



U.S. Department
of Transportation

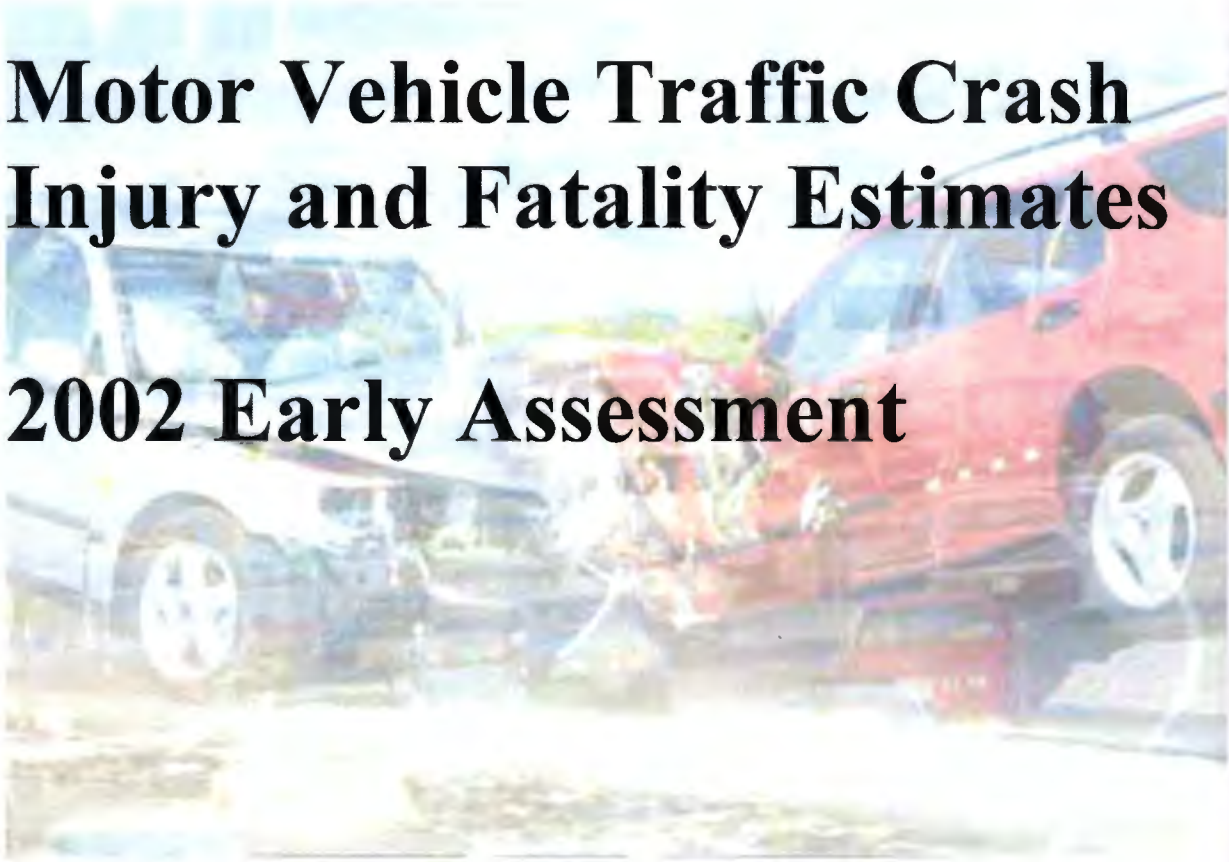
**National Highway
Traffic Safety
Administration**



DOT HS 809 586

May 2003

Technical Report



Motor Vehicle Traffic Crash Injury and Fatality Estimates 2002 Early Assessment

Published By:

NCSA

**National Center for Statistics and Analysis
Advanced Research and Analysis**

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, National Center for Statistics and Analysis in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation, the National Highway Traffic Safety Administration or the National Center for Statistics and Analysis. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Technical Report Documentation Page

1. Report No. DOT HS 809 586		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle Motor Vehicle Traffic Crash Injury and Fatality Estimates - 2002 Early Assessment			5. Report Date May 2003		
			6. Performing Organization Code NPO-121		
7. Author(s) Hilton, Judith; Umesh Shankar			8. Performing Organization Report No.		
9. Performing Organization Name and Address Mathematical Analysis Division, National Center for Statistics and Analysis National Highway Traffic Safety Administration U.S. Department of Transportation NRD-31, 400 Seventh Street, S.W. Washington, D.C. 20590			10. Work Unit No. (TR AIS)		
			11. Contract or Grant No.		
12. Sponsoring Agency Name and Address Mathematical Analysis Division, National Center for Statistics and Analysis National Highway Traffic Safety Administration U.S. Department of Transportation NRD-31, 400 Seventh Street, S.W. Washington, D.C. 20590			13. Type of Report and Period Covered NHTSA Technical Report		
			14. Sponsoring Agency Code		
15. Supplementary Notes					
<p>Abstract</p> <p>The objective of this report by the National Center for Statistics and Analysis (NCSA) was to examine the early assessment of fatalities and injuries in motor vehicle crashes for 2002. Data was compared between 2001 and 2002.</p> <p>Based on the National Highway Traffic Administration's <i>FARS</i> (Fatality Analysis Reporting System) data file, and the <i>NASS</i> (National Automotive Sampling System) <i>General Estimates System</i>, Early Assessment estimates indicated that approximately 42,850 persons died and an additional 2,914,000 persons were injured on U.S. public roads and highways in the calendar year 2002. This report will contrast estimates for 2002 with Annual Report numbers for 2001.</p> <p>Early Assessment estimates are based on the best data currently available. This data is incomplete or preliminary at this time and will be superceded when the Annual Report Files become available. At that time a broader range of fatality and injury statistics will be reported.</p>					
17. Key Words motor vehicle crashes, fatalities, injuries, fars, ges, early assessment, estimates			18. Distribution Statement Document is available to the public through the National Technical Information Service, Springfield, VA 22161 http://www.ntis.gov		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 43	22. Price

Table of Contents

1.	<i>EXECUTIVE SUMMARY</i>	1
1.2	Significant Findings	1
2.	<i>INTRODUCTION</i>	2
2.1	Methodology	2
3.	<i>RESULTS</i>	4
3.1	Total Crashes, Injuries, Fatalities and Rates	4
3.2	Trends	5
3.3	Persons Killed and Injured	7
3.4	Vehicle Occupants.....	8
3.5	Alcohol-related Crashes	10
3.6	Rollover Crashes	15
3.7	Motorcycle Riders.....	19
3.8	Large Trucks	21
3.9	Non-Occupants.....	23
3.10	Intersection Crashes	24
3.11	Children and Youth	25
3.12	Young Drivers	29
4.	<i>APPENDIX A</i>	31

1. EXECUTIVE SUMMARY

This report gives an early glimpse at the number of fatalities and injuries on US roadways resulting from motor vehicle traffic crashes occurring in 2002. The estimates are based on the data from the National Highway Traffic Safety Administration's (NHTSA) Fatality Analysis Reporting System (FARS) and National Automotive Sampling System's (NASS) General Estimates System (GES). The early assessment numbers in 2002 indicate to an increase in the number of fatalities and decline in the number of people injured from the previous year.

The estimates from the early assessment files are based on a statistical procedure, which uses data from sources that are incomplete or preliminary at this time. These estimates for 2002 will be superseded during the summer of 2003 with the release of the complete FARS and GES data.

1.2 Significant Findings

- The estimated number of persons killed increased to the highest level since 1990;
- Injuries in motor vehicle crashes declined;
- The fatality rate per 100M vehicle miles traveled (VMT) was unchanged;
- Injury rates declined;
- Occupant fatalities accounted for all of the increase in total fatalities;
- Non-Occupant fatalities declined;
- Most of the increase in occupant fatalities was in pickup trucks, Sport Utility Vehicles (SUV) and vans;
- Most passenger vehicle occupant fatalities continue to be unrestrained;
- Alcohol-related fatalities increased;
 - The increase in alcohol related fatalities was concentrated in occupants of vans and SUVs and riders of motorcycles;
 - SUVs, vans and motorcycles had a larger increase in alcohol-involved drivers than other vehicles;
- Passenger vehicle occupant fatalities in rollover crashes increased;
- Fatality increases in SUV and pickup rollovers accounted for:
 - Nearly half of the increase in total occupant fatalities;
 - Most of the increase in passenger vehicle rollover fatalities;
- Passenger car occupant fatalities in two-vehicle crashes with a pickup truck, van or SUV increased;
- Motorcyclist fatalities continued to increase;
 - Fatalities of older motorcyclists increased while fatalities of younger motorcyclists declined;
- Fatalities for children ages 0-3 and ages 4-7 declined;
- Fatalities for occupants ages 8-15 increased; and,
- Fatalities of young drivers (ages 16-20) increased.

2. INTRODUCTION

Early Assessment (EA) of the National Highway Traffic Safety Administration's FARS and the NASS GES data files, indicated that an estimated 42,850 persons died and an additional 2,914,000 persons were injured on U.S. public roads and highways in the calendar year 2002. This report will contrast estimates for 2002 with those reported for 2001 (Refer to *Traffic Safety Facts 2001*).

Early Assessment estimates are based on the best data currently available. This data is either incomplete or preliminary at this time and will be superceded when the Annual Report Files become available. At that time a broader range of fatality and injury statistics will be reported.

2.1 Methodology

Fatality estimates in this report are primarily based on the incomplete 2002 FARS Early Assessment file, the 2001 Annual Report File (ARF) and the Monthly Fatality Counts (MFCs) that NHTSA receives from the states. Since the MFCs have no other variables than the number of fatalities, they are generally more complete than the Early Assessment file at the same time.

A set of "reliable" state and month combinations is identified for which the MFCs have, historically, been complete by the time the Early Assessment is begun in March. It is assumed that the MFC data from these state and month combinations is complete this year and that they, therefore, are the correct fatality numbers for this subset of the 2002 data. These numbers are compared to the comparable 2001 ARF numbers, that is, the number of fatalities in the same state and month in 2001. That permits the ratios of 2002 fatalities to 2001 fatalities to be computed by month for the reliable subset. These ratios are applied to the entire set of FARS 2001 fatalities to obtain monthly estimates, called "control totals", of all 2002 fatalities for each month.

Since the degree of completion in the EA file varies from state to state, each state is assigned a cut-off month which represents the last month for which the 2002 EA file appears to be complete or nearly complete enough to use for percentage estimates for crash characteristics. A hybrid database is created that uses the cases from each month through the cut-off month from 2002 EA file and the cases for subsequent months from 2001 ARF.

Inflation factors are calculated and placed on the hybrid database so that the hybrid database is weighted up to the control total fatalities by month.

Non-fatal crash and injury estimates were obtained from the first three quarters of the NASS GES 2002 data file, which is complete. Data for the final quarter were extrapolated from the last quarter of the NASS GES 2001 data file. This was accomplished by calculating crash ratios between the first three quarters of 2002 and the first three quarters of 2001, then multiplying the individual weights for the last quarter of

2001 by these ratios and appending this data to the 2002 file in place of the missing last quarter. This final quarter is in effect an estimate using 2001 data.

