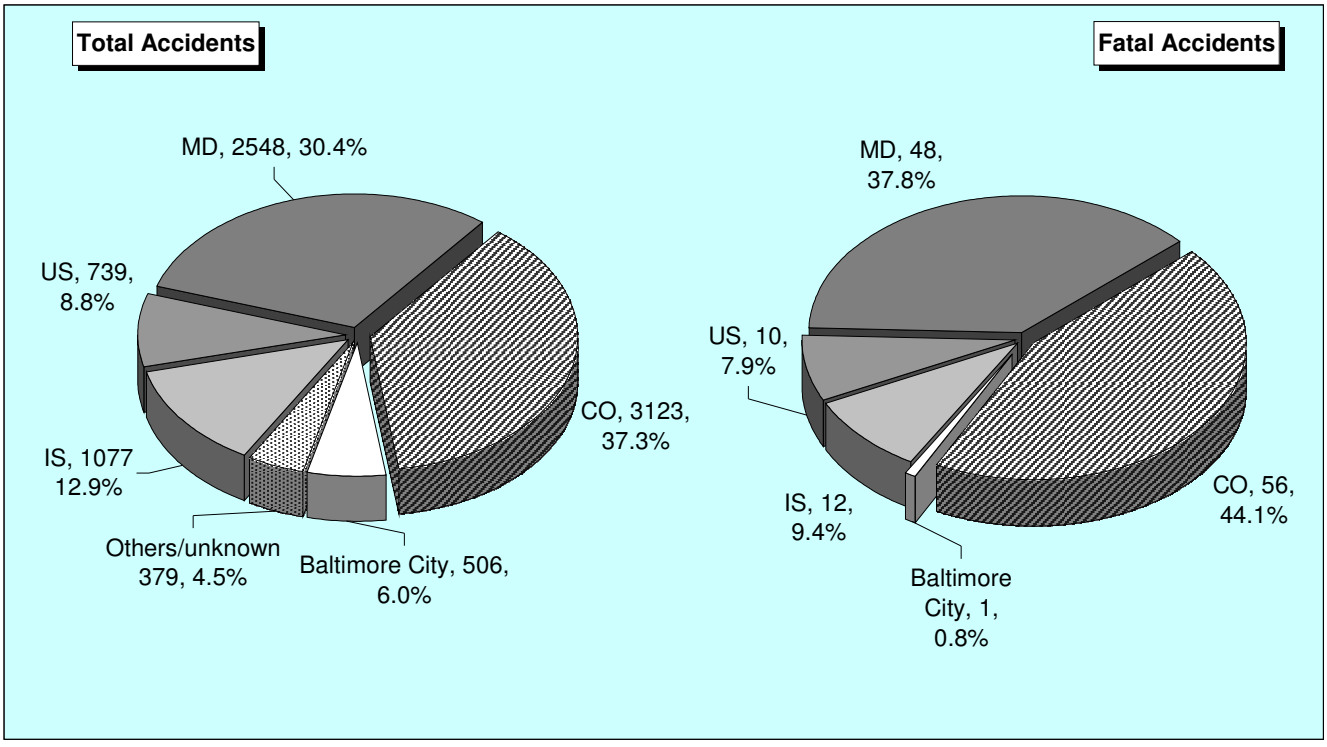
Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	-	1	-	-	1	2	-	-	-	1
Rear End	1	1	2	1	-	1	-	-	-	-
Sideswipe	1	1	-	-	-	-	-	1	-	-
Angle	-	-	-	-	-	1	-	-	-	-
Parked Vehicle	3	1	2	3	5	2	-	-	-	2
Pedestrian	3	1	1	3	1	3	-	-	2	
Pedalcycle	2	-	1	-	-	-	-	-	-	1
Animal	-	-	-	-	-	-	1	-	-	-
Fixed Object	118	156	124	142	127	151	136	137	101	107
Other Object	-	-	-	1	2	1	2	1	1	2
Overturned	3	2	3	9	7	7	4	4	2	4
Spilled Cargo	-	-	-	-	-	-	-	-	-	-
Jacknife	-	-	-	-	-	-	-	-	1	-
Other Non Collision	2	1	1	1	2	-	2	1	-	-
Run Off Road	1	-	-	3	2	5	7	14	9	10
U-Turn	-	-	1	-	-	-	-	-	-	-
Other/unknown	2	-	-	-	-	2	2	-	-	-
Total	**136**	**164**	**135**	**163**	**147**	**175**	**154**	**158**	**116**	**127**

2003 Overview

Route Types

- The highest percentage of total and fatal run-off-the-road accidents occurred on County highways (37.3% and 44.1%, respectively).

Figure 3.3.11 Run-Off-the-Road Accidents by Route Type, 2003



Other Factors

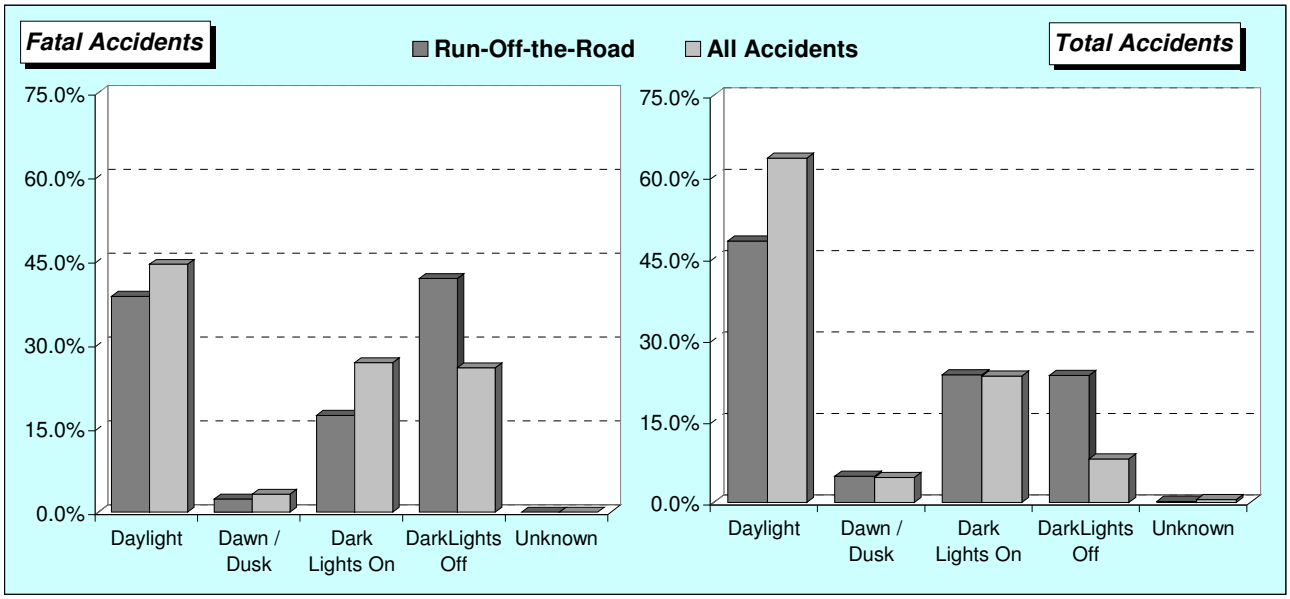
- Run-off-the-road accidents under non-daylight illumination (dawn/dusk, dark lights on and dark lights off) accounted for 51.6% of total run-off-the road accidents, while non-daylight illumination accounted for only 35.9% of all accident types.

- Fatal run-off-the-road accidents under "Dark Lights Off" accounted for 41.7% of all fatal run-off-the-road accidents. This percentage was significantly higher than the percentage of all accidents under non-daylight condition among all types of accidents (25.8%).

Table 3.3.24 Run-Off-the-Road Accidents by Illumination, 2003

Illumination	Run-Off-the-Road Accidents				All types of Accidents			
	Fatal Accidents		Total Accidents		Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Daylight	49	38.6	4,032	48.2	264	44.3	69,291	63.5
Dawn / Dusk	3	2.4	401	4.8	19	3.2	5,013	4.6
Dark Lights On	22	17.3	1,965	23.5	159	26.7	25,458	23.3
Dark Lights Off	53	41.7	1,958	23.4	154	25.8	8,777	8.0
Unknown	-	0.0	16	0.2	-	0.0	591	0.5
Total	**127**	**100.0**	**8,372**	**100.0**	**596**	**100.0**	**109,130**	**100.0**

Figure 3.3.12 Illumination Types in Run-Off-the-Road and All Accidents, 2003

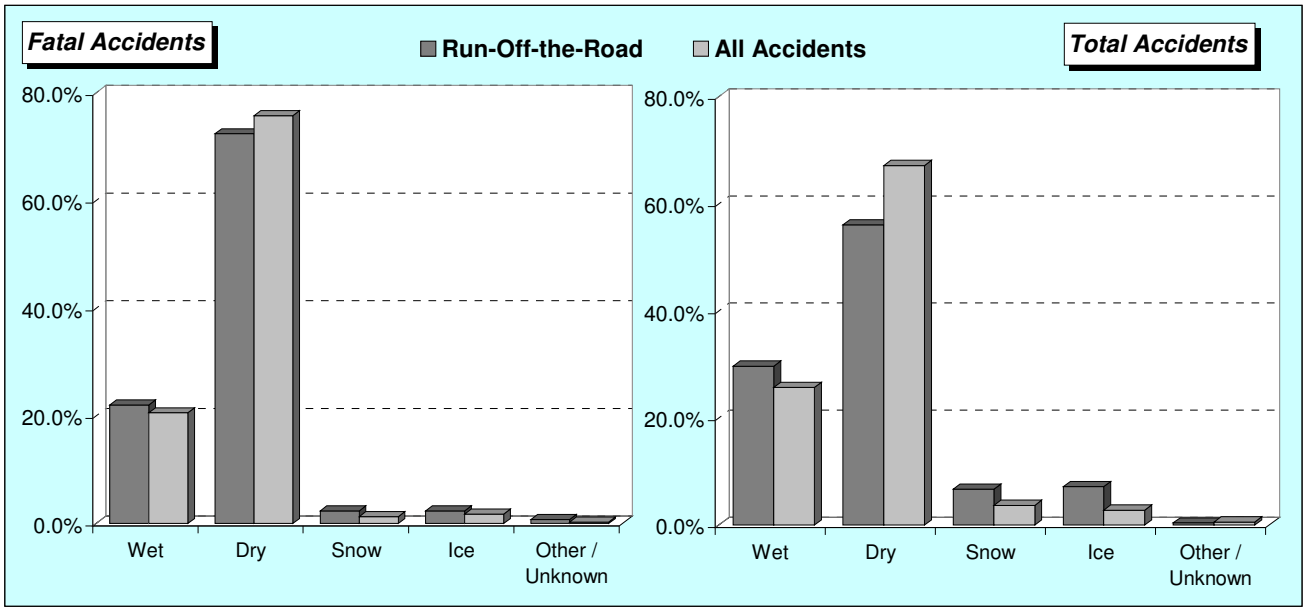


- All accident types under non-dry roadway conditions (wet, snow and ice) accounted for 32.2% of all roadway accidents, while run-off-the-road accidents under non-dry roadway conditions accounted for 43.6% of all run-off-the-road accidents.

Table 3.3.25 Run-Off-the-Road Accidents by Roadway Surface, 2003

Weather	Run-Off-the-Road Accidents				All types of Accidents			
	Fatal Accidents		Total Accidents		Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Wet	28	22.0	2,483	29.7	123	20.6	28,066	25.7
Dry	92	72.4	4,695	56.1	452	75.8	73,348	67.2
Snow	3	2.4	561	6.7	8	1.3	4,028	3.7
Ice	3	2.4	601	7.2	11	1.8	3,040	2.8
Mud	-	0.0	-	0.0	-	-	-	-
Other / Unknown	1	0.8	32	0.4	2	0.3	648	0.6
Total Accidents	**127**	**100.0**	**8,372**	**100.0**	**596**	**100.0**	**109,130**	**100.0**

Figure 3.3.13 Roadway Surface Types in Run-Off-the-Road and All Accidents, 2003



County

- Prince George's County had more total run-off-the-road accidents than any other county in 2003 (11.9%). The largest number of fatal run-off-the-road accidents occurred in Baltimore County (17.3%).
- The highest run-off-the-road accident rates were 51.7 per 100 million VMT in Charles County and 52.49 per 10,000 population in Caroline County.
- Calvert County had the highest fatal run-off-the-road accident rates per VMT. Fatal run-off-the-road accident rate per population was highest in Queen Anne's County.

Table 3.3.26 Run-Off-the-Road Accidents and Accident Rates by County, 2003

County	Run-Off-the-Road Accidents				VMT (millions)	Population*	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	105	1.3	2	1.6	838	73,668	12.53	14.25	0.24	0.27
Anne Arundel	766	9.1	14	11.0	5,587	506,620	13.71	15.12	0.25	0.28
Baltimore	975	11.6	**22**	**17.3**	8,078	777,184	12.07	12.55	0.27	0.28
Calvert	136	1.6	5	3.9	722	84,110	18.84	16.17	**0.69**	0.59
Caroline	162	1.9	2	1.6	344	30,861	47.09	**52.49**	0.58	0.65
Carroll	256	3.1	5	3.9	1,248	163,207	20.51	15.69	0.40	0.31
Cecil	291	3.5	6	4.7	1,230	92,746	23.66	31.38	0.49	0.65
Charles	607	7.3	5	3.9	1,174	133,049	**51.70**	45.62	0.43	0.38
Dorchester	118	1.4	2	1.6	362	30,612	32.60	38.55	0.55	0.65
Frederick	534	6.4	2	1.6	2,746	213,662	19.45	24.99	0.07	0.09
Garrett	87	1.0	1	0.8	486	30,049	17.90	28.95	0.21	0.33
Harford	435	5.2	4	3.1	2,257	232,175	19.27	18.74	0.18	0.17
Howard	258	3.1	6	4.7	3,620	264,265	7.13	9.76	0.17	0.23
Kent	40	0.5	1	0.8	228	19,680	17.54	20.33	0.44	0.51
Montgomery	555	6.6	9	7.1	7,427	918,881	7.47	6.04	0.12	0.10
Prince George's	**995**	**11.9**	13	10.2	8,631	838,716	11.53	11.86	0.15	0.15
Queen Anne's	103	1.2	5	3.9	910	44,108	11.32	23.35	0.55	**1.13**
St. Mary's	327	3.9	5	3.9	778	92,754	42.03	35.25	0.64	0.54
Somerset	70	0.8	1	0.8	285	25,447	24.56	27.51	0.35	0.39
Talbot	111	1.3	1	0.8	623	34,670	17.82	32.02	0.16	0.29
Washington	382	4.6	8	6.3	1,968	136,796	19.41	27.92	0.41	0.58
Wicomico	371	4.4	5	3.9	842	87,375	44.06	42.46	0.59	0.57
Worcester	155	1.9	2	1.6	674	49,604	23.00	31.25	0.30	0.40
Baltimore City	533	6.4	1	0.8	3,620	628,670	14.72	8.48	0.03	0.02
Total Accidents	**8,372**	**100.0**	**127**	**100.0**	**54,678**	**5,508,909**	**15.31**	**15.20**	**0.23**	**0.23**

1. Source: * Maryland Department of Planning
2. Accident rates by VMT are calculated per 100 Million Vehicle Miles of Travel.
3. Accident rates by population are calculated per 10,000 population.

3.3.5 Speed Limit

Trends

- For the latest 10 years, among the speed limits of the roads on which vehicles involved in accidents had driven, the most speed limit of the roads were 25 miles per hour or less than.
- For fatal accidents, the most posted speed limits of roads on which involved-vehicles had driven were 50 or 55 miles per hour.

Table 3.3.27 Vehicles Involved in Total Accidents by Posted Speed Limit, 1994-2003

Posted Speed Limit (mph)	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
25 or less	35,562	35,700	37,151	35,176	34,990	36,469	37,771	39,020	39,849	43,238
30	28,886	28,524	29,216	27,676	26,963	26,802	27,533	27,536	28,318	28,382
35	28,349	29,163	28,934	28,541	27,036	28,329	28,649	31,398	32,505	33,932
40	20,805	21,166	21,771	21,978	22,141	21,593	21,568	23,195	23,715	24,155
45	9,883	9,597	10,248	10,123	10,155	10,446	11,117	11,769	12,547	13,058
50	10,514	10,162	11,093	10,542	10,846	11,004	10,868	11,097	12,062	12,797
55	19,329	18,013	18,861	18,126	16,835	18,277	18,692	19,717	20,500	20,979
60	8	14	267	439	345	446	411	575	504	385
65	23	1,011	2,291	2,484	3,742	4,256	4,017	4,459	4,971	5,447
Other/ Unknown	26,821	26,448	25,288	23,689	21,654	23,402	24,507	21,088	20,955	20,509
Total Vehicles	**180,180**	**179,798**	**185,120**	**178,774**	**174,707**	**181,024**	**185,133**	**189,854**	**195,926**	**202,882**

Table 3.3.28 Vehicles Involved in Fatal Accidents by Posted Speed Limit, 1994-2003

Posted Speed Limit (mph)	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
25 or less	24	32	15	14	20	21	30	23	26	18
30	44	54	45	43	42	50	46	53	54	45
35	37	42	43	40	38	40	46	56	44	49
40	54	65	56	63	48	53	57	68	58	69
45	27	24	23	23	26	28	25	33	24	25
50	74	80	81	78	53	68	73	73	70	86
55	88	72	55	56	73	68	67	66	97	64
60	-	-	1	2	3	3	2	1	2	5
65	-	6	13	19	25	21	19	30	27	17
Other/ Unknown	7	11	8	7	5	11	10	8	6	5
Total Vehicles	**355**	**386**	**340**	**345**	**333**	**363**	**375**	**411**	**408**	**383**

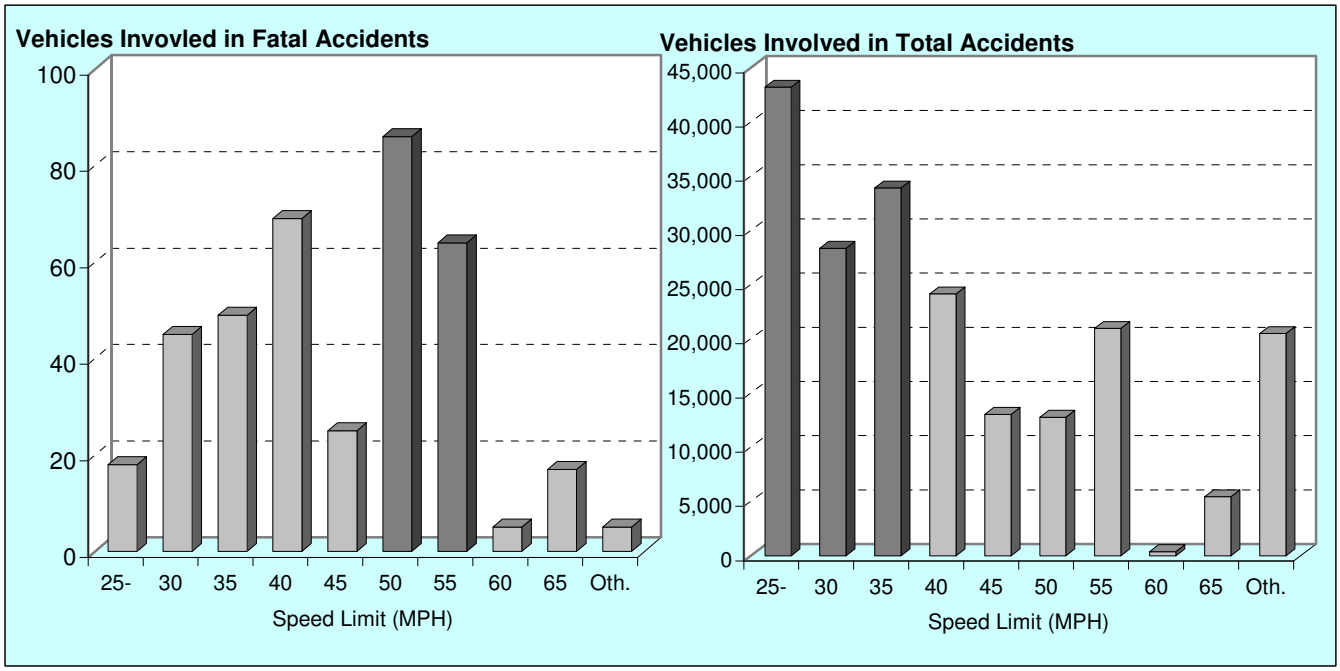
2003 Overview

- Among the speed limits of the roads on which vehicles involved in fatal accidents had driven, the highest percentage of the speed limits of the roads occurred on the road of which speed limit is 50 miles/hour (22.5%).
- For total accidents, the speed limit of 25 miles per hour or less had the most vehicles involved in total accidents (21.3%).

Table 3.3.29 Vehicles Involved in Fatal and Total Accidents by Posted Speed Limit, 2003

Posted Speed Limits (mph)	Vehicles Involved in Fatal Acc.		Vehicles Involved in Total Acc.	
	Number	%	Number	%
25 or less	18	4.7	**43,238**	**21.3**
30	45	11.7	28,382	14.0
35	49	12.8	33,932	16.7
40	69	18.0	24,155	11.9
45	25	6.5	13,058	6.4
50	**86**	**22.5**	12,797	6.3
55	64	16.7	20,979	10.3
60	5	1.3	385	0.2
65	17	4.4	5,447	2.7
Other/ Unknown	5	1.3	20,509	10.1
Total	**383**	**100.0**	**202,882**	**100.0**

Figure 3.3.14 Vehicles Involved in Fatal and Total Accidents by Posted Speed Limit, 2003



3.4 DRIVER BEHAVIOR-RELATED FACTORS

This section describes the accidents for driver behavior-related contributing circumstances, such as aggressive driving, speeding, red-light-running, and inattentive driving. Aggressive driving accounted for 9.5% of all accident fatalities in 2003. Aggressive driving is defined as two or more consecutive contributing circumstances causing accidents. The contributing circumstances include: "Failed to Yield Right of Way", "Failed to Obey Stop Sign", "Failed to Obey Traffic Signal", "Failed to Obey Other Traffic Control", "Failed to Keep Right of Center", "Failed to Stop for School Bus", "Exceeding Speed Limit", "Too Fast for Conditions", "Followed Too Closely", "Improper Lane Change", and "Improper Passing".

Speeding accounted for 24.0% of all accident fatalities in 2003. Speeding is defined as any reportable accidents in which speed was listed as a contributing factor, whether or not the driver was noted as going over the posted speed limit. The contributing factors include "Exceed Speed Limit" and "Too Fast for Conditions". Red-light-running accounted for 2.6% of all accident fatalities in 2003. Red-light-running is defined as any reportable accidents in which "Fail to Obey Traffic Signal" was listed as a contributing factor.

Inattentive driver-involved fatalities comprised 26.6% of all fatalities in 2003. Inattentive drivers are defined as drivers who did not pay attention or used cell phone when the accidents occurred.

Some of the notable trends are as follows:

- Between 2002 and 2003, aggressive driving-involved fatalities decreased from 71 to 62, while total aggressive driving-involved injuries increased by 10.8%.
- Between 2002 and 2003, speeding-related fatalities decreased by 7.1%, while speeding-related injuries increased by 12.0%.
- Red-light-running-involved accidents have generally decreased by an average of 4.3% from 1994 to 2003.
- Among inattentive driver-involved accidents, the percentages of rear-end collisions ranged from 31% to 40% over the latest 10 years.

Some results for 2003 are follows:

- The fixed object and the opposite direction collision types accounted for 60 % of all fatal accidents due to aggressive driving.
- The driver age group of 16-20 years had the highest percentage of drivers involved in speeding accidents (25.5%), and the highest driver fatalities involved in speeding accidents (18.3%).
- Red-light-running accidents occurred most frequently on MD highways (45.1%). Most fatal Red-light-running accidents occurred on MD highways (82.4%).
- Baltimore City had the highest inattentive driver-involved accident rate per VMT (145.58 per 100 million VMT)

3.4.1 Aggressive Driving

Trends

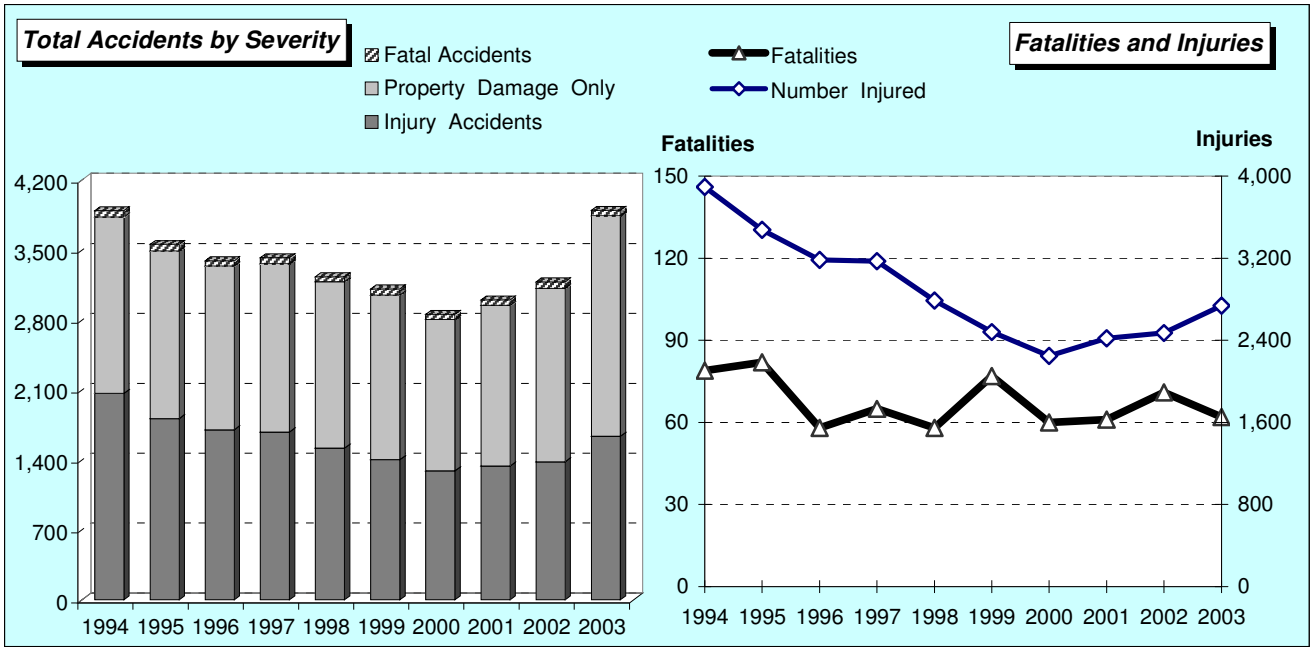
Severity

- Total accidents due to aggressive driving had been trending down from 1994 to 2000, but have been trending up from 2000 to 2003.
- Between 2002 and 2003, aggressive driving-involved fatalities decreased from 71 to 62, while total aggressive driving-involved injuries increased by 10.8%.

Table 3.4.1 Aggressive Driving-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	64	2,068	1,765	**3,897**	79	3,894
1995	66	1,815	1,678	**3,559**	82	3,477
1996	53	1,703	1,638	**3,394**	58	3,183
1997	61	1,681	1,682	**3,424**	65	3,170
1998	49	1,520	1,665	**3,234**	58	2,788
1999	61	1,405	1,647	**3,113**	77	2,482
2000	52	1,292	1,516	**2,860**	60	2,247
2001	55	1,341	1,608	**3,004**	61	2,420
2002	63	1,383	1,737	**3,183**	71	2,471
2003	55	1,637	2,208	**3,900**	62	2,739
Avg. Change (%)	**-1.6**	**-2.3**	**2.8**	**0.01**	**-2.4**	**-3.3**

Figure 3.4.1 Aggressive Driving-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003



- From 1994 to 2003, the percentage of aggressive driving-involved accidents among all types of accidents ranged from 2.9% to 4.0%, while the percentage of fatal aggressive driving-involved accidents among all fatal accidents ranged from 9.1% to 11.0%.

Table 3.4.2 Percentage of Aggressive Driving-Involved Accidents among All Accidents, 1994-2003

Year	Fatal Accidents			Fatalities			Total Accidents		
	Fatal Aggressive Driving Acc.	All Fatal Accidents	Percent of All	Aggressive Driving Fatalities	All Fatalities	Percent of All	Total Aggressive Driving Acc	All Accidents	Percent of All
1994	64	605	10.6	79	657	12.0	3,897	96,864	4.0
1995	66	614	10.7	82	684	12.0	3,559	96,681	3.7
1996	53	563	9.4	58	614	9.4	3,394	99,355	3.4
1997	61	570	10.7	65	610	10.7	3,424	96,121	3.6
1998	49	551	8.9	58	606	9.6	3,234	94,039	3.4
1999	61	555	11.0	77	598	12.9	3,113	97,012	3.2
2000	52	574	9.1	60	617	9.7	2,860	99,302	2.9
2001	55	602	9.1	61	662	9.2	3,004	101,411	3.0
2002	63	606	10.4	71	661	10.7	3,183	104,843	3.0
2003	55	596	9.2	62	651	9.5	3,900	109,130	3.6

Collision Type

- The most frequent collision type in aggressive driving-involved accidents over the latest 10 years was the rear end type. Between 2002 and 2003, rear-end collisions significantly increased by 48.7%.

Table 3.4.3 Total Aggressive Driving-Involved Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	459	332	359	273	268	205	213	222	204	257
Rear End	857	749	668	744	752	730	700	704	743	1,105
Left Turn	217	183	174	171	153	139	117	123	141	160
Sideswipe	482	414	294	283	296	267	264	260	264	292
Angle	957	872	685	709	644	637	529	503	573	652
Parked Vehicle	157	118	122	110	99	104	102	122	138	131
Pedestrian	25	23	21	24	14	25	18	18	25	27
Pedalcycle	14	13	13	12	12	11	5	5	7	9
Other Conveyance	1	1	1	1	2	1	2	4	5	1
Railway Train	-	2	1	1	1	2	1	-	1	-
Animal	4	1	2	3	2	2	2	4	5	1
Fixed Object	579	558	534	595	525	491	424	503	502	543
Other Object	16	18	25	18	15	21	11	16	25	18
Overturned	30	25	24	31	20	30	19	29	19	24
Spilled Cargo	-	-	-	1	-	-	-	-	-	-
Jacknife	-	-	1	2	1	2	-	-	-	3
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	7	13	10	6	12	4	3	9	5	10
Run Off Road	-	1	4	14	16	13	37	35	65	62
Down Hill Runaway	-	-	-	-	-	-	1	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	-	-	-
U-Turn	8	7	8	11	3	10	8	5	5	5
Backing	28	13	19	27	23	23	26	13	15	21
Other/unknown	56	216	429	388	376	396	378	429	441	579
Total	**3,897**	**3,559**	**3,394**	**3,424**	**3,234**	**3,113**	**2,860**	**3,004**	**3,183**	**3,900**

- Over the latest 10 years, the most frequent collision type in fatal aggressive driving-involved accidents was the fixed object type. The second most frequent collision type was the opposite direction type.

Table 3.4.4 Fatal Aggressive Driving-Involved Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	24	20	14	12	12	17	7	11	16	16
Rear End	2	1	3	2	2	1	4	5	4	2
Left Turn	2	1	3	4	2	2	2	2	3	3
Sideswipe	2	2	1	3	-	4	3	-	1	1
Angle	8	11	8	8	9	9	12	9	9	6
Parked Vehicle	-	1	1	-	-	1	-	2	-	1
Pedestrian	1	1	-	2	-	-	1	-	2	1
Pedalcycle	-	-	-	1	-	-	-	-	-	-
Other Conveyance	-	-	-	-	-	-	-	-	-	-
Railway Train	-	-	-	-	-	-	1	-	-	-
Animal	-	-	-	-	-	-	-	-	-	-
Fixed Object	21	29	19	25	21	24	18	23	23	17
Other Object	-	-	-	-	-	1	-	1	-	1
Overturned	2	-	1	2	-	2	-	-	-	-
Spilled Cargo	-	-	-	-	-	-	-	-	-	-
Jacknife	-	-	-	-	-	-	-	-	-	-
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	1	-	1	-	2	-	1	-	-	-
Run Off Road	-	-	-	-	-	-	2	1	2	2
Down Hill Runaway	-	-	-	-	-	-	-	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	-	-	-
U-Turn	-	-	-	-	-	-	-	-	1	-
Backing	-	-	1	1	-	-	1	-	-	-
Other/unknown	1	-	1	1	1	-	-	1	2	5
Total	**64**	**66**	**53**	**61**	**49**	**61**	**52**	**55**	**63**	**55**

Driver Age

- Among aggressive drivers, the age groups most involved in total accidents and fatal accidents was 16 to 19 years. As driver ages increase, the fraction of aggressive drivers involved in total accidents decreased.

