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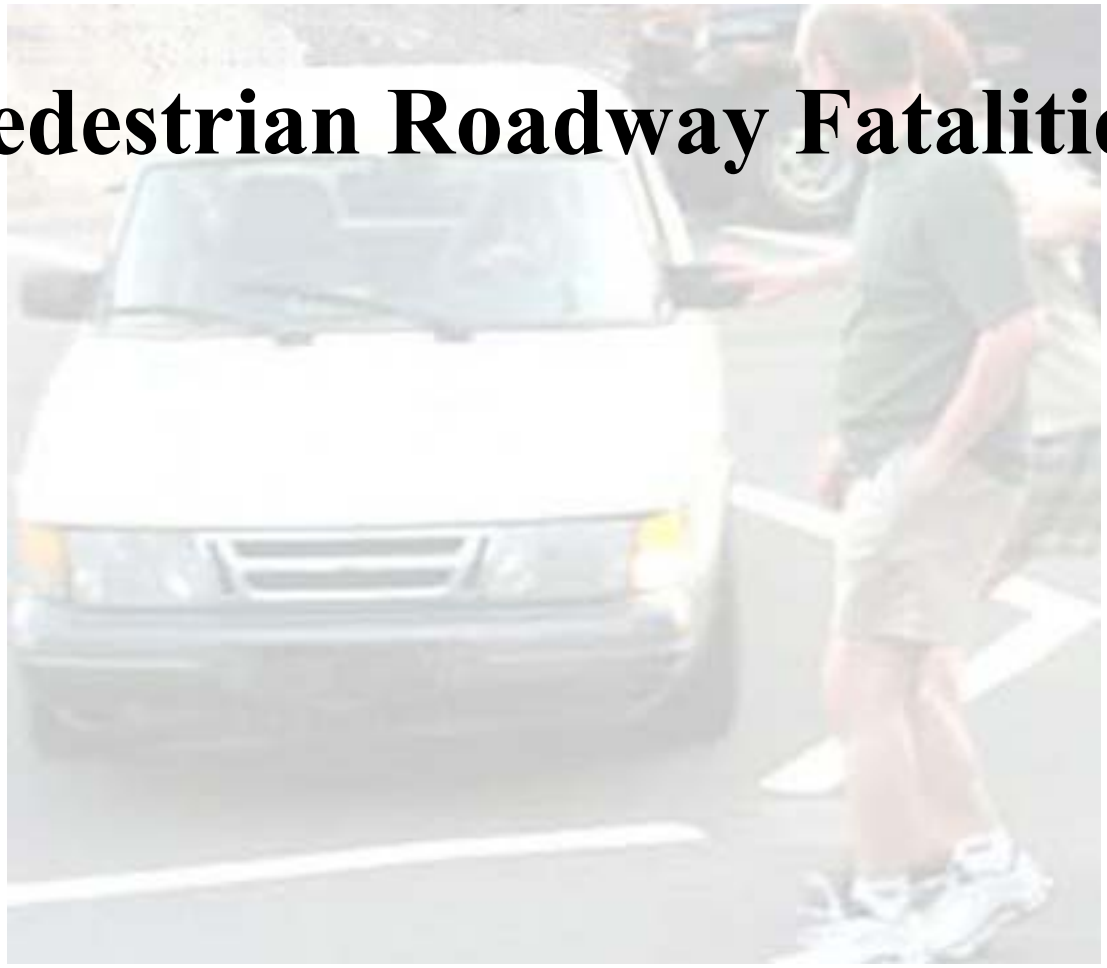
Technical Report

Pedestrian Roadway Fatalities



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Abstract

The objective of this study by the National Center for Statistics and Analysis (NCSA) was to examine the pedestrian fatalities in motor vehicle crashes. Data was analyzed for trends using the 1998 through 2001 NCSA's Fatality Analysis Reporting System (FARS). Rates are calculated based on the US resident population data from the Census Bureau.

Almost 175,000 pedestrians died in all motor vehicle crashes with more than 162,000 pedestrians killed in **single vehicle crashes** between 1975 and 2000. Pedestrian fatalities from all crashes reached a low of 4,763 fatalities in 2000. In 2001, pedestrian fatalities slightly increased to 4,882. However, in 2001, pedestrian fatalities accounted for about 12 percent of all fatalities and 85 percent of all non-occupant fatalities in motor vehicle crashes.

Pedestrian fatalities in single vehicle crashes accounted for over 90 percent of the pedestrian fatalities from all fatal motor vehicle crashes. With such a high percentage of pedestrian fatalities from single vehicle crashes, this report was written to provide insight into the possible causes for these pedestrian fatalities.

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1. EXECUTIVE SUMMARY

This report was written to provide insight into the possible causes for pedestrian highway fatalities involving a single motor vehicle (**single vehicle crash, SV crash**), which not surprisingly account for over 90 percent of pedestrian fatalities from motor vehicle crashes. The analysis was based on 1998-2001 data from the Fatality Analysis Reporting System (FARS), a census of all fatal motor vehicle crashes.