Since the NASS GES is a sample survey, all estimates based on these files are subject to sampling and non-sampling errors and the sampling variability must be taken into account when interpreting year-to-year differences. (Refer to *Traffic Safety Facts 2001 Appendix C* for estimates of standard errors). NASS GES estimates in this report have been rounded to the nearest thousand. **All sums and differences were calculated before rounding and may not correspond exactly to the rounded numbers shown in the tables. Percents and percents of change were calculated after rounding for purposes of internal consistency within the tables and may vary from those calculated prior to-rounding.**

Exposure data sources used for computing rates and shown in Table 1, include:

- 1) Projected Vehicle Miles of Travel (VMT) from the Federal Highway Administration's *December 2002 Traffic Volume Report*;
- 2) Registered Vehicles from NHTSA's revision of Federal Highway Administration estimates; and,
- 3) Population Data from the U.S. Census Bureau's website <http://eire.census.gov/popest/data/states/tables/ST-EST2002-01.php>. Population numbers used are Census Bureau Estimates for July 1, 2001, and July 1, 2002.

Table 1			
Exposure Data by Year and Percent Change			
2002 Early Assessment			
Exposure	Year		Percent Change
	2001	2002	
Vehicle Miles Traveled (VMT)	2,781,462 M	2,829,336 M	1.7%
Registered Vehicles	221,230,148	225,654,751	2.0%
Population	285,317,559	288,368,698	1.1%
Source: FHWA; US Census Bureau, POLK			

3. RESULTS

Results of data from early estimates of 2002 with data from 2001 are compared and presented in the following subsections. Data for long-term trend charts are provided in Appendix A.

3.1 Total Crashes, Injuries, Fatalities and Rates

An estimated 42,850 people were killed in an estimated 38,356 motor vehicle traffic crashes in 2002. This represents an increase of 1.7% fatalities from the 42,116 reported in 2001 **and is the highest level of fatalities since 1990**. Fatality rates, however, show little change as measures of exposure have increased at the same time: Vehicle Miles Traveled by 1.7%, registered vehicles by 2.0%, and population by 1.1%. Using these data, fatality rates remained constant for VMT, dropped 0.3% by number of registered vehicles, and rose by 0.7% per population.

The number of non-fatal police reported crashes is estimated at 6,241,000 for the year 2002. This is a 0.7% decrease from those reported in 2001. Injury crashes fell by 3.5% while PDO (Property Damage Only) crashes increased by 0.6%. The number of persons injured decreased by 3.9% and injury rates for the three measures of exposure all decreased substantially relative to 2001, as shown in Table 2.

Table 2
Crashes and Number of Persons Killed and Injured
Rates by Year for Vehicle Miles Traveled, Population and Registered Vehicles
2002 Early Assessment

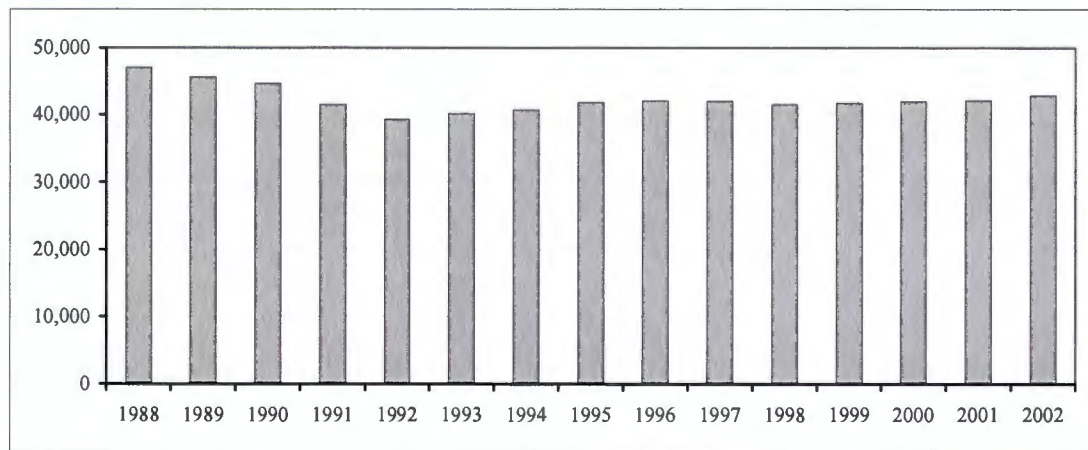
	2001				2002			
	Number	Rate			Number	Rate		
		100M VMT	100K Pop	100K Reg Veh		100M VMT	100K Pop	100K Reg Veh
Fatal Crashes	37,795	---	---	---	38,356	---	---	---
Persons Killed	42,116	1.51	14.8	19.0	42,850	1.51	14.9	19.0
Non-Fatal Crashes	6,285,000	---	---	---	6,241,000	---	---	---
Persons Injured	3,033,000	109	1,063	1,371	2,914,000	103	1,011	1,291

Source: FARS, NASS-GES, NCSA, NHTSA; FHWA; US Census Bureau

3.2 Trends

Figure 1 shows the total number of deaths due to motor vehicle traffic crashes. The fatality toll fell steeply from 47,087 fatalities in 1988 and reached its lowest level in 1992 with 39,250 fatalities. In 1993 fatalities started to rise again and rose yearly through 1996 after which the number dipped slightly and then started to rise again in 1999 reaching an estimated level of 42,850 in 2002, the highest count since 1990.

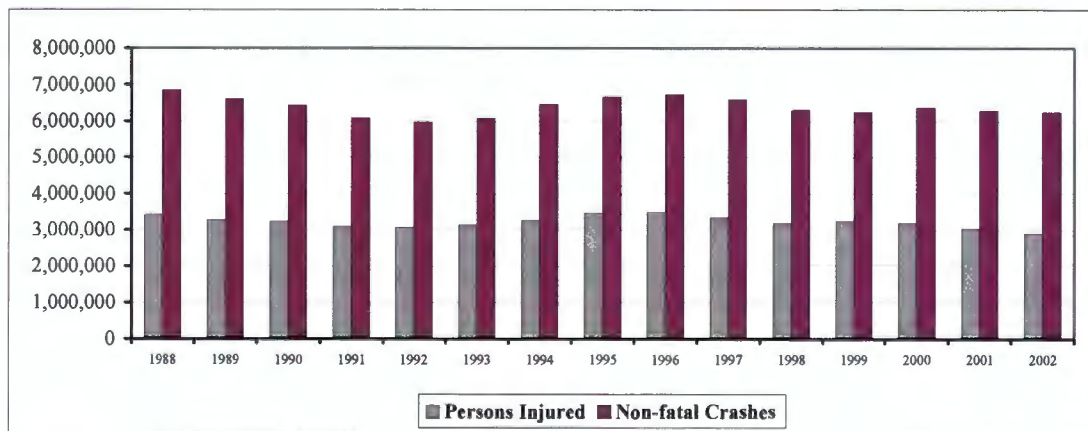
Figure 1
Fatalities in Motor Vehicle Crashes by Year



Source: FARS, NCSA, NHTSA

In similar fashion, numbers of injured persons shrank each year from 1988 to 1992. However, after increasing again until 1996, counts of injured persons have fallen off in recent years along with numbers of nonfatal crashes.

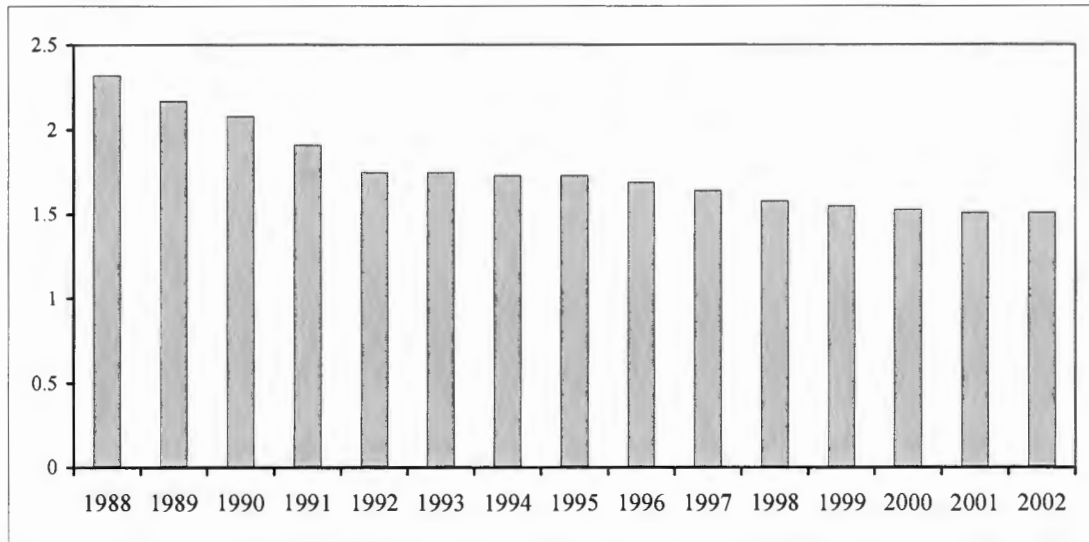
Figure 2
Persons Injured and Non-Fatal Crashes by Year



Source: NASS-GES, NCSA, NHTSA

The number of people killed per 100 million VMT that had been gradually inching downward since 1995, following a steep decline from 1988 to 1992, leveled off in 2002. This is shown in Figure 3.

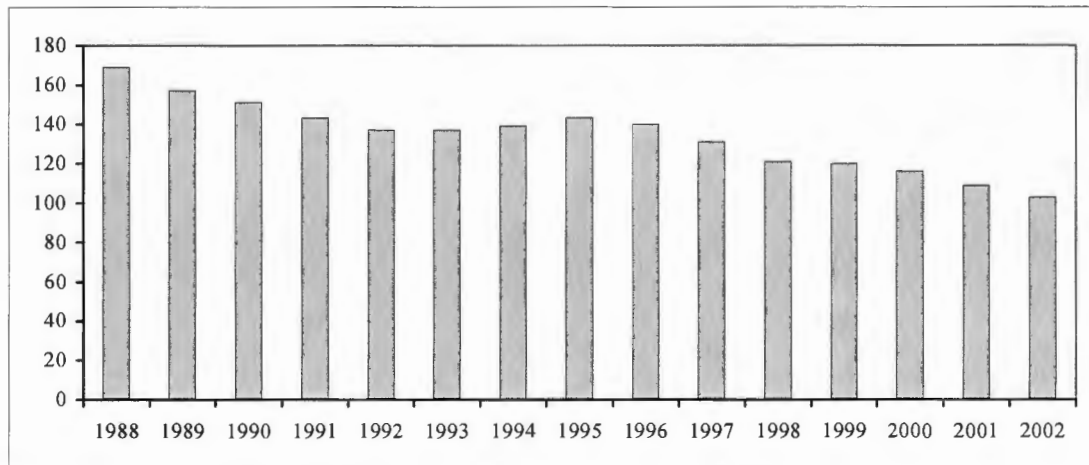
Figure 3
Fatality Rate per 100M VMT by Year



Source: FARS, NCSA, NHTSA; FHWA

Figure 4 shows a sharp trend downwards from 1988 to 1992 and again from 1995 to 2002 for persons injured per 100 million VMT.

Figure 4
Injury Rate per 100M VMT by Year



Source: NASS-GES, NCSA, NHTSA

3.3 Persons Killed and Injured

Table 3 shows the comparison between vehicle occupant, motorcycle rider and non-occupant fatalities. The largest increase is for vehicle drivers followed by motorcyclists. The largest decrease (11%) is for pedalcyclists.