Table 3.4.5 Total Aggressive Drivers Involved by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	38	33	33	36	34	25	27	24	18	30
16 - 19	674	675	583	684	630	627	537	626	603	717
20 - 24	595	566	502	462	485	491	475	465	577	661
25 - 29	465	454	433	416	382	337	293	323	319	393
30 - 34	445	376	347	323	295	289	244	254	261	314
35 - 39	303	244	263	320	293	270	237	233	233	299
40 - 44	209	213	212	203	223	211	176	159	204	255
45 - 49	190	150	168	182	138	150	171	162	157	246
50 - 54	129	112	116	112	140	119	116	112	123	152
55 - 59	88	86	73	87	76	68	70	90	81	140
60 - 64	71	58	59	44	65	64	62	56	52	72
65 - 69	70	61	51	55	46	33	30	33	45	54
70 - 79	88	82	83	90	81	72	62	66	80	94
80 +	26	26	26	38	37	35	46	36	44	41
Unknown	619	517	513	426	377	415	366	416	456	512
Total	**4,010**	**3,653**	**3,462**	**3,478**	**3,302**	**3,206**	**2,912**	**3,055**	**3,253**	**3,980**

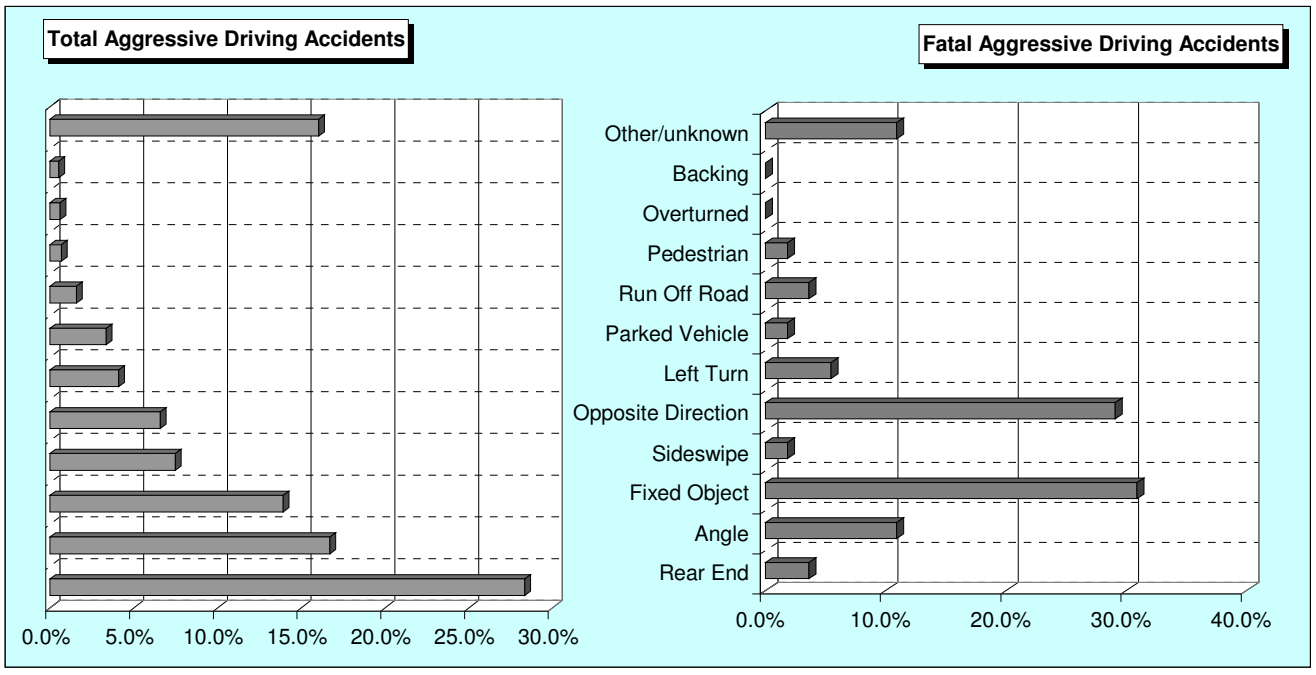
Table 3.4.6 Aggressive Driver Fatalities by Driver Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	-	1	1	-	-	-	-	1	-	1
16 - 19	6	10	4	7	9	11	6	9	5	7
20 - 24	5	9	8	5	8	14	7	8	6	6
25 - 29	7	6	7	5	6	8	3	3	5	4
30 - 34	5	8	5	6	2	1	3	5	1	2
35 - 39	6	4	2	4	3	2	2	1	1	1
40 - 44	1	2	2	1	2	2	3	1	7	-
45 - 49	1	-	1	1	2	-	1	2	1	2
50 - 54	1	-	2	1	2	1	3	1	1	-
55 - 59	2	-	-	-	-	1	-	2	1	4
60 - 64	-	-	2	1	-	-	2	-	-	-
65 - 69	3	1	-	-	-		-	1	1	2
70 - 79	-	-	-	3	-	1	4	4	1	1
80 +	1	1	2	3	-	-	2	-	2	2
Unknown	-	-	-	1	-	-	-	-	1	-
Total	**38**	**42**	**36**	**38**	**34**	**41**	**36**	**38**	**33**	**32**

2003 Overview

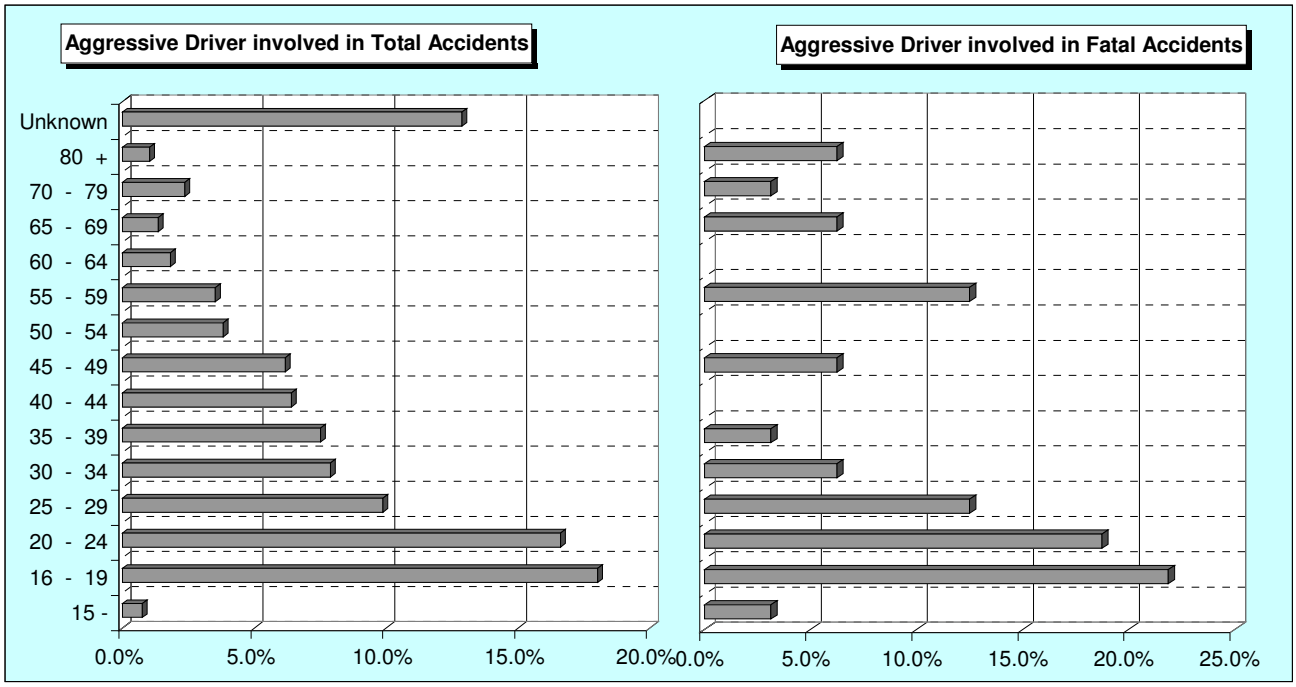
- Rear-end (1,165 accidents, 28.3%) was the most frequent collision type in aggressive driving-involved accidents. The most frequent collision type in aggressive driving-involved fatal accidents was the fixed object type, and the second most frequent type was the opposite direction. These two collision types accounted for 60 % of all fatal accidents due to aggressive driving.

Figure 3.4.2 Total and Fatal Aggressive-Involved Driving Accidents by Collision Type, 2003



- The driver age group of 16-20 years had the most aggressive drivers involved in accidents, (24.2%), and the most aggressive driver fatalities (23.7%).

Figure 3.4.3 Total and Fatal Aggressive Driving-Involved Accidents by Driver Age, 2003



- 34.4% of aggressive driver fatalities and 4.4% of drivers involved in the aggressive driving-involved accidents did not use any safety equipment.

Table 3.4.7 Aggressive Driver Fatalities and Drivers Involved In Aggressive Driving-Involved Accidents by Safety Equipment Used, 2003

Driver Age	Aggressive Driver Fatalities		Total Aggressive Drivers	
	Number	Percent	Number	Percent
Lap Belts Only	1	3.1	20	0.5
Harness Only	-	0.0	29	0.7
Belt and Harness	5	15.6	2,316	58.2
Air Bag	5	15.6	30	0.8
Air Bag and Belts	5	15.6	556	14.0
Motorcycle Helmet	3	9.4	22	0.6
Eye Protection	-	0.0	1	0.0
Helmet / Eye Protection	1	3.1	19	0.5
None	**11**	**34.4**	**175**	**4.4**
Not Stated	-	0.0	87	2.2
Other / Unknown	1	3.1	725	18.2
Total Drivers	**32**	**100.0**	**3,980**	**100.0**

- The proportion of male drivers among aggressive drivers was significantly higher than that of male drivers in all types of accidents. The proportion of male drivers involved in fatal accidents was also much higher than that of male drivers involved in all accidents.

Table 3.4.8 Total and Fatal Aggressive Driving-Involved Accidents by Driver Gender, 2003

Driver Gender	Aggressive Drivers involved in Accidents				Drivers involved in All Accidents			
	Fatal Accidents		Total Accidents		Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Male	26	81.3	2,435	61.2	290	75.7	105,400	52.0
Female	6	18.7	1,208	30.4	93	24.3	68,921	34.0
Unknown	-	0.0	337	8.4	-	0.0	28,561	14.0
Total Drivers	**32**	**100.0**	**3,980**	**100.0**	**383**	**100.0**	**202,882**	**100.0**

- Baltimore County had the largest number of total aggressive driving accidents (782). Fatal accidents due to aggressive driving were largest in Baltimore City (10).
- Baltimore City had the highest aggressive driving-involved accident rate per VMT (15.97 per 100 million VMT). Anne Arundel County had the aggressive driving-involved accident rate per population (12.59 per 10,000 population). The highest fatal aggressive driving-involved accidents rate per VMT was 0.28 per 100 million VMT in Baltimore City and Dorchester County.

Table 3.4.9 Aggressive Driving-Involved Accidents and Accident Rates by County, 2003

County	Aggressive Driving Accidents				VMT (millions)	Population	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			Per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	30	0.8	-	0.0	838	73,668	3.58	4.07	0.00	0.00
Anne Arundel	638	16.4	6	10.9	5,587	506,620	11.42	**12.59**	0.11	0.12
Baltimore	**782**	**20.1**	6	10.9	8,078	777,184	9.68	10.06	0.07	0.08
Calvert	27	0.7	-	0.0	722	84,110	3.74	3.21	0.00	0.00
Caroline	15	0.4	-	0.0	344	30,861	4.36	4.86	0.00	0.00
Carroll	92	2.4	3	5.5	1,248	163,207	7.37	5.64	0.24	0.18
Cecil	19	0.5	1	1.8	1,230	92,746	1.54	2.05	0.08	0.11
Charles	79	2.0	3	5.5	1,174	133,049	6.73	5.94	0.26	0.23
Dorchester	15	0.4	1	1.8	362	30,612	4.14	4.90	**0.28**	**0.33**
Frederick	130	3.3	3	5.5	2,746	213,662	4.73	6.08	0.11	0.14
Garrett	15	0.4	1	1.8	486	30,049	3.09	4.99	0.21	**0.33**
Harford	110	2.8	6	10.9	2,257	232,175	4.87	4.74	0.27	0.26
Howard	144	3.7	3	5.5	3,620	264,265	3.98	5.45	0.08	0.11
Kent	5	0.1	-	0.0	228	19,680	2.19	2.54	0.00	0.00
Montgomery	445	11.4	1	1.8	7,427	918,881	5.99	4.84	0.01	0.01
Prince George's	489	12.5	9	16.4	8,631	838,716	5.67	5.83	0.10	0.11
Queen Anne's	33	0.8	1	1.8	910	44,108	3.63	7.48	0.11	0.23
St. Mary's	31	0.8	-	0.0	778	92,754	3.98	3.34	0.00	0.00
Somerset	9	0.2	-	0.0	285	25,447	3.16	3.54	0.00	0.00
Talbot	28	0.7	-	0.0	623	34,670	4.49	8.08	0.00	0.00
Washington	75	1.9	-	0.0	1,968	136,796	3.81	5.48	0.00	0.00
Wicomico	58	1.5	1	1.8	842	87,375	6.89	6.64	0.12	0.11
Worcester	53	1.4	-	0.0	674	49,604	7.86	10.68	0.00	0.00
Baltimore City	578	14.8	**10**	**18.2**	3,620	628,670	**15.97**	9.19	**0.28**	0.16
Total Accidents	**3,900**	**100.0**	**55**	**100.0**	**54,678**	**5,508,909**	**7.13**	**7.08**	**0.10**	**0.10**

1. Source: * Maryland Department of Planning
2. Accident rates by VMT are calculated per 100 Million Vehicle Miles of Travel.
3. Accident rates by population are calculated per 10,000 population.

3.4.2 Speeding

Trends

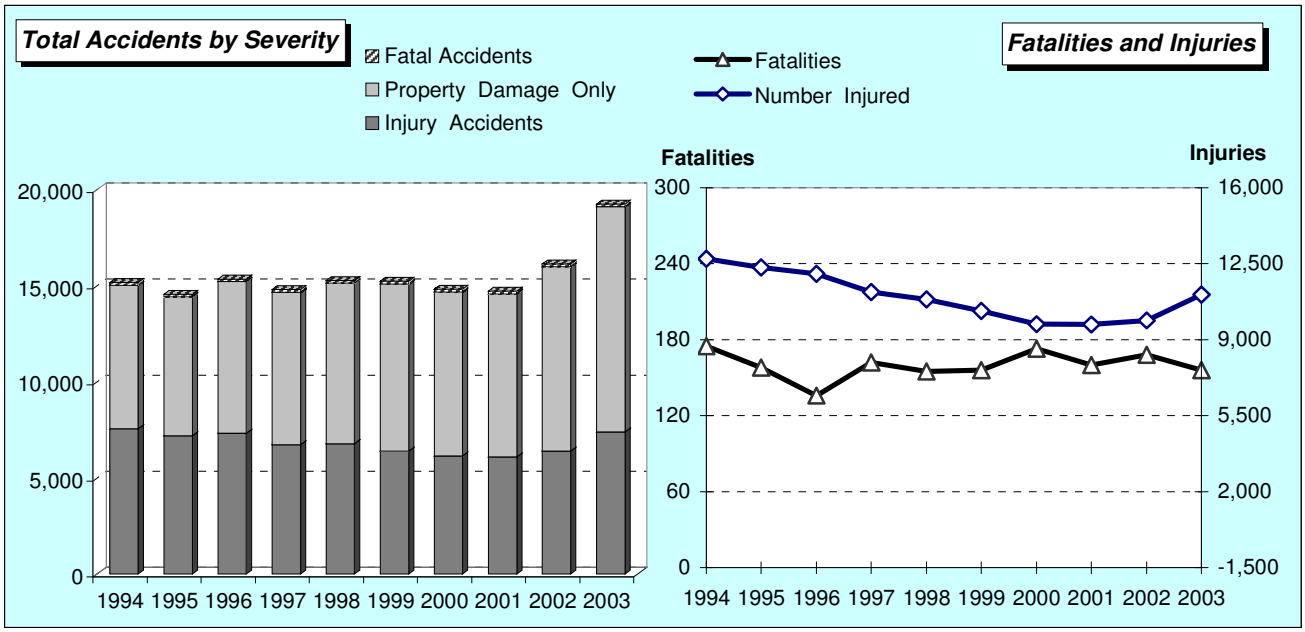
Severity

- Total speeding-related accidents decreased by 3.6% from 1998 to 2001. However, for the latest three years, from 2001 to 2003, total speeding-related accidents had an increasing trend.
- Between 2002 and 2003, speeding-related fatalities decreased by 7.1%, while speeding-related injuries increased by 12.0%.

Table 3.4.10 Speeding-Related Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	157	7,556	7,464	**15,177**	175	12,731
1995	136	7,193	7,232	**14,561**	158	12,327
1996	123	7,323	7,903	**15,349**	136	12,030
1997	152	6,731	7,926	**14,809**	162	11,198
1998	137	6,790	8,350	**15,277**	155	10,855
1999	137	6,395	8,704	**15,236**	156	10,328
2000	155	6,149	8,529	**14,833**	173	9,710
2001	139	6,097	8,489	**14,725**	160	9,702
2002	155	6,397	9,587	**16,139**	168	9,896
2003	142	7,397	11,722	**19,261**	156	11,080
Avg.Change(%)	**-1.1**	**-0.2**	**6.3**	**3.0**	**-1.2**	**-1.4**

Figure 3.4.4 Speeding-Related Accidents by Severity, Fatalities and Injuries, 1994-2003



- The proportion of speeding-related accidents in all types of accidents was 14.5~15.7% over the 1994 - 2002 years. The proportion of fatal speeding accidents among all fatal accidents was 21~27% over those years.

Table 3.4.11 Percentage of Speeding-Related Accidents among All Accidents, 1994-2003

Year	Fatal Accidents			Fatalities			Total Accidents		
	Fatal Speeding Acc.	All Fatal Accidents	Percent of All	Speeding Fatalities	All Fatalities	Percent of All	Total Speeding Acc	All Accidents	Percent of All
1994	157	605	26.0	175	657	26.6	15,177	96,864	15.7
1995	136	614	22.1	158	684	23.1	14,561	96,681	15.1
1996	123	563	21.8	136	614	22.1	15,349	99,355	15.4
1997	152	570	26.7	162	610	26.6	14,809	96,121	15.4
1998	137	551	24.9	155	606	25.6	15,277	94,039	16.2
1999	137	555	24.7	156	598	26.1	15,236	97,012	15.7
2000	155	574	27.0	173	617	28.0	14,833	99,302	14.9
2001	139	602	23.1	160	662	24.2	14,725	101,411	14.5
2002	155	606	25.6	168	661	25.4	16,139	104,843	15.4
2003	142	596	23.8	156	651	24.0	19,261	109,130	17.6

Collision Type

- Most collision types for speeding-related accidents were the fixed object, rear-end, and parked vehicle over the latest 10 years.

Table 3.4.12 Total Speeding-Related Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	1,061	783	933	696	705	677	610	597	612	770
Rear End	4,839	4,551	4,544	4,532	4,889	4,727	4,565	4,437	4,894	5,982
Left Turn	271	213	208	196	207	178	178	188	198	223
Sideswipe	649	548	484	409	398	410	402	373	418	462
Angle	852	797	761	810	724	658	640	624	668	774
Parked Vehicle	1,144	971	990	869	814	997	964	878	1,035	1,177
Pedestrian	99	86	102	79	97	82	87	74	90	91
Pedalcycle	44	43	37	40	44	51	27	32	23	32
Other Conveyance	5	10	9	9	9	11	11	9	20	15
Railway Train	-	1	9	3	4	7	1	2	4	5
Animal	25	24	19	33	32	21	19	23	32	38
Fixed Object	5,422	5,409	5,630	5,606	5,726	5,607	5,492	5,484	5,925	6,858
Other Object	126	161	176	139	156	154	138	142	155	214
Overturned	323	272	287	310	320	322	318	342	321	433
Spilled Cargo	2	4	2	3	8	4	3	1	3	3
Jacknife	14	17	23	14	23	17	14	14	8	13
Units Separate	-	1	2		3	1	5	2	3	2
Other Non Collision	68	87	96	68	66	64	38	45	50	69
Run Off Road	11	12	48	95	139	254	372	428	560	721
Down Hill Runaway	-	-	-	2	-	-	3	-	2	2
Explosion or Fire	-	-	-	-	-	-	2	-	1	1
U-Turn	42	39	43	38	35	31	55	29	29	43
Backing	38	41	35	38	39	29	29	30	23	28
Other/unknown	142	491	911	820	839	934	860	971	1,065	1,305
Total	**15,177**	**14,561**	**15,349**	**14,809**	**15,277**	**15,236**	**14,833**	**14,725**	**16,139**	**19,261**

Table 3.4.13 Fatal Speeding-Related Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	33	21	17	12	16	24	9	17	17	19
Rear End	10	10	9	18	10	7	17	13	13	16
Left Turn	2	4	2	4	8	6	8	4	2	5
Sideswipe	4	6	4	5	3	4	3	2	2	2
Angle	6	9	6	6	5	9	11	7	7	8
Parked Vehicle	5	3	5	3	4	4	3	5	1	2
Pedestrian	7	8	10	6	4	4	6	3	9	5
Pedalcycle	4	-	-	2	-	-	-	-	-	1
Other Conveyance	-	-	-	-	-	-	-	-	-	-
Railway Train	-	-	-	-	-	-	-	-	-	-
Animal	-	-	-	-	-	1	-	-	-	-
Fixed Object	76	73	66	86	72	70	84	72	91	64
Other Object	-	-	-	-	2	2	1	1	1	2
Overturned	7	1	2	7	8	5	3	6	2	7
Spilled Cargo	-	-	-	-	-	-	-	-	-	-
Jacknife	-	-	-	-	-	-	-	-	-	-
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	1	1	1	1	3	-	1	-	-	1
Run Off Road	-	-	-	1	-	-	5	8	5	5
Down Hill Runaway	-	-	-	-	-	-	-	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	-	-	-
U-Turn	-	-	-	-	-	-	-	-	1	-
Backing	1	-	-	-	1	-	2	-	1	1
Other/unknown	1	-	1	1	1	1	2	1	3	4
Total	**157**	**136**	**123**	**152**	**137**	**137**	**155**	**139**	**155**	**142**

Illumination

Table 3.4.14 Total Speeding-Related Accidents by Illumination, 1994-2003

Illumination	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Daylight	8,777	8,476	9,170	8,970	9,210	9,235	9,146	8,924	9,773	11,635
Dawn / Dusk	776	818	803	699	800	776	776	797	812	951
Dark Lights On	3,249	3,479	3,456	3,342	3,520	3,532	3,110	3,226	3,790	4,494
Dark Lights Off	1,932	1,757	1,881	1,767	1,720	1,674	1,787	1,754	1,752	2,144
Other / Unknown	443	31	39	31	27	19	14	24	12	37
Total	**15,177**	**14,561**	**15,349**	**14,809**	**15,277**	**15,236**	**14,833**	**14,725**	**16,139**	**19,261**

Table 3.4.15 Fatal Speeding-Related Accidents by Illumination, 1994-2003

Illumination	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Daylight	62	47	49	55	59	57	69	48	54	57
Dawn / Dusk	7	7	5	5	4	7	6	4	7	3
Dark Lights On	39	39	31	52	36	35	42	47	54	39
Dark Lights Off	44	43	38	40	37	38	38	40	39	43
Other / Unknown	5	-	-	-	1	-	-	-	1	-
Total	**157**	**136**	**123**	**152**	**137**	**137**	**155**	**139**	**155**	**142**

Driver Age

- Among drivers involved in speeding-related accidents, the driver age group of 16-19 and 20-24 years was the most involved in total accidents and fatal accidents. As driver ages increase, the fraction of speeding drivers involved in the accidents decreased.

Table 3.4.16 Drivers Involved in Speeding-Related Accidents by Driver Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	132	134	113	122	106	77	97	102	98	119
16 - 19	2,859	2,937	2,935	3,241	3,340	3,344	3,066	3,232	3,442	3,808
20 - 24	2,667	2,553	2,615	2,460	2,544	2,667	2,692	2,757	3,140	3,703
25 - 29	2,102	2,028	2,065	1,943	1,926	1,813	1,697	1,637	1,803	2,278
30 - 34	1,895	1,730	1,829	1,602	1,597	1,509	1,458	1,464	1,456	1,798
35 - 39	1,438	1,274	1,467	1,420	1,407	1,398	1,381	1,252	1,343	1,592
40 - 44	992	951	1,034	1,029	1,078	1,121	1,167	1,049	1,172	1,412
45 - 49	764	707	822	721	815	788	801	785	838	1,093
50 - 54	501	445	527	487	578	576	567	570	613	783
55 - 59	337	346	351	329	398	390	357	379	404	532
60 - 64	233	202	214	226	257	238	233	254	273	351
65 - 69	173	148	172	170	162	173	145	133	157	216
70 - 79	195	219	205	200	241	256	215	199	259	265
80 +	52	49	55	63	84	83	77	95	92	131
Unknown	1,417	1,315	1,412	1,190	1,113	1,239	1,218	1,260	1,444	1,672
Total	**15,757**	**15,038**	**15,816**	**15,203**	**15,646**	**15,672**	**15,171**	**15,168**	**16,534**	**19,753**

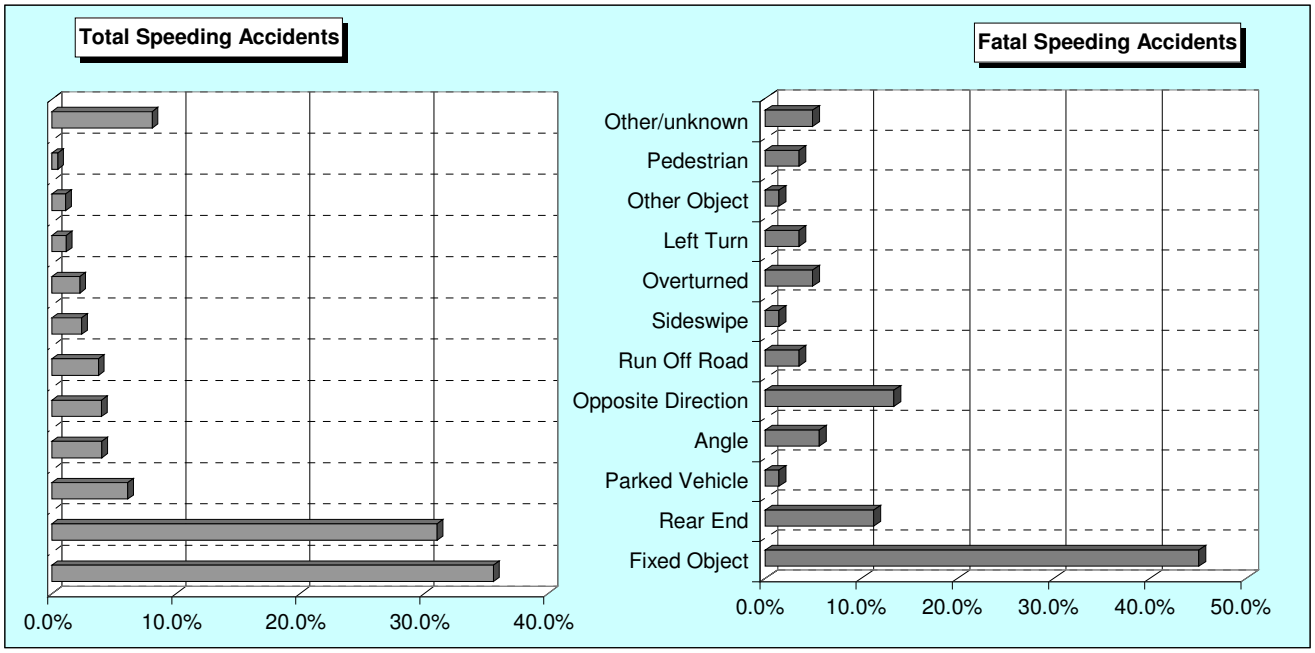
Table 3.4.17 Driver Fatalities Involved in Speeding-Related Accidents by Driver Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	-	4	2	-	-	-	-	2	-	1
16 - 19	17	13	14	13	20	26	21	17	12	12
20 - 24	15	19	17	11	14	22	22	25	30	14
25 - 29	16	11	16	25	19	13	14	15	15	14
30 - 34	11	20	8	13	10	7	10	16	11	14
35 - 39	11	12	4	12	10	6	9	6	7	11
40 - 44	4	4	6	3	5	10	7	4	8	6
45 - 49	4	1	5	6	1	5	5	2	7	7
50 - 54	4	1	4	1	4	2	6	3	3	2
55 - 59	3	-	1	2	3	1	-	3	1	6
60 - 64	2	2	2	5	3	3	5	-	1	2
65 - 69	4	1	-	1	1	2	1	2	-	3
70 - 79	1	1	2	3	3	3	1	3	1	4
80 +	2	-	-	-	1	1	-	-	1	-
Unknown	1	-	-	-	2	-	-	-	2	-
Total	**95**	**89**	**81**	**95**	**96**	**101**	**101**	**98**	**99**	**96**

2003 Overview

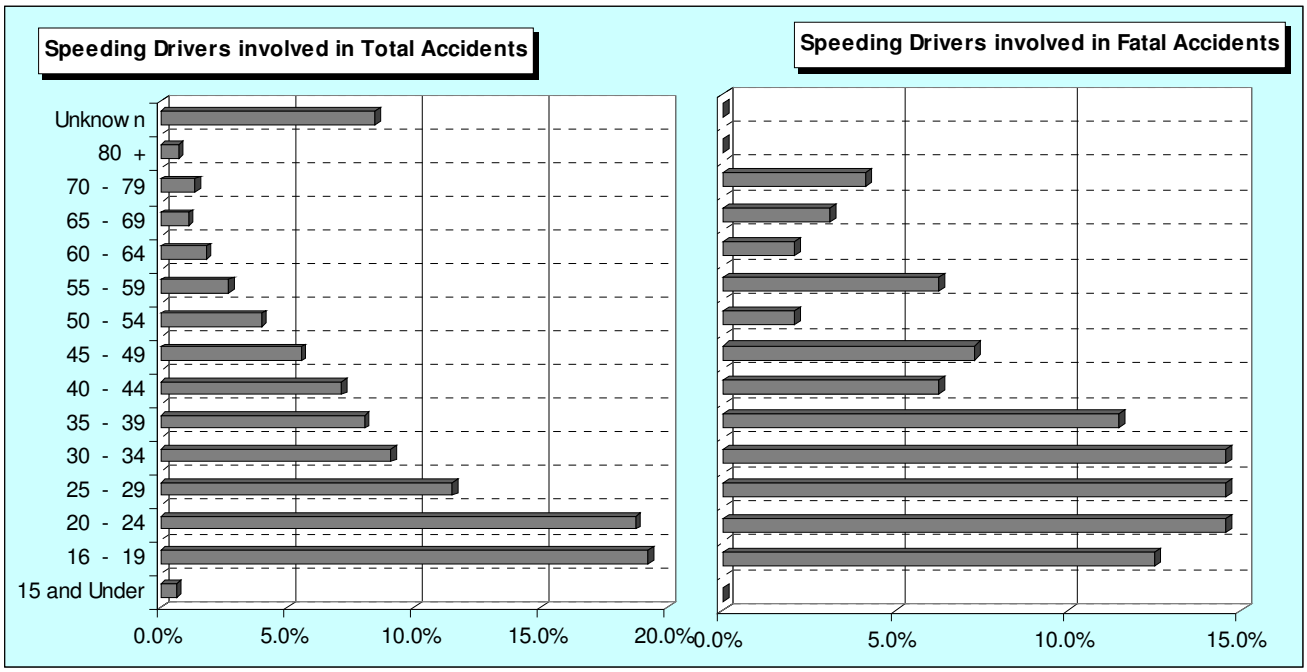
- Fixed object collisions (5,484 accidents, 37.2%) were the most frequent collision type in speeding accidents.

Figure 3.4.5 Total and Fatal Speeding-Related Accidents by Collision Type, 2003



- The driver age group of 16-20 years had the highest percentage of drivers involved in speeding accidents (25.5%), and the highest driver fatalities involved in speeding accidents (18.3%).

Figure 3.4.6 Drivers Involved in Total and Fatal Speeding Accidents by Age, 2003



- The proportion of male drivers among speeding drivers was higher than that of male drivers in all types of accidents. The proportion of male drivers involved in fatal speeding accidents was also significantly higher than that of male drivers involved in all accidents.

Table 3.4.18 Total and Fatal Speeding-Related Accidents by Driver Gender, 2003

Driver Gender	Speeding Drivers involved in Accidents				Drivers involved in All Accidents			
	Fatal Accidents		Total Accidents		Fatal Accidents		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Male	86	89.6	12,445	63.0	290	75.7	105,400	52.0
Female	10	10.4	6,136	31.1	93	24.3	68,921	34.0
Unknown	-	0.0	1,172	5.9	-	0.0	28,561	14.0
Total Drivers	**96**	**100.0**	**19,753**	**100.0**	**383**	**100.0**	**202,882**	**100.0**

- Total and fatal speeding-related accidents were largest in Prince George's County.
- The highest total speeding accident rates were highest in Charles County, and the highest fatal speeding-related accidents rates were highest in Garret County.

Table 3.4.19 Speeding-Related Accidents and Accident Rates by County, 2003

County	Speeding Accidents				VMT (millions)	Population	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	189	1.0	1	0.7	838	73,668	22.55	25.66	0.12	0.14
Anne Arundel	2,248	11.7	21	14.8	5,587	506,620	40.24	44.37	0.38	0.41
Baltimore	3,392	17.6	20	14.1	8,078	777,184	41.99	43.64	0.25	0.26
Calvert	232	1.2	4	2.8	722	84,110	32.13	27.58	0.55	0.48
Caroline	96	0.5	2	1.4	344	30,861	27.91	31.11	0.58	0.65
Carroll	407	2.1	5	3.5	1,248	163,207	32.61	24.94	0.40	0.31
Cecil	290	1.5	5	3.5	1,230	92,746	23.58	31.27	0.41	0.54
Charles	598	3.1	5	3.5	1,174	133,049	**50.94**	**44.95**	0.43	0.38
Dorchester	74	0.4	1	0.7	362	30,612	20.44	24.17	0.28	0.33
Frederick	653	3.4	4	2.8	2,746	213,662	23.78	30.56	0.15	0.19
Garrett	145	0.8	4	2.8	486	30,049	29.84	48.25	**0.82**	**1.33**
Harford	727	3.8	5	3.5	2,257	232,175	32.21	31.31	0.22	0.22
Howard	974	5.1	5	3.5	3,620	264,265	26.91	36.86	0.14	0.19
Kent	47	0.2	1	0.7	228	19,680	20.61	23.88	0.44	0.51
Montgomery	2,720	14.1	7	4.9	7,427	918,881	36.62	29.60	0.09	0.08
Prince George's	**3,124**	**16.2**	**23**	**16.2**	8,631	838,716	36.20	37.25	0.27	0.27
Queen Anne's	165	0.9	3	2.1	910	44,108	18.13	37.41	0.33	0.68
St. Mary's	287	1.5	2	1.4	778	92,754	36.89	30.94	0.26	0.22
Somerset	46	0.2		0.0	285	25,447	16.14	18.08	0.00	0.00
Talbot	155	0.8		0.0	623	34,670	24.88	44.71	0.00	0.00
Washington	522	2.7	5	3.5	1,968	136,796	26.52	38.16	0.25	0.37
Wicomico	311	1.6	2	1.4	842	87,375	36.94	35.59	0.24	0.23
Worcester	171	0.9	2	1.4	674	49,604	25.37	34.47	0.30	0.40
Baltimore City	1,688	8.8	15	10.6	3,620	628,670	46.63	26.85	0.41	0.24
Total Accidents	**19,261**	**100.0**	**142**	**100.0**	**54,678**	**5,508,909**	**35.23**	**34.96**	**0.26**	**0.26**

1. Source: * Maryland Department of Planning
2. Accident rates by VMT are calculated per 100 Million Vehicle Miles of Travel.
3. Accident rates by population are calculated per 10,000 population.