Role	2001	2002	Percent Change
Occupants	33,205	34,055	+2.6%
Drivers	22,898	23,670	+3.4%
Passengers	10,202	10,273	+0.7%
Unknown Occupant	105	112	+4.8%
Motorcyclists	3,181	3,276	+3.0%
Non-occupants	5,730	5,519	-3.7%
Pedestrians	4,882	4,776	-2.2%
Pedalcyclists	728	647	-11%
Other	120	96	-20%
TOTAL	42,116	42,850	1.7%

Source: FARS, NCSA, NHTSA

Injury data, as shown in Table 4 exhibit a somewhat different pattern of increases and decreases. The number of vehicle occupants injured is down more than 4% while motorcycle riders injured went up by more than 8%. There were almost 8% fewer pedestrians injured but nearly 7% more pedalcyclists injured.

Role	2001	2002	Percent Change
Occupants	2,841,000	2,723,000	-4.2%
Drivers	1,934,000	1,856,000	-4.0%
Passengers	907,000	867,000	-4.4%
Motorcyclists	60,000	65,000	+8.3%
Non-occupants	131,000	127,000	-3.1%
Pedestrians	78,000	72,000	-7.7%
Pedalcyclists	45,000	48,000	+6.7%
Other	8,000	7,000	-12%
TOTAL	3,033,000	2,914,000	-3.9%

Source: NASS-GES, NCSA, NHTSA

3.4 Vehicle Occupants

The number of vehicle occupants killed in light trucks (pickups, SUVs and vans) rose by more than 4%. There was a small increase in the number of large truck occupants killed and a very small decrease in the number of passenger car occupant fatalities. The numbers of those injured fell in all types of vehicle except "Other". The largest decrease (-5.4%) was for persons injured in passenger cars.

Table 5
Vehicle Occupants Killed and Injured by Vehicle Type and Year
2002 Early Assessment

Vehicle Type	2001	2002	Change
Occupants Killed	33,205	34,055	+2.6%
Passenger Cars	20,233	20,158	-0.4%
Light Trucks	11,677	12,176	+4.3%
Large Trucks	704	712	+1.1%
Other*	430	476	+11%
Unknown Vehicle Type	161	533	n/a
Occupants Injured	2,841,000	2,722,000	-3.9%
Passenger Cars	1,927,000	1,822,000	-5.4%
Light Trucks and Vans	861,000	848,000	-1.5%
Large Trucks	29,000	25,000	-14%
Other*	28,000	27,000	8.0%

Source: FARS, NASS-GES, NCSA, NHTSA

* Includes buses, farm and construction equipment but does not include motorcycles.

The majority of passenger-vehicle occupants killed were not restrained by any type of seat belt or child safety seat. In Table 6 and Figure 5 occupants whose restraint use was unknown (about 8%) were distributed proportionally to the known use categories.

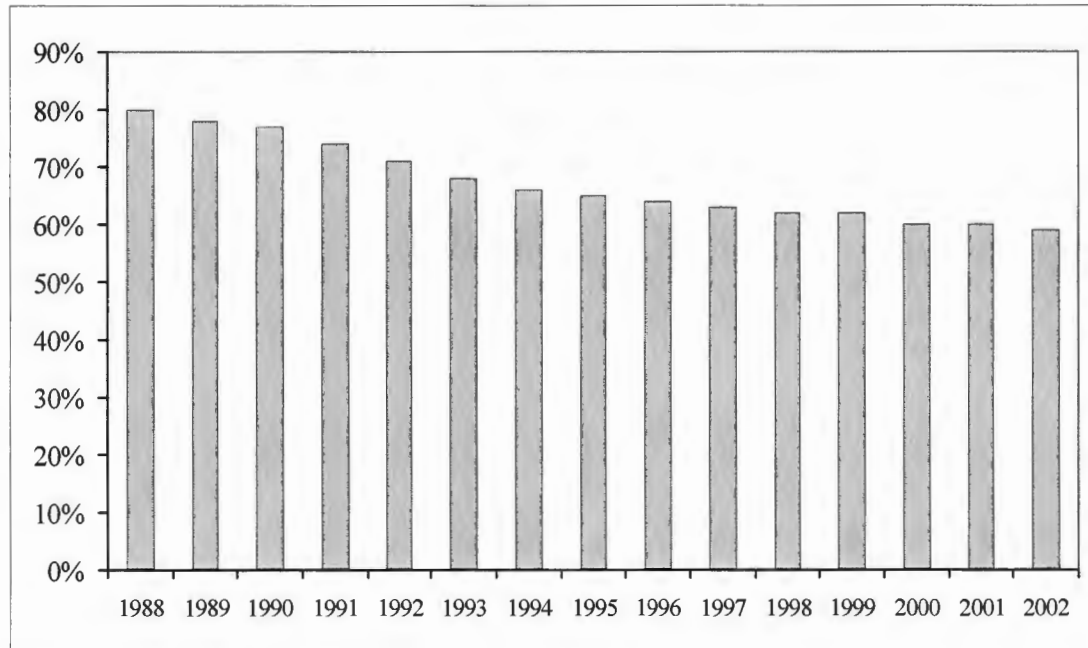
Table 6
Passenger Vehicle Occupant Fatalities by Restraint Use
2002 Early Assessment

Restraint Use	Year			
	2001		2002	
Persons Killed	31,910	100%	32,335	100%
Restraint Used	12,908	40%	13,232	41%
Restraint Not Used	19,002	60%	19,103	59%

Source: FARS, NCSA, NHTSA

The percent of unrestrained persons fatally injured in motor vehicle traffic crashes has been decreasing steadily from 80% in 1988 to an estimated 59% in 2002. This is illustrated in Figure 5. After declining 18 percentage points in the 11-year period between 1988-1998, the decline has been only 3 percentage points in the last 3 years.

Figure 5
Percent Unrestrained Fatalities by Year



Source: FARS, NCSA, NHTSA

3.5 Alcohol-related Crashes

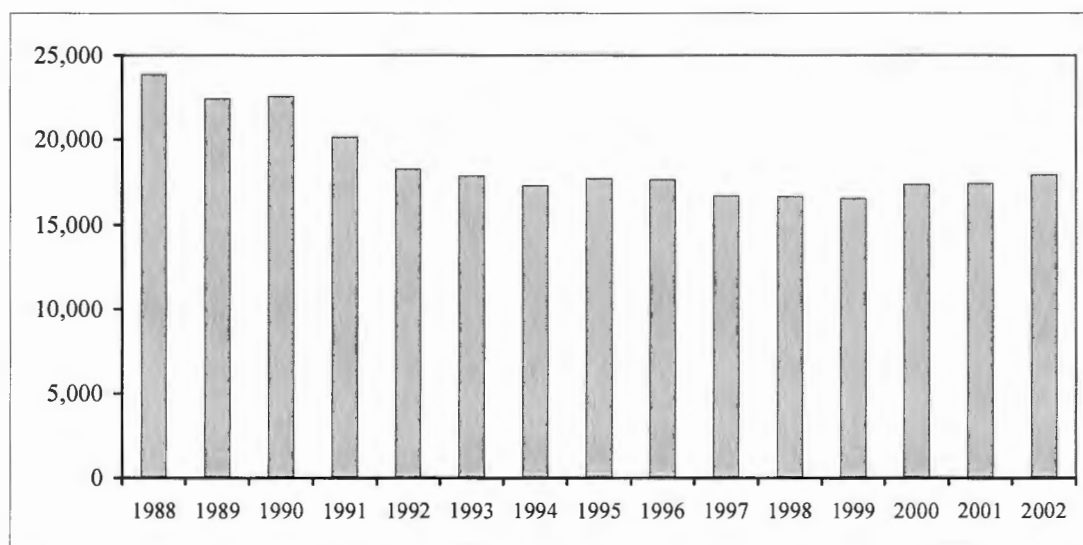
Not only did the estimated number of fatalities increase in 2002, but the number of alcohol related fatalities rose as well by 3%. Not since 1996 has the percent of alcohol related deaths been as high as 42%. Data from Table 7 shows that the number of fatalities in crashes with low BAC (impaired) declined by 7 percent and fatalities in high BAC (intoxicated) crashes increased by 5 percent between 2001 and 2002.

Highest BAC In Crash	Year		Percent Change
	2001	2002	
Alcohol Related Fatalities	17,448	17,970	+3.0%
Percent of All Fatalities	41%	42%	
Fatality Rate / 100 M VMT	0.63	0.64	
Impaired ($0.01 \leq \text{BAC} \leq 0.07$)	2,515	2,335	-7.2%
Intoxicated ($\text{BAC} \geq 0.08$)	14,933	15,635	+4.7%

Source: FARS, NCSA, NHTSA; FHWA

In general, the number of fatalities in alcohol-related crashes over a 15-year period as shown in Figure 6 follows a similar pattern as that traced by the total number of fatalities (Figure 1).

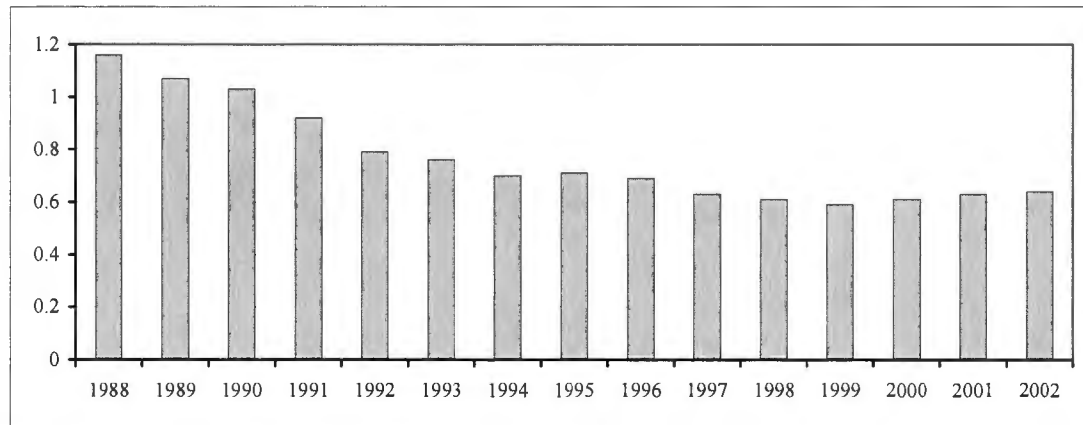
**Figure 6
Persons Killed in Alcohol Related Crashes**



Source: FARS, NCSA, NHTSA

Figure 7 gives the rate of alcohol-related deaths per 100 M VMT. The lowest rate in a 15-year period after a long decline was in 1999. Since 1999 the rate has been slowly increasing.

Figure 7
Fatality Rate per 100M VMT in Alcohol Related Crashes



Source: FARS, NCSA, NHTSA; FHWA

Table 8 shows the breakdown of persons killed in alcohol related crashes by their role for 2001 and 2002. Motorcyclists had the highest increase fatalities in alcohol related crashes (6%) followed by passengers (4.6%) and all occupants (3.6%).

Table 8
Persons Killed in Alcohol Related Crashes by Person Type and Year
2002 Early Assessment

Person Type	Year		Percent Change
	2001	2002	
Persons Killed	17,448	17,970	+3.0%
All Occupants	13,429	13,914	+3.6%
Drivers	9,562	9,871	+3.2%
Passengers	3,817	3,993	+4.6%
Unknown Occupant	50	50	0.0%
Motorcyclists	1,330	1,410	+6.0%
Non-occupants	2,688	2,646	-1.6%
Pedestrians	2,369	2,362	-0.3%
Pedalcyclists	281	255	-9.3%
Other*	39	29	-26%

Source: FARS, NCSA, NHTSA

*Includes occupants of motor vehicles not in transport and of non-motor vehicle transport devices.

The number of injured persons in alcohol-related crashes dropped sharply in 2002 except for the number of injured motorcyclists, which went up more than 14%. This is shown in Table 9.

Person Type	Year		Percent Change
	2001	2002	
Persons Injured	275,000	252,000	-8.4%
All Occupants	254,000	231,000	-9.1%
Drivers	173,000	157,000	-9.2%
Passengers	82,000	73,000	-11%
Motorcyclists	7,000	8,000	+14%
Non-occupants	14,000	13,000	-7.1%
Pedestrians	11,000	10,000	-9.1%
Pedalcyclists	2,000	2,000	0.0%
Other*	1,000	1,000	0.0%

Source: NASS-GES, NCSA, NHTSA
*Includes occupants of motor vehicles not in transport and of non-motor vehicle transport devices.

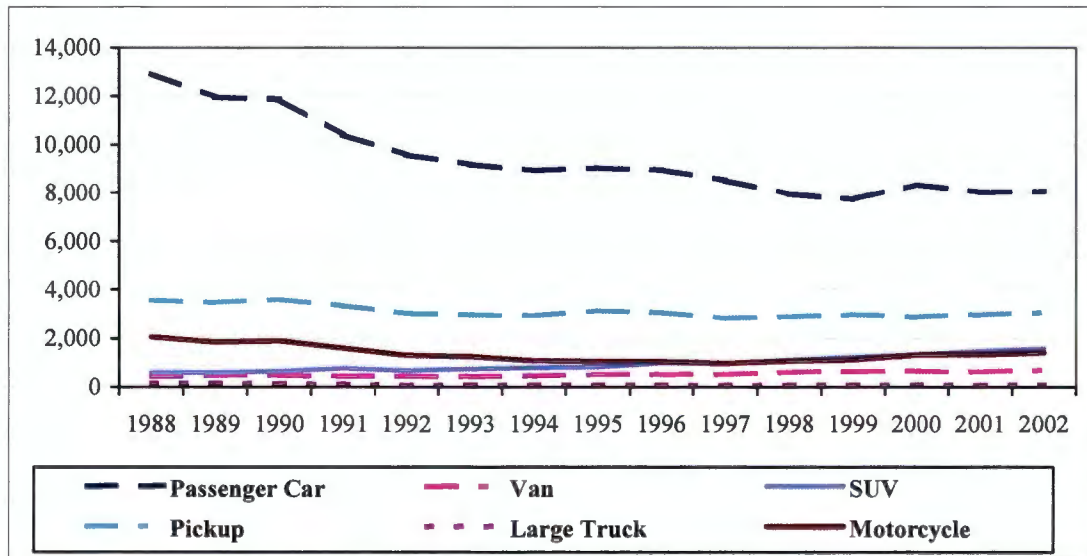
Table 10 gives the breakdown of occupant fatalities by vehicle type. The largest percent change was in large truck occupants (37%) followed by van occupants (9.4%) and SUV occupants (7.1%).

Type Of Vehicle	Year		Percent Change
	2001	2002	
Vehicle Occupants Killed *	13,429	13,914	+3.6%
Passenger Car	8,034	8,059	+0.3%
Van	631	690	+9.4%
SUV	1,472	1,577	+7.1%
Pickup Truck	2,988	3,058	+2.3%
Large Truck	63	86	+37%

Source: FARS, NCSA, NHTSA
*Includes buses, other vehicles and vehicles with unknown body type

Figure 8 shows numbers of vehicle occupants by vehicle type the number of and motorcyclists killed in alcohol-related crashes over a 15-year period.

Figure 8
Vehicle Occupants Killed in Alcohol Related Crashes by Vehicle Type



Source: FARS, NCSA, NHTSA

The number of alcohol-involved drivers in fatal crashes has increased in all types of vehicles with the exception of large trucks, which declined by 2.6% as shown in Table 11. The largest increase is among drivers of SUVs followed by drivers of motorcycle, vans, passenger cars and pickup trucks, in that order.

Table 11
Alcohol Involved Drivers in Fatal Crashes by Vehicle Type
2002 Early Assessment

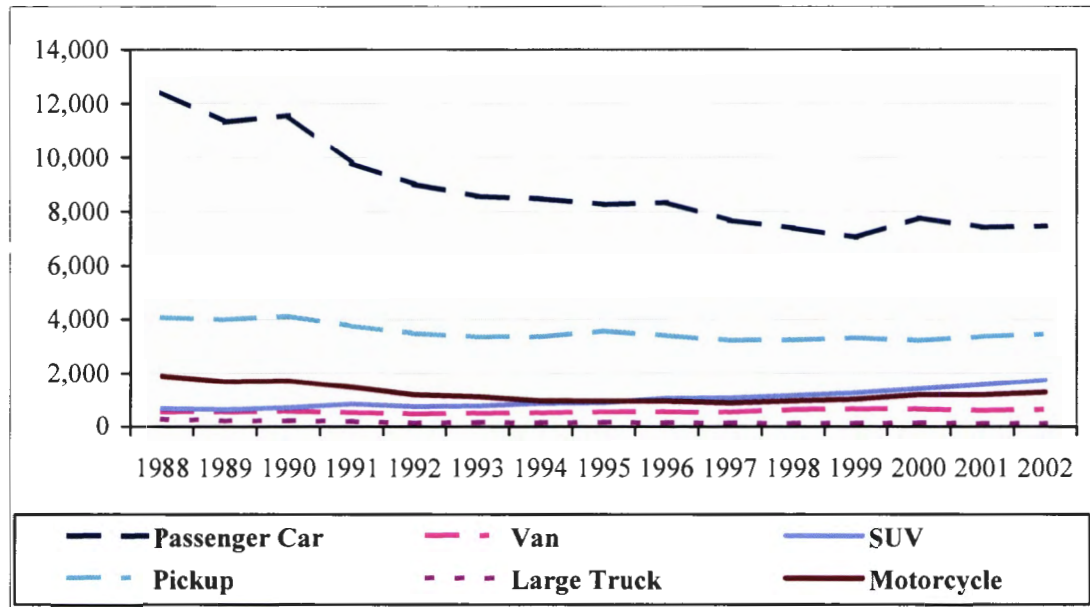
Type of Vehicle	Year		Percent Change
	2001	2002	
Total*	14,706	15,327	+4.2%
Passenger Car	7,413	7,456	+0.6%
Van	605	641	+6.0%
SUV	1,562	1,733	+11%
Pickup Truck	3,362	3,441	+2.3%
Large Truck	117	114	-2.6%
Motorcycle	1,191	1,275	+7.1%

Source: FARS, NCSA, NHTSA

* Includes buses, other vehicles and vehicles with unknown body type

In Figure 9 the numbers of alcohol-involved drivers in fatal crashes by vehicle type are plotted over a 15-year period. The most dramatic change is the drop in the number of alcohol-involved passenger car drivers, however the largest percent decline is for large trucks. The only increases are for alcohol-involved drivers of vans, and especially drivers of SUVs, which nearly tripled.

Figure 9
Alcohol Involved Drivers in Fatal Crashes by Vehicle Type



Source: FARS, NCSA, NHTSA

3.6 Rollover Crashes

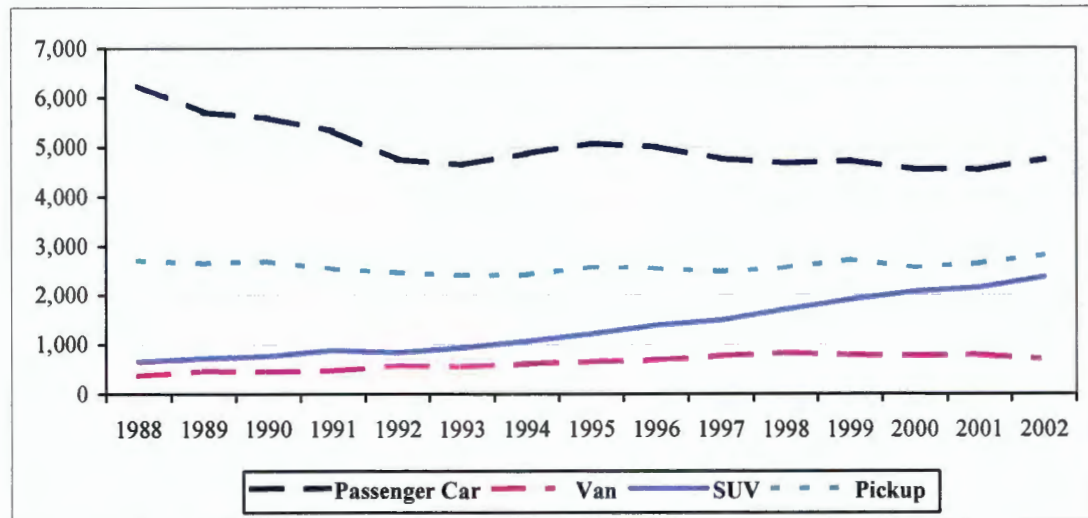
Tables 12 and 13 contrast occupant rollover fatalities with all non-rollover fatalities and further break down the rollover fatalities by vehicle type. The number of passenger vehicle rollover fatalities went up by 497 in 2002 for an increase of almost 5%, more than twice the percent increase for all fatalities. The increase in rollover fatalities can be mostly attributed to occupants of SUV's, followed by pickups. Only vans showed a decrease of 11%.

Type of Vehicle	Year		Percent Change
	2001	2002	
Persons Killed*	10,130	10,626	+4.9%
Passenger Car	4,549	4,746	+4.4%
Van	784	695	-11%
SUV	2,142	2,353	+9.8%
Pickup Truck	2,643	2,819	+6.7%
Persons Injured	155,000	170,000	+9.7%
Passenger Car	71,000	83,000	+17%
Van	10,000	10,000	0.0%
SUV	38,000	42,000	+11%
Pickup Truck	36,000	35,000	-2.8%

Source: FARS, NASS-GES, NCSA, NHTSA
* Includes other light trucks

In Figure 10 rollover fatalities in the four vehicle groups (listed in Table 12) are compared over a 15-year period. Fatalities in SUVs have almost quadrupled in this time frame and van fatalities have nearly doubled. Pickup truck fatalities are approximately at the same level. Only passenger car occupant fatalities have declined in rollover crashes.

Figure 10
Fatalities in Rollover Crashes by Vehicle Type



Source: FARS, NCSA, NHTSA

Although the numbers of rollover fatalities climbed for SUVs the proportion remained the same at 61%, which was the highest percent for any vehicle type. The proportion of fatalities in rollover crashes for pickup trucks rose from 43% in 2001 to 46% in 2002.

Table 13
Passenger Vehicle Occupants Killed and Injured by Percent Rollover and Vehicle Type
2002 Early Assessment

Vehicle Type	2001			2002		
	Rollover		Total	Rollover		Total
	Yes	No		Yes	No	
Persons Killed						
Passenger Car	22%	78%	20,233	24%	76%	20,159
Van	39%	61%	2,011	33%	67%	2,112
SUV	61%	39%	3,515	61%	39%	3,855
Pickup Truck	43%	57%	6,116	46%	54%	6,167
Persons Injured						
Passenger Car	4%	96%	1,922,000	5%	95%	1,819,000
Van	5%	95%	204,000	5%	95%	194,000
SUV	13%	87%	295,000	13%	87%	312,000
Pickup Truck	10%	90%	360,000	10%	90%	336,000

Source: FARS, NASS-GES, NCSA, NHTSA

In Table 14 all deaths due to motor vehicle traffic crashes are broken down by general person types, vehicle types (for passenger vehicles) and crash types (rollover vs. non-rollover). The largest percents of increase in fatalities in 2002 are found in SUV and pickup-truck rollover crashes. These two categories account for 46% of all occupant fatalities and 78% of all passenger vehicle occupant rollover fatalities.