3.4.3 Red-Light-Running

Trends

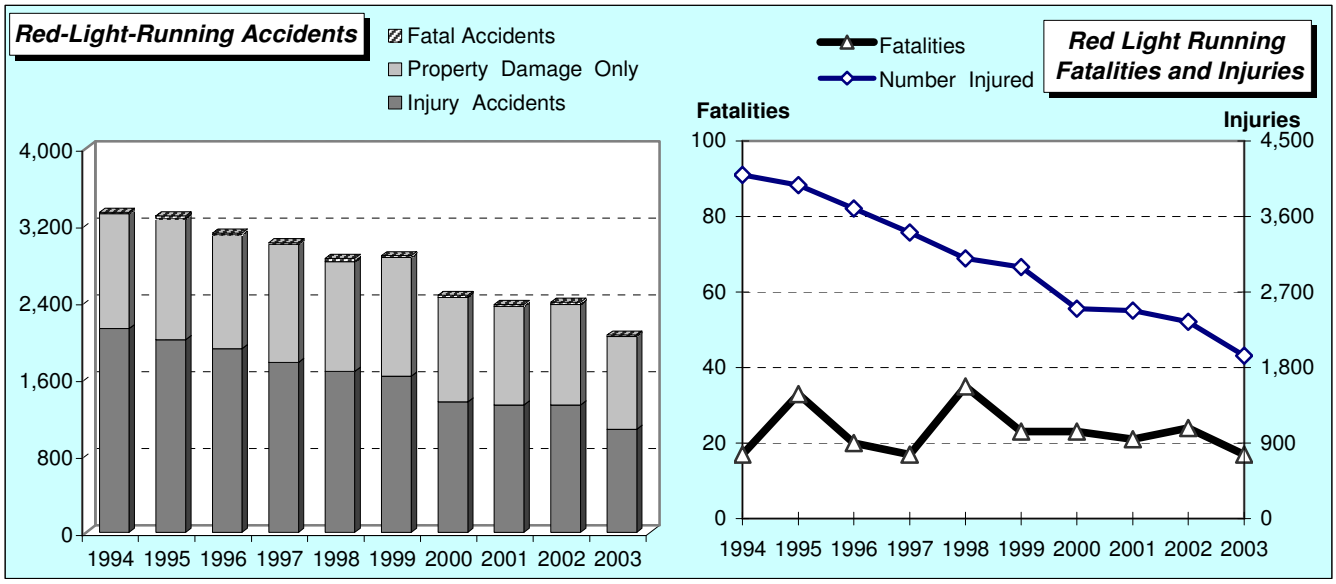
Severity

- Red-light-running-involved accidents have generally decreased by an average of 4.3% from 1994 to 2003. The number of injuries involved in red light running also shows a decreasing pattern, similar to the number of total accidents.
- The numbers of fatalities due to red-light-running were 17~35 persons per year over those years.

Table 3.4.20 Red-Light-Running-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	16	2,123	1,194	**3,333**	17	4,094
1995	31	2,004	1,261	**3,296**	33	3,971
1996	19	1,911	1,187	**3,117**	20	3,696
1997	16	1,769	1,232	**3,017**	17	3,412
1998	35	1,677	1,140	**2,852**	35	3,098
1999	19	1,626	1,234	**2,879**	23	2,998
2000	21	1,360	1,087	**2,468**	23	2,504
2001	20	1,328	1,025	**2,373**	21	2,481
2002	23	1,328	1,046	**2,397**	24	2,346
2003	17	1,072	965	**2,054**	17	1,939
Avg.Change(%)	**0.7**	**-5.5**	**-2.1**	**-4.3**	**-**	**-5.8**

Figure 3.4.7 Red-Light-Running-Involved Accidents by Severity, Fatalities and Injuries, 1994-2003



- There was a downward trend for the percentage of red-light–running accidents among all types of accidents. However, the percentage of fatal accidents due to red-light-running among all fatal accidents did not show any clear trend.

Table 3.4.21 Percentage of Red-Light-Running-Involved Accidents among All Accidents, 1994-2003

Year	Fatal Accidents			Fatalities			Total Accidents		
	Fatal Red Light Running Acc.	All Fatal Accidents	Percent of All	Fatal Red Light Running Acc.	All Fatalities	Percent of All	Fatal Red Light Running Acc.	All Accidents	Percent of All
1994	16	605	**2.6**	17	657	**2.6**	3,333	96,864	**3.4**
1995	31	614	**5.0**	33	684	**4.8**	3,296	96,681	**3.4**
1996	19	563	**3.4**	20	614	**3.3**	3,117	99,355	**3.1**
1997	16	570	**2.8**	17	610	**2.8**	3,017	96,121	**3.1**
1998	35	551	**6.4**	35	606	**5.8**	2,852	94,039	**3.0**
1999	19	555	**3.4**	23	598	**3.8**	2,879	97,012	**3.0**
2000	21	574	**3.7**	23	617	**3.7**	2,468	99,302	**2.5**
2001	20	602	**3.3**	21	662	**3.2**	2,373	101,411	**2.3**
2002	23	606	**3.8**	24	661	**3.6**	2,397	104,843	**2.3**
2003	17	596	**2.9**	17	651	**2.6**	2,054	109,130	**1.9**

Collision Types

- For the latest 10 years, the angle collision type accounted for most of crashes related to red-light-running. Most fatal red-light-running accident collision types were the angle and left turn collisions.

Table 3.4.22 Total Red-Light-Running-Involved Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	41	68	66	80	95	70	71	87	72	66
Rear End	194	224	209	220	251	287	259	220	236	171
Left Turn	442	336	327	353	300	302	263	212	241	244
Sideswipe	42	30	24	22	23	18	22	24	15	22
Angle	2,545	2,453	2,166	2,080	1,912	1,917	1,577	1,559	1,549	1,265
Parked Vehicle	4	10	12	2	6	4	5	8	8	11
Pedestrian	14	25	18	14	19	13	21	13	20	16
Pedalcycle	5	20	23	19	26	20	14	14	17	7
Other Conveyance	-	-	-	-	2	-	-	2	-	
Railway Train	2	1	2	3	5	4	7	3	1	2
Animal	-	-	-	-	1	-	-	-	-	
Fixed Object	16	11	14	12	11	14	11	7	14	13
Other Object	-	4	3	3	2	2	4	6	3	2
Overturned	1	2	1	1	1	-	-	1	1	
Spilled Cargo	-	-	-	-	-	-	-	-	-	
Jacknife	-	-	-	-	-	-	-	-	-	
Units Separate	-	-	-	-	-	-	-	-	-	
Other Non Collision	-	2	3	-	1	-	-	2	2	1
Run Off Road	-	-	-	-	1	-	-	-	-	
Down Hill Runaway	-	-	-	-	-	-	-	-	-	
Explosion or Fire	-	-	-	-	-	-	-	-	-	
U-Turn	2	3	2	2	1	2	1	3	2	1
Backing	10	10	14	6	13	12	15	6	9	11
Other/unknown	15	97	233	200	182	214	198	206	207	222
Total	**3,333**	**3,296**	**3,117**	**3,017**	**2,852**	**2,879**	**2,468**	**2,373**	**2,397**	**2,054**

Table 3.4.23 Fatal Red-Light-Running-Involved Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	-	-	-	-	1	-	-	-	1	1
Rear End	-	1	1	1	2	3	-	-	3	-
Left Turn	4	3	1	3	1	1	3	2	-	7
Sideswipe	-	-	-	-	-	-	-	-	-	-
Angle	12	24	16	10	24	11	12	16	16	8
Parked Vehicle	-	1	-	-	1	-	-	-	-	-
Pedestrian	-	1	-	-	4	2	4	1	1	-
Pedalcycle	-	-	-	-	1	1	-	1	-	-
Other Conveyance	-	-	-	-	-	-	-	-	-	-
Railway Train	-	-	-	-	-	-	1	-	-	-
Animal	-	-	-	-	-	-	-	-	-	-
Fixed Object	-	1	1	1	1	-	-	-	1	-
Other Object	-	-	-	-	-	-	-	-	-	-
Overturned	-	-	-	-	-	-	-	-	-	-
Spilled Cargo	-	-	-	-	-	-	-	-	-	-
Jacknife	-	-	-	-	-	-	-	-	-	-
Units Separate	-	-	-	-	-	-	-	-	-	-
Other Non Collision	-	-	-	-	-	-	-	-	-	-
Run Off Road	-	-	-	-	-	-	-	-	-	-
Down Hill Runaway	-	-	-	-	-	-	-	-	-	-
Explosion or Fire	-	-	-	-	-	-	-	-	-	-
U-Turn	-	-	-	-	-	-	-	-	-	-
Backing	-	-	-	-	-	1	-	-	-	-
Other/unknown	-	-	-	1	-	-	1	-	1	1
Total	**16**	**31**	**19**	**16**	**35**	**19**	**21**	**20**	**23**	**17**

Driver Age

- The driver age group most involved in red light running accidents was 20 to 24 years.

Table 3.4.24 Red-Light-Running Drivers Involved in Total Accidents by Driver Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	18	7	16	6	8	7	10	2	5	8
16 - 19	393	423	389	412	356	366	309	276	305	261
20 - 24	538	459	403	379	397	384	380	328	362	318
25 - 29	451	400	376	364	336	286	269	261	237	197
30 - 34	378	333	357	297	285	285	233	217	205	180
35 - 39	280	292	268	286	268	278	209	220	217	164
40 - 44	225	247	196	256	237	226	206	189	193	172
45 - 49	204	222	193	191	177	195	164	164	153	138
50 - 54	135	146	166	136	159	166	141	144	126	123
55 - 59	113	137	134	115	115	121	90	92	112	92
60 - 64	118	110	116	87	112	92	75	91	91	72
65 - 69	102	102	96	103	84	88	57	52	61	49
70 - 79	159	165	156	177	141	163	112	116	122	101
80 +	63	64	60	74	59	70	60	58	46	48
Unknown	251	234	235	171	147	187	173	165	179	154
Total	**3,428**	**3,341**	**3,161**	**3,054**	**2,881**	**2,914**	**2,488**	**2,375**	**2,414**	**2,077**

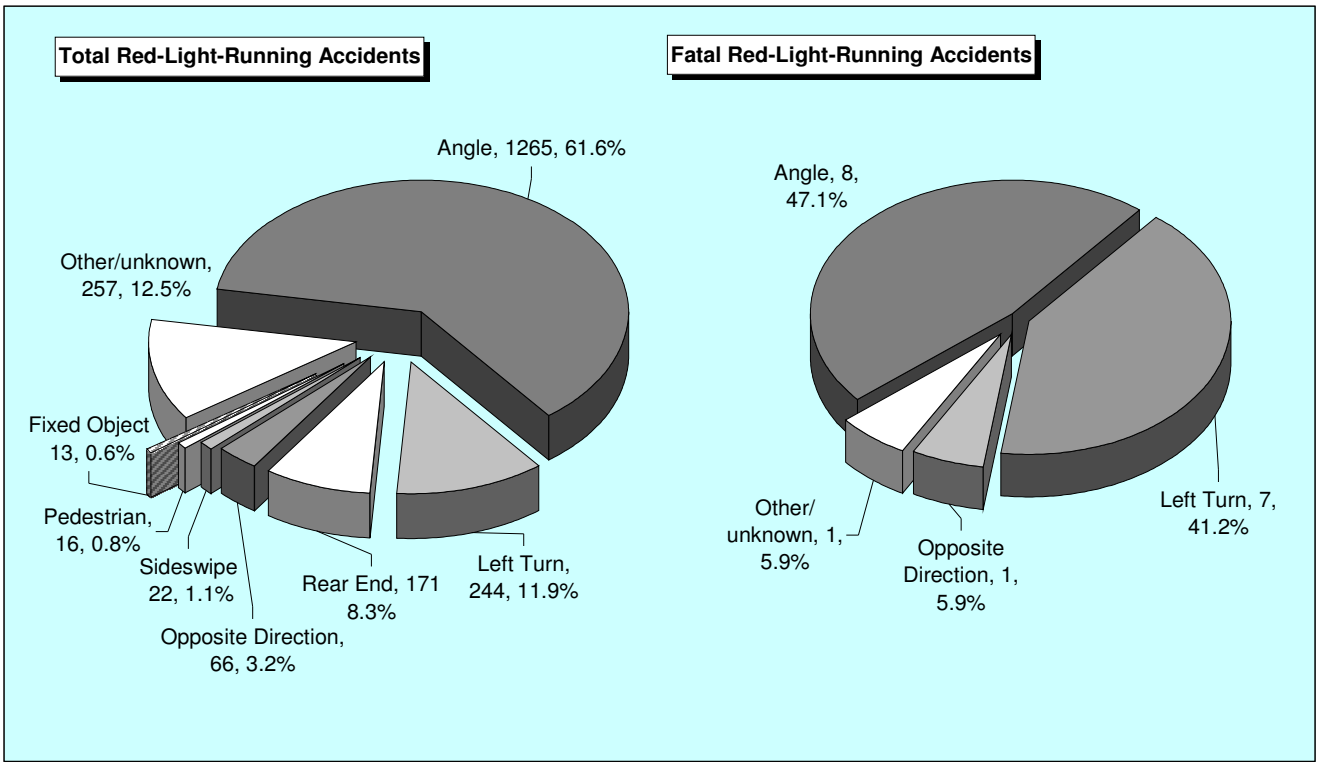
Table 3.4.25 Red-Light-Running Drivers Involved in Fatal Accidents by Driver Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	1	-	-	-	-	-	-	-	-	-
16 - 19	-	-	1	1	-	-	1	1	-	-
20 - 24	2	6	1	-	2	-	1	1	1	2
25 - 29	1	2	-	1	-	1	-	-	-	-
30 - 34	-	-	1	-	-	-	-	2	-	1
35 - 39	2	-	-	-	2	-	-	-	1	-
40 - 44	-	1	-	-	-	-	-	-	-	-
45 - 49	-	1	-	-	-	1	1	-	1	-
50 - 54	-	1	1	1	-	-	1	-	1	1
55 - 59	1		-	-	2	-	-	2	1	2
60 - 64	-	1	-	-	2	1	-	2	-	-
65 - 69	-	1	-	-	-	-	-	-	1	-
70 - 79	1	1	-	-	2	1	2	1	2	-
80 +	-	2	3	2	1	-	1	-	1	1
Unknown	-	-	-	-	-	-	-	-	-	-
Total	**8**	**16**	**7**	**5**	**11**	**4**	**7**	**9**	**9**	**7**

2003 Overview

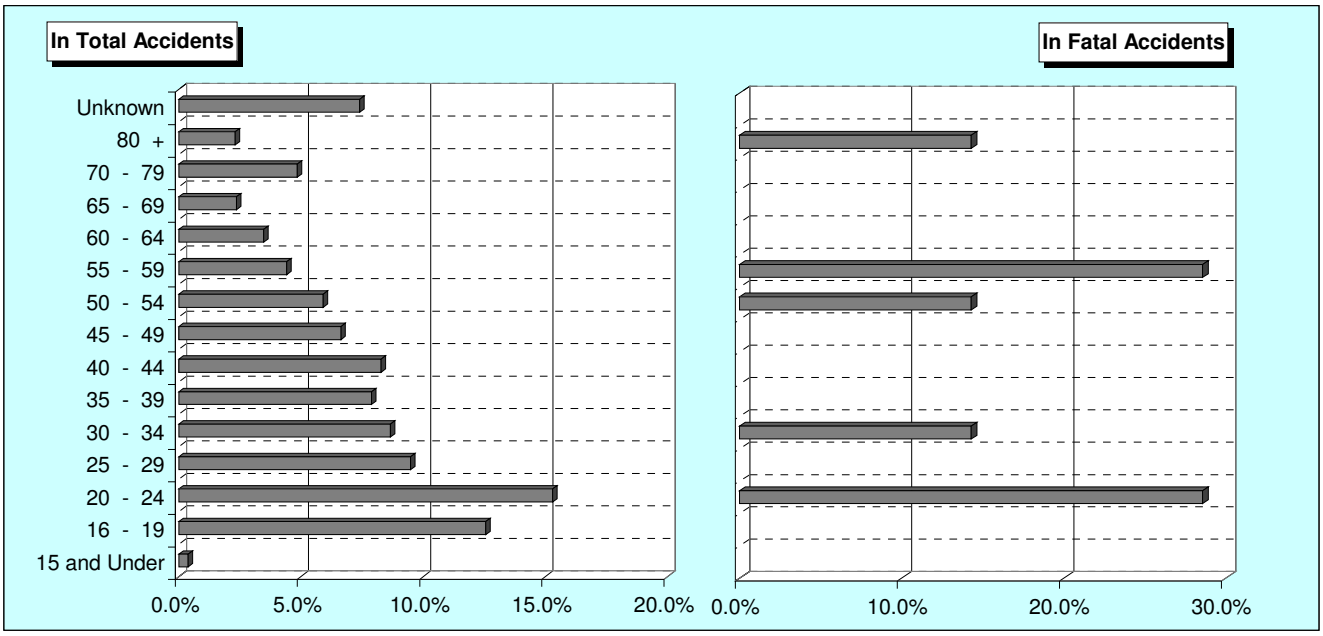
- The angle collision was the collision type most involved in total (61.6%) and fatal (47.1%) red-right-running accidents.

Figure 3.4.8 Total and Fatal Red-Light-Running Accidents by Collision Type, 2003



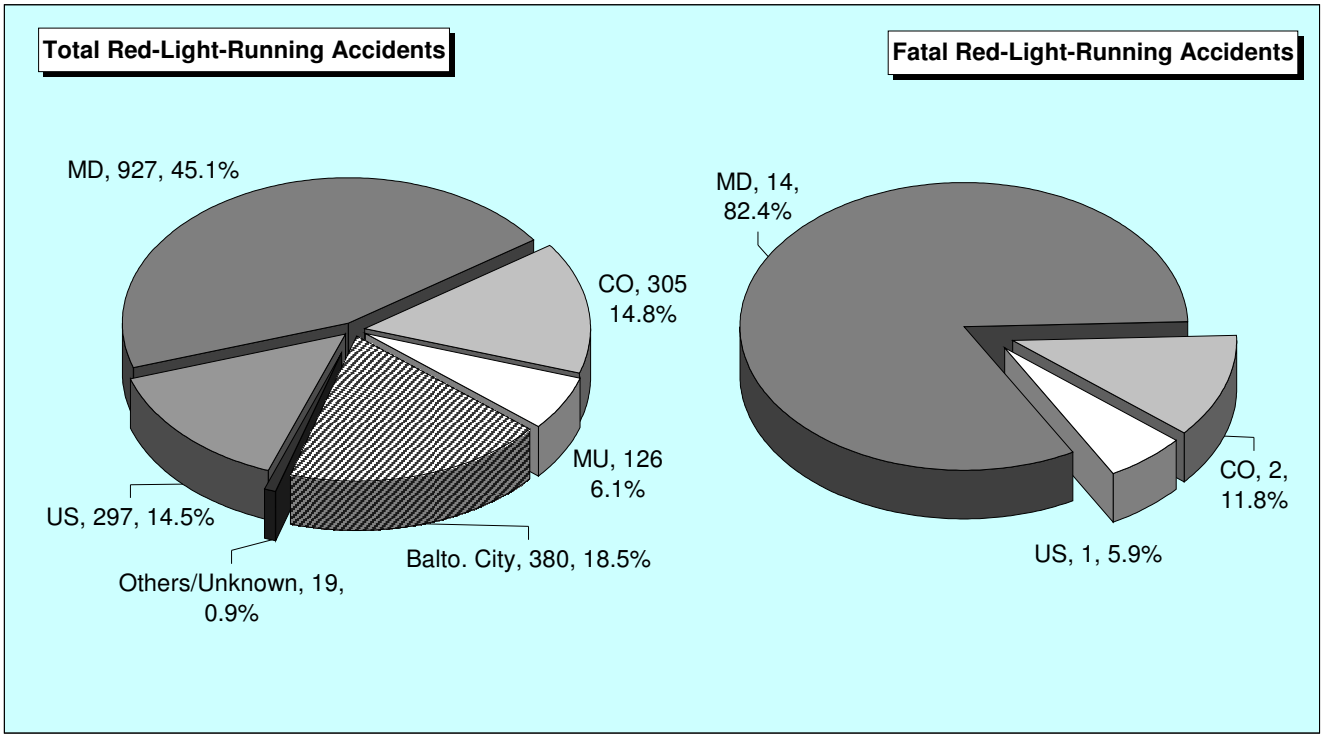
- The driver age group of 20-24 years was most involved in total red-light-running accidents.

Figure 3.4.9 Red-Light-Running Drivers Involved in Total and Fatal Accidents by Driver Age



- Red-light-running accidents occurred most frequently on MD highways (45.1%). Most fatal Red-light-running accidents occurred on MD highways (82.4%).

Figure 3.4.10 Red-Light-Running Accidents by Route Type, 2003



- The largest number of red-light-running accidents occurred in Baltimore County (18.5%), and of fatal red-light-running accidents in Prince George's County (35.3%).
- The highest total red-light-running accident rate per VMT was 10.52 per 100 million vehicle miles of travel in Baltimore City. Washington County had the highest total accident rate per 10,000 population.
- Calvert County had the highest fatal accident rates per both VMT and population.

Table 3.4.26 Red-Light-Running Accidents and Accident Rates by County, 2003

County	Red-Light-Running Accidents				VMT (millions)	Population	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			Per 100M VMT	per 10,000 Pop.	Per 100M VMT	per 10,000 Pop.
Allegany	12	0.6	-	0.0	838	73,668	1.43	1.63	0.00	0.00
Anne Arundel	213	10.4	3	17.6	5,587	506,620	3.81	4.20	0.05	0.06
Baltimore	193	9.4	-	0.0	8,078	777,184	2.39	2.48	0.00	0.00
Calvert	33	1.6	1	5.9	722	84,110	4.57	3.92	**0.14**	**0.12**
Caroline	9	0.4	-	0.0	344	30,861	2.62	2.92	0.00	0.00
Carroll	45	2.2	1	5.9	1,248	163,207	3.61	2.76	0.08	0.06
Cecil	26	1.3	-	0.0	1,230	92,746	2.11	2.80	0.00	0.00
Charles	41	2.0	-	0.0	1,174	133,049	3.49	3.08	0.00	0.00
Dorchester	9	0.4	-	0.0	362	30,612	2.49	2.94	0.00	0.00
Frederick	56	2.7	-	0.0	2,746	213,662	2.04	2.62	0.00	0.00
Garrett	5	0.2	-	0.0	486	30,049	1.03	1.66	0.00	0.00
Harford	61	3.0	2	11.8	2,257	232,175	2.70	2.63	0.09	0.09
Howard	100	4.9	-	0.0	3,620	264,265	2.76	3.78	0.00	0.00
Kent	1	0.0	-	0.0	228	19,680	0.44	0.51	0.00	0.00
Montgomery	329	16.0	2	11.8	7,427	918,881	4.43	3.58	0.03	0.02
Prince George's	293	14.3	**6**	**35.3**	8,631	838,716	3.39	3.49	0.07	0.07
Queen Anne's	9	0.4	-	0.0	910	44,108	0.99	2.04	0.00	0.00
St. Mary's	27	1.3	1	5.9	778	92,754	3.47	2.91	0.13	0.11
Somerset	6	0.3	-	0.0	285	25,447	2.11	2.36	0.00	0.00
Talbot	18	0.9	-	0.0	623	34,670	2.89	5.19	0.00	0.00
Washington	98	4.8	1	5.9	1,968	136,796	4.98	**7.16**	0.05	0.07
Wicomico	62	3.0	-	0.0	842	87,375	7.36	7.10	0.00	0.00
Worcester	27	1.3	-	0.0	674	49,604	4.01	5.44	0.00	0.00
Baltimore City	**381**	**18.5**	-	0.0	3,620	628,670	**10.52**	6.06	0.00	0.00
Total Accidents	**2,054**	**100.0**	**17**	**100.0**	**54,678**	**5,508,909**	**3.76**	**3.73**	**0.03**	**0.03**

1. Source: * Maryland Department of Planning
2. Accident rates by VMT are calculated per 100 Million Vehicle Miles of Travel.
3. Accident rates by population are calculated per 10,000 population.

3.4.4 Inattentive Drivers

Trends

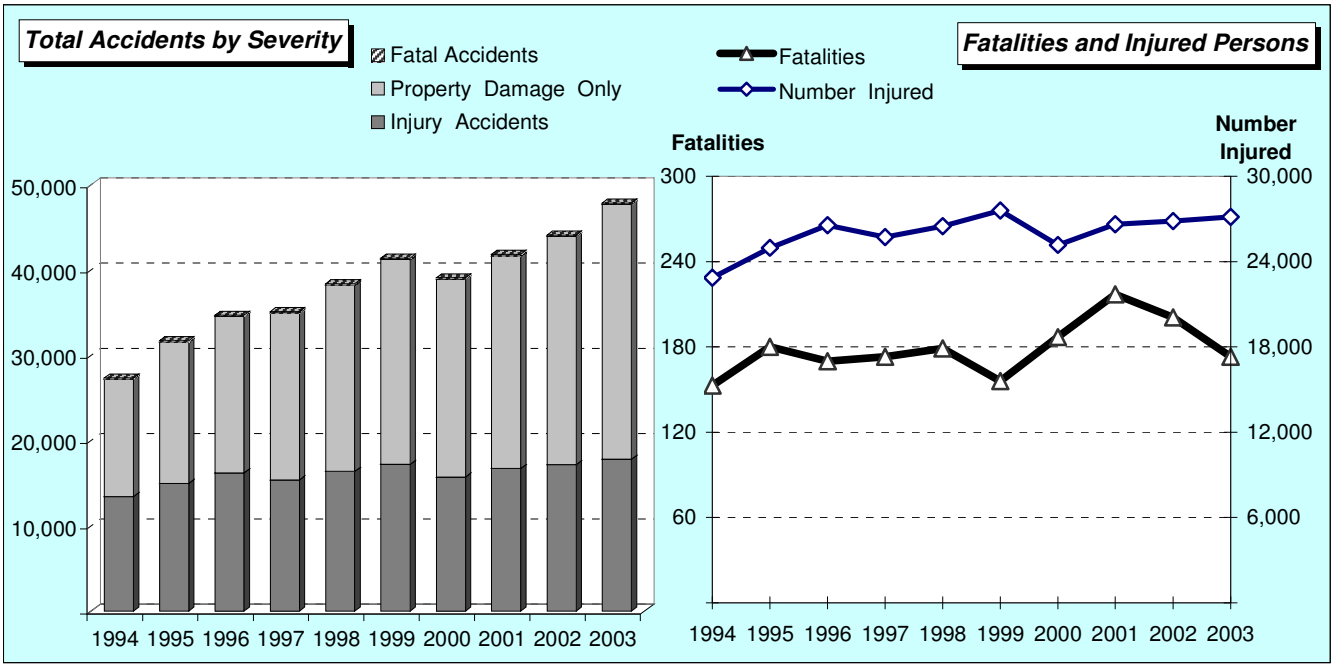
Severity

- For the latest 10 years, inattentive driver-involved accidents have been trending up with an average change rate of 8.3% per year.
- For the latest 3 years, inattentive driver-involved fatalities have been trending down.

Table 3.4.27 Inattentive Driver-Involved Accidents by Severity, Fatalities and Injured Persons, 1994-2003

Year	Fatal Accidents	Injury Accidents	Property Damage Only	Total Accidents	Fatalities	Number Injured
1994	143	13,467	13,746	27,356	153	22,875
1995	157	15,001	16,561	31,719	180	24,984
1996	164	16,229	18,337	34,730	170	26,569
1997	155	15,409	19,582	35,146	173	25,749
1998	163	16,406	21,833	38,402	179	26,512
1999	151	17,212	24,033	41,396	156	27,608
2000	175	15,736	23,192	39,103	187	25,172
2001	193	16,735	24,914	41,842	217	26,636
2002	177	17,193	26,761	44,131	201	26,868
2003	156	17,818	29,893	47,867	173	27,148
Avg. Change (%)	**1.0**	**3.6**	**13.1**	**8.3**	**1.5**	**2.1**

Figure 3.4.11 Inattentive Driver-Involved Accidents by Severity, Fatalities and Injured Persons, 1994-2003



- From 1994 to 2003, the percentage of inattentive driver-involved fatalities among all fatalities ranged from 23% to 33%.

Table 3.4.28 Percentage of Inattentive Driver-Involved Fatalities among All Fatalities, 1994-2003

Year	Inattentive Driver- Involved Fatalities		Other Fatalities		All Fatalities	
	Number	%	Number	%	Number	%
1994	153	23.3	504	76.7	657	100.0
1995	180	26.3	504	73.7	684	100.0
1996	170	27.7	444	72.3	614	100.0
1997	173	28.4	437	71.6	610	100.0
1998	179	29.5	427	70.5	606	100.0
1999	156	26.1	442	73.9	598	100.0
2000	187	30.3	430	69.7	617	100.0
2001	217	32.8	445	67.2	662	100.0
2002	201	30.4	460	69.6	661	100.0
2003	173	26.6	478	73.4	651	100.0

Collision Types

- The most frequent collision type in inattentive driver-involved accidents over the latest 10 years was the rear end type. Among the inattentive driver-involved accidents, the percentages of rear-end collisions ranged from 31% to 40% over those years.

Table 3.4.29 Inattentive Driver-Involved Accidents by Collision Type, 1994-2003

Collision Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Opposite Direction	749	844	991	951	1,088	1,102	1,027	1,198	1,245	1,269
Rear End	11,037	11,645	11,845	12,073	13,123	14,060	13,096	13,998	14,489	15,001
Left Turn	1,410	1,752	1,896	1,955	2,147	2,341	2,037	2,229	2,449	2,495
Sideswipe	2,146	2,204	2,136	2,063	2,268	2,410	2,382	2,580	2,669	2,802
Angle	3,191	4,022	4,366	4,484	4,819	5,301	4,683	5,132	5,515	5,818
Parked Vehicle	2,610	2,890	3,192	3,076	3,391	3,801	3,617	3,507	3,713	4,384
Pedestrian	545	561	711	661	708	730	685	682	695	794
Pedalcycle	152	176	165	194	228	239	192	171	159	190
Other Conveyance	6	24	18	19	19	23	23	28	22	32
Railway Train	10	5	11	12	18	23	22	18	11	17
Animal	42	52	49	65	69	78	66	82	87	120
Fixed Object	3,926	4,796	5,262	5,472	5,967	6,088	6,150	6,379	6,851	7,504
Other Object	128	177	228	217	264	269	270	283	268	329
Overturned	182	213	241	277	297	331	309	336	367	402
Spilled Cargo	2	3	5	7	4	9	8	7	8	4
Jacknife	7	13	22	16	11	23	16	17	12	18
Units Separate	-	4	3	5	5	5	7	3	4	6
Other Non Collision	71	80	88	73	91	75	77	72	73	86
Run Off Road	10	20	39	72	134	267	357	517	648	681
Down Hill Runaway	-	-	1	4	-	-	-	-	1	1
Explosion or Fire	-	-	2	2	1	5	3	1	6	5
U-Turn	454	473	557	536	580	653	665	592	640	670
Backing	234	253	299	302	336	344	323	328	349	407
Other/unknown	444	1,512	2,603	2,610	2,834	3,219	3,088	3,682	3,850	4,832
Total	**27,356**	**31,719**	**34,730**	**35,146**	**38,402**	**41,396**	**39,103**	**41,842**	**44,131**	**47,867**

Driver Ages

- Among inattentive drivers, the age group most involved in the accidents was 16 to 19 years in most years, but 20-24 years in 2003.

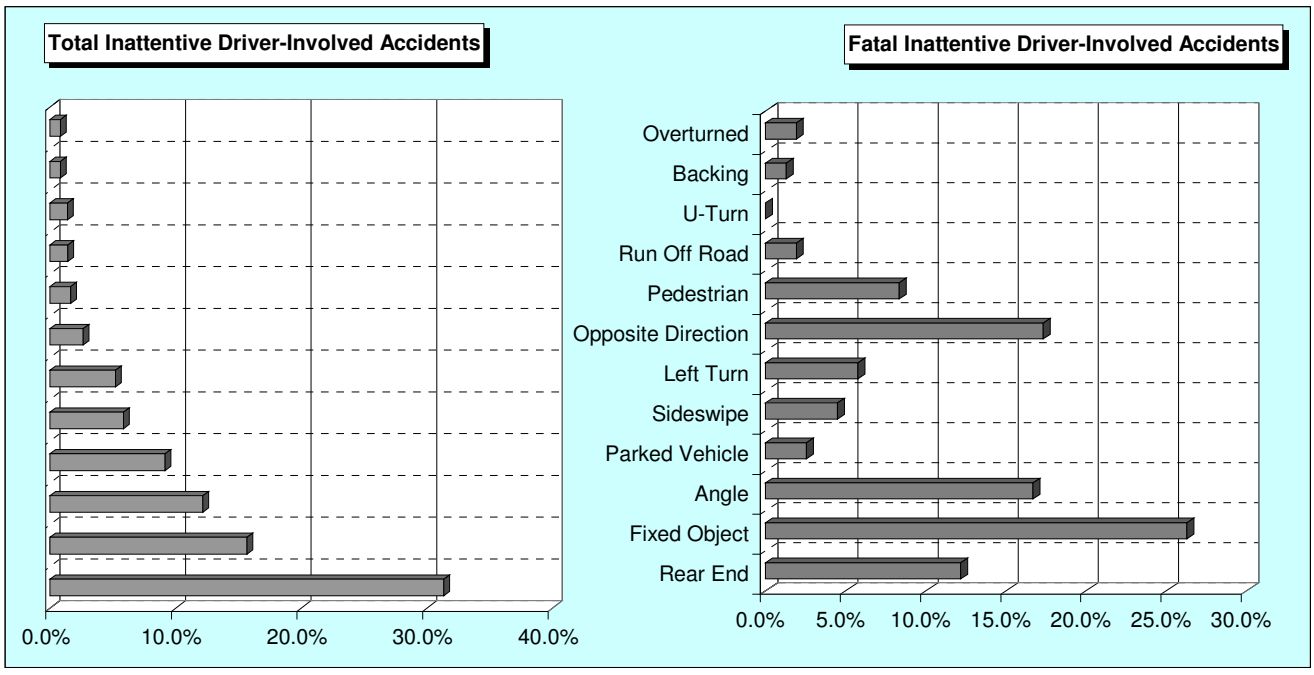
Table 3.4.30 Inattentive Drivers by Age, 1994-2003

Driver Age	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
15 and Under	125	143	147	156	162	153	125	172	173	179
16 - 19	3,794	4,657	4,915	5,303	5,975	6,419	5,861	6,310	6,659	6,797
20 - 24	3,778	4,270	4,651	4,666	5,094	5,577	5,577	6,095	6,523	7,131
25 - 29	3,518	4,008	4,162	4,139	4,295	4,453	4,044	4,306	4,413	4,776
30 - 34	3,292	3,850	3,982	3,928	4,067	4,188	3,866	4,045	4,033	4,526
35 - 39	2,639	3,164	3,546	3,498	3,861	4,125	3,905	3,949	4,040	4,238
40 - 44	2,249	2,474	2,791	2,974	3,158	3,527	3,387	3,566	3,766	4,134
45 - 49	1,671	2,034	2,213	2,238	2,609	2,727	2,665	2,806	3,001	3,342
50 - 54	1,199	1,413	1,629	1,756	1,984	2,138	2,124	2,219	2,413	2,514
55 - 59	882	1,050	1,230	1,246	1,515	1,564	1,525	1,626	1,771	2,035
60 - 64	778	810	939	951	1,073	1,150	1,030	1,178	1,276	1,403
65 - 69	628	705	829	826	858	965	819	861	922	957
70 - 79	979	1,233	1,416	1,379	1,504	1,655	1,408	1,477	1,474	1,549
80 +	364	432	513	568	681	718	682	718	786	840
Unknown	2,749	3,226	3,598	3,359	3,528	4,179	4,030	4,493	4,900	5,776
Total	**28,645**	**33,469**	**36,561**	**36,987**	**40,364**	**43,538**	**41,048**	**43,821**	**46,150**	**50,197**

2003 Overview

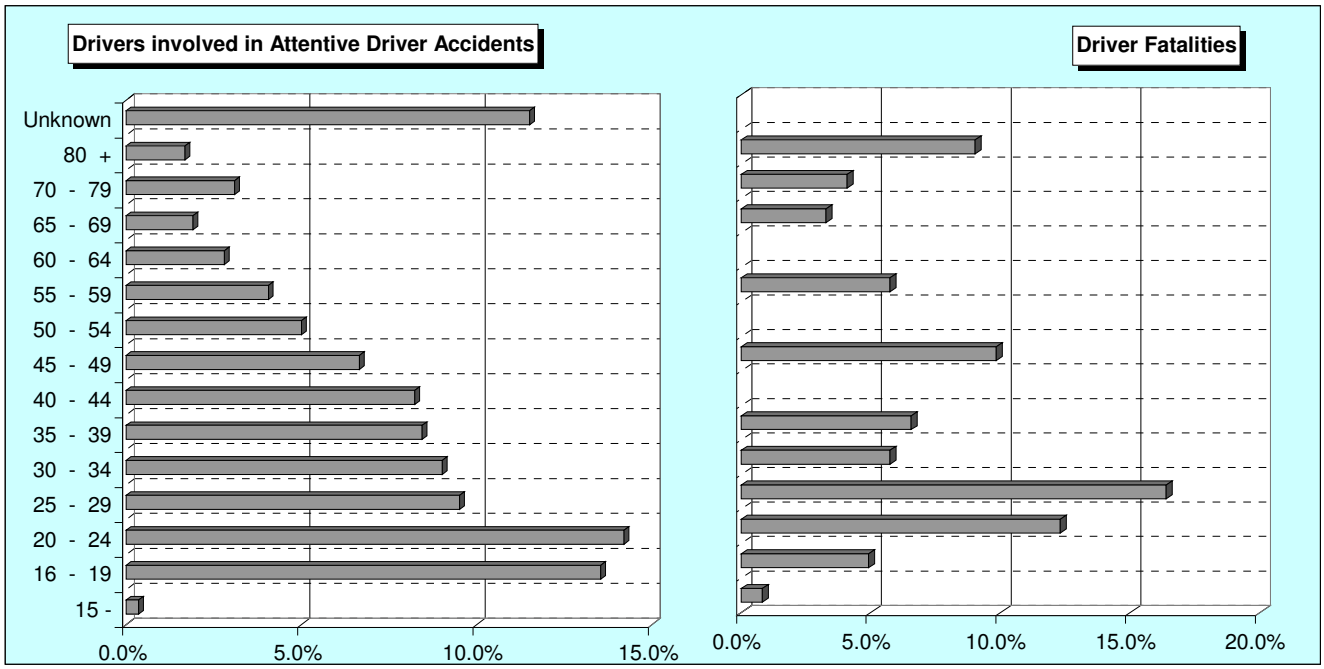
- Rear-end (15,001 accidents, 31.3%) was the most frequent collision type in inattentive driver-involved accidents. The most frequent collision type in fatal inattentive driver-involved accidents was the fixed object type (41 accidents, 26.3%).