Table 14
Number of Persons Killed in Motor Vehicle Crashes by Type and Year
2002 Early Assessment

	2001	2002	Change	% Change	% Tot Increase	% Occ Increase	% Roll Increase
Fatalities	42,116	42,850	734	+1.7%	100%	---	---
Non-occupants	5,730	5,519	-211	-3.7%	-29%	---	---
Motorcyclists	3,181	3,276	95	+3.0%	13%	---	---
Occupants	33,205	34,055	850	+2.6%	116%	100%	---
PV Occ Non-Roll	21,781	21,708	-73	-0.3%	---	---	---
PV Occ Rollover	10,129	10,626	497	+4.9%	68%	58%	100%
PCar Occ Roll	4,549	4,747	198	+4.3%	27%	23%	40%
SUV Occ Roll	2,142	2,353	211	+9.8%	29%	25%	42%
PU Occ Roll	2,643	2,819	176	+6.6%	24%	21%	35%
Van Occ Roll	784	695	-89	---	---	---	---

Source: FARS, NCSA, NHTSA

PV=Passenger Vehicle; Occ=Occupants; PU=Pickup Truck, Pcar=Passenger Car, Roll=Rollover

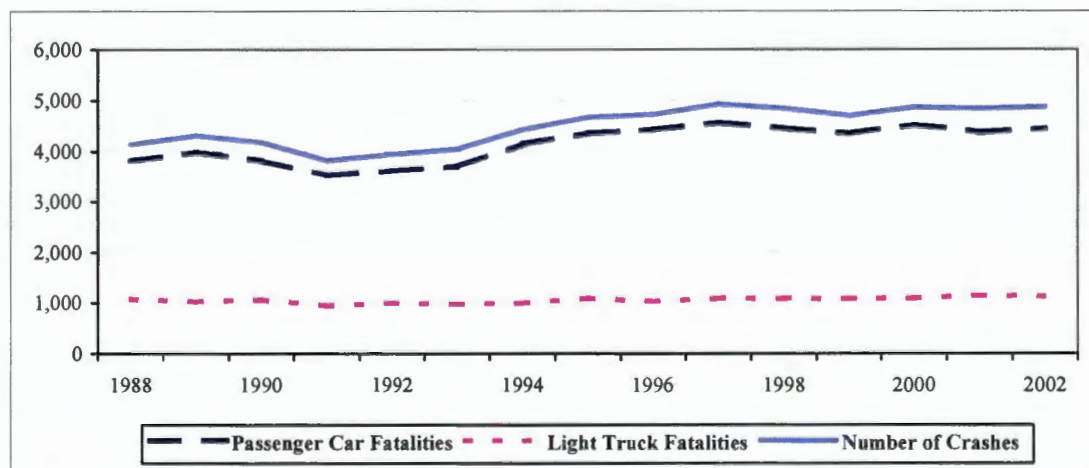
Fatalities in two-vehicle crashes involving a passenger car and a light truck (vans, pickups, SUVs, etc.) increased by 1.6% for the occupants of the passenger cars, and decreased for occupants of the light trucks (-2.4%) while the number of these crashes rose as seen in Table 15.

Table 15			
Two Vehicle Crashes Involving a Passenger Car and a Light Truck and Year 2002 Early Assessment			
	Year		Percent Change
	2001	2002	
Killed			
Number of Fatal Two Vehicle Crashes	4,838	4,871	+0.7%
Passenger Car Fatalities	4,375	4,446	+1.6%
Light Truck Fatalities	1,150	1,122	-2.4%
Injured			
Number of Injury Two Vehicle Crashes	501,000	477,000	-4.7%
Passenger Car Occ. Injured	468,000	449,000	-4.1%
Light Truck Occ. Injured	303,000	288,000	-4.8%

Source: FARS, NASS-GES, NCSA, NHTSA

Figure 11 illustrates the changes from 1988 to 2002 in the number of crashes, and in the numbers of fatalities for two-vehicle passenger car crashes with light trucks. Interestingly, the number of passenger car fatalities varies proportionally with the number of crashes while the number of light truck fatalities barely moves as the number of these crashes goes up.

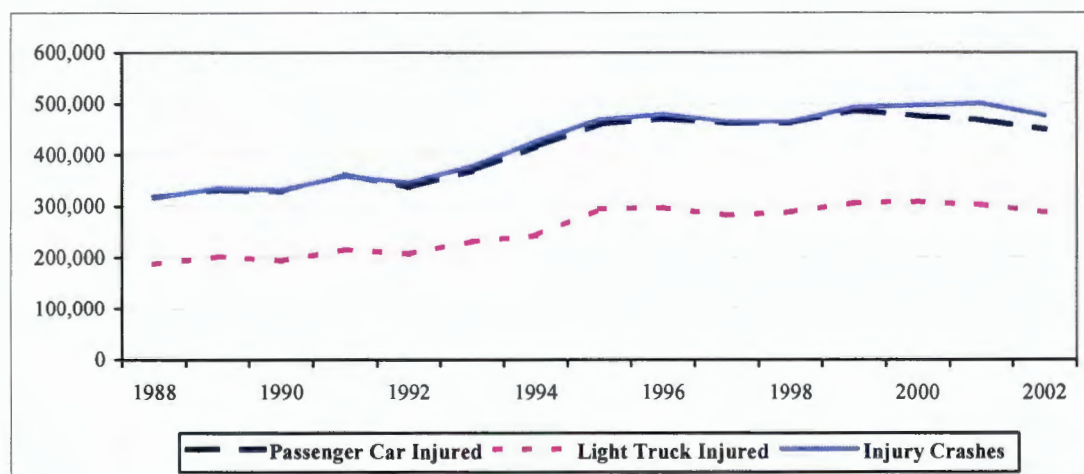
Figure 11
Two Vehicle Fatal Crashes Involving a Passenger Car and a Light Truck



Source: FARS, NCSA, NHTSA

Looking at injured persons in two-vehicle injury crashes involving a passenger car with a light truck, the numbers for both passenger car and light truck occupants parallel the number of these crashes.

Figure 12
Two Vehicle Injury Crashes Involving a Passenger Car and a Light Truck



Source: NASS-GES, NCSA, NHTSA

3.7 Motorcycle Riders

Motorcycle fatalities went up for the 5th year in a row, although the rate of increase slowed. The number of injured motorcyclists also rose while the total number of injured persons fell by 4% in the same time frame. Table 16 shows the upward trend for fatalities and persons injured for motorcycle riders.

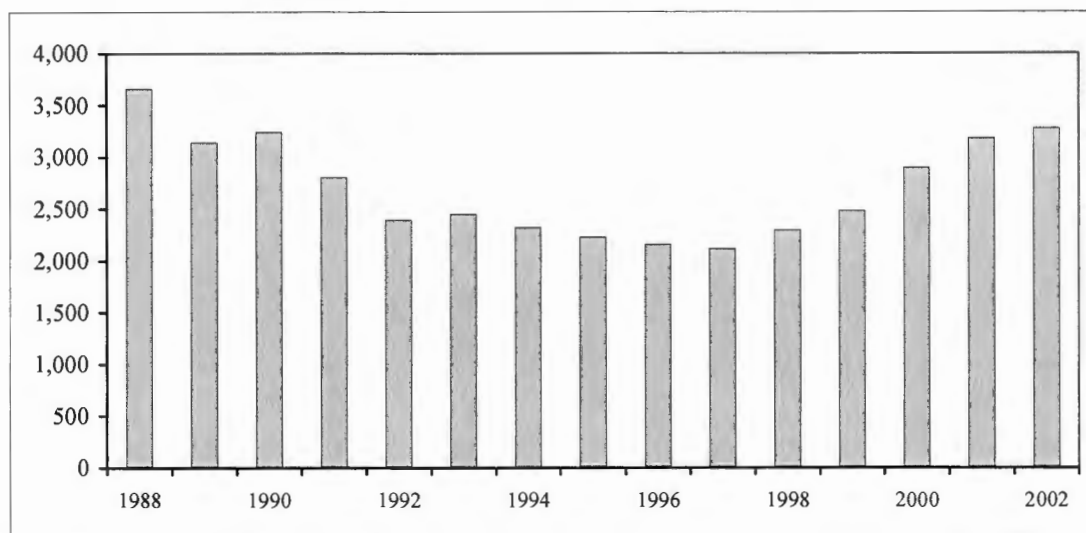
Table 16
Total and Motorcyclists Killed and Injured by Year, 1997-2002
2002 Early Assessment

Fatalities	Year					
	1997	1998	1999	2000	2001	2002
Total Killed	42,013	41,501	41,717	41,945	42,116	42,850
Change	---	-512	+216	+228	+171	+734
Motorcyclists Killed	2,116	2,294	2,483	2,897	3,181	3,276
Change	---	+178	+189	+414	+284	+95
Percent Change	---	8.4%	8.2%	16%	9.8%	3.0%
Percent of All Fatalities	5.0%	5.5%	6.0%	6.9%	7.6%	7.6%
Motorcyclists Injured	53,000	49,000	50,000	58,000	60,000	65,000

Source: FARS, NASS-GES, NCSA, NHTSA

Figure 13 shows all motorcycle rider fatalities over a 15-year period. As shown in Figure 14, almost all of the decrease in motorcycle fatalities can be attributed to the under 30 age group while most of the increase from 1997 on is due to the increasing numbers of older motorcyclists killed.

Figure 13
Motorcyclist Fatalities by Year



Source: FARS, NCSA, NHTSA

Table 17 breaks dead motorcyclist riders into age groups. Although the overall increase is just 3% there are extreme differences in the changes by age groups, ranging from a decrease of 9.2% for those under 20 to an increase of 24% for those over 50.

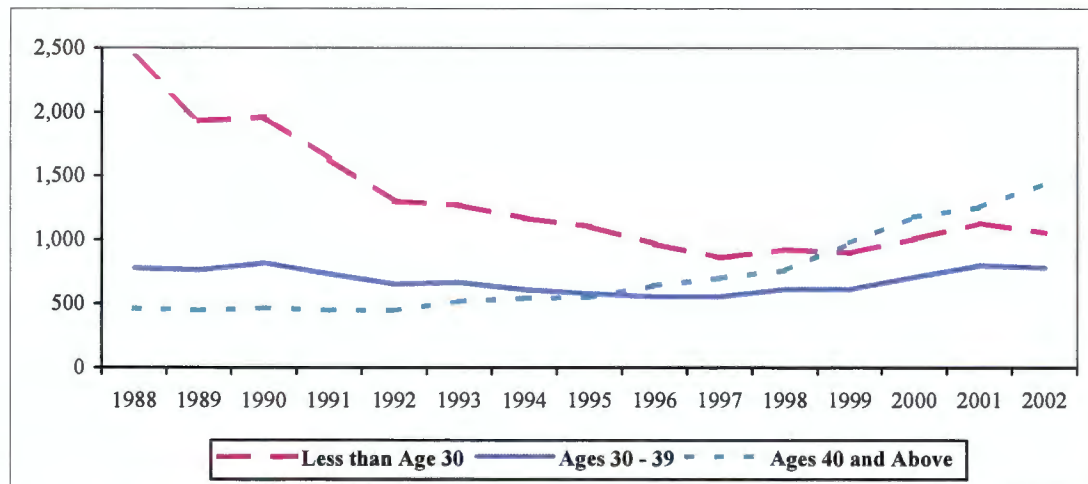
Table 17
Motorcyclist Fatalities by Age Group and Year
2002 Early Assessment

Age Group	Year		Percent Change
	2001	2002	
Under 20	209	190	-9.2%
20 – 29	919	863	-6.1%
30 – 39	797	779	-2.2%
40 – 49	722	781	+8.2%
Over 50	532	659	+24%
Unknown	2	4	n/a
Total	3,181	3,276	+3.0%

Source: FARS, NCSA, NHTSA

Figure 14 illustrates the dramatic changes in motorcycle fatalities over time. While the number of fatalities in the middle age range (30-39) remains fairly static, the number of fatalities among younger motorcyclists falls off sharply for a 10-year period and then rise somewhat for the next 4 years. In contrast, fatalities in the older age range (40+) are fairly level and then commence to increase rapidly starting in 1996, eventually outnumbering fatalities in the under-30 range in 1999.

Figure 14
Motorcyclist Fatalities by Age Group



Source: FARS, NCSA, NHTSA

3.8 Large Trucks

The number of fatalities among occupants of large trucks rose slightly, with all of the increase happening in multiple-vehicle crashes. The number of fatalities among truck occupants in single vehicle crashes, other vehicle occupants and non-occupants declined.

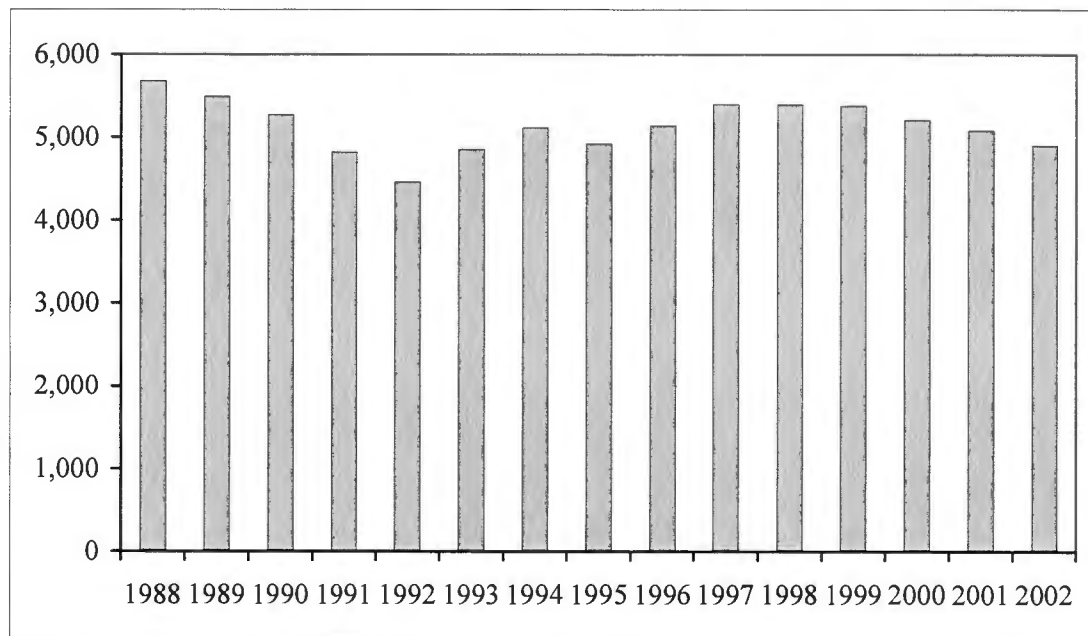
Table 18
Persons Killed in Large Truck Crashes
2002 Early Assessment

Type	Year		Percent Change
	2001	2002	
Truck Occupants	704	712	+1.2%
Single Vehicle	471	458	-2.7%
Multiple Vehicle	233	254	+9.2%
Other Vehicle Occupants	3,940	3,816	-3.2%
Non-occupants	438	374	-15%
Total	5,082	4,902	-3.5%

Source: FARS, NCSA, NHTSA

The number of large truck crash related fatalities has varied between a high of 5,679 in 1988 and a low of 4,462 in 1992. Numbers decreased from 1988 to 1992, increased again until 1997-1998 and since that time are slowly declining.

Figure 15
Fatalities in Large Truck Crashes



Source: FARS, NCSA, NHTSA

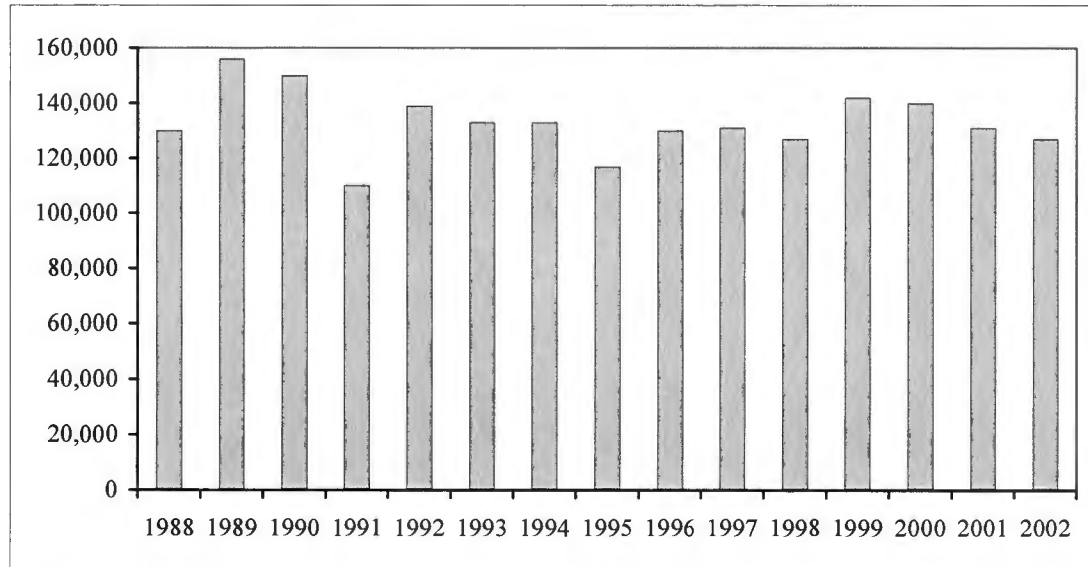
The number of injured persons in large truck crashes has also declined in recent years. However, the number of injured persons in the 2002 Early Assessment appears to be about equal to a 15-year average.

Table 19
Persons Injured in Large Truck Crashes
2002 Early Assessment

Type			Percent Change
	2001	2002	
Truck Occupants	29,000	25,000	+1.2%
Single Vehicle	13,000	12,000	-2.7%
Multiple Vehicle	16,000	13,000	+9.2%
Other Vehicle Occupants	99,000	99,000	-3.2%
Non-occupants	3,000	3,000	-14.7%
Total	131,000	127,000	-3.5%

Source: NASS-GES, NCSA, NHTSA

Figure 16
Person Injured in Large Truck Crashes



Source: NASS-GES, NCSA, NHTSA

3.9 Non-Occupants

Except for injured pedalcyclists, the number of non-occupants killed or injured declined in all categories. For pedestrians, who constitute the largest group of non-occupants, fatalities were down 2.2%. The number of injured pedestrians fell nearly 8%.

Table 20
Non-occupants Killed or Injured by Role
2002 Early Assessment

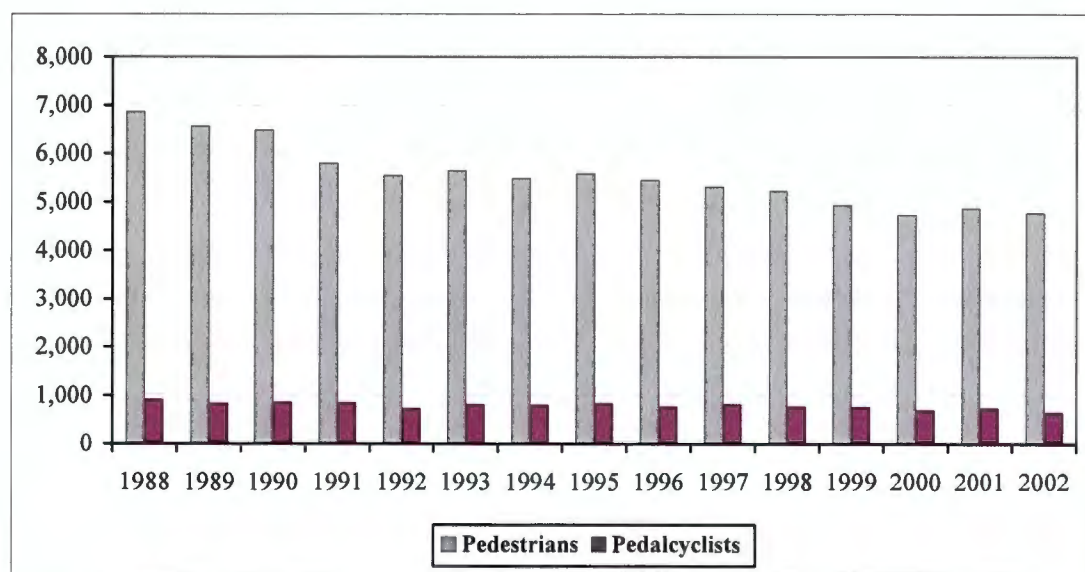
Role	Year		Percent Change
	2001	2002	
Persons Killed	5,730	5,519	-3.7%
Pedestrians	4,882	4,776	-2.2%
Pedalcyclists	728	646	-11%
Others*	120	96	-20%
Persons Injured	131,000	127,000	-3.1%
Pedestrians	78,000	72,000	-7.7%
Pedalcyclists	45,000	48,000	+6.7%
Others*	8,000	7,000	-13%

Source: FARS, NASS-GES, NCSA, NHTSA

*Includes occupants of motor vehicles not in transport and of non-motor vehicle transport devices

Figure 17 delineates the steady decline in the number of non-motorist deaths in motor vehicle traffic crashes over the last 15 years. The individual decreases for pedestrians and pedalcyclists parallel each other in this time period.

Figure 17
Pedestrian and Pedalcyclist Fatalities



Source: FARS, NCSA, NHTSA

3.10 Intersection Crashes

Tables 21 and 22 show fatalities and numbers of injured persons by the proximity of the crash to a junction. The number of intersection and intersection-related fatalities increased while the numbers of injured persons fell.

Table 21
Persons Killed by Relation to a Roadway Junction
2002 Early Assessment

Relation to Junction	Year		Percent Change
	2001	2002	
Junction	9,316	9,410	+1.5%
Intersection	7,717	7,750	+0.4%
Intersection Related	1,599	1,660	+3.8%
Non-junction	30,602	30,837	+0.8%
Other/Unknown	2,198	2,603	n/a
Total	42,116	42,850	+1.7%

Source: FARS, NCSA, NHTSA

Table 22
Injury Crashes by Relation to a Roadway Junction
2002 Early Assessment

Relation to Junction	Year		Percent Change
	2001	2002	
Junction			
Intersection	592,000	579,000	-2.2%
Intersection Related	278,000	370,000	-2.2%
Non-junction	776,000	753,000	-2.9%
Other	256,000	231,000	-9.8%
Total	2,003,000	1,934,000	-3.4%

Source: NASS-GES, NCSA, NHTSA

3.11 Children and Youth

The number of children three years old and younger (including infants) dropped by almost 6%. All of the decrease accrued to vehicle occupants, as there was no change in the number of non-occupant fatalities. The number of injured children in this age group went up by 2.1%. All of this increase and, again, all of the change occurred in the numbers of child vehicle occupants injured.