Figure 3.4.12 Total and Fatal Inattentive Driver-Involved Accidents by Collision Type, 2003



- The driver age group of 20-24 years had the most inattentive drivers involved in accidents, (14.2%). The driver age group of 25-29 years had the most inattentive driver fatalities (16.4%).

Figure 3.4.13 Drivers Involved in Inattentive Driver Accidents and Driver Fatalities by Age, 2003



- 28.6% of inattentive driver fatalities and 2.4% of drivers involved in the inattentive drivers - involved accidents did not use any safety equipment.

Table 3.4.31 Driver Fatalities and Drivers Involved in Inattentive Driver Accidents by Safety Equipment Used, 2003

Driver Age	Inattentive Driver Fatalities		Total Inattentive Drivers	
	Number	Percent	Number	Percent
Lap Belts Only	-	0.0	409	0.8
Harness Only	2	1.6	479	1.0
Belt and Harness	36	29.5	32,724	65.2
Air Bag	16	13.1	143	0.3
Air Bag and Belts	14	11.5	6,404	12.8
Motorcycle Helmet	11	9.0	143	0.3
Eye Protection	-	0.0	4	0.01
Helmet / Eye Protection	3	2.5	146	0.3
None	**35**	**28.6**	**1,196**	**2.4**
Not Stated	-	0.0	904	1.8
Other / Unknown	5	4.1	7,645	15.1
Total Drivers	**122**	**100.0**	**50,197**	**100.0**

- The proportion of male drivers (57.5%) among inattentive drivers was higher than that of male drivers (52.0%) in all types of accidents. The proportion of male drivers involved in fatal accidents was also higher than that of male drivers involved in all accidents.

Table 3.4.32 Drivers Involved and Driver Fatalities in Inattentive Driver-Involved Accidents and All Accidents by Driver Gender, 2003

Driver Gender	Inattentive Driver-Involved Accidents				All Accidents			
	Driver Fatalities		Drivers Involved		Driver Fatalities		Drivers Involved	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Male	93	76.2	28,848	57.5	290	75.7	105,400	52.0
Female	29	23.8	17,399	34.6	93	24.3	68,921	34.0
Unknown	-	0.0	3,950	7.9	-	0.0	28,561	14.0
Total Drivers	**122**	**100.0**	**50,197**	**100.0**	**383**	**100.0**	**202,882**	**100.0**

- Prince George's County had the largest number of inattentive driver-involved accidents (9,275). The number of fatal inattentive driver-involved accidents was also largest in Prince George's County (25).
- Baltimore City had the highest inattentive driver-involved accident rate per VMT (145.58 per 100 million VMT). Talbot County had the highest inattentive driver-involved accident rate per population (137.87 per 10,000 population). The highest fatal inattentive driver-involved accidents rate per VMT was 1.1 per 100 million VMT in Dorchester County.

Table 3.4.33 Inattentive Driver-Involved Accidents and Accident Rates by County, 2003

County	Inattentive Driver-Involved Accidents				VMT (millions)	Population	Total Acc. Rate		Fatal Acc. Rate	
	Total	%	Fatal	%			Per 100M VMT	per 10,000 Pop.	per 100M VMT	per 10,000 Pop.
Allegany	418	0.9	4	2.6	838	73,668	49.88	56.74	0.48	0.54
Anne Arundel	3,049	6.4	9	5.8	5,587	506,620	54.57	60.18	0.16	0.18
Baltimore	6,470	13.5	14	9.0	8,078	777,184	80.09	83.25	0.17	0.18
Calvert	555	1.2	3	1.9	722	84,110	76.87	65.99	0.42	0.36
Caroline	203	0.4	2	1.3	344	30,861	59.01	65.78	0.58	0.65
Carroll	802	1.7	7	4.5	1,248	163,207	64.26	49.14	0.56	0.43
Cecil	904	1.9	7	4.5	1,230	92,746	73.50	97.47	0.57	0.75
Charles	1,398	2.9	5	3.2	1,174	133,049	119.08	105.07	0.43	0.38
Dorchester	241	0.5	4	2.6	362	30,612	66.57	78.73	**1.10**	1.31
Frederick	1,509	3.2	7	4.5	2,746	213,662	54.95	70.63	0.25	0.33
Garrett	300	0.6	4	2.6	486	30,049	61.73	99.84	0.82	**1.33**
Harford	1,704	3.6	11	7.1	2,257	232,175	75.50	73.39	0.49	0.47
Howard	2,511	5.2	9	5.8	3,620	264,265	69.36	95.02	0.25	0.34
Kent	77	0.2	0	0.0	228	19,680	33.77	39.13	0.00	0.00
Montgomery	8,305	17.4	9	5.8	7,427	918,881	111.82	90.38	0.12	0.10
Prince George's	**9,275**	**19.4**	**25**	**16.0**	8,631	838,716	107.46	110.59	0.29	0.30
Queen Anne's	279	0.6	5	3.2	910	44,108	30.66	63.25	0.55	1.13
St. Mary's	831	1.7	5	3.2	778	92,754	106.81	89.59	0.64	0.54
Somerset	175	0.4	2	1.3	285	25,447	61.40	68.77	0.70	0.79
Talbot	478	1.0	1	0.6	623	34,670	76.73	**137.87**	0.16	0.29
Washington	1,291	2.7	13	8.3	1,968	136,796	65.60	94.37	0.66	0.95
Wicomico	1,198	2.5	4	2.6	842	87,375	142.28	137.11	0.48	0.46
Worcester	624	1.3	4	2.6	674	49,604	92.58	125.80	0.59	0.81
Baltimore City	5,270	11.0	2	1.3	3,620	628,670	**145.58**	83.83	0.06	0.03
Total	**47,867**	**100.0**	**156**	**100.0**	**54,678**	**5,508,909**	**87.54**	**86.89**	**0.29**	**0.28**

1. Source: * Maryland Department of Planning
2. Accident rates by VMT are calculated per 100 Million Vehicle Miles Traveled.
3. Accident rates by population are calculated per 10,000 population.

CHAPTER IV. REGIONAL CHARACTERISTICS

4.1 COUNTIES

4.2 BORDERING STATES

4.3 PEER STATES AND OTHER COUNTRIES

4.1 COUNTIES

This section describes the accidents by county, considering severity, highway type, and odds ratios. Safety fact sheets for 23 Maryland counties and Baltimore City provide more detail accident information by Traffic Safety Analysis Division (TSAD). Each county fact sheet has trends in accidents over the latest 10 years and a 2003 Overview. For more details on county traffic safety information, please contact TSAD.

Some of the notable trends for the latest 5 years (1999-2003) are as follows:

- More fatalities occurred in Prince George's County than in any other counties.
- Nearly half of fatalities on Interstate (IS) highways occurred in Baltimore County and Prince George's County for the latest 5 years. Between 2002 and 2003, the number of fatalities on Interstate highways in Prince George's and Cecil County significantly decreased, while that in Queen Anne's County increased from 2 to 7.
- For the latest 5 years, the largest number of fatalities on US routes occurred in Baltimore and Prince George's County. The fatalities on US routes in Baltimore County had an increasing trend over the latest 5 years.
- The largest number of fatalities on MD routes has occurred on Prince George's County and Anne Arundel County for the 5 years.
- Nearly 60% of fatalities on County routes occurred on four counties; Prince George's, Baltimore, Anne Arundel, and Montgomery County.

Some results for 2003 are as follows:

- Prince George's County had the largest number of fatalities, while Garrett County had the highest fatality rates per VMT, per population, per licensed driver and per registered vehicle.
- 2.0% of traffic accidents in Garrett County resulted in a fatality, which is significantly higher than the statewide 0.5%.
- The highest odds ratio of total accidents per VMT is 2.72, found in Baltimore City. The lowest odds ratio of total accidents per VMT is 0.39, found in Queen Anne's County.
- The highest odds ratio of fatal accidents per VMT is 2.45, found in Garrett County. The lowest odds ratio of fatal accidents per VMT is 0.40, found in Kent County.

4.1.1 Severity

2003 Overview

- 0.5% of all the statewide traffic crashes resulted in a fatality. However, 2.0% of traffic accidents in Garrett County resulted in a fatality, which is significantly higher than the statewide 0.5%. In Queen Anne's County, 1.7% of accidents resulted in a fatality.

- In 2003, Prince George's County had the most fatalities, while Garrett County had the highest fatality rates per VMT, per population, per licensed driver and per registered vehicle. The number of injury accidents was largest in Prince George's County, while the injury rates per VMT, per licensed driver and per registered vehicle were highest in Baltimore City.

- The serious injuries, non-incapacitating and capacitating injuries was highest in Prince George's County, while the serious injury rates per VMT, per population and per licensed driver were highest in Charles County. Prince George's also had the highest sum of the non-incapacitating, capacitating injuries and fatalities, and Charles County had the highest the rates of the sum per VMT, per population and per licensed driver.

Table 4.1.1 County Accidents by Severity, 2003

County	Fatal Accidents		Injury Accidents		Property Damage Only		Total Accidents	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	8	0.9	402	42.9	528	56.3	938	100.0
Anne Arundel	59	0.6	3,588	34.3	6,804	65.1	10,451	100.0
Baltimore	81	0.5	5,362	33.7	10,474	65.8	15,917	100.0
Calvert	17	1.5	550	48.6	565	49.9	1,132	100.0
Caroline	8	1.6	205	40.7	291	57.7	504	100.0
Carroll	26	1.1	899	39.5	1,349	59.3	2,274	100.0
Cecil	19	1.2	663	40.4	960	58.5	1,642	100.0
Charles	19	0.7	1,060	38.3	1,686	61.0	2,765	100.0
Dorchester	7	1.4	211	41.9	285	56.7	503	100.0
Frederick	17	0.5	1,292	40.8	1,859	58.7	3,168	100.0
Garrett	**13**	**2.0**	220	34.1	413	63.9	646	100.0
Harford	31	0.9	1,355	40.2	1,981	58.8	3,367	100.0
Howard	19	0.4	1,463	29.5	3,479	70.1	4,961	100.0
Kent	1	0.5	98	47.8	106	51.7	205	100.0
Montgomery	47	0.3	6,019	41.7	8,366	58.0	14,432	100.0
Prince George's	112	0.7	6,206	36.8	10,567	62.6	16,885	100.0
Queen Anne's	12	1.7	277	39.3	416	59.0	705	100.0
St. Mary's	12	0.9	599	43.8	757	55.3	1,368	100.0
Somerset	3	0.8	144	37.4	238	61.8	385	100.0
Talbot	3	0.3	305	31.8	651	67.9	959	100.0
Washington	24	0.9	1,056	38.6	1,654	60.5	2,734	100.0
Wicomico	15	0.7	810	38.2	1,296	61.1	2,121	100.0
Worcester	9	0.6	502	35.7	897	63.7	1,408	100.0
Baltimore City	34	0.2	5,424	27.6	14,202	72.2	19,660	100.0
Total	**596**	**0.5**	**38,710**	**35.5**	**69,824**	**64.0**	**109,130**	**100.0**

Table 4.1.2 Fatalities and Fatality Rates by County, 2003

County	Fatalities	VMT (millions)	Population	Licensed Drivers†	Registered Vehicles†	Fatality Rates per			
						100 M VMT	10,000 population	10,000 Lic. Drivers	10,000 Regist. Veh.
Allegany	8	838	73,668	50,353	63,575	0.95	1.09	1.59	1.26
Anne Arundel	66	5,587	506,620	370,104	504,396	1.18	1.30	1.78	1.31
Baltimore	87	8,078	777,184	557,115	643,823	1.08	1.12	1.56	1.35
Calvert	19	722	84,110	58,876	82,785	2.63	2.26	3.23	2.30
Caroline	8	344	30,861	24,158	34,164	2.33	2.59	3.31	2.34
Carroll	26	1,248	163,207	120,126	166,332	2.08	1.59	2.16	1.56
Cecil	23	1,230	92,746	66,199	86,308	1.87	2.48	3.47	2.66
Charles	20	1,174	133,049	92,781	123,255	1.70	1.50	2.16	1.62
Dorchester	7	362	30,612	22,100	30,086	1.93	2.29	3.17	2.33
Frederick	18	2,746	213,662	156,828	208,247	0.66	0.84	1.15	0.86
Garrett	16	486	30,049	21,551	31,514	**3.29**	**5.32**	**7.42**	**5.08**
Harford	35	2,257	232,175	171,548	217,024	1.55	1.51	2.04	1.61
Howard	20	3,620	264,265	195,936	234,142	0.55	0.76	1.02	0.85
Kent	1	228	19,680	14,408	20,851	0.44	0.51	0.69	0.48
Montgomery	52	7,427	918,881	675,740	705,969	0.70	0.57	0.77	0.74
Prince George's	**122**	8,631	838,716	524,662	598,194	1.41	1.45	2.33	2.04
Queen Anne's	14	910	44,108	32,580	48,157	1.54	3.17	4.30	2.91
St. Mary's	16	778	92,754	62,728	89,283	2.06	1.72	2.55	1.79
Somerset	3	285	25,447	13,959	19,251	1.05	1.18	2.15	1.56
Talbot	3	623	34,670	27,571	39,072	0.48	0.87	1.09	0.77
Washington	26	1,968	136,796	96,723	126,665	1.32	1.90	2.69	2.05
Wicomico	16	842	87,375	60,848	79,129	1.90	1.83	2.63	2.02
Worcester	9	674	49,604	39,663	55,437	1.34	1.81	2.27	1.62
Baltimore City	36	3,620	628,670	306,474	273,643	0.99	0.57	1.17	1.32
Total	**651**	**54,678**	**5,508,909**	**3,763,031**	**4,481,302**	**1.19**	**1.18**	**1.73**	**1.45**

1. Source: † Maryland Motor Vehicle Administration
2. Rates are calculated per 100 Million Vehicle Miles of Travel. Population/Licensed Drivers/Registered Vehicles are calculated per 10,000

Table 4.1.3 Persons Injured and Injury Rates by County, 2003

County	Person Injured	VMT (millions)	Population	Licensed Drivers	Registered Vehicles	Injury Rates per			
						100 M VMT	10,000 population	10,000 Lic. Drivers	10,000 Regist. Veh.
Allegany	641	838	73,668	50,353	63,575	76.49	87.01	127.30	100.83
Anne Arundel	5,175	5,587	506,620	370,104	504,396	92.63	102.15	139.83	102.60
Baltimore	8,104	8,078	777,184	557,115	643,823	100.32	104.27	145.46	125.87
Calvert	892	722	84,110	58,876	82,785	123.55	106.05	151.50	107.75
Caroline	319	344	30,861	24,158	34,164	92.73	103.37	132.05	93.37
Carroll	1,395	1,248	163,207	120,126	166,332	111.78	85.47	116.13	83.87
Cecil	1,048	1,230	92,746	66,199	86,308	85.20	113.00	158.31	121.43
Charles	1,570	1,174	133,049	92,781	123,255	133.73	118.00	169.22	127.38
Dorchester	333	362	30,612	22,100	30,086	91.99	108.78	150.68	110.68
Frederick	1,944	2,746	213,662	156,828	208,247	70.79	90.98	123.96	93.35
Garrett	384	486	30,049	21,551	31,514	79.01	127.79	178.18	121.85
Harford	2,119	2,257	232,175	171,548	217,024	93.89	91.27	123.52	97.64
Howard	2,092	3,620	264,265	195,936	234,142	57.79	79.16	106.77	89.35
Kent	143	228	19,680	14,408	20,851	62.72	72.66	99.25	68.58
Montgomery	8,753	7,427	918,881	675,740	705,969	117.85	95.26	129.53	123.99
Prince George's	**9,414**	8,631	838,716	524,662	598,194	109.07	112.24	179.43	157.37
Queen Anne's	433	910	44,108	32,580	48,157	47.58	98.17	132.90	89.91
St. Mary's	873	778	92,754	62,728	89,283	112.21	94.12	139.17	97.78
Somerset	223	285	25,447	13,959	19,251	78.25	87.63	159.75	115.84
Talbot	432	623	34,670	27,571	39,072	69.34	124.60	156.69	110.57
Washington	1,580	1,968	136,796	96,723	126,665	80.28	115.50	163.35	124.74
Wicomico	1,297	842	87,375	60,848	79,129	154.04	148.44	213.15	163.91
Worcester	749	674	49,604	39,663	55,437	111.13	**151.00**	188.84	135.11
Baltimore City	8,205	3,620	628,670	306,474	273,643	**226.66**	130.51	**267.72**	**299.84**
Total	**58,118**	**54,678**	**5,508,909**	**3,763,031**	**4,481,302**	**106.29**	**105.50**	**154.44**	**129.69**

Table 4.1.4 Non-Incapacitating (3) & Incapacitating (4) Injuries and Injury (3, 4) Rates by County, 2003

County	(3)&(4) Injuries	VMT (millions)	Population	Licensed Drivers	Registered Vehicles	Non-Incapacitating (3) & Incapacitating (4) Injury Rates			
						100 M VMT	10,000 population	10,000 Lic. Drivers	10,000 Regist. Veh.
Allegany	338	838	73,668	50,353	63,575	40.33	45.88	67.13	53.17
Anne Arundel	2,836	5,587	506,620	370,104	504,396	50.76	55.98	76.63	56.23
Baltimore	3,733	8,078	777,184	557,115	643,823	46.21	48.03	67.01	57.98
Calvert	499	722	84,110	58,876	82,785	69.11	59.33	84.75	60.28
Caroline	172	344	30,861	24,158	34,164	50.00	55.73	71.20	50.35
Carroll	762	1,248	163,207	120,126	166,332	61.06	46.69	63.43	45.81
Cecil	583	1,230	92,746	66,199	86,308	47.40	62.86	88.07	67.55
Charles	1,063	1,174	133,049	92,781	123,255	**90.55**	**79.90**	**114.57**	86.24
Dorchester	179	362	30,612	22,100	30,086	49.45	58.47	81.00	59.50
Frederick	1,102	2,746	213,662	156,828	208,247	40.13	51.58	70.27	52.92
Garrett	206	486	30,049	21,551	31,514	42.39	68.55	95.59	65.37
Harford	1,133	2,257	232,175	171,548	217,024	50.20	48.80	66.05	52.21
Howard	1,029	3,620	264,265	195,936	234,142	28.43	38.94	52.52	43.95
Kent	79	228	19,680	14,408	20,851	34.65	40.14	54.83	37.89
Montgomery	4,779	7,427	918,881	675,740	705,969	64.35	52.01	70.72	67.69
Prince George's	**4,917**	8,631	838,716	524,662	598,194	56.97	58.63	93.72	82.20
Queen Anne's	274	910	44,108	32,580	48,157	30.11	62.12	84.10	56.90
St. Mary's	562	778	92,754	62,728	89,283	72.24	60.59	89.59	62.95
Somerset	109	285	25,447	13,959	19,251	38.25	42.83	78.09	56.62
Talbot	218	623	34,670	27,571	39,072	34.99	62.88	79.07	55.79
Washington	904	1,968	136,796	96,723	126,665	45.93	66.08	93.46	71.37
Wicomico	673	842	87,375	60,848	79,129	79.93	77.02	110.60	85.05
Worcester	379	674	49,604	39,663	55,437	56.23	76.41	95.56	68.37
Baltimore City	3,119	3,620	628,670	306,474	273,643	86.16	49.61	101.77	**113.98**
Total	**29,648**	**54,678**	**5,508,909**	**3,763,031**	**4,481,302**	**54.22**	**53.82**	**78.79**	**66.16**

Table 4.1.5 Non-Incapacitation (3), Incapacitating (4) Injuries & Fatalities (5) and Injury (3, 4, 5) Rates by County, 2003

County	(3), (4) Injuries & (5) Fatalities	VMT (millions)	Population	Licensed Drivers	Registered Vehicles	(3) & (4) Injury and Fatalities (5) Rates			
						100 M VMT	10,000 population	10,000 Lic. Drivers	10,000 Regist. Veh.
Allegany	346	838	73,668	50,353	63,575	41.29	46.97	68.71	54.42
Anne Arundel	2,902	5,587	506,620	370,104	504,396	51.94	57.28	78.41	57.53
Baltimore	3,820	8,078	777,184	557,115	643,823	47.29	49.15	68.57	59.33
Calvert	518	722	84,110	58,876	82,785	71.75	61.59	87.98	62.57
Caroline	180	344	30,861	24,158	34,164	52.33	58.33	74.51	52.69
Carroll	788	1,248	163,207	120,126	166,332	63.14	48.28	65.60	47.38
Cecil	606	1,230	92,746	66,199	86,308	49.27	65.34	91.54	70.21
Charles	1,083	1,174	133,049	92,781	123,255	**92.25**	**81.40**	**116.73**	87.87
Dorchester	186	362	30,612	22,100	30,086	51.38	60.76	84.16	61.82
Frederick	1,120	2,746	213,662	156,828	208,247	40.79	52.42	71.42	53.78
Garrett	222	486	30,049	21,551	31,514	45.68	73.88	103.01	70.44
Harford	1,168	2,257	232,175	171,548	217,024	51.75	50.31	68.09	53.82
Howard	1,049	3,620	264,265	195,936	234,142	28.98	39.70	53.54	44.80
Kent	80	228	19,680	14,408	20,851	35.09	40.65	55.52	38.37
Montgomery	4,831	7,427	918,881	675,740	705,969	65.05	52.57	71.49	68.43
Prince George's	**5,039**	8,631	838,716	524,662	598,194	58.38	60.08	96.04	84.24
Queen Anne's	288	910	44,108	32,580	48,157	31.65	65.29	88.40	59.80
St. Mary's	578	778	92,754	62,728	89,283	74.29	62.32	92.14	64.74
Somerset	112	285	25,447	13,959	19,251	39.30	44.01	80.23	58.18
Talbot	221	623	34,670	27,571	39,072	35.47	63.74	80.16	56.56
Washington	930	1,968	136,796	96,723	126,665	47.26	67.98	96.15	73.42
Wicomico	689	842	87,375	60,848	79,129	81.83	78.86	113.23	87.07
Worcester	388	674	49,604	39,663	55,437	57.57	78.22	97.82	69.99
Baltimore City	3,155	3,620	628,670	306,474	273,643	87.15	50.19	102.95	**115.30**
Total	**30,299**	**54,678**	**5,508,909**	**3,763,031**	**4,481,302**	**55.41**	**55.00**	**80.52**	**67.61**

4.1.2 Highway Type

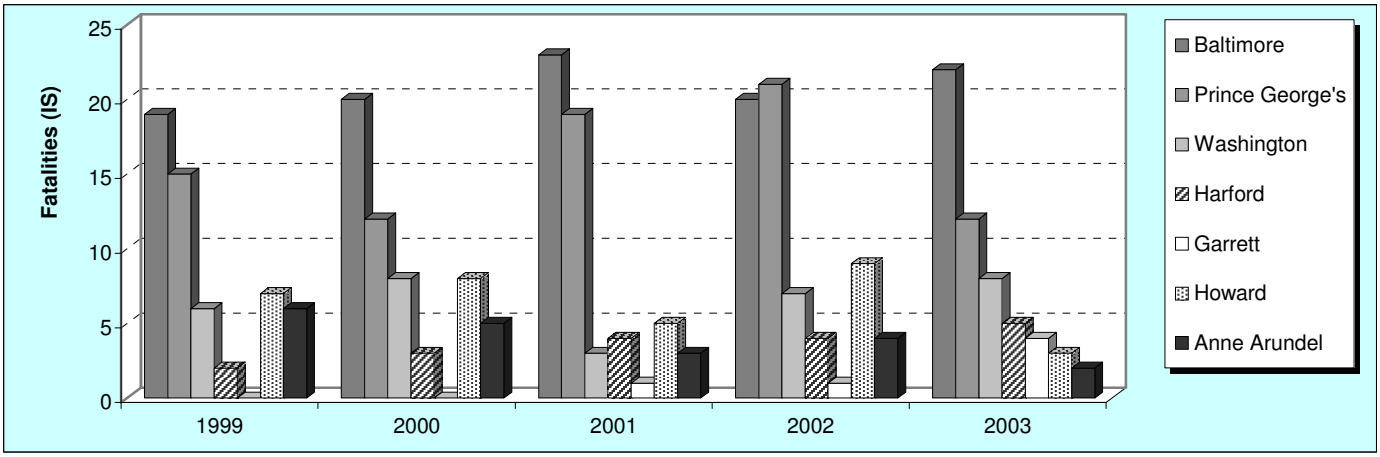
Trends

- Nearly half of fatalities on Interstate (IS) highways occurred in Baltimore County and Prince George's County for the latest 5 years.
- Between 2002 and 2003, the number of fatalities on Interstate highways in Baltimore County increased from 20 to 22. However, the number of fatalities on Interstate highways in Price George's County significantly decreased from 21 to12.

Table 4.1.6 Fatality Trends on the Interstate Highways by County, 1998-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	3	4.1	2	2.7	2	2.6	1	1.2	1	1.7
Anne Arundel	6	8.2	5	6.8	3	3.9	4	4.8	2	3.4
Baltimore	19	26.0	20	27.0	23	29.9	20	23.8	22	37.3
Calvert	-	-	-	-	-	-	-	0	-	0.0
Caroline	-	-	-	-	-	-	-	0	-	0.0
Carroll	-	-	1	1.4	-	-	-	0	1	1.7
Cecil	2	2.7	1	1.4	4	5.2	2	2.4	1	1.7
Charles	-	-	-	-	-	-	-	0	-	0.0
Dorchester	-	-	-	-	-	-	-	0	-	0.0
Frederick	8	11	5	6.8	6	7.8	5	6	-	0.0
Garrett	-	-	-	-	1	1.3	1	1.2	4	6.8
Harford	2	2.7	3	4.1	4	5.2	4	4.8	5	8.5
Howard	7	9.6	8	10.8	5	6.5	9	10.7	3	5.1
Kent	-	-	-	-	-	-	-	0	-	0.0
Montgomery	3	4.1	4	5.4	4	5.2	6	7.1	-	0.0
Prince George's	15	20.5	12	16.2	19	24.7	21	25.0	12	20.3
Queen Anne's	-	-	-	-	-	-	-	0	-	0.0
St. Mary's	-	-	-	-	-	-	-	0	-	0.0
Somerset	-	-	-	-	-	-	-	0	-	0.0
Talbot	-	-	-	-	-	-	-	0	-	0.0
Washington	6	8.2	8	10.8	3	3.9	7	8.3	8	13.6
Wicomico	-	-	-	-	-	-	-	0	-	0.0
Worcester	-	-	-	-	-	-	-	0	-	0.0
Baltimore City	2	2.7	5	6.8	3	3.9	4	4.8	-	0.0
Total	**73**	**100**	**74**	**100**	**77**	**100**	**84**	**100**	**59**	**100.0**

Figure 4.1.1 Fatalities on Interstate Highways by County, 1999-2003

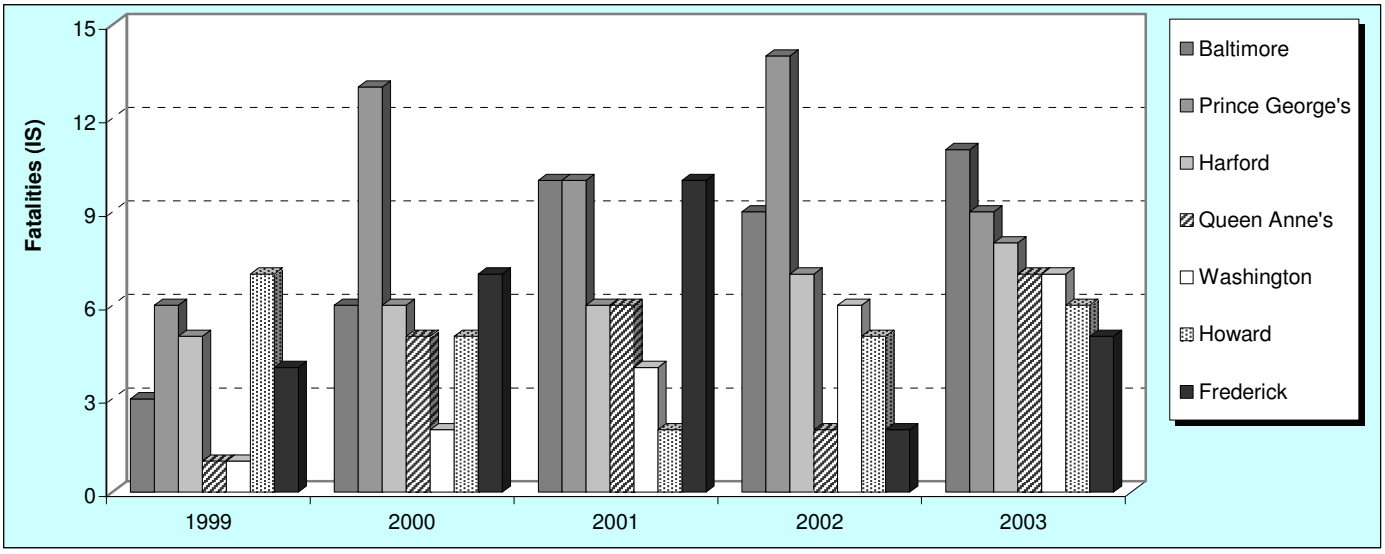


- The largest number of fatalities on US routes occurred in Baltimore and Prince George's County. The fatalities on US routes in Baltimore County had an increasing trend over the latest 5 years.
- Between 2002 and 2003, the number of fatalities on Interstate highways in Prince George's and Cecil County significantly decreased, while that in Queen Anne's County increased from 2 to 7.