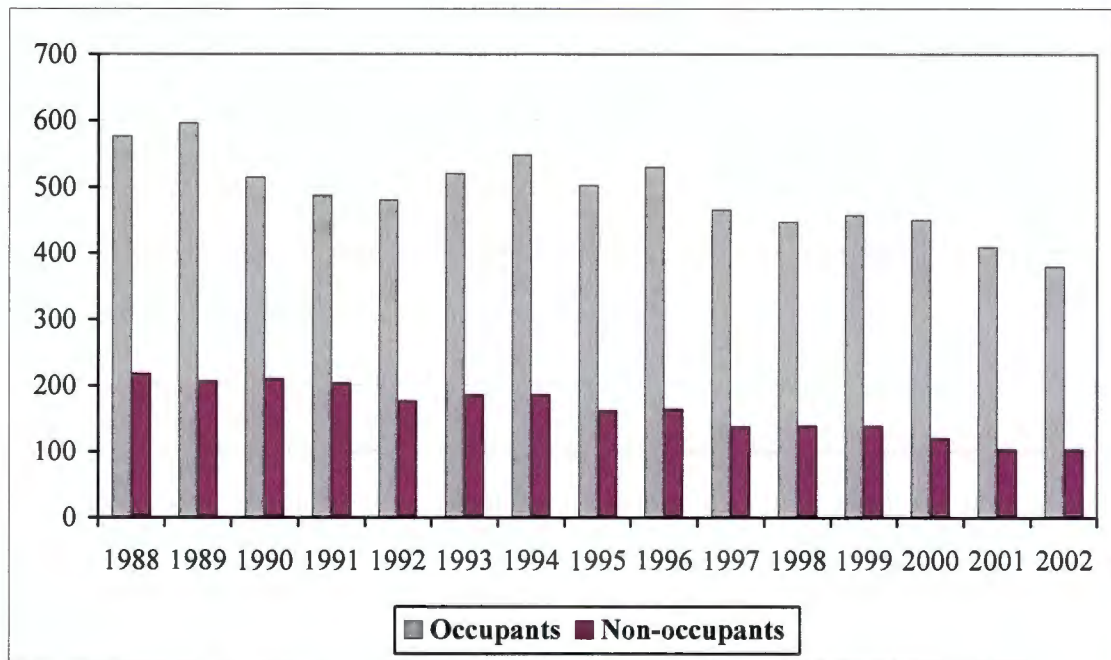
Table 23
Children, Under Age 4, Killed or Injured by Role
2002 Early Assessment

Role	2001	2002	Percent Change
Killed	513	484	-5.7%
Occupants	409	380	-7.1%
Non-occupants	104	104	0.0%
Injured	47,000	48,000	+2.1%
Occupants	45,000	47,000	+4.4%
Non-occupants	2,000	2,000	0.0%

Source: FARS, NASS-GES, NCSA, NHTSA

Figure 18 charts the decline in numbers of very young children (0-3) killed in motor vehicle traffic crashes. The low number of non-occupant deaths relative to occupant deaths makes sense since many in this age group are not yet walking.

Figure 18
Children Ages 0-3 Killed in Motor Vehicle Crashes



Source: FARS, NCSA, NHTSA

Children in the (4-7) age group experienced over 8% fewer fatalities in 2002 than in the previous year. The decline was equally steep for both occupants and non-occupants. The number of children injured in this age group fell more than 6%, all of the change accruing to injured occupants.

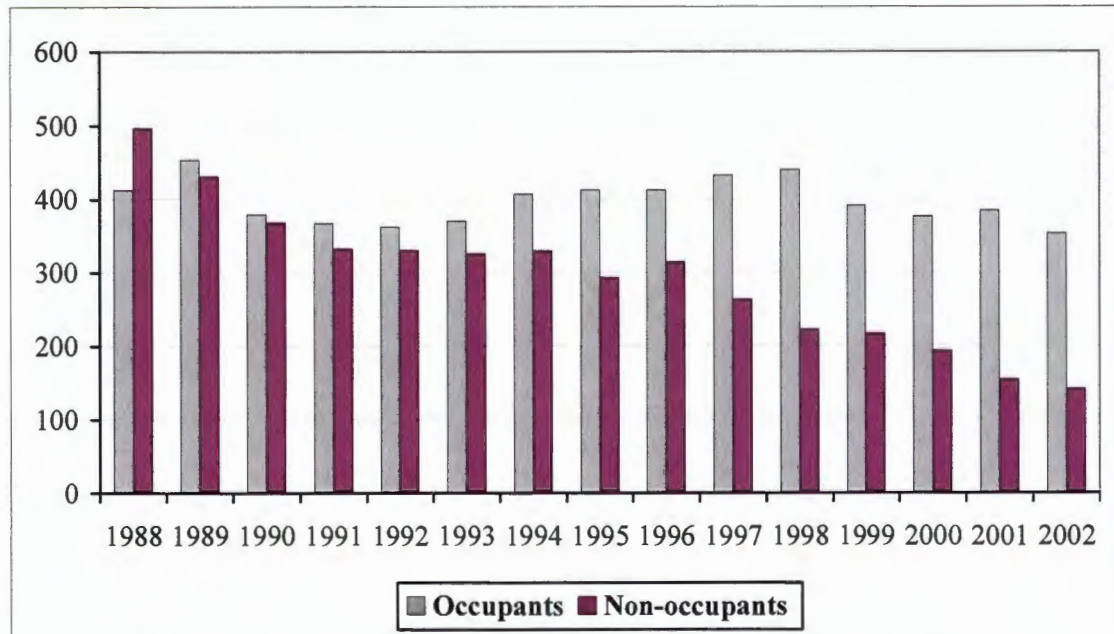
Table 24
Children Ages 4 thru 7 Killed or Injured by Role
2002 Early Assessment

Role	2001	2002	Percent Change
Killed	540	496	-8.1%
Occupants	385	354	-8.1%
Non-occupants	155	142	-8.4%
Injured	66,000	62,000	-6.1%
Occupants	58,000	54,000	-6.9%
Non-occupants	8,000	8,000	0.0%

Source: FARS, NASS-GES, NCSA, NHTSA

Figure 19 shows fatalities in the 4-7 year old age group. There is a strong shift in the number of fatalities from non-occupants to vehicle occupants over the 15-year period.

Figure 19
Fatalities among 4-7 Year Old Age Group



Source: FARS, NCSA, NHTSA

In 2002 there was a jump of almost 9% in the number of occupant fatalities for children and young people in the 8 thru 15 year old age range. In this same age group non-occupant fatalities fell by more than 7%. The number of injured persons declined across the board.

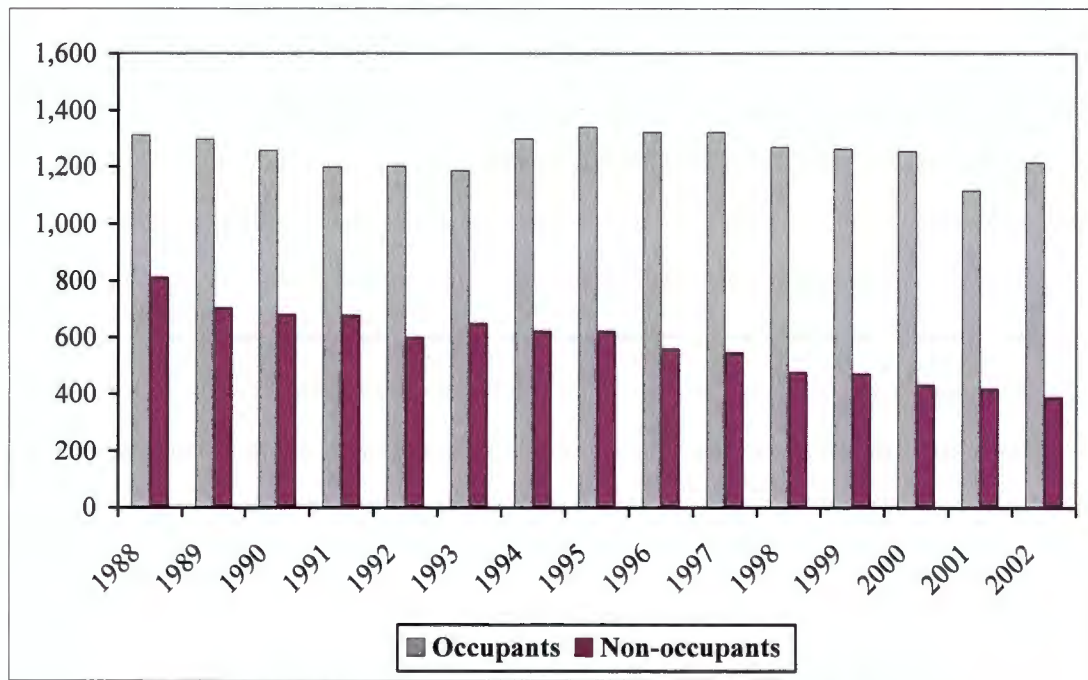
Table 25
Children and Youth, 8-15, Killed or Injured by Role
2002 Early Assessment

Role	2001	2002	Percent Change
Killed	1,535	1,604	+4.5%
Occupants	1,116	1,215	+8.9%
Non-occupants	419	389	-7.2%
Injured	191,000	184,000	-3.5%
Occupants	160,000	156,000	-2.2%
Non-occupants	32,000	29,000	-10%

Source: FARS, NASS-GES, NCSA, NHTSA

Figure 20 shows fatalities for the 8-15 age group, which exhibits the same phenomenon as in Figure 18, which is the decrease in the numbers of non-occupant fatalities not only in actual numbers but also relative to the numbers of occupant fatalities.

Figure 20
Fatalities among 8-15 Year Old Age Group



Source: FARS, NCSA, NHTSA

3.12 Young Drivers

The category "Young Drivers" is comprised of those drivers from 16 through 20 years of age. Passengers are those riding in the same vehicle with a young driver and may be of any age, while the "Other" category consists of occupants of other vehicles in a crash with a young driver together with non-occupants. Table 26 shows that fatal crashes and fatalities in crashes with young drivers increased somewhat in 2002 while injury and PDO crashes declined. The greatest increase is in Young Driver deaths which rose by almost 6%.

Table 26
Crash Types and Persons Killed in Crashes with Young Drivers
2002 Early Assessment

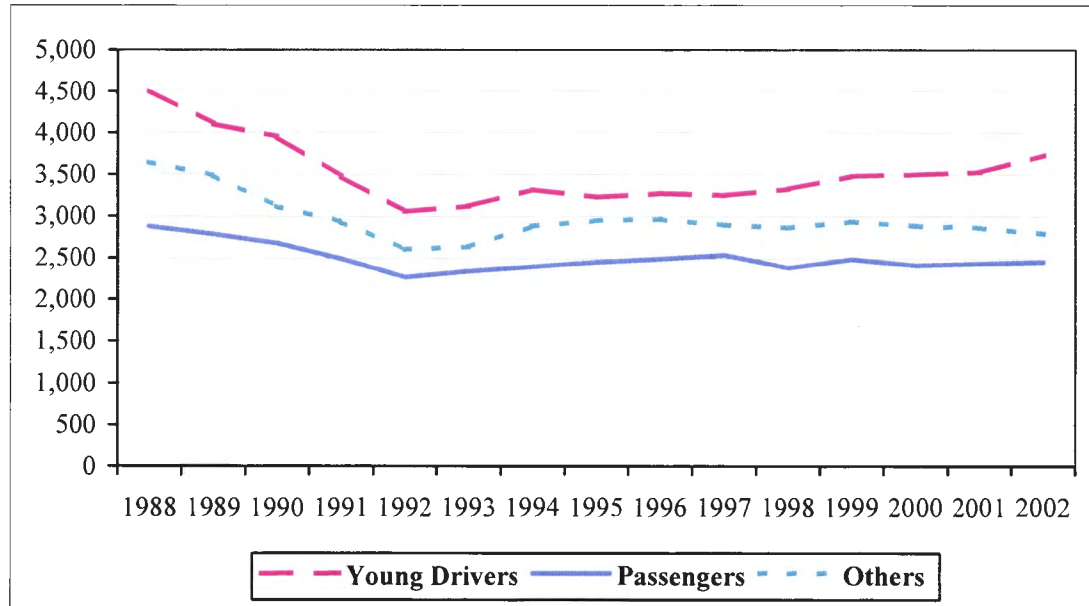
Crashes and Persons Killed	2001	2002	Percent Change
Total Crashes	1,666,000	1,624,000	-2.5%
Fatal	7,598	7,722	+1.6%
Injury	564,000	544,000	-3.5%
Property Damage Only	1,094,000	1,072,000	-2.0%
Total Persons Killed	8,839	8,996	+1.8%
Young Drivers (16-20)	3,529	3,738	+5.9%
Passengers*	2,441	2,461	+0.8%
Others	2,869	2,798	-2.5%

Source: FARS, NASS-GES, NCSA, NHTSA

*In vehicles with young drivers

Figure 21 depicts the distribution of fatalities in crashes involving a young driver over 15 years. The number of these deaths fell sharply from 1988 to 1992 and then began to rise gradually. Individually, young driver deaths in the most recent years went up while passenger deaths leveled off and other deaths went down slightly.