Table 4.1.7 Fatality Trends on "US" Routes by County, 1998-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	2	2.9	-	-	3	3.5	1	1.1	4	5.1
Anne Arundel	1	1.4	1	1.3	-	-	3	3.4	2	2.6
Baltimore	3	4.3	6	7.7	10	11.8	9	10.1	11	14.1
Calvert	-	-	-	-	-	-	-	-	-	0.0
Caroline	-	-	-	-	-	-	-	-	-	0.0
Carroll	-	-	-	-	-	-	-	-	-	0.0
Cecil	13	18.8	3	3.8	6	7.1	8	9.0	3	3.8
Charles	2	2.9	4	5.1	3	3.5	4	4.5	1	1.3
Dorchester	3	4.3	3	3.8	-	-	1	1.1	-	0.0
Frederick	4	5.8	7	9.0	10	11.8	2	2.2	5	6.4
Garrett	1	1.4	3	3.8	3	3.5	-	-	5	6.4
Harford	5	7.2	6	7.7	6	7.1	7	7.9	8	10.3
Howard	7	10.1	5	6.4	2	2.4	5	5.6	6	7.7
Kent	-	-	-	-	2	2.4	-	-	-	0.0
Montgomery	2	2.9	-	-	2	2.4	3	3.4	3	3.8
Prince George's	6	8.7	13	16.7	10	11.8	14	15.7	9	11.5
Queen Anne's	1	1.4	5	6.4	6	7.1	2	2.2	7	9.0
St. Mary's	-	-	-	-	-	-	-	-	-	0.0
Somerset	2	2.9	3	3.8	3	3.5	1	1.1	3	3.8
Talbot	5	7.2	4	5.1	5	5.9	3	3.4	-	0.0
Washington	1	1.4	2	2.6	4	4.7	6	6.7	7	9.0
Wicomico	3	4.3	7	9.0	5	5.9	6	6.7	2	2.6
Worcester	8	11.6	6	7.7	5	5.9	14	15.7	2	2.6
Baltimore City	-	-	-	-	-	-	-	-	-	0.0
Total	**69**	**100.0**	**78**	**100.0**	**85**	**100.0**	**89**	**100.0**	**78**	**100.0**

Figure 4.1.2 Fatalities on "US" Routes by County, 1999-2003

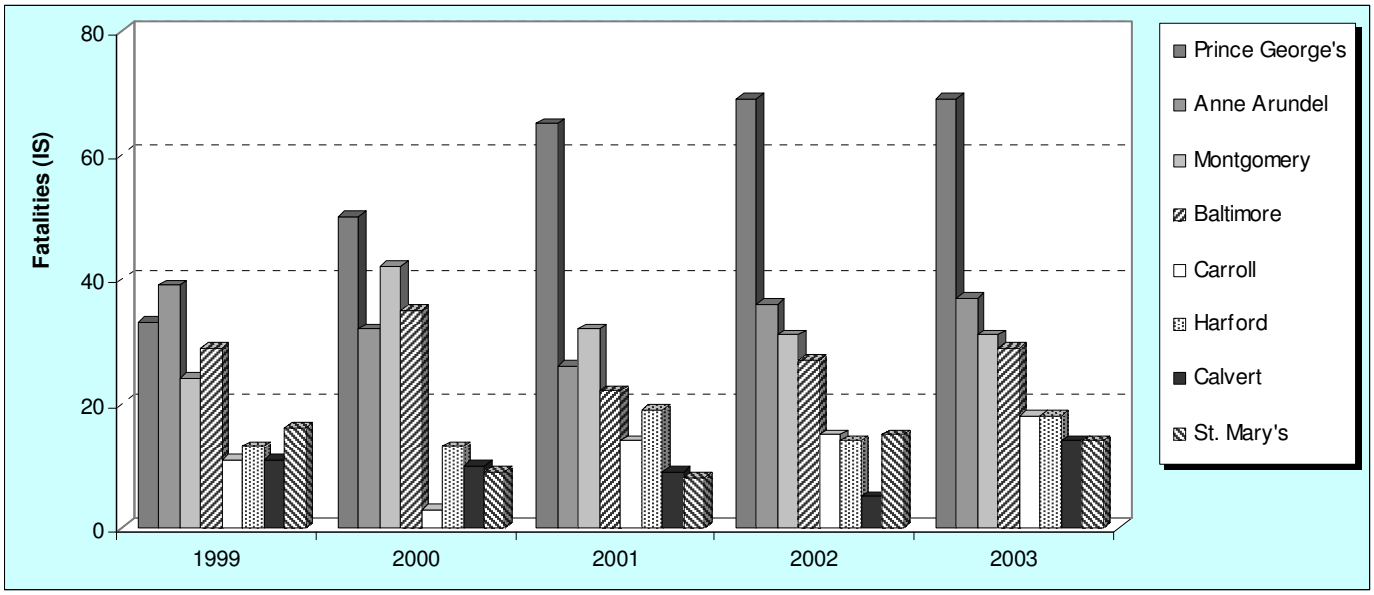


- The largest number of fatalities on MD routes occurred on Prince George's County and Anne Arundel County from 1999 to 2003. In Calvert County, the fatalities on MD routes increased from 5 in 2002 to 14 in 2003.

Table 4.1.8 Fatality Trends on "MD" Routes by County, 1998-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	6	2.3	3	1.0	3	1.1	8	2.8	2	0.7
Anne Arundel	39	14.7	32	10.9	26	9.3	36	12.8	37	12.3
Baltimore	29	10.9	35	11.9	22	7.9	27	9.6	29	9.7
Calvert	11	4.2	10	3.4	9	3.2	5	1.8	14	4.7
Caroline	12	4.5	10	3.4	5	1.8	5	1.8	6	2.0
Carroll	11	4.2	3	1.0	14	5.0	15	5.3	18	6.0
Cecil	12	4.5	11	3.8	6	2.1	9	3.2	10	3.3
Charles	14	5.3	20	6.8	13	4.6	15	5.3	10	3.3
Dorchester	3	1.1	3	1.0	5	1.8	1	0.4	5	1.7
Frederick	13	4.9	11	3.8	13	4.6	2	0.7	5	1.7
Garrett	4	1.5	2	0.7	-	-	-	0.0	4	1.3
Harford	13	4.9	13	4.4	19	6.8	14	5.0	18	6.0
Howard	5	1.9	11	3.8	10	3.6	3	1.1	6	2.0
Kent	-	-	-	-	5	1.8	3	1.1	-	0.0
Montgomery	24	9.1	42	14.3	32	11.4	31	11.0	31	10.3
Prince George's	33	12.5	50	17.1	65	23.2	69	24.6	69	23.0
Queen Anne's	3	1.1	7	2.4	5	1.8	5	1.8	4	1.3
St. Mary's	16	6.0	9	3.1	8	2.9	15	5.3	14	4.7
Somerset	-	-	1	0.3	6	2.1	4	1.4	-	0.0
Talbot	6	2.3	4	1.4	3	1.1	3	1.1	3	1.0
Washington	6	2.3	8	2.7	2	0.7	9	3.2	7	2.3
Wicomico	1	0.4	2	0.7	4	1.4	1	0.4	4	1.3
Worcester	4	1.5	6	2.0	5	1.8	1	0.4	4	1.3
Baltimore City	-	-	-	-	-	-	-	0.0	-	0.0
Total	**265**	**100.0**	**293**	**100.0**	**280**	**100.0**	**281**	**100.0**	**300**	**100.0**

Figure 4.1.3 Fatalities on "MD" Routes by County, 1999-2003



- Nearly 60% of fatalities on County routes occurred on four counties; Prince George's, Baltimore, Anne Arundel, and Montgomery County. Between 2002 and 2003, the number of fatalities on Anne Arundel County routes increased from 14 to 24.

Table 4.1.9 Fatality Trends on "County" Routes by County, 1998-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	-	-	1	0.9	2	1.3	-	0.0	1	0.6
Anne Arundel	9	6.8	10	9.3	17	10.9	14	9.2	24	15.0
Baltimore	31	23.5	18	16.7	26	16.7	24	15.7	24	15.0
Calvert	3	2.3	3	2.8	2	1.3	-	0.0	5	3.1
Caroline	-	-	-	-	-	-	2	1.3	2	1.3
Carroll	5	3.8	2	1.9	5	3.2	6	3.9	6	3.8
Cecil	6	4.5	2	1.9	5	3.2	8	5.2	7	4.4
Charles	10	7.6	6	5.6	5	3.2	8	5.2	9	5.6
Dorchester	-	-	1	0.9	7	4.5	3	2.0	2	1.3
Frederick	7	5.3	4	3.7	7	4.5	9	5.9	5	3.1
Garrett	1	0.8	3	2.8	1	0.6	2	1.3	2	1.3
Harford	3	2.3	6	5.6	4	2.6	8	5.2	4	2.5
Howard	6	4.5	4	3.7	4	2.6	7	4.6	4	2.5
Kent	-	-	-	-	-	-	1	0.7	1	0.6
Montgomery	16	12.1	10	9.3	20	12.8	21	13.7	16	10.0
Prince George's	25	18.9	24	22.2	30	19.2	31	20.3	30	18.8
Queen Anne's	1	0.8	1	0.9	5	3.2	4	2.6	3	1.9
St. Mary's	3	2.3	2	1.9	2	1.3	2	1.3	1	0.6
Somerset	-	-	-	-	-	-	-	0.0		0.0
Talbot	1	0.8	2	1.9	3	1.9	-	0.0		0.0
Washington	1	0.8	4	3.7	3	1.9	3	2.0	2	1.3
Wicomico	2	1.5	4	3.7	5	3.2	-	0.0	9	5.6
Worcester	1	0.8	1	0.9	3	1.9	-	0.0	3	1.9
Baltimore City	1	0.8	-	-	-	-	-	0.0		0.0
Total	**132**	**100.0**	**108**	**100.0**	**156**	**100.0**	**153**	**100.0**	**160**	**100.0**

Figure 4.1.4 Fatalities on "County" Routes by County, 1999-2003

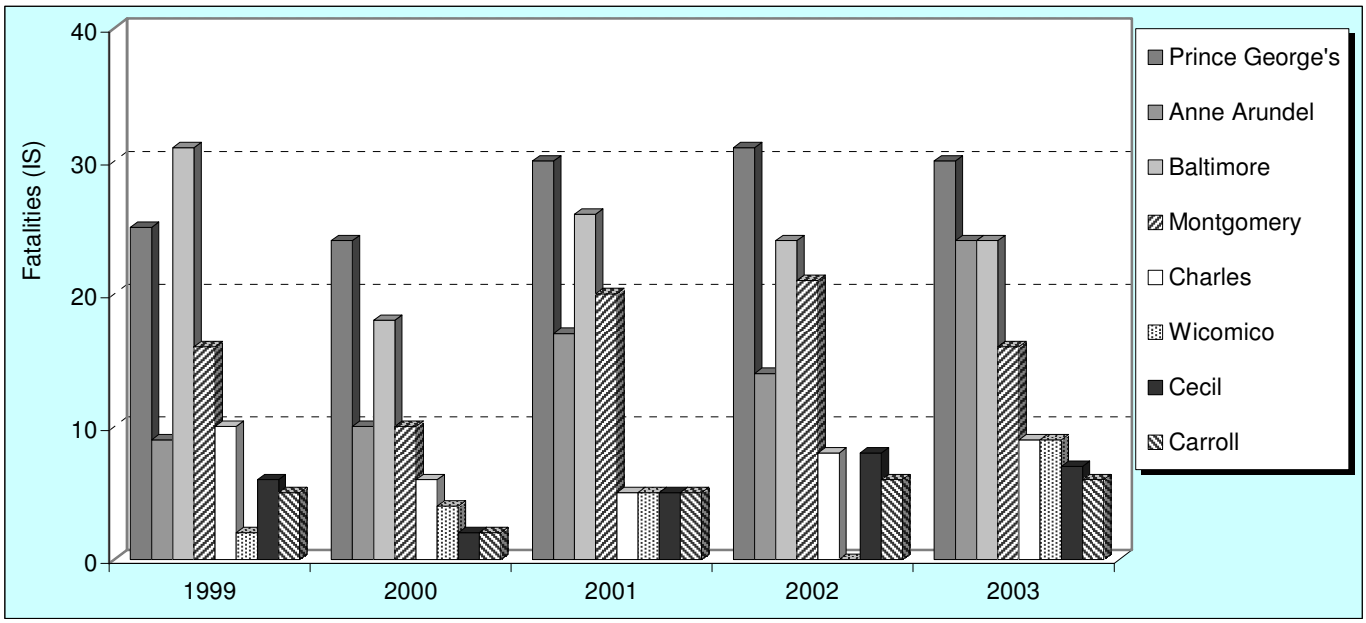


Table 4.1.10 Fatal Accident Trends on Interstate Highways by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	3	4.7	2	3.4	2	3.1	1	1.5	1	1.8
Anne Arundel	6	9.4	5	8.5	3	4.6	4	6.0	2	3.5
Baltimore	18	28.1	20	33.9	21	32.3	19	28.4	22	38.6
Calvert	-	-	-	-	-	-	-	-	-	-
Caroline	-	-	-	-	-	-	-	-	-	-
Carroll	-	-	1	1.7	-	-	-	-	1	1.8
Cecil	2	3.1	1	1.7	3	4.6	2	3.0	1	1.8
Charles	-	-	-	-	-	-	-	-	-	-
Dorchester	-	-	-	-	-	-	-	-	-	-
Frederick	8	12.5	4	6.8	5	7.7	5	7.5	-	-
Garrett	-	-	-	-	1	1.5	1	1.5	3	5.3
Harford	2	3.1	3	5.1	2	3.1	4	6.0	5	8.8
Howard	7	10.9	7	11.9	5	7.7	8	11.9	2	3.5
Kent	-	-	-	-	-	-	-	-	-	-
Montgomery	3	4.7	4	6.8	3	4.6	6	9.0	-	-
Prince George's	14	21.9	11	18.6	17	26.2	15	22.4	12	21.1
Queen Anne's	-	-	-	-	-	-	-	-	-	-
St. Mary's	-	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-	-
Talbot	-	-	-	-	-	-	1	1.5	-	-
Washington	1	1.6	-	-	1	1.5	1	1.5	8	14.0
Wicomico	-	-	1	1.7	1	1.5	-	-	-	-
Worcester	-	-	-	-	1	1.5	-	-	-	-
Baltimore City	-	-	-	-	-	-	-	-	-	-
Total	**64**	**100.0**	**59**	**100.0**	**65**	**100.0**	**67**	**100.0**	**57**	**100.0**

Table 4.1.11 Fatal Accident Trends on "US" Routes by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	2	3.1	-	-	3	4.0	1	1.2	4	5.9
Anne Arundel	1	1.6	1	1.4	-	-	2	2.4	1	1.5
Baltimore	3	4.7	5	6.8	10	13.3	9	10.8	10	14.7
Calvert	-	-	-	-	-	-	-	-	-	-
Caroline	-	-	-	-	-	-	-	-	-	-
Carroll	-	-	-	-	-	-	-	-	-	-
Cecil	11	17.2	3	4.1	5	6.7	8	9.6	3	4.4
Charles	2	3.1	4	5.4	2	2.7	4	4.8	1	1.5
Dorchester	3	4.7	2	2.7	-	-	1	1.2	-	-
Frederick	4	6.3	7	9.5	8	10.7	2	2.4	4	5.9
Garrett	1	1.6	3	4.1	3	4.0	-	-	4	5.9
Harford	5	7.8	6	8.1	5	6.7	5	6.0	6	8.8
Howard	7	10.9	4	5.4	2	2.7	5	6.0	6	8.8
Kent	-	-	-	-	2	2.7	-	0.0	-	-
Montgomery	2	3.1	-	-	2	2.7	3	3.6	2	2.9
Prince George's	6	9.4	12	16.2	9	12.0	13	15.7	9	13.2
Queen Anne's	1	1.6	5	6.8	6	8.0	2	2.4	5	7.4
St. Mary's	-	-	-	-	-	-	-	-	-	-
Somerset	2	3.1	3	4.1	2	2.7	1	1.2	3	4.4
Talbot	5	7.8	4	5.4	4	5.3	3	3.6	-	-
Washington	1	1.6	2	2.7	3	4.0	5	6.0	6	8.8
Wicomico	3	4.7	7	9.5	4	5.3	6	7.2	2	2.9
Worcester	5	7.8	6	8.1	5	6.7	13	15.7	2	2.9
Baltimore City	-	-	-	-	-	-	-	-	-	-
Total	**64**	**100.0**	**74**	**100.0**	**75**	**100.0**	**83**	**100.0**	**68**	**100.0**

Table 4.1.12 Fatal Accident Trends on "MD" Routes by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	5	2.0	3	1.1	3	1.2	7	2.7	2	0.7
Anne Arundel	37	15.1	32	11.9	26	10.3	33	12.9	33	12.2
Baltimore	27	11.0	33	12.2	19	7.5	25	9.8	26	9.6
Calvert	8	3.3	10	3.7	9	3.6	5	2.0	12	4.4
Caroline	11	4.5	8	3.0	5	2.0	5	2.0	6	2.2
Carroll	9	3.7	3	1.1	12	4.7	13	5.1	18	6.6
Cecil	10	4.1	9	3.3	5	2.0	7	2.7	8	3.0
Charles	14	5.7	17	6.3	11	4.3	13	5.1	9	3.3
Dorchester	3	1.2	3	1.1	3	1.2	1	0.4	5	1.8
Frederick	11	4.5	10	3.7	12	4.7	2	0.8	5	1.8
Garrett	4	1.6	2	0.7	-	-	-	-	3	1.1
Harford	13	5.3	12	4.4	18	7.1	13	5.1	17	6.3
Howard	5	2.0	10	3.7	8	3.2	3	1.2	6	2.2
Kent	-	-	-	-	5	2.0	3	1.2	-	-
Montgomery	21	8.6	40	14.8	28	11.1	28	10.9	28	10.3
Prince George's	33	13.5	44	16.3	58	22.9	64	25.0	62	22.9
Queen Anne's	3	1.2	6	2.2	4	1.6	5	2.0	4	1.5
St. Mary's	14	5.7	9	3.3	7	2.8	14	5.5	10	3.7
Somerset	-	-	1	0.4	6	2.4	4	1.6	-	-
Talbot	6	2.4	4	1.5	3	1.2	3	1.2	3	1.1
Washington	6	2.4	6	2.2	2	0.8	6	2.3	7	2.6
Wicomico	1	0.4	2	0.7	4	1.6	1	0.4	3	1.1
Worcester	4	1.6	6	2.2	5	2.0	1	0.4	4	1.5
Baltimore City	-	-	-	-	-	-	-	-	-	-
Total	**245**	**100.0**	**270**	**100.0**	**253**	**100.0**	**256**	**100.0**	**271**	**100.0**

Table 4.1.13 Fatal Accident Trends on "County" Routes by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	-	-	1	1.0	2	1.4	-	-	1	0.7
Anne Arundel	8	6.8	10	9.7	16	11.0	14	9.9	22	14.8
Baltimore	27	22.9	17	16.5	24	16.6	23	16.3	22	14.8
Calvert	3	2.5	3	2.9	1	0.7	-	-	5	3.4
Caroline	-	-	-	-	-	-	2	1.4	2	1.3
Carroll	5	4.2	2	1.9	5	3.4	6	4.3	6	4.0
Cecil	3	2.5	2	1.9	5	3.4	6	4.3	5	3.4
Charles	10	8.5	6	5.8	5	3.4	8	5.7	9	6.0
Dorchester	-	-	1	1.0	7	4.8	3	2.1	2	1.3
Frederick	6	5.1	4	3.9	7	4.8	6	4.3	5	3.4
Garrett	1	0.8	3	2.9	1	0.7	2	1.4	2	1.3
Harford	3	2.5	6	5.8	4	2.8	8	5.7	3	2.0
Howard	6	5.1	4	3.9	4	2.8	6	4.3	4	2.7
Kent	-	-	-	-	-	-	1	0.7	1	0.7
Montgomery	15	12.7	10	9.7	18	12.4	20	14.2	15	10.1
Prince George's	21	17.8	21	20.4	27	18.6	29	20.6	27	18.1
Queen Anne's	1	0.8	1	1.0	5	3.4	3	2.1	3	2.0
St. Mary's	3	2.5	2	1.9	2	1.4	2	1.4	1	0.7
Somerset	-	-	-	-	-	-	-	-	-	-
Talbot	1	0.8	2	1.9	2	1.4	-	-	-	-
Washington	1	0.8	3	2.9	3	2.1	2	1.4	2	1.3
Wicomico	2	1.7	4	3.9	4	2.8	-	-	9	6.0
Worcester	1	0.8	1	1.0	3	2.1	-	-	3	2.0
Baltimore City	1	0.8	-	-	-	-	-	-	-	-
Total	**118**	**100.0**	**103**	**100.0**	**145**	**100.0**	**141**	**100.0**	**149**	**100.0**

Table 4.1.14 Total Accident Trends on Interstate Highways by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	150	1.9	128	1.6	146	1.7	128	1.4	172	1.8
Anne Arundel	449	5.6	434	5.4	497	5.8	522	5.9	680	7.2
Baltimore	2,211	27.6	2,108	26.2	2,547	29.7	2,742	30.9	2,881	30.5
Calvert	-	-	-	-	-	-	-	-	-	-
Caroline	-	-	-	-	-	-	-	-	-	-
Carroll	5	0.1	22	0.3	9	0.1	8	0.1	14	0.1
Cecil	205	2.6	191	2.4	212	2.5	202	2.3	235	2.5
Charles	1	0.0	-	-	-	-	1	0.0	1	0.0
Dorchester	-	-	-	-	1	0.0	-	-	-	-
Frederick	358	4.5	366	4.6	435	5.1	425	4.8	453	4.8
Garrett	81	1.0	87	1.1	74	0.9	100	1.1	91	1.0
Harford	282	3.5	261	3.2	260	3.0	335	3.8	376	4.0
Howard	562	7.0	517	6.4	519	6.0	585	6.6	575	6.1
Kent	-	-	-	-	1	0.0	1	0.0	1	0.0
Montgomery	1,242	15.5	1,381	17.2	1,386	16.2	1,265	14.2	1,216	12.9
Prince George's	1,620	20.2	1,824	22.7	1,681	19.6	1,729	19.5	1,794	19.0
Queen Anne's	1	0.0	1	0.0	-	-	-	-	-	-
St. Mary's	1	0.0	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-	-
Talbot	-	-	-	-	2	0.0	-	-	1	0.0
Washington	394	4.9	365	4.5	381	4.4	357	4.0	361	3.8
Wicomico	-	-	-	-	-	-	1	0.0	-	-
Worcester	-	-	-	-	-	-	-	-	-	-
Baltimore City	440	5.5	351	4.4	429	5.0	482	5.4	584	6.2
Total	**8,002**	**100.0**	**8,036**	**100.0**	**8,580**	**100.0**	**8,883**	**100.0**	**9,435**	**100.0**

Table 4.1.15 Total Accident Trends on "US" Routes by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	213	2.6	217	2.7	208	2.6	211	2.5	240	2.8
Anne Arundel	191	2.4	177	2.2	195	2.4	191	2.3	213	2.4
Baltimore	736	9.1	719	9.1	749	9.4	830	9.8	914	10.5
Calvert	-	-	-	-	-	-	-	-	-	-
Caroline	1	0.0	-	-	-	-	-	-	-	-
Carroll	1	0.0	-	-	1	0.0	2	0.0	1	0.0
Cecil	252	3.1	231	2.9	228	2.9	259	3.1	270	3.1
Charles	440	5.5	439	5.5	466	5.8	443	5.2	481	5.5
Dorchester	139	1.7	65	0.8	94	1.2	126	1.5	118	1.4
Frederick	470	5.8	494	6.2	461	5.8	446	5.3	536	6.1
Garrett	136	1.7	131	1.7	125	1.6	150	1.8	162	1.9
Harford	538	6.7	484	6.1	481	6.0	511	6.0	550	6.3
Howard	811	10.1	922	11.6	964	12.1	1,007	11.9	1,020	11.7
Kent	21	0.3	7	0.1	8	0.1	11	0.1	8	0.1
Montgomery	389	4.8	407	5.1	455	5.7	498	5.9	508	5.8
Prince George's	1,370	17.0	1,406	17.7	1,315	16.5	1,391	16.4	1,410	16.2
Queen Anne's	262	3.3	258	3.3	222	2.8	238	2.8	243	2.8
St. Mary's	-	-	-	-	-	-	-	-	-	-
Somerset	103	1.3	113	1.4	82	1.0	94	1.1	87	1.0
Talbot	236	2.9	182	2.3	194	2.4	228	2.7	279	3.2
Washington	613	7.6	599	7.6	665	8.3	595	7.0	553	6.3
Wicomico	762	9.5	759	9.6	769	9.7	866	10.2	808	9.3
Worcester	371	4.6	317	4.0	283	3.6	359	4.2	324	3.7
Baltimore City	-	-	-	-	1	0.0	-	-	-	-
Total	**8,055**	**100.0**	**7,927**	**100.0**	**7,966**	**100.0**	**8,456**	**100.0**	**8,725**	**100.0**

Table 4.1.16 Total Accident Trends on "MD" Routes by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	233	0.8	251	0.9	240	0.8	234	0.7	264	0.8
Anne Arundel	3,977	14.3	4,172	14.9	4,370	14.7	4,826	15.3	4,915	15.1
Baltimore	3,385	12.2	3,236	11.5	3,390	11.4	3,932	12.5	4,067	12.5
Calvert	642	2.3	670	2.4	664	2.2	749	2.4	776	2.4
Caroline	262	0.9	159	0.6	179	0.6	265	0.8	310	1.0
Carroll	1,122	4.0	1,023	3.6	1,161	3.9	1,183	3.8	1,280	3.9
Cecil	531	1.9	501	1.8	520	1.8	507	1.6	569	1.8
Charles	843	3.0	810	2.9	832	2.8	891	2.8	871	2.7
Dorchester	175	0.6	118	0.4	134	0.5	175	0.6	176	0.5
Frederick	900	3.2	922	3.3	875	3.0	911	2.9	879	2.7
Garrett	138	0.5	131	0.5	124	0.4	137	0.4	131	0.4
Harford	1,260	4.5	1,321	4.7	1,250	4.2	1,247	4.0	1,332	4.1
Howard	940	3.4	1,083	3.9	1,136	3.8	1,241	3.9	1,219	3.8
Kent	131	0.5	118	0.4	153	0.5	132	0.4	134	0.4
Montgomery	5,389	19.4	5,719	20.4	6,128	20.7	6,150	19.5	6,466	19.9
Prince George's	4,943	17.8	5,177	18.4	5,760	19.4	5,930	18.8	6,028	18.6
Queen Anne's	247	0.9	264	0.9	302	1.0	291	0.9	291	0.9
St. Mary's	850	3.1	829	3.0	817	2.8	910	2.9	971	3.0
Somerset	176	0.6	141	0.5	127	0.4	160	0.5	151	0.5
Talbot	333	1.2	242	0.9	267	0.9	279	0.9	294	0.9
Washington	442	1.6	435	1.5	442	1.5	445	1.4	483	1.5
Wicomico	265	1.0	206	0.7	234	0.8	258	0.8	259	0.8
Worcester	576	2.1	541	1.9	525	1.8	611	1.9	577	1.8
Baltimore City	14	0.1	17	0.1	17	0.1	18	0.1	19	0.1
Total	**27,774**	**100.0**	**28,086**	**100.0**	**29,647**	**100.0**	**31,482**	**100.0**	**32,462**	**100.0**

Table 4.1.17 Total Accident Trends on "County" Routes by County, 1999-2003

County	1999		2000		2001		2002		2003	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Allegany	67	0.3	82	0.4	59	0.2	72	0.3	66	0.2
Anne Arundel	2,150	9.6	2,336	10.2	2,399	9.6	2,668	10.2	2,951	10.7
Baltimore	5,636	25.2	5,293	23.0	5,912	23.7	6,438	24.7	6,891	25.1
Calvert	210	0.9	173	0.8	246	1.0	246	0.9	257	0.9
Caroline	111	0.5	50	0.2	81	0.3	157	0.6	133	0.5
Carroll	490	2.2	510	2.2	588	2.4	584	2.2	622	2.3
Cecil	378	1.7	349	1.5	365	1.5	358	1.4	414	1.5
Charles	806	3.6	878	3.8	956	3.8	1,013	3.9	1,190	4.3
Dorchester	72	0.3	52	0.2	66	0.3	57	0.2	28	0.1
Frederick	555	2.5	550	2.4	645	2.6	647	2.5	655	2.4
Garrett	187	0.8	214	0.9	164	0.7	197	0.8	185	0.7
Harford	646	2.9	711	3.1	714	2.9	798	3.1	768	2.8
Howard	1530	6.8	1,640	7.1	1,909	7.6	1,989	7.6	1,974	7.2
Kent	26	0.1	31	0.1	46	0.2	36	0.1	39	0.1
Montgomery	3,939	17.6	4,001	17.4	4,418	17.7	4,083	15.7	4,338	15.8
Prince George's	4,095	18.3	4,648	20.2	4,991	20.0	5,138	19.7	5,226	19.0
Queen Anne's	104	0.5	95	0.4	100	0.4	124	0.5	141	0.5
St. Mary's	242	1.1	221	1.0	227	0.9	250	1.0	308	1.1
Somerset	85	0.4	78	0.3	78	0.3	73	0.3	77	0.3
Talbot	102	0.5	84	0.4	103	0.4	95	0.4	125	0.5
Washington	398	1.8	388	1.7	398	1.6	424	1.6	484	1.8
Wicomico	413	1.8	440	1.9	402	1.6	441	1.7	410	1.5
Worcester	115	0.5	140	0.6	122	0.5	165	0.6	193	0.7
Baltimore City	4	0.0	-	-	-	-	2	0.0	-	-
Total	**22,361**	**100.0**	**22,964**	**100.0**	**24,989**	**100.0%**	**26,055**	**100.0**	**27,475**	**100.0**

2003 Overview

Table 4.1.18 Fatal Accidents by County and Route Type, 2003

County	IS	US	MD	CO	MU	GV	SR	OP	Balto. City CY	Parking Lots	Unknown	Total
Allegany	1	4	2	1	-	-	-	-	-	-	-	8
Anne Arundel	2	1	33	22	-	-	-	-	-	1	-	59
Baltimore	22	10	26	22	-	-	-	-	-	-	1	81
Calvert	-	-	12	5	-	-	-	-	-	-	-	17
Caroline	-	-	6	2	-	-	-	-	-	-	-	8
Carroll	1	-	18	6	-	-	-	-	-	1	-	26
Cecil	1	3	8	5	-	-	-	1	-	1	-	19
Charles	-	1	9	9	-	-	-	-	-	-	-	19
Dorchester	-	-	5	2	-	-	-	-	-	-	-	7
Frederick	-	4	5	5	2	-	-	1	-	-	-	17
Garrett	3	4	3	2	-	-	-	-	-	-	1	13
Harford	5	6	17	3	-	-	-	-	-	-	-	31
Howard	2	6	6	4	-	-	-	-	-	-	1	19
Kent	-	-	-	1	-	-	-	-	-	-	-	1
Montgomery	-	2	28	15	1	-	-	1	-	-	-	47
Prince George's	12	9	62	27	1	1	-	-	-	-	-	112
Queen Anne's	-	5	4	3	-	-	-	-	-	-	-	12
St. Mary's	-	-	10	1	-	-	-	-	-	1	-	12
Somerset	-	3	-	-	-	-	-	-	-	-	-	3
Talbot	-	-	3	-	-	-	-	-	-	-	-	3
Washington	8	6	7	2	1	-	-	-	-	-	-	24
Wicomico	-	2	3	9	1	-	-	-	-	-	-	15
Worcester	-	2	4	3	-	-	-	-	-	-	-	9
Baltimore City	-	-	-	-	-	-	-	-	33	-	1	34
Total	**57**	**68**	**271**	**149**	**6**	**1**	**-**	**3**	**33**	**4**	**4**	**596**
Percent	**10**	**11**	**45**	**25**	**1**	**0**	**-**	**1**	**6**	**1**	**1**	**100**

Table 4.1.19 Total Accidents by County and Route Type, 2003

County	IS	US	MD	CO	MU	GV	SR	OP	Balto. City CY	Parking Lots	Unknown	Total
Allegany	172	240	264	66	139	-	-	3	-	28	26	938
Anne Arundel	680	213	4,915	2,951	394	6	46	150	-	624	472	10,451
Baltimore	2,881	914	4,067	6,891	-	1	11	78	-	786	288	15,917
Calvert	-	-	776	257	7	-	-	49	-	26	17	1,132
Caroline	-	-	310	133	41	-	-	-	-	15	5	504
Carroll	14	1	1,280	622	244	-	-	7	-	82	24	2,274
Cecil	235	270	569	414	79	-	-	6	-	52	17	1,642
Charles	1	481	871	1,190	29	-	-	21	-	112	60	2,765
Dorchester	-	118	176	28	150	-	-	1	-	16	14	503
Frederick	453	536	879	655	407	-	1	37	-	128	72	3,168
Garrett	91	162	131	185	51	-	-	2	-	13	11	646
Harford	376	550	1,332	768	154	1	-	17	-	119	50	3,367
Howard	575	1,020	1,219	1,974	-	-	-	30	-	77	66	4,961
Kent	1	8	134	39	17	-	-	-	-	5	1	205
Montgomery	1,216	508	6,466	4,338	834	57	2	75	-	707	229	14,432
Prince George's	1,794	1,410	6,028	5,226	916	12	75	69	-	993	362	16,885
Queen Anne's	-	243	291	141	11	-	-	1	-	10	8	705
St. Mary's	-	-	971	308	6	-	-	6	-	59	18	1,368
Somerset	-	87	151	77	33	-	2	1	-	26	8	385
Talbot	1	279	294	125	186	-	-	3	-	48	23	959
Washington	361	553	483	484	680	-	-	8	-	97	68	2,734
Wicomico	-	808	259	410	505	-	-	3	-	96	40	2,121
Worcester	-	324	577	193	204	-	-	-	-	84	26	1,408
Baltimore City	584	-	19	-	-	-	-	-	18,472	476	109	19,660
Total	**9,435**	**8,725**	**32,462**	**27,475**	**5,087**	**77**	**137**	**567**	**18,472**	**4,679**	**2,014**	**109,130**
Percent	**8.6**	**8.0**	**29.7**	**25.2**	**4.7**	**0.1**	**0.1**	**0.5**	**16.9**	**4.3**	**1.8**	**100.0**

4.1.3 Odds Ratios

2003 Overview

- Odds ratios are the relative values of each county with respect to statewide average value. In other words, the odds ratio of fatalities per VMT for a county represents the relative fatality rate per VMT with respect to the statewide overall fatality rate per VMT.
- Baltimore City had the highest odds ratio of total accident rates. Total accident rates for Baltimore City were 2.72 times the statewide rate per VMT, 1.58 times the statewide rate per population, 2.21 times the statewide rate per licensed driver, and the 2.95 times the statewide rate per registered vehicle.
- Garrett County had the highest odds ratio of fatal accident rates and fatality rates. Fatal accident rates for Garrett County were 2.45 times the statewide rate per VMT and 4.0 times the statewide rate per population. Fatality rates for Garrett County were 4.51 times the statewide rate per population and 4.29 times the statewide rate per licensed driver.
- Injury accident rates for Baltimore City were 2.12 times the statewide rate per VMT, 2.29 times the statewide rate per registered vehicle. Injury rates for Baltimore City were 2.13 times the statewide rate per VMT, 2.31 times the statewide rate per registered vehicle.
- Serious injury rates (non-incapacitating and incapacitating injuries) for Charles County were 1.67 times the statewide rate per VMT and 1.48 times the statewide rate per population.