Figure 21
Fatalities in Crashes Involving Young Drivers (16-20)



Source: FARS, NCSA, NHTSA

4. APPENDIX A

The following tables provide long-term data for the figures in the report.

Year	Fatalities	Persons Injured	Non-Fatal Crashes	Fatality Rate per 100M VMT	Injury Rate per 100M VMT
1988	47,087	3,416,000	6,844,000	2.32	169
1989	45,582	3,284,000	6,612,000	2.17	157
1990	44,599	3,231,000	6,431,000	2.08	151
1991	41,508	3,097,000	6,081,000	1.91	143
1992	39,250	3,070,000	5,965,000	1.75	137
1993	40,150	3,149,000	6,070,000	1.75	137
1994	40,716	3,266,000	6,459,000	1.73	139
1995	41,817	3,465,000	6,663,000	1.73	143
1996	42,065	3,483,000	6,732,000	1.69	140
1997	42,013	3,348,000	6,587,000	1.64	131
1998	41,501	3,192,000	6,298,000	1.58	121
1999	41,717	3,263,000	6,242,000	1.55	120
2000	41,945	3,189,000	6,356,000	1.53	116
2001	42,116	3,033,000	6,285,000	1.51	109
2002	42,850	2,914,000	6,241,000	1.51	103

Source: FARS, NASS-GES, NCSA, NHTSA; FHWA

Table A-2
Percent Unrestrained Fatalities, Fatalities in Alcohol Related Crashes and Fatality Rate in Alcohol Related Crashes by Year

Year	Percent Unrestrained Fatalities	Fatalities in Alcohol Related Crashes	Fatality Rate per 100M VMT in Alcohol Related Crashes
1988	80	23,833	1.16
1989	78	22,424	1.07
1990	77	22,587	1.03
1991	74	20,159	0.92
1992	71	18,290	0.79
1993	68	17,908	0.76
1994	66	17,308	0.70
1995	65	17,732	0.71
1996	64	17,673	0.69
1997	63	16,711	0.63
1998	62	16,673	0.61
1999	62	16,572	0.59
2000	60	17,380	0.61
2001	60	17,448	0.63
2002	59	17,970	0.64

Source: FARS, NCSA, NHTSA; FHWA

Table A-3
Vehicle Occupants Killed in Alcohol Related Crashes by Year and Vehicle Type

Year	Vehicle Type					
	Passenger Car	Van	SUV	Pickup	Large Truck	Motorcycle
1988	12,938	434	593	3,556	155	2,052
1989	11,949	487	587	3,486	154	1,837
1990	11,878	482	646	3,590	124	1,903
1991	10,407	441	762	3,344	111	1,600
1992	9,583	439	670	3,029	65	1,313
1993	9,184	429	735	2,967	72	1,254
1994	8,946	457	787	2,931	76	1,086
1995	9,033	523	807	3,136	79	1,060
1996	8,971	522	987	3,063	74	1,049
1997	8,525	518	970	2,829	59	980
1998	7,955	623	1,102	2,895	77	1,073
1999	7,742	638	1,222	2,971	76	1,118
2000	8,341	655	1,338	2,901	88	1,316
2001	8,034	631	1,472	2,988	63	1,330
2002	8,059	690	1,577	3,058	86	1,410

Source: FARS, NCSA, NHTSA

Table A-4
Alcohol Involved Drivers in Fatal Crashes by Year and Vehicle Type

Year	Vehicle Type					
	Passenger Car	Van	SUV	Pickup	Large Truck	Motorcycle
1988	12,429	561	670	4,072	283	1,876
1989	11,327	564	644	3,994	218	1,682
1990	11,577	581	711	4,118	220	1,712
1991	9,784	522	841	3,752	190	1,467
1992	9,011	478	746	3,474	132	1,187
1993	8,561	501	773	3,357	165	1,120
1994	8,468	510	861	3,349	149	954
1995	8,265	542	887	3,567	157	942
1996	8,335	548	1,055	3,394	145	946
1997	7,668	534	1,073	3,226	133	881
1998	7,390	638	1,159	3,237	121	958
1999	7,037	648	1,259	3,322	123	1,013
2000	7,766	645	1,418	3,210	138	1,188
2001	7,413	605	1,562	3,362	117	1,191
2002	7,456	641	1,733	3,441	114	1,275

Source: FARS, NCSA, NHTSA

**Table A-5
Fatalities in Rollover Crashes by Year and Vehicle Type**

Year	Vehicle Type			
	Passenger Car	Van	SUV	Pickup
1988	6,248	374	651	2,713
1989	5,707	463	722	2,660
1990	5,593	451	762	2,698
1991	5,328	472	882	2,543
1992	4,738	564	834	2,460
1993	4,648	541	934	2,403
1994	4,870	610	1,063	2,409
1995	5,076	650	1,210	2,571
1996	4,997	681	1,384	2,545
1997	4,765	768	1,489	2,479
1998	4,672	823	1,705	2,560
1999	4,718	784	1,902	2,724
2000	4,548	771	2,064	2,558
2001	4,549	784	2,142	2,643
2002	4,747	695	2,353	2,819

Source: FARS, NCSA, NHTSA

Table A-6
Two Vehicle Fatal Crashes Involving a Passenger Car and a Light Truck by Year

Year	Passenger Car Fatalities	Light Truck Fatalities	Number of Crashes
1988	3,817	1,081	4,144
1989	3,996	1,035	4,314
1990	3,826	1,067	4,180
1991	3,530	947	3,827
1992	3,624	1,004	3,954
1993	3,701	980	4,051
1994	4,150	1,004	4,437
1995	4,354	1,094	4,673
1996	4,427	1,036	4,734
1997	4,566	1,093	4,933
1998	4,452	1,089	4,845
1999	4,353	1,083	4,701
2000	4,523	1,094	4,867
2001	4,375	1,150	4,838
2002	4,446	1,122	4,871

Source: FARS, NCSA, NHTSA

Table A-7
Two Vehicle Injury Crashes Involving a Passenger Car and a Light Truck by Year

Year	Passenger Car Injured	Light Truck Injured	Injury Crashes
1988	317,000	188,000	316,000
1989	332,000	203,000	335,000
1990	329,000	195,000	331,000
1991	361,000	216,000	358,000
1992	337,000	207,000	346,000
1993	369,000	232,000	378,000
1994	416,000	243,000	426,000
1995	460,000	295,000	469,000
1996	470,000	297,000	480,000
1997	461,000	282,000	465,000
1998	461,000	289,000	465,000
1999	487,000	307,000	493,000
2000	476,000	308,000	497,000
2001	468,000	303,000	501,000
2002	449,000	288,000	477,000

Source: NASS-GES, NCSA, NHTSA

Table A-8
Motorcyclist Fatalities by Year and Age Group

Year	Less than Age 30	Age 30-39	Ages 40 and Above
1988	2,426	775	460
1989	1,931	761	446
1990	1,961	816	466
1991	1,630	728	447
1992	1,299	652	444
1993	1,267	666	514
1994	1,170	608	541
1995	1,104	576	547
1996	965	555	641
1997	860	556	699
1998	921	612	760
1999	898	612	973
2000	1,007	707	1,178
2001	1,128	797	1,254
2002	1,053	779	1,440

Source: FARS, NCSA, NHTSA

Table A-9
Motorcyclist Fatalities, Fatalities in Large Truck Crashes, Persons Injured in Large Truck Crashes, Pedestrian and Pedalcyclist Fatalities by Year

Year	Motorcyclist Fatalities	Fatalities in Large Truck Crashes	Persons Injured in Large Truck Crashes	Pedestrians Killed	Pedalcyclists Killed
1988	3,662	5,679	130,000	6,870	911
1989	3,141	5,490	156,000	6,556	832
1990	3,244	5,272	150,000	6,482	859
1991	2,806	4,821	110,000	5,801	843
1992	2,395	4,462	139,000	5,549	723
1993	2,449	4,856	133,000	5,649	816
1994	2,320	5,114	133,000	5,489	802
1995	2,227	4,918	117,000	5,584	833
1996	2,161	5,142	130,000	5,449	765
1997	2,116	5,398	131,000	5,321	814
1998	2,294	5,395	127,000	5,228	760
1999	2,483	5,380	142,000	4,939	754
2000	2,879	5,211	140,000	4,763	693
2001	3,181	5,082	131,000	4,882	728
2002	3,276	4,902	127,000	4,776	646

Source: FARS, NASS-GES, NCSA, NHTSA

Table A-10
Children Killed in Motor Vehicle Crashes by Year, Age Group and Person Type

Year	Age Group					
	Ages 0-3		Ages 4-7		Ages 8-15	
	Occupant	Non-Occupant	Occupant	Non-Occupant	Occupant	Non-Occupant
1988	577	218	413	497	1,312	812
1989	597	207	454	431	1,298	702
1990	515	210	380	369	1,258	681
1991	488	204	368	333	1,199	676
1992	481	177	363	331	1,203	600
1993	521	186	371	326	1,187	648
1994	549	187	407	330	1,300	621
1995	503	162	413	293	1,341	621
1996	531	165	413	315	1,322	559
1997	466	138	433	264	1,323	546
1998	447	140	440	223	1,270	477
1999	458	139	392	217	1,264	472
2000	451	121	377	194	1,254	434
2001	409	104	385	155	1,116	419
2002	380	104	354	142	1,215	389

Source: FARS, NCSA, NHTSA

Table A-11
Fatalities in Crashes Involving Young Drivers (16-20) by Year

Year	Young Drivers	Passengers*	Others
1988	4,507	2,885	3,646
1989	4,105	2,790	3,489
1990	3,952	2,686	3,123
1991	3,480	2,495	2,937
1992	3,061	2,271	2,609
1993	3,126	2,345	2,639
1994	3,324	2,399	2,889
1995	3,234	2,457	2,955
1996	3,279	2,498	2,970
1997	3,257	2,539	2,902
1998	3,330	2,388	2,867
1999	3,484	2,494	2,942
2000	3,502	2,418	2,891
2001	3,529	2,441	2,869
2002	3,738	2,461	2,798

Source: FARS, NCSA, NHTSA

*In vehicles with young drivers