Table 4.1.20 Odds Ratio of Total Accidents by County, 2003

County	Total Accidents	Percent of					Odds Ratio of Total Accidents per			
		Total Accidents	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	938	0.9	1.5	1.3	1.3	1.4	0.56	0.64	0.64	0.61
Anne Arundel	10,451	9.6	10.2	9.2	9.8	11.3	0.94	1.04	0.97	0.85
Baltimore	15,917	14.6	14.8	14.1	14.8	14.4	0.99	1.03	0.99	1.02
Calvert	1,132	1.0	1.3	1.5	1.6	1.8	0.79	0.68	0.66	0.56
Caroline	504	0.5	0.6	0.6	0.6	0.8	0.73	0.82	0.72	0.61
Carroll	2,274	2.1	2.3	3.0	3.2	3.7	0.91	0.70	0.65	0.56
Cecil	1,642	1.5	2.2	1.7	1.8	1.9	0.67	0.89	0.86	0.78
Charles	2,765	2.5	2.1	2.4	2.5	2.8	1.18	1.05	1.03	0.92
Dorchester	503	0.5	0.7	0.6	0.6	0.7	0.70	0.83	0.78	0.69
Frederick	3,168	2.9	5.0	3.9	4.2	4.6	0.58	0.75	0.70	0.62
Garrett	646	0.6	0.9	0.5	0.6	0.7	0.67	1.09	1.03	0.84
Harford	3,367	3.1	4.1	4.2	4.6	4.8	0.75	0.73	0.68	0.64
Howard	4,961	4.5	6.6	4.8	5.2	5.2	0.69	0.95	0.87	0.87
Kent	205	0.2	0.4	0.4	0.4	0.5	0.45	0.53	0.49	0.40
Montgomery	14,432	13.2	13.6	16.7	18.0	15.8	0.97	0.79	0.74	0.84
Prince George's	16,885	15.5	15.8	15.2	13.9	13.3	0.98	1.02	1.11	1.16
Queen Anne's	705	0.6	1.7	0.8	0.9	1.1	0.39	0.81	0.75	0.60
St. Mary's	1,368	1.3	1.4	1.7	1.7	2.0	0.88	0.74	0.75	0.63
Somerset	385	0.4	0.5	0.5	0.4	0.4	0.68	0.76	0.95	0.82
Talbot	959	0.9	1.1	0.6	0.7	0.9	0.77	1.40	1.20	1.01
Washington	2,734	2.5	3.6	2.5	2.6	2.8	0.70	1.01	0.97	0.89
Wicomico	2,121	1.9	1.5	1.6	1.6	1.8	1.26	1.23	1.20	1.10
Worcester	1,408	1.3	1.2	0.9	1.1	1.2	1.05	1.43	1.22	1.04
Baltimore City	19,660	**18.0**	6.6	11.4	8.1	6.1	**2.72**	**1.58**	**2.21**	**2.95**
Total	**109,130**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

Table 4.1.21 Odds Ratio of Fatal Accidents by County, 2003

County	Fatal Accidents	Percent of					Odds Ratio of Fatal Accidents per			
		Fatal Accidents	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	8	1.3	1.5	1.3	1.3	1.4	0.88	1.00	1.00	0.95
Anne Arundel	59	9.9	10.2	9.2	9.8	11.3	0.97	1.08	1.01	0.88
Baltimore	81	14	14.8	14.1	14.8	14.4	0.92	0.96	0.92	0.95
Calvert	17	2.9	1.3	1.5	1.6	1.8	2.16	1.87	1.82	1.54
Caroline	8	1.3	0.6	0.6	0.6	0.8	2.13	2.40	2.09	1.76
Carroll	26	4.4	2.3	3.0	3.2	3.7	1.91	1.47	1.37	1.18
Cecil	19	3.2	2.2	1.7	1.8	1.9	1.42	1.89	1.81	1.66
Charles	19	3.2	2.1	2.4	2.5	2.8	1.48	1.32	1.29	1.16
Dorchester	7	1.2	0.7	0.6	0.6	0.7	1.77	2.11	2.00	1.75
Frederick	17	2.9	5.0	3.9	4.2	4.6	0.57	0.74	0.68	0.61
Garrett	13	2.2	0.9	0.5	0.6	0.7	**2.45**	**4.00**	**3.81**	**3.10**
Harford	31	5.2	4.1	4.2	4.6	4.8	1.26	1.23	1.14	1.07
Howard	19	3.2	6.6	4.8	5.2	5.2	0.48	0.66	0.61	0.61
Kent	1	0.2	0.4	0.4	0.4	0.5	0.40	0.47	0.44	0.36
Montgomery	47	7.9	13.6	16.7	18.0	15.8	0.58	0.47	0.44	0.50
Prince George's	**112**	**19.0**	15.8	15.2	13.9	13.3	1.19	1.23	1.35	1.41
Queen Anne's	12	2.0	1.7	0.8	0.9	1.1	1.21	2.51	2.33	1.87
St. Mary's	12	2.0	1.4	1.7	1.7	2.0	1.42	1.20	1.21	1.01
Somerset	3	0.5	0.5	0.5	0.4	0.4	0.97	1.09	1.36	1.17
Talbot	3	0.5	1.1	0.6	0.7	0.9	0.44	0.80	0.69	0.58
Washington	24	4.0	3.6	2.5	2.6	2.8	1.12	1.62	1.57	1.42
Wicomico	15	2.5	1.5	1.6	1.6	1.8	1.63	1.59	1.56	1.43
Worcester	9	1.5	1.2	0.9	1.1	1.2	1.23	1.68	1.43	1.22
Baltimore City	34	5.7	6.6	11.4	8.1	6.1	0.86	0.50	0.70	0.93
Total	**596**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

Table 4.1.22 Odds Ratio of Injury Accidents by County, 2003

County	Injury Accidents	Percent of					Odds Ratio of Injury Accidents per			
		Injury Accidents	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	402	1.0	1.5	1.3	1.3	1.4	0.68	0.78	0.78	0.73
Anne Arundel	3,588	9.3	10.2	9.2	9.8	11.3	0.91	1.01	0.94	0.82
Baltimore	5,362	13.9	14.8	14.1	14.8	14.4	0.94	0.98	0.94	0.96
Calvert	550	1.4	1.3	1.5	1.6	1.8	1.08	0.93	0.91	0.77
Caroline	205	0.5	0.6	0.6	0.6	0.8	0.84	0.95	0.82	0.69
Carroll	899	2.3	2.3	3.0	3.2	3.7	1.02	0.78	0.73	0.63
Cecil	663	1.7	2.2	1.7	1.8	1.9	0.76	1.02	0.97	0.89
Charles	1,060	2.7	2.1	2.4	2.5	2.8	1.28	1.13	1.11	1.00
Dorchester	211	0.5	0.7	0.6	0.6	0.7	0.82	0.98	0.93	0.81
Frederick	1,292	3.3	5.0	3.9	4.2	4.6	0.66	0.86	0.80	0.72
Garrett	220	0.6	0.9	0.5	0.6	0.7	0.64	1.04	0.99	0.81
Harford	1,355	3.5	4.1	4.2	4.6	4.8	0.85	0.83	0.77	0.72
Howard	1,463	3.8	6.6	4.8	5.2	5.2	0.57	0.79	0.73	0.72
Kent	98	0.3	0.4	0.4	0.4	0.5	0.61	0.71	0.66	0.54
Montgomery	6,019	15.5	13.6	16.7	18.0	15.8	1.14	0.93	0.87	0.99
Prince George's	**6,206**	**16.0**	15.8	15.2	13.9	13.3	1.02	1.05	1.15	1.20
Queen Anne's	277	0.7	1.7	0.8	0.9	1.1	0.43	0.89	0.83	0.67
St. Mary's	599	1.5	1.4	1.7	1.7	2.0	1.09	0.92	0.93	0.78
Somerset	144	0.4	0.5	0.5	0.4	0.4	0.71	0.81	1.00	0.87
Talbot	305	0.8	1.1	0.6	0.7	0.9	0.69	1.25	1.08	0.90
Washington	1,056	2.7	3.6	2.5	2.6	2.8	0.76	1.10	1.06	0.97
Wicomico	810	2.1	1.5	1.6	1.6	1.8	1.36	1.32	1.29	1.19
Worcester	502	1.3	1.2	0.9	1.1	1.2	1.05	**1.44**	1.23	1.05
Baltimore City	5,424	14.0	6.6	11.4	8.1	6.1	**2.12**	1.23	**1.72**	**2.29**
Total	**38,710**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

Table 4.1.23 Odds Ratio of Fatalities by County, 2003

County	Fatalities	Percent of					Odds Ratio of Fatalities per			
		Fatalities	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	8	1.2	1.5	1.3	1.3	1.4	0.80	0.92	0.92	0.87
Anne Arundel	66	10.1	10.2	9.2	9.8	11.3	0.99	1.10	1.03	0.90
Baltimore	87	13.4	14.8	14.1	14.8	14.4	0.90	0.95	0.90	0.93
Calvert	19	2.9	1.3	1.5	1.6	1.8	2.21	1.91	1.87	1.58
Caroline	8	1.2	0.6	0.6	0.6	0.8	1.95	2.19	1.91	1.61
Carroll	26	4.0	2.3	3.0	3.2	3.7	1.75	1.35	1.25	1.08
Cecil	23	3.5	2.2	1.7	1.8	1.9	1.57	2.10	2.01	1.83
Charles	20	3.1	2.1	2.4	2.5	2.8	1.43	1.27	1.25	1.12
Dorchester	7	1.1	0.7	0.6	0.6	0.7	1.62	1.94	1.83	1.60
Frederick	18	2.8	5.0	3.9	4.2	4.6	0.55	0.71	0.66	0.60
Garrett	16	2.5	0.9	0.5	0.6	0.7	**2.77**	**4.51**	**4.29**	**3.49**
Harford	35	5.4	4.1	4.2	4.6	4.8	1.30	1.28	1.18	1.11
Howard	20	3.1	6.6	4.8	5.2	5.2	0.46	0.64	0.59	0.59
Kent	1	0.2	0.4	0.4	0.4	0.5	0.37	0.43	0.40	0.33
Montgomery	52	8.0	13.6	16.7	18.0	15.8	0.59	0.48	0.44	0.51
Prince George's	**122**	**18.7**	15.8	15.2	13.9	13.3	1.19	1.23	1.34	1.40
Queen Anne's	14	2.2	1.7	0.8	0.9	1.1	1.29	2.69	2.48	2.00
St. Mary's	16	2.5	1.4	1.7	1.7	2.0	1.73	1.46	1.47	1.23
Somerset	3	0.5	0.5	0.5	0.4	0.4	0.88	1.00	1.24	1.07
Talbot	3	0.5	1.1	0.6	0.7	0.9	0.40	0.73	0.63	0.53
Washington	26	4.0	3.6	2.5	2.6	2.8	1.11	1.61	1.55	1.41
Wicomico	16	2.5	1.5	1.6	1.6	1.8	1.60	1.55	1.52	1.39
Worcester	9	1.4	1.2	0.9	1.1	1.2	1.12	1.54	1.31	1.12
Baltimore City	36	5.5	6.6	11.4	8.1	6.1	0.84	0.48	0.68	0.91
Total	**651**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

Table 4.1.24 Odds Ratio of Injuries by County, 2003

County	Injuries	Percent of					Odds Ratio of Injuries per			
		Injuries	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	641	1.1	1.5	1.3	1.3	1.4	0.72	0.82	0.82	0.78
Anne Arundel	5,175	8.9	10.2	9.2	9.8	11.3	0.87	0.97	0.91	0.79
Baltimore	8,104	13.9	14.8	14.1	14.8	14.4	0.94	0.99	0.94	0.97
Calvert	892	1.5	1.3	1.5	1.6	1.8	1.16	1.01	0.98	0.83
Caroline	319	0.5	0.6	0.6	0.6	0.8	0.87	0.98	0.85	0.72
Carroll	1,395	2.4	2.3	3.0	3.2	3.7	1.05	0.81	0.75	0.65
Cecil	1,048	1.8	2.2	1.7	1.8	1.9	0.80	1.07	1.03	0.94
Charles	1,570	2.7	2.1	2.4	2.5	2.8	1.26	1.12	1.10	0.98
Dorchester	333	0.6	0.7	0.6	0.6	0.7	0.87	1.03	0.98	0.85
Frederick	1,944	3.3	5.0	3.9	4.2	4.6	0.67	0.86	0.80	0.72
Garrett	384	0.7	0.9	0.5	0.6	0.7	0.74	1.21	1.15	0.94
Harford	2,119	3.6	4.1	4.2	4.6	4.8	0.88	0.87	0.80	0.75
Howard	2,092	3.6	6.6	4.8	5.2	5.2	0.54	0.75	0.69	0.69
Kent	143	0.2	0.4	0.4	0.4	0.5	0.59	0.69	0.64	0.53
Montgomery	8,753	15.1	13.6	16.7	18.0	15.8	1.11	0.90	0.84	0.96
Prince George's	**9,414**	**16.2**	15.8	15.2	13.9	13.3	1.03	1.06	1.16	1.21
Queen Anne's	433	0.7	1.7	0.8	0.9	1.1	0.45	0.93	0.86	0.69
St. Mary's	873	1.5	1.4	1.7	1.7	2.0	1.06	0.89	0.90	0.75
Somerset	223	0.4	0.5	0.5	0.4	0.4	0.74	0.83	1.03	0.89
Talbot	432	0.7	1.1	0.6	0.7	0.9	0.65	1.18	1.01	0.85
Washington	1,580	2.7	3.6	2.5	2.6	2.8	0.76	1.09	1.06	0.96
Wicomico	1,297	2.2	1.5	1.6	1.6	1.8	1.45	1.41	1.38	1.26
Worcester	749	1.3	1.2	0.9	1.1	1.2	1.05	**1.43**	1.22	1.04
Baltimore City	8,205	14.1	6.6	11.4	8.1	6.1	**2.13**	1.24	**1.73**	**2.31**
Total	**58,118**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

Table 4.1.25 Odds Ratio of Non-Incapacitating (3) & Incapacitating (4) Injuries by County, 2003

County	(3) & (4) Injuries	Percent of					Odds Ratio of (3) & (4) Injuries per			
		(3) & (4) Injuries	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	338	1.1	1.5	1.3	1.3	1.4	0.74	0.85	0.85	0.80
Anne Arundel	2,836	9.6	10.2	9.2	9.8	11.3	0.94	1.04	0.97	0.85
Baltimore	3,733	12.6	14.8	14.1	14.8	14.4	0.85	0.89	0.85	0.88
Calvert	499	1.7	1.3	1.5	1.6	1.8	1.27	1.10	1.08	0.91
Caroline	172	0.6	0.6	0.6	0.6	0.8	0.92	1.04	0.90	0.76
Carroll	762	2.6	2.3	3.0	3.2	3.7	1.13	0.87	0.81	0.69
Cecil	583	2.0	2.2	1.7	1.8	1.9	0.87	1.17	1.12	1.02
Charles	1,063	3.6	2.1	2.4	2.5	2.8	**1.67**	**1.48**	**1.45**	1.30
Dorchester	179	0.6	0.7	0.6	0.6	0.7	0.91	1.09	1.03	0.90
Frederick	1,102	3.7	5.0	3.9	4.2	4.6	0.74	0.96	0.89	0.80
Garrett	206	0.7	0.9	0.5	0.6	0.7	0.78	1.27	1.21	0.99
Harford	1,133	3.8	4.1	4.2	4.6	4.8	0.93	0.91	0.84	0.79
Howard	1,029	3.5	6.6	4.8	5.2	5.2	0.52	0.72	0.67	0.66
Kent	79	0.3	0.4	0.4	0.4	0.5	0.64	0.75	0.70	0.57
Montgomery	4,779	16.1	13.6	16.7	18.0	15.8	1.19	0.97	0.90	1.02
Prince George's	**4,917**	**16.6**	15.8	15.2	13.9	13.3	1.05	1.09	1.19	1.24
Queen Anne's	274	0.9	1.7	0.8	0.9	1.1	0.56	1.15	1.07	0.86
St. Mary's	562	1.9	1.4	1.7	1.7	2.0	1.33	1.13	1.14	0.95
Somerset	109	0.4	0.5	0.5	0.4	0.4	0.71	0.80	0.99	0.86
Talbot	218	0.7	1.1	0.6	0.7	0.9	0.65	1.17	1.00	0.84
Washington	904	3.0	3.6	2.5	2.6	2.8	0.85	1.23	1.19	1.08
Wicomico	673	2.3	1.5	1.6	1.6	1.8	1.47	1.43	1.40	1.29
Worcester	379	1.3	1.2	0.9	1.1	1.2	1.04	1.42	1.21	1.03
Baltimore City	3,119	10.5	6.6	11.4	8.1	6.1	1.59	0.92	1.29	**1.72**
Total	**29,648**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

Table 4.1.26 Odds Ratio of Non-Incapacitating (3), Incapacitating (4) Injuries and Fatalities (5) by County, 2003

County	(3), (4) & (5) Injuries	Percent of					Odds Ratio of (3), (4) & (5) Injuries per			
		(3), (4) & (5) Injuries	VMT	Population	Licensed Drivers	Registered Vehicles	VMT	Population	Licensed Drivers	Registered Vehicles
Allegany	346	1.1	1.5	1.3	1.3	1.4	0.75	0.85	0.85	0.80
Anne Arundel	2,902	9.6	10.2	9.2	9.8	11.3	0.94	1.04	0.97	0.85
Baltimore	3,820	12.6	14.8	14.1	14.8	14.4	0.85	0.89	0.85	0.88
Calvert	518	1.7	1.3	1.5	1.6	1.8	1.29	1.12	1.09	0.93
Caroline	180	0.6	0.6	0.6	0.6	0.8	0.94	1.06	0.93	0.78
Carroll	788	2.6	2.3	3.0	3.2	3.7	1.14	0.88	0.81	0.70
Cecil	606	2.0	2.2	1.7	1.8	1.9	0.89	1.19	1.14	1.04
Charles	1,083	3.6	2.1	2.4	2.5	2.8	**1.66**	**1.48**	**1.45**	1.30
Dorchester	186	0.6	0.7	0.6	0.6	0.7	0.93	1.10	1.05	0.91
Frederick	1,120	3.7	5.0	3.9	4.2	4.6	0.74	0.95	0.89	0.80
Garrett	222	0.7	0.9	0.5	0.6	0.7	0.82	1.34	1.28	1.04
Harford	1,168	3.9	4.1	4.2	4.6	4.8	0.93	0.91	0.85	0.80
Howard	1,049	3.5	6.6	4.8	5.2	5.2	0.52	0.72	0.66	0.66
Kent	80	0.3	0.4	0.4	0.4	0.5	0.63	0.74	0.69	0.57
Montgomery	4,831	15.9	13.6	16.7	18.0	15.8	1.17	0.96	0.89	1.01
Prince George's	**5,039**	**16.6**	15.8	15.2	13.9	13.3	1.05	1.09	1.19	1.25
Queen Anne's	288	1.0	1.7	0.8	0.9	1.1	0.57	1.19	1.10	0.88
St. Mary's	578	1.9	1.4	1.7	1.7	2.0	1.34	1.13	1.14	0.96
Somerset	112	0.4	0.5	0.5	0.4	0.4	0.71	0.80	1.00	0.86
Talbot	221	0.7	1.1	0.6	0.7	0.9	0.64	1.16	1.00	0.84
Washington	930	3.1	3.6	2.5	2.6	2.8	0.85	1.24	1.19	1.09
Wicomico	689	2.3	1.5	1.6	1.6	1.8	1.48	1.43	1.41	1.29
Worcester	388	1.3	1.2	0.9	1.1	1.2	1.04	1.42	1.21	1.04
Baltimore City	3,155	10.4	6.6	11.4	8.1	6.1	1.57	0.91	1.28	**1.71**
Total	**30,299**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**1.00**	**1.00**	**1.00**	**1.00**

4.2 BORDERING STATES

This section describes and compares the accident characteristics of states around Maryland. Bordering states around Maryland include Delaware, District of Columbia, Pennsylvania, Virginia, and West Virginia.

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Some of the notable trends are as follows:

- The Maryland fatality rate per 100 million VMT has consistently been below the national fatality rates for every year since 1992. The Virginia fatality rate has also been below the national fatality rates except for 1997.

Some results for 2003 are as follows:

- In 2003, Maryland and Virginia fatality rates per 100 million VMT were below the national fatality rate per 100 million VMT.
- District of Columbia, Pennsylvania, West Virginia fatality and Maryland fatality rates per 100,000 population were below the national fatality rate per 100,000 population.

4.2.1 Fatalities and Fatality Types for Bordering States

Trends

Delaware

- Between 2002 and 2003, the fatalities in Delaware increased by 16.9% from 124 to 145. The fatality rate per 100 million VMT increased from 1.40 in 2002 to 1.61 in 2003.
- Driver fatalities and pedestrian fatalities accounted for 64.8% and 12.4%, respectively, of all fatalities in 2003.

Table 4.2.1 Delaware Fatality Rates per VMT, Population, Licensed Drivers and Registered Vehicles, 1994-2003

Year	Fatalities	VMT (million)	Fatality Rate per 100 Million VMT	Population (1,000)	Fatality Rate per 100,000 Population	Licensed Drivers (1,000)	Fatality Rate per 100,000 Licensed Drivers	Registered Vehicles (1,000)	Fatality Rate per 100,000 Registered Vehicles
1994	112	7,026	1.59	709	15.80	514	21.79	609	18.39
1995	121	7,516	1.61	719	16.83	525	23.05	635	19.06
1996	116	7,644	1.51	727	15.96	532	21.80	651	17.82
1997	143	7,962	1.79	735	19.46	540	26.48	662	21.60
1998	115	8,165	1.40	743	15.48	548	20.99	676	17.01
1999	100	8,534	1.17	752	13.30	552	18.12	694	14.41
2000	123	8,201	1.49	784	16.58	564	23.05	717	18.13
2001	136	8,283	1.58	791	17.32	569	24.08	733	18.69
2002	124	8,837	1.40	807	15.36	573	21.64	688	18.02
2003*	145	9,013	1.61	818	17.73	592	24.51	778	18.64

Source: Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration,
*State Reported Numbers from "Delaware's Annual Traffic Statistical Report 2003", Delaware State Police

Table 4.2.2 Delaware Fatalities by Victim Type, 1994-2003

Year	Driver Fatalities†		Passenger Fatalities		Pedestrian Fatalities††		Pedalcyclist Fatalities		Other Fatalities		Total Killed	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	67	59.8	22	19.6	18	16.1	5	4.5	0	0.0	**112**	**100.0**
1995	59	48.8	32	26.4	29	24.0	1	0.8	0	0.0	**121**	**100.0**
1996	63	54.3	30	25.9	20	17.2	3	2.6	0	0.0	**116**	**100.0**
1997	84	58.7	39	27.3	14	9.8	3	2.1	3	2.1	**143**	**100.0**
1998	79	68.7	18	15.7	15	13.0	3	2.6	0	0.0	**115**	**100.0**
1999	65	65.0	21	21.0	12	12.0	1	1.0	1	1.0	**100**	**100.0**
2000	65	52.8	33	26.8	22	17.9	3	2.4	0	0.0	**123**	**100.0**
2001	77	56.6	38	27.9	17	12.5	2	1.5	2	1.5	**137**	**100.0**
2002	72	58.1	32	25.8	16	12.9	4	3.2	0	0.0	**124**	**100.0**
2003*	94	64.8	31	21.4	18	12.4	2	1.4	0	0.0	**145**	**100.0**

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration
* State Reported Numbers from "Delaware's Annual Traffic Statistical Report 2003"
† Drivers Include motorcyclists †† Pedestrians on foot only

District of Columbia

- For the latest 10 years (1994-2003), the number of fatalities in District of Columbia ranged from 41 to 69. Between 2002 and 2003, the fatalities in District of Columbia increased by 42.6% from 47 to 67. The fatality rate per population increased from 8.23 to 11.89 per 100,000 population.
- Pedestrian accounted for 26.9% of all fatalities in 2003. Among the states in the US, District of Columbia had the highest pedestrian fatality rate per population (3.19 per 100,000 population).

Table 4.2.3 District of Columbia Fatality Rates per VMT, Population, Licensed Drivers and Registered Vehicles, 1994-2003

Year	Fatalities	VMT (million)	Fatality Rate per 100 Million VMT	Population (1,000)	Fatality Rate per 100,000 Population	Licensed Drivers (1,000)	Fatality Rate per 100,000 Licensed Drivers	Registered Vehicles (1,000)	Fatality Rate per 100,000 Registered Vehicles
1994	69	-	2.00	570	12.11	366	18.85	270	25.56
1995	58	-	1.74	554	10.47	366	15.85	243	23.87
1996	62	-	1.59	543	11.42	333	18.62	237	26.16
1997	60	-	1.80	530	11.32	356	16.85	235	25.53
1998	54	-	1.63	525	10.29	352	15.34	236	22.88
1999	41	-	1.18	519	7.90	349	11.75	237	17.30
2000	48	-	1.37	523	9.37	348	14.08	244	20.08
2001	68	-	1.81	572	11.89	328	20.73	250	27.20
2002	47	-	1.33	571	8.23	309	15.19	239	19.66
2003	67	-	1.61	563	11.89	313	21.40	230	29.15

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation

Table 4.2.4 District of Columbia Fatalities by Victim Type, 1994-2003

Year	Driver Fatalities*		Passenger Fatalities		Pedestrian Fatalities†		Pedalcyclist Fatalities		Other Fatalities		Total Killed	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	25	36.2	19	27.5	23	33.3	2	2.9	0	0.0	**69**	**100.0**
1995	35	60.3	9	15.5	13	22.4	1	1.7	0	0.0	**58**	**100.0**
1996	24	38.7	15	24.2	21	33.9	1	1.6	1	1.6	**62**	**100.0**
1997	21	35.0	14	23.3	24	40.0	0	0.0	1	1.7	**60**	**100.0**
1998	24	44.4	15	27.8	15	27.8	0	0.0	0	0.0	**54**	**100.0**
1999	19	46.3	5	12.2	16	39.0	1	2.4	0	0.0	**41**	**100.0**
2000	23	46.9	7	14.3	18	36.7	1	2.0	0	0.0	**49**	**100.0**
2001	34	50.0	21	30.9	11	16.2	2	2.9	0	0.0	**68**	**100.0**
2002	28	59.6	11	23.4	7	14.9	1	2.1	0	0.0	**47**	**100.0**
2003	35	52.2	14	20.9	18	26.9	0	0.0	0	0.0	**67**	**100.0**

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
* Includes motorcyclists † Pedestrians on foot only

Pennsylvania

- Between 2002 and 2003, the fatalities in Pennsylvania decreased by 2.3%. The fatality rate per population also decreased from 13.08 to 12.75 per 100,000 population.
- The percentage of driver fatalities among fatalities had an increasing trend over the latest 10 years.
- Driver fatalities accounted for 67.2% of all fatalities in 2003.

Table 4.2.5 Pennsylvania Fatality Rates per VMT, Population, Licensed Drivers and Registered Vehicles, 1994-2003

Year	Fatalities Number	Vehicle Mile Traveled (million)	Fatality Rate per 100 Million VMT	Population (1,000)	Fatality Rate per 100,000 Population	Licensed Drivers (1,000)	Fatality Rate per 100,000 Licensed Drivers	Registered Vehicles (1,000)	Fatality Rate per 100,000 Registered Vehicles
1994	1,441	92,300	1.56	12,052	11.96	8,146	17.69	8,557	16.84
1995	1,480	94,500	1.57	12,072	12.26	8,209	18.03	8,792	16.83
1996	1,469	96,400	1.52	12,056	12.18	8,221	17.87	8,640	17.00
1997	1,557	98,300	1.58	12,011	12.96	8,318	18.72	9,008	17.28
1998	1,481	100,400	1.48	12,003	12.34	8,398	17.64	9,109	16.26
1999	1,549	100,400	1.54	11,994	12.91	8,478	18.27	9,209	16.82
2000	1,520	102,500	1.48	12,202	12,46	8,229	18.47	9,476	16.04
2001	1,532	103,549	1.47	12,287	12.45	8,226	18.60	9,869	15.50
2002	1,614	105,619	1.54	12,335	13.08	8,324	19.39	9,775	16.51
2003	1,577	NA	1.48	12,365	12.75	8,370	18.84	9,993	15.78

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation

Table 4.2.6 Pennsylvania Fatalities by Victim Type, 1994-2003

Year	Driver Fatalities*		Passenger Fatalities		Pedestrian Fatalities†		Pedalcyclist Fatalities		Other Fatalities		Total Killed	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	881	61.1	361	25.1	171	11.9	20	1.4	8	0.6	**1,441**	**100.0**
1995	904	61.1	358	24.2	195	13.2	19	1.3	4	0.3	**1,480**	**100.0**
1996	884	60.2	337	22.9	215	14.6	25	1.7	8	0.5	**1,469**	**100.0**
1997	975	62.6	387	24.9	170	10.9	17	1.1	8	0.5	**1,557**	**100.0**
1998	952	64.3	335	22.6	166	11.2	22	1.5	6	0.4	**1,481**	**100.0**
1999	974	62.9	368	23.8	183	11.8	18	1.2	6	0.4	**1,549**	**100.0**
2000	993	65.3	324	21.3	170	11.2	15	1.0	18	1.2	**1,520**	**100.0**
2001	965	63.1	346	22.6	195	12.3	13	0.9	17	1.1	**1,532**	**100.0**
2002	1,078	66.8	347	21.5	153	9.5	23	1.4	13	0.8	**1,614**	**100.0**
2003	1,060	67.2	318	20.2	170	10.8	20	1.3	9	0.6	**1,577**	**100.0**

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
* Includes motorcyclists † Pedestrians on foot only

Virginia

- There was no significant change for the number of fatalities in Virginia for the latest 10 years.
- Between 2002 and 2003, the fatalities in Virginia increased by 3.2%, and the fatality rate per 100 million VMT also increased from 1.21 to 1.23.
- Driver fatalities and pedestrian fatalities accounted for 67.8% and 9.1%, respectively, of all fatalities in 2003.

Table 4.2.7 Virginia Fatality Rates per VMT, Population, Licensed Drivers and Registered Vehicles, 1994-2003

Year	Fatalities Number	Vehicle Mile Traveled (million)	Fatality Rate per 100 Million VMT	Population (1,000)	Fatality Rate per 100,000 Population	Licensed Drivers (1,000)	Fatality Rate per 100,000 Licensed Drivers	Registered Vehicles (1,000)	Fatality Rate per 100,000 Registered Vehicles
1994	930	67,609	1.38	6,552	14.19	4,631	20.08	5,993	16.63
1995	900	69,811	1.29	6,618	13.60	4,654	19.34	5,660	15.90
1996	875	71,309	1.23	6,675	13.11	4,692	18.65	5,576	15.69
1997	984	74,142	1.33	6,737	14.61	4,901	20.08	5,765	17.07
1998	935	76,262	1.23	6,805	13.74	4,815	19.42	5,847	15.99
1999	877	79,463	1.10	6,873	12.76	4,729	18.55	5,929	14.79
2000	930	80,452	1.16	6,997	13.29	4,837	19.23	6,107	15.23
2001	935	86,969	1.08	7,188	13.01	4,921	19.00	6,236	14.99
2002	914	75,263*	1.21*	7,294	12.53	5,158	17.72	6,343	14.41
2003*	942	76,830	1.23	7,386	12.77	5,258	17.92	6,834	13.78

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
*State Reported Numbers from "2003 Virginia Traffic Crash Facts".

Table 4.2.8 Virginia Fatalities by Victim Type, 1994-2003

Year	Driver Fatalities*		Passenger Fatalities		Pedestrian Fatalities†		Pedalcyclist Fatalities		Other Fatalities		Total Killed	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	535	57.5	261	28.1	102	11.0	19	2.0	13	1.4	**930**	**100.0**
1995	562	62.4	226	25.1	93	10.3	16	1.8	3	0.3	**900**	**100.0**
1996	524	59.9	223	25.5	114	13.0	10	1.1	4	0.5	**875**	**100.0**
1997	630	64.0	241	24.5	89	9.0	20	2.0	4	0.4	**984**	**100.0**
1998	593	63.4	220	23.5	102	10.9	17	1.8	3	0.3	**935**	**100.0**
1999	575	65.6	201	22.9	85	9.7	10	1.1	6	0.7	**877**	**100.0**
2000	597	64.2	223	24.0	92	9.9	16	1.7	2	0.2	**930**	**100.0**
2001	600	64.2	219	23.4	101	10.8	13	1.4	2	0.2	**935**	**100.0**
2002	575	62.9	237	25.9	88	9.6	12	1.3	2	0.2	**914**	**100.0**
2003	639	67.8	208	22.1	86	9.1	10	1.1	0	0.0	**943††**	**100.0**

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
* Includes motorcyclists † Pedestrians on foot only
†† There are differences between 2003 Virginia crash data and FARS data

West Virginia

- Between 2002 and 2003, the fatalities in West Virginia decreased by 9.8% from 439 to 396. The fatality rate per VMT also decreased from 2.30 to 2.11 per 100 million VMT.
- Driver fatalities and passenger fatalities accounted for 71.7% and 21.1%, respectively, of all fatalities in 2003.

Table 4.2.9 West Virginia Fatality Rates per VMT, Population, Licensed Drivers and Registered Vehicles, 1994-2003

Year	Fatalities Number	Vehicle Mile Traveled (million)	Fatality Rate per 100 Million VMT	Population (1,000)	Fatality Rate per 100,000 Population	Licensed Drivers (1,000)	Fatality Rate per 100,000 Licensed Drivers	Registered Vehicles (1,000)	Fatality Rate per 100,000 Registered Vehicles
1994	356	-	-	1,822	19.54	1,317	27.03	1,375	25.89
1995	376	17,052	2.21	1,828	20.57	1,313	28.64	1,511	24.88
1996	345	17,208	2.00	1,826	18.89	1,274	27.08	1,406	24.54
1997	379	17,446	2.17	1,815	20.88	1,285	29.49	1,373	27.60
1998	354	17,870	1.98	1,811	19.55	1,280	27.67	1,386	25.54
1999	395	18,156	2.18	1,807	21.86	1,274	31.00	1,399	28.23
2000	410	18,017	2.28	1,841	22.27	1,347	30.44	1,468	27.93
2001	376	18,834	2.00	1,802	20.87	1,317	28.55	1,480	25.41
2002	439	19,122*	2.30*	1,802	24.36	1,366*	32.50*	1,609*	27.59*
2003	396*	19,174	2.11*	1,810	21.88*	1,219*	32,49*	1,608*	24.66*

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
* State Reported Numbers from "2003 West Virginia Crash Data".

Table 4.2.10 West Virginia Fatalities by Victim Type, 1994-2003

Year	Driver Fatalities*		Passenger Fatalities		Pedestrian Fatalities†		Pedalcyclist Fatalities		Other Fatalities		Total Killed	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	239	67.1	82	23.0	29	8.1	6	1.7	0	0.0	**356**	**100.0**
1995	248	66.0	92	24.5	31	8.2	1	0.3	4	1.1	**376**	**100.0**
1996	224	64.9	89	25.8	23	6.7	4	1.2	5	1.4	**345**	**100.0**
1997	244	64.4	108	28.5	21	5.5	5	1.3	1	0.3	**379**	**100.0**
1998	227	64.1	88	24.9	35	9.9	3	0.8	1	0.3	**354**	**100.0**
1999	252	63.8	110	27.8	29	7.3	3	0.8	1	0.3	**395**	**100.0**
2000	272	66.3	108	26.3	25	6.1	2	0.5	3	0.7	**410**	**100.0**
2001	247	65.7	97	25.8	28	7.4	3	0.8	1	0.3	**376**	**100.0**
2002	300	68.3	108	24.6	28	6.4	1	0.2	2	0.5	**439**	**100.0**
2003**	284	71.7	84	21.1	23	5.8	1	0.3	4	1.0	**396**	**100.0**

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
* Includes motorcyclists † Pedestrians on foot only
** State Reported Numbers from "2003 West Virginia Crash Data".

Maryland

- Between 2002 and 2003, the fatalities in Maryland decreased by 1.5% from 661 to 651. The fatality rate per population also decreased from 12.20 to 11.82 per 100,000 population.
- Driver fatalities and passenger fatalities accounted for 58.8% and 22.0%, respectively, of all fatalities in 2003. Pedestrian fatalities accounted for 18.1% of all fatalities.

Table 4.2.11 Maryland Fatality Rates per VMT, Population, Licensed Drivers and Registered Vehicles, 1994-2003

Year	Fatalities Number	Vehicle Mile Traveled (million)	Fatality Rate per 100 Million VMT	Population (1,000)	Fatality Rate per 100,000 Population	Licensed Drivers (1,000)	Fatality Rate per 100,000 Licensed Drivers	Registered Vehicles (1,000)	Fatality Rate per 100,000 Registered Vehicles
1994	651	44,201	1.47	5,006	13.00	3,311	19.66	3,543	18.37
1995	671	44,917	1.49	5,042	13.31	3,347	20.05	3,664	18.31
1996	608	45,945	1.32	5,060	12.02	3,377	18.00	3,635	16.73
1997	611	46,991	1.30	5,095	11.99	3,347	18.26	3,825	15.97
1998	606	48,434	1.25	5,110	11.86	3,406	17.79	3,955	15.32
1999	590	49,075	1.20	5,172	11.41	3,431	17.20	3,942	14.97
2000	588	50,300	1.17	5,275	11.15	3,382	17.39	3,897	15.09
2001	662	52,017	1.27	5,375	12.31	3,626	18.26	3,994	16.52
2002	661	53,761	1.23	5,418	12.20	3,684	17.94	4,394	15.04
2003	651	54,678	1.19	5,509	11.82	3,763	17.30	4,481	14.53

Source: FARS, Traffic Safety Facts 1994-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
Notes: The data for 2003 and 2002 are slightly different from FARS data, since those are based on the data shown in Chapter 1, which were from MAARS of Maryland State Police.

Table 4.2.12 Maryland Fatalities by Victim Type, 1994-2003

Year	Driver Fatalities*		Passenger Fatalities		Pedestrian Fatalities†		Pedalcyclist Fatalities		Other Fatalities		Total Killed	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1994	355	54.0	159	24.2	126	19.2	16	2.4	1	0.2	657	100.0
1995	386	56.4	162	23.7	128	18.7	8	1.2	0	0.0	684	100.0
1996	340	55.4	143	23.3	123	20.0	8	1.3	0	0.0	614	100.0
1997	345	56.6	143	23.4	105	17.2	15	2.5	2	0.3	610	100.0
1998	333	55.0	160	26.4	101	16.7	11	1.8	1	0.2	606	100.0
1999	363	60.7	110	18.4	119	19.9	6	1.0	0	0.0	598	100.0
2000	375	60.8	137	22.2	99	16.0	6	1.0	0	0.0	617	100.0
2001	411	62.1	138	20.8	99	15.0	13	2.0	1	0.2	662	100.0
2002	408	61.7	142	21.5	101	15.3	7	1.1	3	0.5	661	100.0
2003	383	58.8	143	22.0	118	18.1	6	0.9	1	0.2	651	100.0

Source: Maryland Traffic Safety Fact book 2002 and 2003
* Includes motorcyclists † Pedestrians on foot only
Notes: The data for 2003 and 2002 are slightly different from FARS data, since those are based on the data shown in Chapter 1, which are from MAARS of Maryland State Police.

4.2.2 Comparison with Bordering States

Trends

- The Maryland fatality rate per VMT has consistently been below the national fatality rates every year for the latest 10 years. The Virginia fatality rate has been also below the national fatality rates except for 1997.

- West Virginia fatality rates per VMT have been consistently above the national fatality rates since 1992.

Table 4.2.13 National, Maryland, and Bordering States Comparison in Fatality Rates per 100M VMT, 1994-2003

Years	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
National	1.73	1.73	1.69	1.64	1.58	1.55	1.53	1.52	1.51	1.48
Delaware	1.59	1.61	1.52	1.80	1.41	1.17	1.59	1.58	1.40	1.61*
District of Columbia	2.00	1.70	1.60	1.80	1.60	1.20	1.40	1.81	1.33	1.61
Pennsylvania	1.56	1.57	1.52	1.58	1.48	1.54	1.48	1.47	1.54	1.48
Virginia	1.38	1.29	1.23	1.33	1.23	1.10	1.16	1.08	1.18	1.18*
West Virginia	2.10	2.21	2.00	2.17	1.98	2.18	2.28	1.91	2.19	2.11*
Maryland	**1.47**	**1.49**	**1.32**	**1.30**	**1.25**	**1.20**	**1.17**	**1.27**	**1.23**	**1.19***

Source: Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration
* State Reported Numbers from Each State Report

Table 4.2.14 National, Maryland, and Bordering States Comparison in Pedestrian Fatality Rates per 100,000 Population, 1994-2003

Years	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
National	2.10	2.13	2.04	1.98	1.93	1.80	1.73	1.71	1.67	1.63
Delaware	2.55	4.04	2.76	1.91	2.02	1.59	2.86	2.14	1.98	2.32
District of Columbia	4.04	2.35	3.87	4.54	2.87	3.08	3.44	1.92	1.23	3.19
Pennsylvania	1.42	1.62	1.78	1.41	1.38	1.53	1.39	1.53	1.24	1.37
Virginia	1.56	1.41	1.71	1.32	1.50	1.24	1.31	1.41	1.21	1.16
West Virginia	1.59	1.70	1.26	1.16	1.93	1.60	1.36	1.55	1.55	1.22
Maryland	**2.58**	**2.46**	**2.48**	**2.10**	**2.04**	**2.20**	**1.73**	**1.88**	**1.86**	**2.14**

Source: FARS, Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation

Table 4.2.15 National, Maryland, and Bordering States Comparison in Fatality Rates per 100,000 Population, 1994-2003

Years	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
National	15.64	15.91	15.86	15.69	15.36	15.30	14.86	14.79	14.85	14.66
Delaware	15.80	16.83	15.96	19.46	15.48	13.30	16.58	17.32	15.36	17.73*
District of Columbia	12.11	10.47	11.42	11.32	10.29	7.90	9.37	11.89	8.23	11.89
Pennsylvania	11.96	12.26	12.18	12.96	12.34	12.91	12.46	12.45	13.08	12.75
Virginia	14.19	13.60	13.11	14.61	13.74	12.76	13.29	13.01	12.53	12.77
West Virginia	19.54	20.57	18.89	20.88	19.55	21.86	22.27	20.87	24.36	21.88*
Maryland	**13.00**	**13.31**	**12.02**	**11.99**	**11.86**	**11.41**	**11.15**	**12.28**	**12.20**	**11.82***

Source: FARS, Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation

* State Reported Numbers from Each State Report

Table 4.2.16 National, Maryland, and Bordering States Comparison in Fatality Rates per 100,000 Registered Vehicles, 1994-2003

Years	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
National	21.15	21.22	20.86	20.64	19.95	19.61	19.33	19.07	18.97	18.48
Delaware	19.72	20.13	19.56	22.92	18.40	15.97	19.19	20.42	18.02	18.64*
District of Columbia	25.56	23.87	26.16	25.53	22.88	17.30	20.08	27.20	19.66	29.15
Pennsylvania	16.84	16.83	17.00	17.28	16.26	16.82	16.04	15.50	16.51	15.78
Virginia	16.63	15.90	15.69	17.07	15.99	14.79	15.23	14.99	14.41	13.78*
West Virginia	25.89	24.88	24.54	27.60	25.54	28.23	27.93	23.95	29.39	24.66*
Maryland	**18.37**	**18.31**	**16.73**	**15.97**	**15.32**	**14.97**	**15.09**	**16.52**	**15.04**	**14.53***

Source: FARS, Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
NA: Not Available at this time
* State Reported Numbers from Each State Report

Table 4.2.17 National, Maryland, and Bordering States Comparison in Fatality Rates per 100,000 Licensed Drivers, 1994-2003

Years	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
National	23.21	23.68	23.43	22.99	22.45	22.29	22.00	22.06	22.04	21.74
Delaware	21.79	23.05	21.80	26.48	20.99	18.12	23.05	24.08	21.64	24.51
District of Columbia	18.85	15.85	18.62	16.85	15.34	11.75	14.08	20.73	15.19	21.40
Pennsylvania	17.69	18.03	17.87	18.72	17.64	18.27	18.47	18.60	19.39	18.84
Virginia	20.08	19.34	18.65	20.88	19.42	18.55	19.23	19.00	17.72	17.92*
West Virginia	27.03	28.64	27.08	29.49	27.67	31.00	30.44	28.34	33.13	32.49*
Maryland	**19.66**	**20.05**	**18.00**	**18.26**	**17.79**	**17.20**	**17.39**	**19.12**	**17.94**	**17.30***

Source: FARS, Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
*: Not Available at this time

2002 and 2003 Overview

- In 2003, Maryland and Virginia fatality rates per 100 million VMT were below the national fatality rate per 100 million VMT.
- Delaware and West Virginia fatality rates per 100 million VMT were above the national fatality rate per 100 million VMT in 2003.
- District of Columbia, Pennsylvania, West Virginia fatality and Maryland fatality rates per 100,000 population were below the national fatality rate per 100,000 population.
- Delaware and Virginia fatality rates per 100,000 population were above the national fatality rate per 100,000 population in 2002 and 2003.

Table 4.2.18 National, Maryland, and Bordering States Comparison in Fatality Rate, Fatal and Injury Accident Rate, 2002

Jurisdiction	VMT* (millions)	Fatalities	Fatality Rate	Fatal Accidents	Fatal Acc. Rate	Injury Accidents	Injury Acc. Rate
National – USA	2,829,645	42,815	1.51	38,252	1.35	1,929,000	68.17
Delaware	8,837	124	1.40	117*	1.29	6,172*	N/A**
District of Columbia	3,615	47	1.33	43	1.19	N/A**	N/A**
Pennsylvania	105,619	1,614	1.54	1,462	1.39	N/A**	N/A**
Virginia	75,263	914	1.18	830	1.11	55,178	73.31
West Virginia	19,122	439	2.30	400	2.12	16,855	88.14
Maryland	**53,761**	**661**	**1.23**	**606**	**1.13**	**38,875**	**72.31**

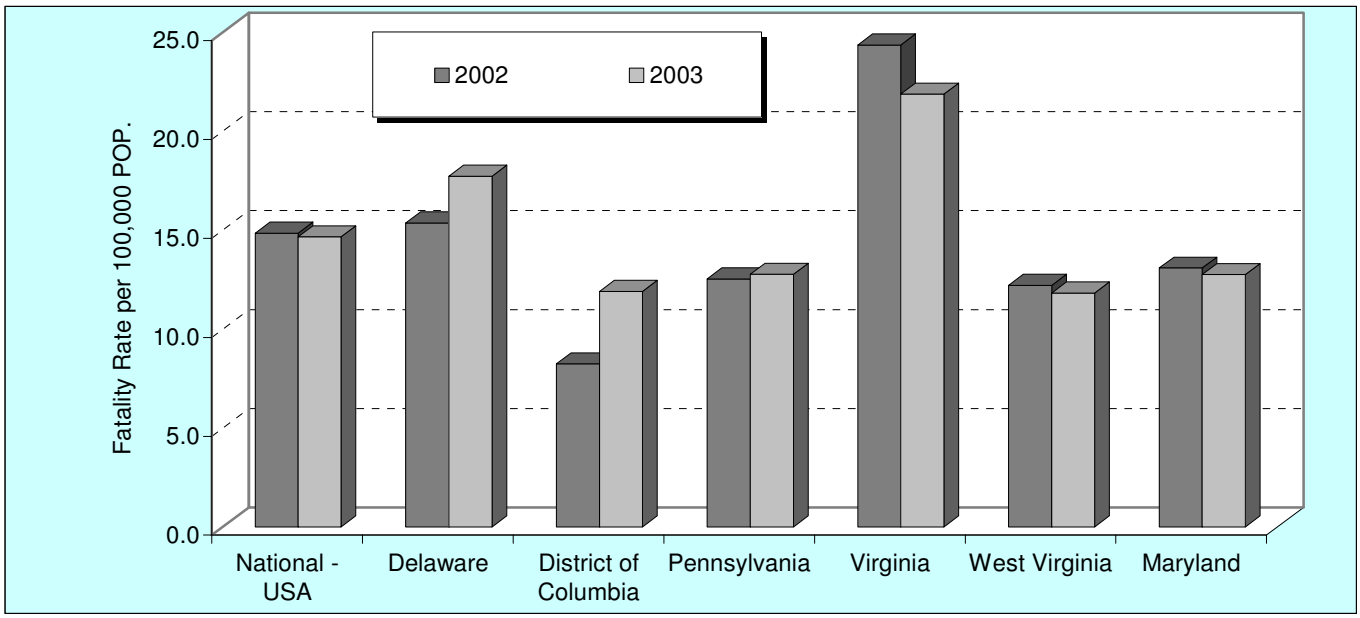
Source: FARS, Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
* State Reported Number
** Not Available at this time
† % Change between 2001 Fatality Rate (Table 4.2.18) and 2002 Fatality Rate (Table 4.2.19)
Notes: The data from FARS may be slightly different from State Reported Numbers

Table 4.2.19 National, Maryland, and Bordering States Comparison in Fatality Rate, Fatal and Injury Accident Rate, 2003

Jurisdiction	VMT* (millions)	Fatalities	Fatality Rate	Fatal Accidents	Fatal Acc. Rate	Injury* Accidents	Injury Acc. Rate*
National – USA	2,878,719	42,643	1.48	38,252	1.33	1,925,000	66.87
Delaware	9,013	145	1.61	136*	1.51	5,645	62.63
District of Columbia	NA	67	1.61	63	NA	NA	NA
Pennsylvania	NA	1,577	1.48	1,433	NA	NA	NA
Virginia	76,830	942	1.23	860*	1.12	55,041	71.64
West Virginia	19,174	396	2.11	364*	1.94	15,914**	83.0
Maryland *	**54,678**	**651**	**1.19**	**596**	**1.09**	**38,710**	**70.80**

Source: FARS, Traffic Safety Facts 1992-2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
*: State Reported Numbers , ** : Estimated with VMT and Injury Accident Rate
Notes: The data from FARS may be slightly different from State Reported Numbers

Figure 4.2.1 Fatality Rates (per 100,000 population) of National, Maryland, and Bordering States, 2002-2003



4.3 PEER STATES AND OTHER COUNTRIES

This section describes and compares the accident characteristics of the peer states that have similar characteristics with Maryland in terms of some social-traffic indices such as area, population, VMT, lane-miles, number of vehicles, and fatality rates. From comparing all the states with Maryland by these indices, nine states including Arizona, Connecticut, Delaware, Indiana, Massachusetts, New Hampshire, Oregon, Washington, and Wisconsin are considered as the peer states.

This section also discusses the accident characteristics of 30 other countries which are the members of the OECD (Organization for Economic Co-operation and Development), and compare them to Maryland accident characteristics.

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Some of the notable results for the peer states are as follows:

- Between 1985 and 2003, the fatality rates of VMT decreased in all peer states, as Maryland and the national rates did. In 2003, most the fatality rates were below the national fatality rate except for Arizona, Delaware, and Wisconsin.
- Massachusetts and Maryland had relatively higher percentages of pedestrian fatalities among the peer states.
- Most peer states had higher percentages of alcohol-related fatalities than the national percentage. Indiana had the lowest percentage of alcohol-related fatalities among the peer states (31.4%).
- The pedestrian fatality rates per 100,000 population in Delaware, Arizona and Maryland were above the national pedestrian rate of 1.63 per 100,000 population.

Some of the notable results for the OECD countries are as follows:

- Maryland fatality rates per VKT (Vehicle-Kilometer Traveled) and per vehicle were significantly below the average fatality rates of 30 OECD countries, while per population were slightly above the average of those countries.
- Maryland injury accident rates per population were higher than the average injury accident rates of 30 OECD countries, but per VKT were lower than the average of those countries.

4.3.1 Comparison with Peer States

Trend and 2003 Overview

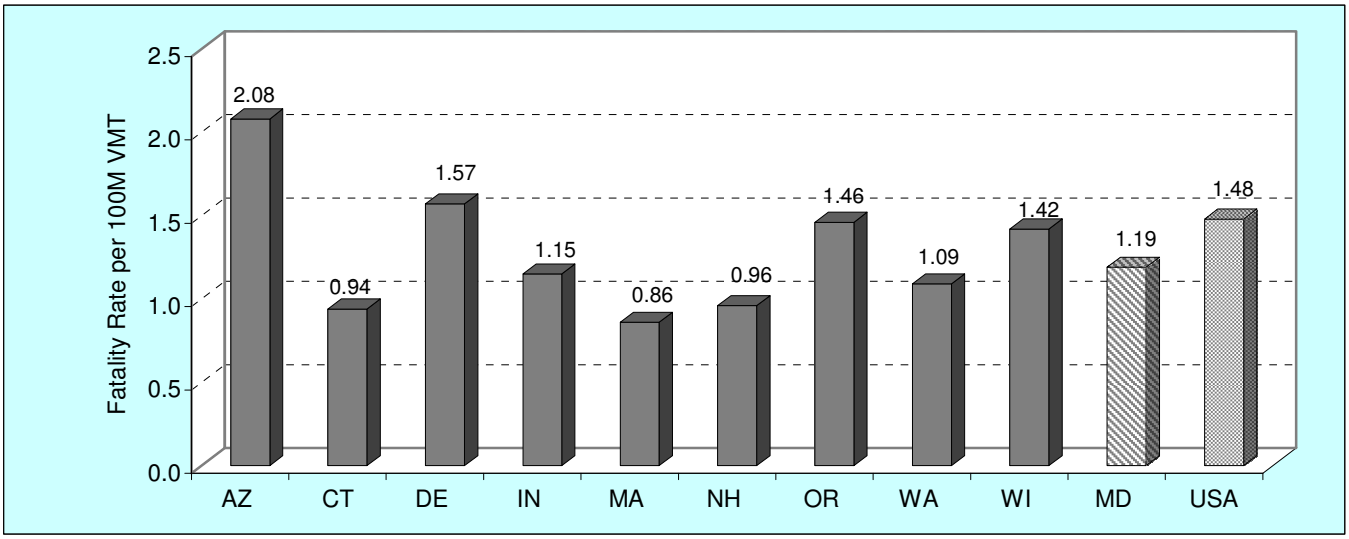
- Among the 9 peer states, in 2003, Arizona had the highest fatalities and fatality rate per VMT, and Massachusetts had the lowest fatality rate per VMT. From 1985 to 2003, the fatalities in most states had been decreasing in trend, but in Delaware and Wisconsin had been slightly increasing in trend.
- Between 1985 and 2003, the fatality rates per VMT decreased in all peer states, as Maryland and the national rates did. The fatality rate per 100 million VMT increased from 1.40 in 2002 to 1.61 in 2003.

Table 4.3.1 Peer States Fatalities and Fatality Rates per 100 million VMT, 1985-2003

Peer States	Fatalities					Fatality Rate per 100 Million VMT				
	1985	1990	1995	2003	Increase Rates (%)	1985	1990	1995	2003	Increase Rates (%)
Arizona	893	869	1,035	1,120	1.41	4.14	2.45	2.61	2.08	-2.76
Connecticut	448	385	317	294	-1.91	2.00	1.46	1.13	0.94	-2.94
Delaware	104	138	121	142	2.03	1.94	2.11	1.61	1.57	-1.06
Indiana	974	1,049	960	834	-0.80	2.39	1.95	1.49	1.15	-2.88
Massachusetts	742	605	444	462	-2.10	1.87	1.31	0.92	0.86	-3.00
New Hampshire	191	158	118	127	-1.86	2.53	1.61	1.11	0.96	-3.45
Oregon	559	579	574	512	-0.47	2.61	2.17	1.91	1.46	-2.45
Washington	744	825	653	600	-1.08	2.16	1.85	1.33	1.09	-2.75
Wisconsin	744	769	745	848	0.78	2.03	1.74	1.45	1.42	-1.67
Maryland	729	707	671	649	-0.61	2.19	1.74	1.5	1.19	**-2.54**
National-USA	**43,825**	**44,599**	**41,817**	**42,643**	**-0.15**	**2.47**	**2.08**	**1.73**	**1.48**	**-2.23**

Source: Traffic Safety Facts 2003-FARS, National Highway Traffic Safety Administration, Jan. 2005
Notes: The data from FARS may be slightly different from State Reported Numbers

Figure 4.3.1 Fatality Rates per 100 million VMT of the Peer States, 2003



- In 2003, Arizona also had the highest fatality rates per licensed driver, registered vehicle, and population. The fatality rates in most peer states were below the national fatality rate except for Arizona, Delaware, and Wisconsin.

Table 4.3.2 Peer States Fatality Rates per Licensed Driver, Registered Vehicle, and Population, 2003

States	Fatalities	Licensed Drivers (1000)	Fatalities per 100,000 Drivers	Registered Vehicles (1000)	Fatalities per 100,000 Registered Vehicles	Population (1000)	Fatalities per 100,000 Population
Arizona	1,120	3,819	**29.32**	3,783	**29.60**	5,581	**20.07**
Connecticut	294	2,660	11.05	3,027	9.71	3,483	8.44
Delaware	142	585	24.27	702	20.23	817	17.37
Indiana	834	4,536	18.39	5,884	14.17	6,196	13.46
Massachusetts	462	4,646	9.94	5,610	8.24	6,433	7.18
New Hampshire	127	968	13.12	1,205	10.54	1,288	9.86
Oregon	512	2,590	19.77	3,136	16.33	3,560	14.38
Washington	600	4,407	13.61	5,521	10.87	6,131	9.79
Wisconsin	848	3,766	22.52	4,888	17.35	5,472	15.50
Maryland	649	3,552	18.27	3,941	16.47	5,509	11.78
National- USA	**42,643**	**196,166**	**21.74**	**230,788**	**18.48**	**290,810**	**14.66**

Source: Traffic Safety Facts, 2003, National Highway Traffic Safety Administration, U.S. Department of Transportation
Notes: The data from FARS may be slightly different from State Reported Numbers

- Among the victims killed, the percentages of driver fatalities in Indiana, New Hampshire, and Wisconsin were relatively higher than in other states. The percentage of motorcycle riders killed in Wisconsin was the highest in the peer states (12.1%).
- Massachusetts and Maryland had relatively higher percentages of pedestrian fatalities among the peer states.

Table 4.3.3 Peer States Fatalities by Victim Type, 2003

States	Driver		Passenger		Motorcycle Rider		Pedestrian		Pedalcyclist		Other/ Unknown		Total Fatalities	
	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%
Arizona	515	46.0	318	28.4	109	9.7	121	10.8	16	1.4	41	3.7	1,120	100.0
Connecticut	159	54.1	69	23.5	28	9.5	34	11.6	2	0.7	2	0.7	294	100.0
Delaware	79	55.6	32	22.5	11	7.7	19	13.4	1	0.7	0	0	142	100.0
Indiana	482	57.8	201	24.1	81	9.7	62	7.4	7	0.8	1	0.1	834	100.0
Massachusetts	241	52.2	86	18.6	35	7.6	86	18.6	11	2.4	3	0.6	462	100.0
New Hampshire	73	57.5	23	18.1	9	7.1	19	15.0	2	1.6	1	0.8	127	100.0
Oregon	258	50.4	152	29.7	44	8.6	46	9.0	8	1.6	4	0.8	512	100.0
Washington	315	52.5	138	23.0	59	9.8	75	12.5	10	1.7	3	0.5	600	100.0
Wisconsin	486	57.3	187	22.1	103	12.1	54	6.4	12	1.4	6	0.7	848	100.0
Maryland	329	50.7	139	21.4	56	8.6	114	17.6	7	1.1	4	0.6	649	100.0
National- USA	**23,258**	**54.5**	**10,108**	**23.7**	**3,661**	**8.6**	**4,749**	**11.1**	**622**	**1.5**	**245**	**0.6**	**42,643**	**100.0**

- Most peer states had higher percentages of alcohol-related fatalities than the national percentage. Indiana had the lowest percentage of alcohol-related fatalities among the peer states (31.4%).
- The pedestrian fatality rates per 100,000 population in Delaware, Arizona and Maryland were above the national pedestrian rate of 1.63 per 100,000 population. The pedestrian fatality rate per population was highest in Delaware.

Table 4.3.4 Peer States Alcohol-Related Fatalities, Pedestrian Fatalities, and Pedestrian Fatality Rates, 2003

States	Alcohol-Related Fatalities		Pedestrian Fatalities and Fatality Rates per 100,000 pop.		
	Number	% of Total Fatalities	Pedestrian fatalities	Population (1,000)	Pedestrian Fatality Rates per 100,000 pop.
Arizona	470	42.0	121	5,581	2.17
Connecticut	131	44.6	34	3,483	0.98
Delaware	60	42.3	19	817	2.33
Indiana	262	31.4	62	6,196	1.00
Massachusetts	207	44.8	86	6,433	1.34
New Hampshire	52	40.9	19	1,288	1.48
Oregon	207	40.4	46	3,560	1.29
Washington	259	43.2	75	6,131	1.22
Wisconsin	387	45.6	54	5,472	0.99
Maryland	281	43.3	114	5,509	2.07
National- USA	**17,013**	**39.9**	**4749**	**290,810**	**1.63**

- For all the states, the highest percentage of fatal accidents occurred on principal arterial roadways such as Interstate highways and other expressways. For Indiana, local roadways accounted for the highest percentage of the fatal accidents in Indiana.

Table 4.3.5 Peer States Fatal Accidents by Roadway Functional Class, 2003

States	Principal Arterial								Minor Arterial		Collector		Local		Unknown		Fatal Crashes	
	Interstate Highway		Freeway & Expressway		Other		Total											
	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%	Num.	%
Arizona	191	19.6	33	3.4	244	25.0	468	48.0	184	18.9	183	18.8	115	11.8	25	2.6	975	100.0
Connecticut	58	21.2	20	7.3	56	20.5	134	49.1	54	19.8	38	13.9	45	16.5	2	0.7	273	100.0
Delaware	18	13.5	0	0.0	44	33.1	62	46.6	20	15.0	32	24.1	17	12.8	2	1.5	133	100.0
Indiana	77	10.2	6	0.8	103	13.7	186	24.7	158	21.0	150	19.9	260	34.5	0	0.0	754	100.0
Massachusetts	63	14.5	18	4.1	119	27.4	200	46.1	115	26.5	68	15.7	50	11.5	1	0.2	434	100.0
New Hampshire	13	11.2	1	0.9	30	25.9	44	37.9	11	9.5	37	31.9	19	16.4	5	4.3	116	100.0
Oregon	36	8.4	6	1.4	148	34.5	190	44.3	78	18.2	115	26.8	46	10.7	0	0.0	429	100.0
Washington	59	10.9	24	4.5	126	23.4	209	38.8	82	15.2	127	23.6	121	22.4	0	0.0	539	100.0
Wisconsin	46	6.0	16	2.1	178	23.4	240	31.5	165	21.7	196	25.8	157	20.6	3	0.4	761	100.0
Maryland	60	10.1	34	5.7	171	28.8	265	44.7	133	22.4	119	20.1	73	12.3	3	0.5	593	100.0
National- USA	**4,785**	**12.5**	**1,324**	**3.5**	**8,871**	**23.2**	**14,980**	**39.2**	**7,379**	**19.3**	**8,015**	**21.0**	**7,315**	**19.1**	**563**	**1.5**	**38,252**	**100.0**

4.3.2 Comparison with Other Countries

- Among the 30 OECD member counties, the fatality rates per 100,000 population, per one billion VKT (Vehicle-Kilometer Traveled), and per 100,000 vehicles were highest in Greece, Turkey, and the Republic of Korea, respectively.
- Maryland fatality rates per VKT and per vehicle were significantly below the average fatality rates of 30 OECD countries, but per population were slightly above the average of those countries.

Table 4.3.6 Fatality Rates by OECD[1] Country, 2002[2]

Countries	Population (1,000)	Registered Vehicles (1,000)	Fatality Rates		
			Per 100,000 population	Per 1Billion VKT[3]	Per 100,000 vehicles[4]
Australia	19,641	12,451	8.8	9.0	13.9
Austria	8,033	5,338	11.9	12.3	17.9
Belgium	10,263 [a]	5,737 [a]	14.5 [a]	16.3 [a]	25.9 [a]
Canada	31,414	18,617	9.3	9.3	15.7
Czech Republic	10,206	4,328	14.0	33.1	33.0
Denmark	5,368	2,476	8.6	9.2 [a]	18.6
Finland	5,195	2,603	8.0	8.5	16.0
France	59,344	35,396	12.9	13.8	21.6
Germany	82,440	53,306	8.3	11.1	12.8
Greece	10,554 [b]	5,061 [b]	**19.3 [b]**	26.7 [d]	40.2 [b]
Hungary	10,175	2,974	14.0	N.A.	47.9
Iceland	288	201	10.1	16.0 [b]	14.5
Ireland	3,917	1,850	9.6	10.9 [a]	20.3
Italy	57,844	42,107	11.7	N.A.	16.1
Japan	127,435	80,364	7.5	12.1	11.9
Luxemburg	444	341	14.0	N.A.	18.2
Netherlands	16,105	8,168	6.1	7.6	12.0
New Zealand	3,939	2,710	10.3	12.4 [b]	15.0
Norway	4,552	2,752	6.9	8.3 [a]	11.4
Poland	38,219	15,525	15.3	N.A.	37.7
Portugal	10,407	8,720	16.1	N.A.	19.2
Republic of Korea	47,640	14,614	14.9	22.8	**48.6**
Slovak Republic	5,379	1,834	11.3	46.9 [b]	33.1
Slovenia	1,964	1,046	13.7	21.7	25.7
Spain	40,409	25,066	13.2	N.A.	21.3
Sweden	8,909	4,936	6.0	8.3[c]	10.8
Switzerland	7,261	4,808	7.1	8.4	10.7
Turkey	68,530 [a]	9,821 [a]	5.6 [a]	**73.0 [a]**	39.1 [a]
United Kingdom	59,208	30,403 [a]	6.1	7.5[d]	11.9
USA	288,369	225,685	14.8	9.4	19.0
Average	**-**	**-**	**11.0**	**17.3**	**22.0**
Maryland	**5,418**	**4,394**	**12.2**	**7.7**	**15.0**

Source: IRTAD (International Road Traffic and Accident Database), OECD, 9. 2004
Note: 1) OECD: Organization for Economic Co-operation and Development
2) The data for 2003 are not available.
3) VKT: Vehicle-Kilometer traveled
4) Estimated values based on the fatality rates per population and the number of vehicles
a) 2001 b) 2000 c) 1999 d) 1998 e) 1996 f) 1995 g) 1994

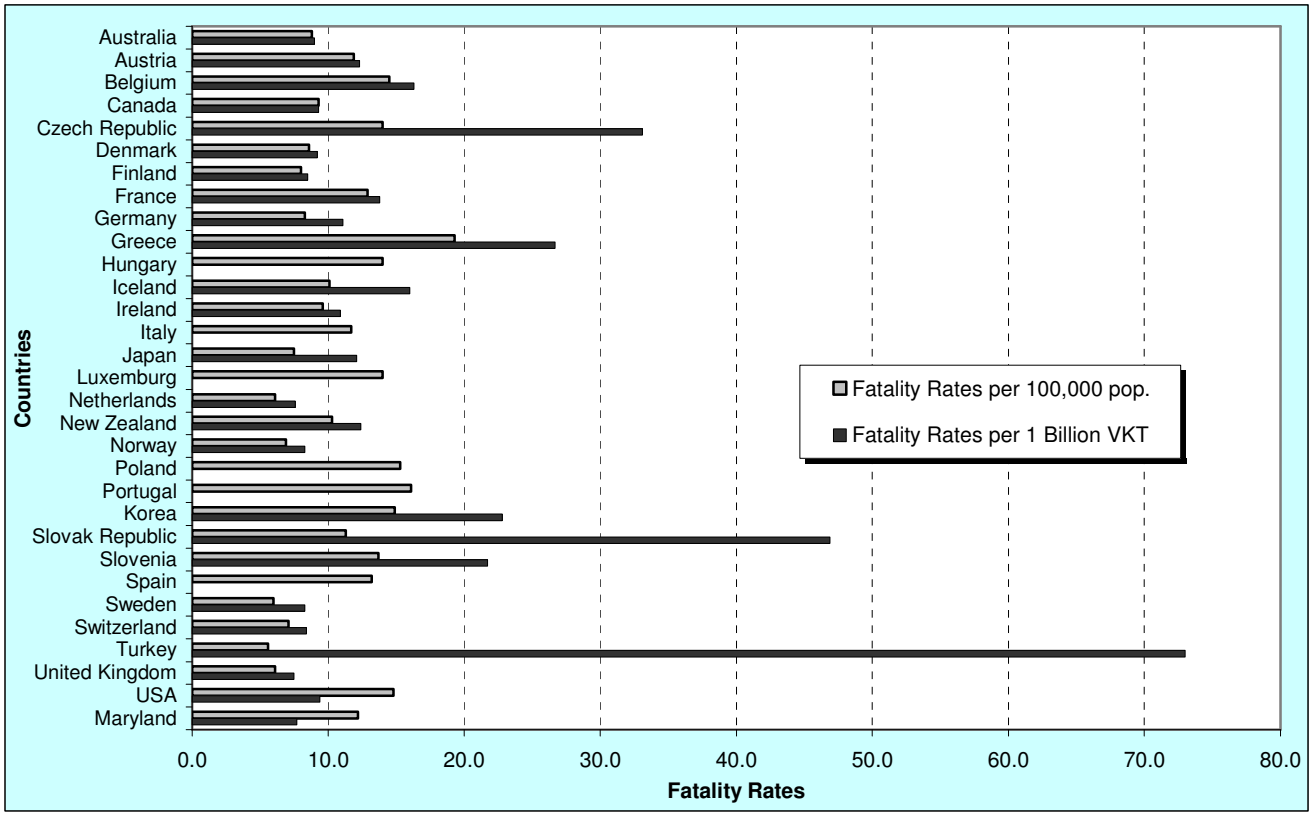
- Among the 30 OECD member countries, the injury accident rates per population and per VKT were highest in Japan.
- Maryland injury accident rates per population were significantly higher than the average injury accident rates of 30 OECD countries, but per VKT were lower than the average of those countries.

Table 4.3.7 Injury Accident Rates by OECD Country, 2002

Countries	Injury Accident Rates		Countries	Injury Accident Rates	
	Per 100,000 pop.	Per million VKT		Per 100,000 pop.	Per million VKT
Australia	N.A.	N.A.	Netherlands	208.0	0.3
Austria	537.0	0.6	New Zealand	258.0	0.21 [b]
Belgium	462 [a]	0.52 [a]	Norway	192.0	0.25 [a]
Canada	508.0	0.5	Poland	140.0	N.A.
Czech Republic	260.0	0.6	Portugal	406.0	N.A.
Denmark	133.0	0.15 [a]	Republic of Korea	485.0	0.7
Finland	119.0	0.1	Slovak Republic	146.0	0.59 [b]
France	178.0	0.2	Slovenia	523.0	0.8
Germany	439.0	0.6	Spain	244.0	N.A.
Greece	218 [b]	0.30 [d]	Sweden	190.0	0.23 [c]
Hungary	193.0	N.A.	Switzerland	326.0	0.4
Iceland	357.0	0.41 [b]	Turkey	80 [a]	1.05 [a]
Ireland	169.0	0.18 [a]	United Kingdom	386.0	0.52 [d]
Italy	411.0	N.A.	USA	668.9	0.42
Japan	**735.0**	**1.2**	**Average**	**315.8**	**0.47**
Luxemburg	174.0	N.A.	**Maryland**	**717.5**	**0.45**

Source: IRTAD (International Road Traffic and Accident Database), OECD, 9. 2004
Note: a) 2001 b) 2000 c) 1999 d) 1998 e) 1996 f) 1995 g) 1994

Figure 4.3.2 Fatality Rates per 100 million VMT by OECD Country, 2002



CHAPTER V. CITATIONS AND SAFETY EQUIPMENT REPAIR ORDERS

5.1 CITATIONS

5.2 SAFETY EQUIPMENT REPAIR ORDERS

5.1 CITATIONS

This section includes citation data from the Maryland Motor Vehicle Administration who receives annual updates from the District Court of Maryland for all counties and District Courts system in Maryland.

Some results for the Fiscal Year 2003 (from July-1-2002 through June-30-2003) are as follows:

- During the FY 2003, there were 1,118,362 citations involving traffic systems.
- The largest number of traffic citations was issued in Montgomery County (14.4%) during the period (FY 2003).
- Garrett County had the highest citation rate per licensed driver (0.731 per licensed driver).
- Baltimore City had the highest citation rate per VMT (39.81 per million VMT).
- The most frequent citation type was “Speeding over Speed limits” (section 21801.1) which accounted for 29.8% of total traffic citations during the fiscal year 2003. Citations involving “Speeding over Speed limits” were the most frequently issued in Baltimore County.

2003 Overview

- During the Fiscal Year 2003 (from July-1-2002 through June-30-2003), there were 1,118,362 citations involving traffic systems.
- The largest number of traffic citations was issued in Montgomery County (14.4%).
- Garrett County had the highest citation rate per licensed driver (0.731 per licensed driver).
- Baltimore City had the highest citation rate per VMT (39.81 per million VMT).

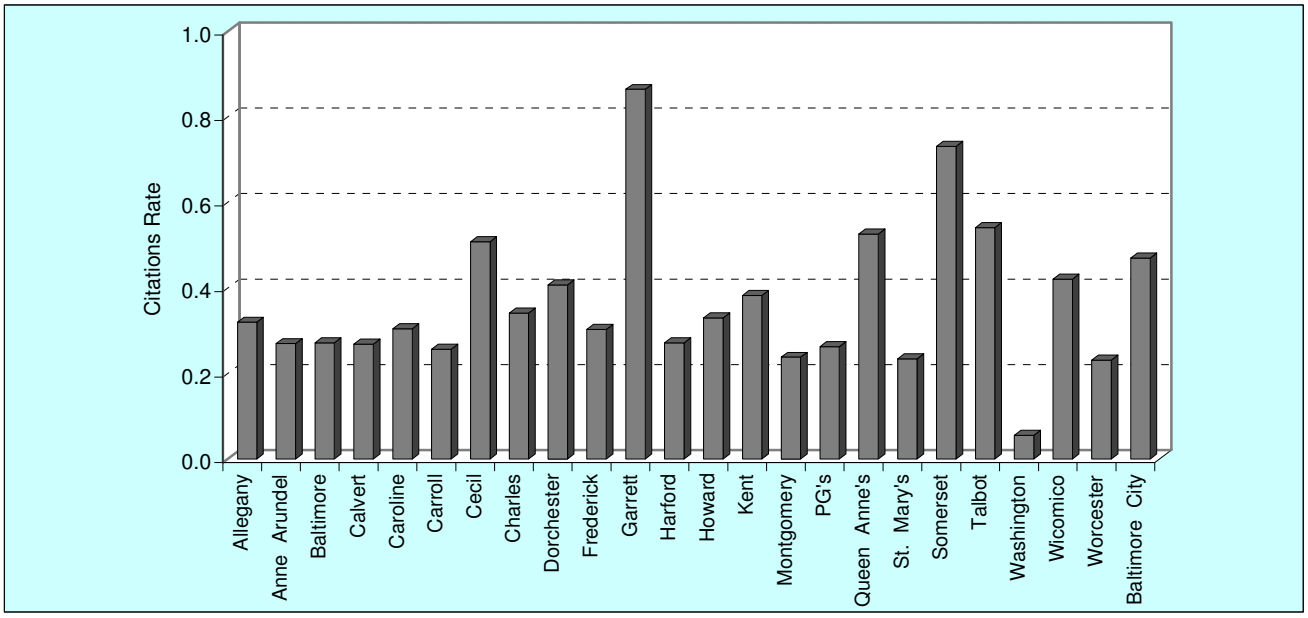
Table 5.1.1 Traffic Citations and Citation Rates by County, FY 2003

County*	Citations		Licensed Drivers	Citations per Licensed Driver	VMT	Citations per VMT (millions)
	Number	Percent				
Allegany	16,107	1.4	50,353	0.320	838	19.22
Anne Arundel	99,877	8.9	370,104	0.270	5,587	17.88
Baltimore	151,293	13.5	557,115	0.272	8,078	18.73
Calvert	15,838	1.4	58,876	0.269	722	21.94
Caroline	7,360	0.7	24,158	0.305	344	21.40
Carroll	30,826	2.8	120,126	0.257	1,248	24.70
Cecil	33,640	3.0	66,199	0.508	1,230	27.35
Charles	31,615	2.8	92,781	0.341	1,174	26.93
Dorchester	9,003	0.8	22,100	0.407	362	24.87
Frederick	47,551	4.3	156,828	0.303	2,746	17.32
Garrett	18,625	1.7	21,551	**0.864**	486	38.32
Harford	46,595	4.2	171,548	0.272	2,257	20.64
Howard	64,727	5.8	195,936	0.330	3,620	17.88
Kent	5,510	0.5	14,408	0.382	228	24.17
Montgomery	**160,534**	**14.4**	675,740	0.238	7,427	21.61
Prince George's	138,111	12.3	524,662	0.263	8,631	16.00
Queen Anne's	17,139	1.5	32,580	0.526	910	18.83
St. Mary's	14,654	1.3	62,728	0.234	778	18.84
Somerset	10,206	0.9	13,959	0.731	285	35.81
Talbot	14,926	1.3	27,571	0.541	623	23.96
Washington	5,399	0.5	96,723	0.056	1,968	2.74
Wicomico	25,530	2.3	60,848	0.420	842	30.32
Worcester	9,178	0.8	39,663	0.231	674	13.62
Baltimore City	144,118	12.9	306,474	0.470	3,620	**39.81**
Total	**1,118,362**	**100.0**	**3,763,031**	**0.297**	**54,678**	**20.45**

Source: Maryland District Court Traffic System Charge Frequency Report, FY 2003 (07/01/2002 through 06/30/2003)

* Note that County Data were obtained from District Court Data using following District Court codes.
01: Baltimore City, 05: Prince George's, 06: Montgomery, 07: Anne Arundel, 08: Baltimore, 09: Harford,
0201: Dorchester, 0202: Somerset, 0203: Wicomico, 0205: Worcester, 0302: Cecil, 0303: Kent,
0304: Queen Anne's, 0305: Talbot, 0306: Caroline, 0401: Calvert, 0402: Charles, 0403: St Mary's,
1001: Howard, 1002: Carroll, 1101: Frederick, 1102: Washington, 1201&1203: Allegany, 1202: Garrett

Figure 5.1.1 Maryland Traffic Citation Rates per Licensed Driver by County, FY 2003



- Among the sections in the articles of the Maryland Vehicle Law, major traffic citations that will affect traffic accidents can be represented as Table 5.2.2.
- According to the Maryland District Court Traffic System Charge Frequency Report, the most frequent citation type was "Speeding over Speed limits" (section 21801.1) which accounted for 29.8% of total traffic citations during the fiscal year 2003. Citations involving "Speeding over Speed limits" were the most frequently issued in Baltimore County.
- The second most citation type was "Operating vehicles without safety seat/seat belt for under 16 years" (section 22412.3 B) which accounted for 11.2% of total traffic citations during the period. Baltimore City had the most citations involving the citation type during the period.

Table 5.1.2 Major Traffic Citation Sections of the Maryland Vehicle Law

MVL Sections	Meaning	Citations	Percent
21201 A1	Failure to Obey Traffic Device	29,964	2.7
21201 A2	Driving across private property or Leave roadway	530	0.0
21202 H1	Driving through Red Signal (circular red signal)	16,565	1.5
21202 H2	Driving through Red Signal (red arrow signal)	772	0.1
21202 I1	Improper right turn on red light	1,771	0.2
21202 I2	Improper left turn from one-way street	305	0.0
21202 M	Disobey Signals at locations other than intersections	379	0.0
21301 A	Failure to drive right of center	7,398	0.7
21307 B	Passing in No-passing Zone(on left prohibited)	113	0.0
21307 C	Passing in No-passing Zone(on left Side of marks)	1,008	0.1
21308 A	Driving wrong way	3,230	0.3
21309 B	Unsafe lane change (in Single Lane required)	7,611	0.7
21309 D	Unsafe lane change (Not obeying control devices)	996	0.1
21309 E	Unsafe lane change (Against Lane Change Devices)	250	0.0
21309 F	Unsafe lane change (Trucks, Tractors, Trailers, and Buses)	273	0.0
21309 I	Unsafe lane change (on Left Turn Lanes)	234	0.0
21310 A	Following too closely	4,704	0.4
21402 A	Failure to Yield right of way on left turn	5,518	0.5

Continue

21402 B	Failure to Yield right of way on U turn	325	0.0
21403 B	Failure to stop and yield at Thru Highway	340	0.0
21403 C	Failure to Stop Signs	448	0.0
21404 A	Failure to stop when entering highway	142	0.0
21404 B	Failure to Yield right of way when entering highway	638	0.1
21502 A2	Failure to stop when pedestrians are crossing in crosswalk	577	0.1
21601 A	Right turn from improper road position	444	0.0
21601 B	Left turn from improper road position	499	0.0
21706 A	Failure to stop on meeting or overtaking stopped school vehicle	1,940	0.2
21707 A	Failure to stop at stop sign	19,965	1.8
21801 A	Speed greater than reasonable	9,878	0.9
21801 B	Failure to Control speed to avoid collision	15,072	1.3
21801 H	Failure to reduce speed when special dangers exist	860	0.1
21801.1	Speeding over Speed limits	**333,370**	**29.8**
21901.1 A	Reckless driving	4,985	0.4
21901.1 B	Negligent driving	16,986	1.5
21902 A1	Driving while under the influence of alcohol	23,766	2.1
21902 A2	Driving while under the influence of alcohol per se.	15,637	1.4
21902 B	Driving while impaired by alcohol	22,894	2.0
21902 C	Driving while impaired by drugs or drugs and alcohol	2,031	0.2
22227 B	Failure to Obey red or blue right on Ramps	2,449	0.2
22412.3 B	Operating vehicles without safety seat or seat belt for under 16 years	125,665	11.2
22412.3 C	Seat belt for passengers	9,315	0.8
Total		**689,847**	**61.7**
Grand Total (All Traffic Citations)		**1,118,362**	**100.0**

Source: The Maryland Vehicle Law, 2003

Table 5.1.3 Traffic Citation Data by Major Section and County, FY 2003

County	21201 A1	21201 A2	21202 H1	21202 H2	21202 I1	21202 I2	21202 M	21301 A	21307 B	21307 C	21308 A	21309 B	21309 D	21309 E
Allegany	101	4	53	2	5	-	6	163	10	11	60	77	4	-
Anne Arundel	1,785	47	769	46	122	31	68	906	9	78	168	862	51	5
Baltimore	1,861	81	1,156	75	164	35	9	856	6	101	359	837	126	7
Calvert	111	2	94	1	9	-	3	223	-	14	12	43	2	-
Caroline	29	-	42	1	6	-	-	78	-	30	9	20	2	1
Carroll	428	6	193	8	37	16	1	482	13	80	48	93	37	1
Cecil	169	7	183	16	21	4	14	276	4	57	28	90	15	2
Charles	276	7	196	17	34	9	8	243	5	49	29	202	41	-
Dorchester	28	1	48	-	5	2	3	77	2	9	23	42	5	1
Frederick	865	15	403	20	57	10	25	265	6	53	145	303	9	4
Garrett	55	-	8	-	-	-	5	158	1	29	3	7	2	-
Harford	331	18	377	51	42	15	6	422	4	33	60	281	118	-
Howard	836	11	261	27	92	15	26	184	3	23	42	229	20	5
Kent	20	-	8	-	1	-	-	42	2	8	-	10	1	-
Montgomery	9,435	95	3,550	311	500	57	64	1,020	11	185	220	1,574	305	25
Prince George's	3,692	54	1,313	67	164	26	32	602	8	102	291	1,005	132	183
Queen Anne's	104	1	27	-	2	-	1	96	2	16	9	94	7	3
St. Mary's	112	9	105	6	19	2	6	97	2	11	10	52	4	-
Somerset	15	-	11	-	2	1	3	49	3	6	10	21	-	-
Talbot	101	-	96	2	13	2	8	118	-	15	33	89	9	-
Washington	248	13	370	4	35	3	7	167	5	28	110	142	7	-
Wicomico	178	5	252	2	33	2	8	211	6	33	51	167	3	2
Worcester	249	3	321	8	21	15	12	168	6	16	140	289	25	-
Baltimore City	8,935	151	6,729	108	387	60	64	495	5	21	1,370	1,082	71	11
Total	**29,964**	**530**	**16,565**	**772**	**1,771**	**305**	**379**	**7,398**	**113**	**1,008**	**3,230**	**7,611**	**996**	**250**

County	21309 F	21309 I	21310 A	21402 A	21402 B	21403 B	21403 C	21404 A	21404 B	21502 A2	21601 A	21601 B	21706 A	21707 A
Allegany	-	1	61	59	1	5	18	6	18	2	-	7	22	162
Anne Arundel	44	20	539	510	31	34	29	20	45	244	14	27	142	1,223
Baltimore	105	27	673	382	18	14	16	13	51	4	19	16	452	1,900
Calvert	-	1	35	81	4	2	3	-	4	-	4	1	3	83
Caroline	-	1	30	21	5	4	7	1	3	-	-	-	3	115
Carroll	-	4	148	189	4	10	20	2	25	7	5	7	47	606
Cecil	12	2	125	78	4	5	5	8	23	-	3	-	8	244
Charles	-	4	117	217	16	10	16	5	19	4	6	4	125	379
Dorchester	-	1	45	28	3	1	8	-	1	-	-	-	3	73
Frederick	2	9	180	243	12	18	18	12	33	1	13	11	21	909
Garrett	-	-	25	26	-	2	3	1	9	-	-	-	13	38
Harford	44	3	335	222	9	13	19	4	18	5	4	9	27	544
Howard	1	8	239	237	9	14	33	10	33	30	8	10	36	627
Kent	-	-	6	3	2	-	1	-	1	-	-	3	7	63
Montgomery	-	73	511	1,585	75	111	149	25	188	182	225	183	610	3,791
Prince George's	9	34	646	687	37	28	21	18	71	41	41	40	273	2,814
Queen Anne's	4	-	88	52	6	6	5	1	3	-	1	-	5	201
St. Mary's	-	-	39	41	4	1	3	3	8	-	-	1	22	196
Somerset	-	-	22	17	-	1	2	1	1	1	-	-	4	123
Talbot	-	-	102	114	4	1	5	1	10	2	1	1	4	215
Washington	-	6	96	158	10	16	26	4	26	-	5	11	34	462
Wicomico	-	3	123	206	3	10	18	1	30	-	6	6	12	412
Worcester	5	15	126	73	17	9	10	3	8	2	14	28	32	169
Baltimore City	47	22	393	289	51	25	13	3	10	52	75	134	35	4,616
Total	**273**	**234**	**4,704**	**5,518**	**325**	**340**	**448**	**142**	**638**	**577**	**444**	**499**	**1,940**	**19,965**

County	21801 A	21801 B	21801 H	21801. 1	21901. 1 A	21901. 1 B	21902 A1	21902 A2	21902 B	21902 C	22227 B	22412. 3 B	22412. 3 C	Total
Allegany	212	189	49	5,745	83	244	466	284	445	35	8	2,821	204	11,643
Anne Arundel	1,208	1,409	93	24,367	644	2,024	2,596	1,670	2,567	278	252	12,756	918	58,651
Baltimore	838	1,768	103	46,240	650	2,010	2,543	1,751	2,478	184	284	14,022	656	82,890
Calvert	65	199	8	5,776	56	400	744	548	738	85	46	1,229	38	10,667
Caroline	133	77	17	2,385	48	142	148	117	154	10	10	1,084	54	4,787
Carroll	370	375	39	8,821	110	1,026	920	548	909	72	67	6,223	561	22,558
Cecil	91	164	15	12,743	104	421	710	415	686	25	28	3,224	194	20,223
Charles	152	494	17	10,041	174	486	891	578	876	50	173	3,490	329	19,789
Dorchester	83	86	11	3,612	40	148	192	104	200	7	14	1,033	95	6,034
Frederick	525	438	28	18,189	153	903	1,283	856	1,296	41	58	3,919	382	31,733
Garrett	115	85	20	6,335	32	150	300	165	292	11	4	2,056	104	10,054
Harford	260	505	18	16,081	158	605	1,483	916	1,292	92	54	5,864	554	30,896
Howard	337	763	40	26,356	179	1,026	1,334	981	1,367	392	134	7,314	499	43,791
Kent	30	28	1	1,586	26	107	135	41	136	30	3	874	77	3,252
Montgomery	1,348	3,647	154	45,986	413	1,396	3,652	2,685	3,659	126	425	13,560	675	102,786
Prince George's	1,465	2,794	96	25,914	858	2,477	1,710	1,130	1,624	259	373	8,270	787	60,188
Queen Anne's	119	125	10	5,594	89	373	372	164	378	17	8	2,165	157	10,305
St. Mary's	41	109	1	5,123	54	395	495	364	293	14	50	2,413	214	10,319
Somerset	24	45	13	6,377	25	127	147	77	147	11	1	911	63	8,261
Talbot	309	196	19	6,110	68	271	357	184	357	26	41	1,611	102	10,597
Washington	379	392	24	9,651	92	486	710	488	711	21	44	5,041	396	20,428
Wicomico	149	453	30	5,032	123	576	497	304	478	58	40	2,984	198	12,705
Worcester	271	163	11	8,709	118	589	842	521	839	19	31	2,568	263	16,728
Baltimore City	1,354	568	43	26,597	688	604	1,239	746	972	168	301	20,233	1,795	80,562
Total	**9,878**	**15,072**	**860**	**333,370**	**4,985**	**16,986**	**23,766**	**15,637**	**22,894**	**2,031**	**2,449**	**125,665**	**9,315**	**689,847**

Source: Maryland District Court Traffic System Charge Frequency Report, FY 2003 (07/01/2002 through 06/30/2003)

5.2 SAFETY EQUIPMENT REPAIR ORDERS

This section addresses Safety Equipment Repair Orders (SERO) statistics. Maryland Safety Equipment Repair Orders (SEROs) are issued by law enforcement officers in some 200 law enforcement agencies responsible for highway safety in Maryland. The data were made available during this year for presentation in this report.

Some of the notable trend and 2003 summaries as follows:

- The SEROs (Safety Equipment Repair Orders) issued during 1997 – 2002 peaked in 1999 at 124,867. From 1999 to 2003, the number of SEROs had a downward trend.
- In 2003, among the defect types, headlights had the highest percentage (21.7%). The second most defect type was stop lights (20.1%).
- In 2003, the largest number of SEROs was issued in Baltimore City (8,584, 16.6%).
- The SEROs rate per 100 registered vehicles was also highest in Baltimore City (3.14 per 100 registered vehicles).

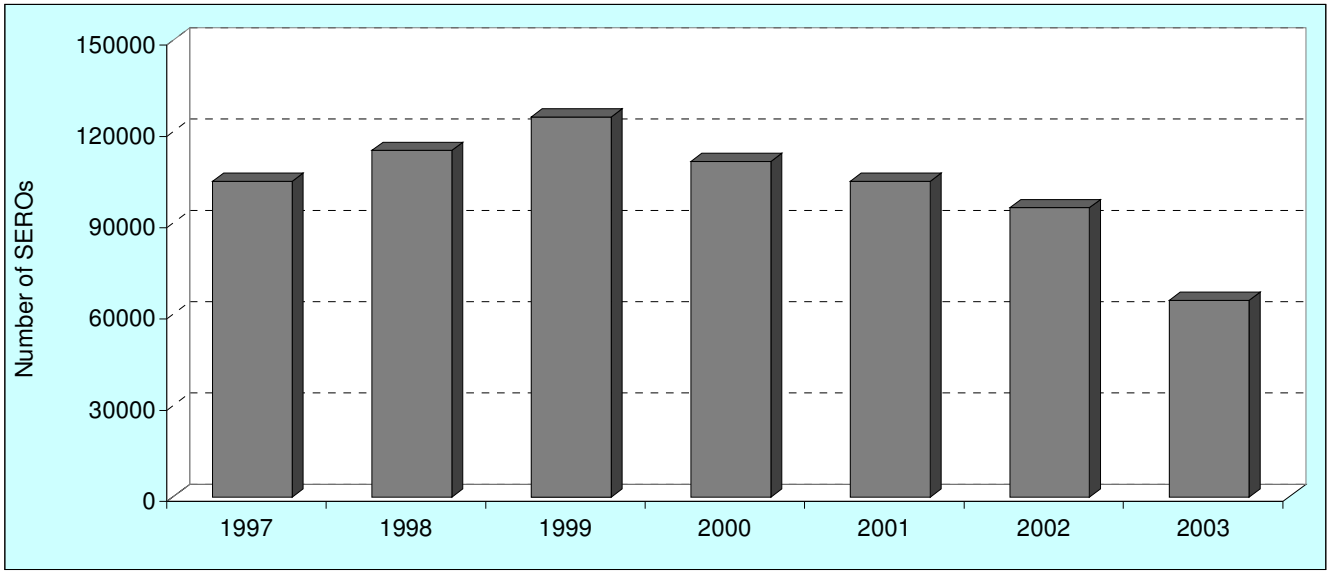
Trend

- The SEROs (Safety Equipment Repair Orders) issued during 1997 – 2002 peaked in 1999 at 124,867.
- From 1999 to 2003, the number of SEROs had a downward trend.
- Between 2002 and 2003, the number of SEROs decreased by 32.0%.

Table 5.2.1 Maryland SEROs Issued by Year, 1997-2003

Year	1997	1998	1999	2000	2001	2002	2003
SEROs	103,703	113,914	124,867	110,276	103,683	95,072	64,626

Figure 5.2.1 Maryland SEROs Issued by Year, 1997-2003



2003 Oveview

- 64,626 SEROs were issued in 2003. Among the SEROs issued in 2003, most SEROs were issued in 1st and 3rd quarters.
- In 2003, among the defect types, headlights had the highest percentage (21.7%). The second most defect type was stop lights (20.1%).

Table 5.2.2 Maryland SEROs by Defect Type, 2003

SERO Defect Type	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Percent
50 – Brakes	104	8	100	-	212	0.3
51 – Tires	253	58	285	-	596	0.9
52 - Steering	30	7	26	-	63	0.1
53 - Exhaust System	785	141	729	1	1,656	2.6
54 - Windshield Wipers	101	33	116	-	250	0.4
55 - Aim	121	16	95	-	232	0.4
55 - Headlights	8,036	1,209	4,751	5	**14,001**	**21.7**
56 - Taillights	4,765	770	3,680	2	9,217	14.3
57 - Horn	58	16	46	-	120	0.2
58 - Drivers Seat	2	2	8	-	12	0.0
59 - Suspension/Shocks	132	31	158	-	321	0.5
60 - Bumpers	137	38	127	-	302	0.5
61 - Tinted	725	152	759	-	1,636	2.5
61 - Glass	3,856	883	4348	3	9,090	14.1
62 - Load Cover	26	6	31	1	64	0.1
64 - Stop Lights	6,292	1,086	5,624	1	**13,003**	**20.1**
65 - Tag Lights	4,031	621	2,864	-	7,516	11.6
66 - Dash Lights	89	19	59	-	167	0.3
67 - Wheel Alignment	15	4	24	-	43	0.1
68 - Rearview Mirror	384	65	364	-	813	1.3
69 - Door Latch/Handle	39	5	34	-	78	0.1
70 - Fuel System	10	2	10	-	22	0.0
70 - Fuel System Cap	2	0	3	-	5	0.0
71 - Turn Signals	560	90	403	1	1,054	1.6
72 - Wheels/Lugs	23	4	30	-	57	0.1
73 - Hood/Catch	30	5	28	-	63	0.1
74 - Floor/Trunk Pans	2	1	5	-	8	0.0
76 - Fenders/Flaps	97	22	88	-	207	0.3
77 - Speedometer/Odometer	113	27	128	-	268	0.4
78 - Hazardous Warning Lamp	141	26	126	1	294	0.5
79 - Parking Lamp	166	26	148	-	340	0.5
80 - S Marker Lamp	290	53	221	-	564	0.9
81 - Fog/Aux Lamp	111	17	74	-	202	0.3
82 - Emergency Warning Lamp	19	5	15	-	39	0.1
83 - Back Up Lamp	76	12	65	-	153	0.2
84 - Reflectors	110	18	72	-	200	0.3
85 - Ext Air Brake Comp	6	2	9	-	17	0.0
86 - Low Air Warning Device	12	0	15	-	27	0.0
87 - Clearance Lamp	300	72	210	-	582	0.9
88 - ID Lamp	447	98	292	-	837	1.3
89 - Safety Belt	100	46	124	-	270	0.4
90 - Lift Axle Air/Weight	0	2	8	-	10	0.0
91 - Diesel Emissions	0	2	13	-	15	0.0
Total	**32,596**	**5,700**	**26,315**	**15**	**64,626**	**100.0**

- In 2003, the largest number of SEROs was issued in Baltimore City (8,584, 16.6%). The second largest number of SEROs was issued in Baltimore County (8,359, 16.2%).
- The SEROs rate per 100 registered vehicles was also highest in Baltimore City (3.14 per 100 registered vehicles). Talbot County had the second highest SEROs rate (2.55 per 100 registered vehicles).

Table 5.2.3 Maryland SEROs Issued by County, 2003

County	SEROs		Registered Vehicles	SEROs Rate per 100 Registered Vehicles
	Number	Percent		
Allegany	340	0.7	63,575	0.53
Anne Arundel	4,814	9.3	504,396	0.95
Baltimore	8,359	16.2	643,823	1.30
Calvert	832	1.6	82,785	1.01
Caroline	348	0.7	34,164	1.02
Carroll	1,929	3.7	166,332	1.16
Cecil	819	1.6	86,308	0.95
Charles	2,527	4.9	123,255	2.05
Dorchester	281	0.5	30,086	0.93
Frederick	2,920	5.7	208,247	1.40
Garrett	320	0.6	31,514	1.02
Harford	1,505	2.9	217,024	0.69
Howard	2,604	5.0	234,142	1.11
Kent	109	0.2	20,851	0.52
Montgomery	5,088	9.8	705,969	0.72
Prince George's	4,602	8.9	598,194	0.77
Queen Anne's	921	1.8	48,157	1.91
Somerset	1,015	2.0	89,283	1.14
St. Mary's	286	0.6	19,251	1.49
Talbot	998	1.9	39,072	2.55
Washington	756	1.5	126,665	0.60
Wicomico	921	1.8	79,129	1.16
Worcester	802	1.6	55,437	1.45
Baltimore City	**8,584**	16.6	273,643	**3.14**
Total	**51,680***	**100.0**	**4,481,302**	**1.15**

* Note that there is the difference between total numbers for defect types and county.

GLOSSARY

General Terms

Accident
An occurrence that originates or terminates on a traffic way, which involves at least one motor vehicle in transport and results in injury or death to any person, or damage to any property.

Accident Rate
The number of accidents per vehicle miles traveled, per population, per licensed driver, or per registered vehicle during a year or other stated period of time.

Accident Severity
1. Fatal Accident - A motor vehicle traffic accident in which one or more persons were killed.
2. Injury Accident - A motor vehicle traffic accident involving one or more persons who were physically harmed or who complained of physical harm but were not killed.
3. Property Damage Accident - A motor vehicle traffic accident involving property damage but no injury or death.

Accident Type
The category that best describes the general type of collision which was the first harmful event, that is, the first occurrence of injury or damage.

Aggressive Driving Accidents
Aggressive driving, as it relates to traffic accident reporting, is defined as two or more reported contributing circumstances by the same driver. The contributing circumstances are: “Failed to Yield Right of Way”, “Failed to Obey Stop Sign”, “Failed to Obey Traffic Signal”, “Failed to Obey Other Traffic Control”, “Failed to Keep Right of Center”, “Failed to Stop for School Bus”, “Exceeding Speed Limit”, “Too Fast for Conditions”, “Followed Too Closely”, “Improper Lane Change”, and “Improper Passing”.

Alcohol-Related Accident
An accident in which a driver or pedestrian was reported to have been drinking.

Alcohol Concentration
The AC is the amount of alcohol in a person’s breath or blood as measured by grams of alcohol per 100 ml of blood or per 210 liter of breath. A positive BAC level (0.01 g/d and higher) indicates that alcohol was consumed by the person tested.

Bus
Large motor vehicles used to carry more than ten passengers, including school buses, inter-city buses, and transit buses.

Citation
A ticket for a traffic violation written by a law enforcement officer.

Collision Accident
A motor vehicle accident other than an overturning incident in which the first harmful event is a collision of a road vehicle in transport with another motor vehicle, other property or pedestrians.

Critical Rate
A threshold rate above which the accident rate is considered statistically significant.

Driver/Operator
The passenger of a vehicle who is in actual physical control of a vehicle in transit or, for an out-of-control vehicle, the passenger who was in control before control was lost.

DUI
Driving Under the Influence.

Ejection
Refers to passengers being totally or partially thrown from the vehicle as a result of an impact or rollover.

Fatality
A person who dies as the result of a motor vehicle traffic accident.

Fatality Rate
The number of persons killed per vehicle miles traveled, per population, per licensed driver, or per registered vehicle.

Fixed Object
Stationary structures or substantial vegetation attached to the terrain.

Harmful Event
An action which occurs within a accident (e.g. hitting a tree, hitting a deer, hitting a pedestrian, hitting another vehicle, etc.) and results in personal injury or property damage.

Imputation
The statistical method of accounting for standard errors in data collection (FARS) by police officers. The federal government GES system uses probabilities and univariate and hotdeck imputation to account for errors in the data collection by census process.

Intersection
An area which contains a crossing or connection of two or more roadways not classified as driveway access and within the prolongation of the lateral curb lines. If no curb exists, it is the area within the extension of the lateral boundary lines of the roadway of two joined traffic ways.

Intersection-Related
An accident resulting from an activity, behavior or traffic control that affects a unit's movement in relation to an intersection, whether or not the point of origin or first harmful event occurred within the intersection.

Motor Vehicle
A self-propelled vehicle or a vehicle propelled by electric power obtained from overhead electrical wires. Motor vehicle does not include a moped or a motor scooter.

Motorcycle
A two-or three-wheeled motor vehicle designed to transport one or two persons.

Non-Collision Accident
Any motor vehicle accident other than a collision accident, including explosion of any part of the motor vehicle, fire starting in the motor vehicle, overturning, immersion, vehicle struck by a flying object, etc.

Non-motorist
Any person who is not an passenger of a motor vehicle in transport and includes the following:
1. Pedestrians
2. Pedalcyclists
3. Passengers of parked motor vehicles
4. Others such as persons riding in or on toys, strollers or other pedestrian conveyances.

Occupant
Any person who is in or upon a vehicle, including the driver, passenger, and persons riding on the outside of the vehicle.

Passenger
Any passenger of a vehicle who is not the driver.

Passenger Car
Motor vehicles used primarily for carrying passengers, including convertibles, sedans, and station wagons.

Pedalcyclist
A person on a vehicle that is powered solely by pedals.

Pedestrian
Any person not in or upon a motor vehicle or other vehicle.

Primary Seat Belt Law
Seat Belt laws that allow an officer to cite a driver for not wearing a seat belt with no other reason for stopping the vehicle.

Red-Light-Running Accidents
Red-light-running is defined as any reported accident which was listed as a contributing factor “Fail to Obey Traffic Signal”. The data limitation for red-light-running accidents is “Signalized Intersection” or “Signalized Intersection Related”.

Restraint Use
The passenger’s use of available vehicle restraints including lap, shoulder, or combination belt, regardless of the presence or activation if an air bag or child safety seat.

Seating Position
The location of the passengers in the vehicle. More than one can be assigned the same seat position; however, this is allowed only when a person is sitting on someone’s lap.

Serious Injury Accidents
Accidents of which accident is reported as incapacitating or non-incapacitating injury

Speeding Accidents
Speeding is defined as any reportable accident in which speed was listed as a contributing factor, whether or not the driver was noted as going over the posted speed limit. The contributing factors include “Exceed Speed Limit” and “Too Fast for Conditions”.

Vehicle Defect
A fault in the vehicle, due to improper maintenance or other reasons, that can cause the driver to lose control, possibly resulting in an accident.

VMT (Vehicle Miles of Travel)
The number of miles traveled by all or certain vehicles on Maryland streets and highways (in a calendar year unless otherwise stated).

Work Zone (Construction Zone)
An area, usually marked by signs, barricades, or other devices indicating that highway construction or maintenance activities are going on.

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ACRONYMS

AADT - Annual Average Daily Traffic
BAC - Blood Alcohol Concentration
BAL –Blood Alcohol Level
BTS - Bureau of Transportation Statistics (in USDOT - NHTSA)
CRD - Central Records Division of Maryland State Police
CO – County Road
DUI - Driving Under the Influence
DWI - Driving While Intoxicated
FARS - Federal Accident Reporting System
FMCSA – Federal Motor Carrier Safety Administration
FHWA – Federal Highways Administration
GV – Government Road
IS – Interstate Route
MAARS - Maryland Automated Accident Reporting System
MC - Motorcycle
MD - Maryland or Maryland Routes
MDOT - Maryland Department of Transportation
MPO - Maryland Planning Office
MSHO - Maryland State Highway Office
MSP - Maryland State Police
MSP-1 – Maryland's Accident Report Form
MU - Municipality
MVA - Motor Vehicle Administration
NHTSA - National Highway Transportation Safety Administration
OCC – Passenger
OP- Other Private
PED - Pedestrian
PDO - Property Damage Only
SERO – Safety Equipment Repair Order
SHA - State Highway Administration
SR – Service Road
US - United States Route
USDOT - United States Department of Transportation
VMT - Vehicle Miles of Travel

2003 Maryland Traffic Safety Facts Feedback Survey

1. Does this booklet provide information that is useful to you?
   Yes _____ No _____
   If not, what information would you like to see added to this booklet?

2. Is the format easy to follow? Yes _____ No _____ If not, what would you change?

3. Please rate the following chapters of the book as to whether you find them Useful, Somewhat Useful, or Not Useful.

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