Almost 175,000 pedestrians died in all motor vehicle crashes with over 162,000 pedestrians killed in single vehicle crashes between 1975 and 2001. As a long-term trend pedestrian fatalities have decreased from a high of 8,096 fatalities in 1979 to a low of 4,763 in 2000. Pedestrian fatalities have decreased each year between 1995 (from 5,584) and 2000, a reduction of 15 percentage points. In 2001, the pedestrian fatalities increased slightly (119 fatalities, 2.5 percentage point) to 4,882 fatalities, the first increase since 1995. However, in 2001, pedestrians accounted for about 12 percent of all highway fatalities in motor vehicle crashes and 85 percent of all non-occupant fatalities in motor vehicle crashes. In 1979, pedestrians accounted for about 16 percent of all fatalities in motor vehicle crashes and 88 percent of all non-occupant fatalities in motor vehicle crashes.

This report does not analyze all variables within the FARS database and other data sources. Also, this analysis does not examine injury data from the General Estimates System (GES), which reports on persons injured resulting from motor vehicle crashes. Further analyses need to be undertaken by examining other variables within FARS and GES that may provide additional information describing other factors associated with pedestrians in motor vehicle crashes. The National Highway Traffic Safety Administration (NHTSA) plans to conduct these analyses and report the findings.

1.1 Purpose

The purpose of this report is to:

- Use FARS data to analyze pedestrian fatalities in **single vehicle crashes**;
- Identify possible causes for pedestrian fatalities;
- Use exposure data of resident population from the US Census Bureau; and,
- Combine the FARS data with exposure data to calculate population rates.

The analytical approach involved several steps. First, reviews of FARS data, *Traffic Safety Facts 2001: Pedestrians,* and *Traffic Safety Facts 2000* were conducted to determine the appropriate data elements to be examined within FARS. The data elements were then analyzed either individually or combined. The analysis was used to identify possible elements within the crash information for pedestrian fatalities in single vehicle crashes.

1.2 Conclusions

There is not a single strategy that will reduce pedestrian fatalities – it is a comprehensive approach employing engineering, education and enforcement **with the focus on both driver and pedestrian**. NHTSA has been following some of these strategies in the past and will continue to disseminate program strategies, policies and messages based on these data. Findings from FARS data provide insight into possible reasons for pedestrian fatalities in **single vehicle crashes** and could aid in the design of crash prevention and pedestrian safety programs:

- Alcohol involvement with BAC ≥ 0.01 (37 percent) among pedestrians is a major problem. High intoxication levels with BAC ≥ 0.08 (32 percent) among pedestrians highlight the seriousness of alcohol involvement problem;

- Alcohol involvement (18 percent) among drivers of motor vehicles when a pedestrian was killed combined with the pedestrian alcohol involvement enhances the problem;

- Almost two-thirds of pedestrian fatalities occurred on urban roadways;

- Most pedestrian fatalities occur at non-intersections (over 75 percent) and roadways without crosswalks (over 40 percent);

- Pedestrian actions at the time of the crash indicate the risks pedestrians are taking while crossing the roadways;

- Driver actions at the time of the crash indicate the risks pedestrians encounter on roadways;

- Dark and dark but lighted conditions (almost two-thirds) are a major concern in pedestrian fatalities. Nighttime, especially 6 PM to midnight hours, account for almost 50 percent of the pedestrian fatalities. These suggest that conspicuity may be a problem;

- Almost one in five (18 percent) pedestrians killed was a result of a hit-and-run crash. More attention and effort on enforcement may be required; and,

- Among the states, New Mexico had the highest pedestrian fatality rate per 100,000 population (3.94) followed by Arizona (3.00). In the ranking of cities based on pedestrian fatality rates, 5 of the top 10 cities were in Florida. The 3 cities with the highest fatality rates were in Florida. States and cities with the highest pedestrian fatality rates need to focus on special safety messages to pedestrians.

2. INTRODUCTION

Almost 175,000 pedestrians died in all motor vehicle crashed between 1975 and 2001. The 2001 FARS data show pedestrian fatalities from all crashes:

- Accounted for about 12 percent of all highway fatalities involving motor vehicles;
- More than one-fifth of all children between the ages of 5 and 9 years old killed in traffic crashes were pedestrians;
- Forty-five percent of the 484 pedestrian fatalities under 16 years of age occurred between 3:00 PM and 7 PM;
- Most pedestrian fatalities occurred at night between 6 PM and 6 AM (64 percent);
- Most pedestrian fatalities occurred in urban areas (69 percent); and,
- More than two-thirds (68 percent) of the 2001 pedestrian fatalities were males. In 2000, the male pedestrian fatality rate per 100,000 population was 2.35 – more than double the rate for females (1.05 per 100,000 population).

Over 162,000 pedestrians died in **single vehicle crashes** between 1975 and 2001. This report examines pedestrian fatalities in single vehicle crashes from 1998-2001 in order to understand possible causes for the fatalities in these crashes. The purpose of this report is to:

- Examine data from NHTSA's FARS fatal motor vehicle crash database and combine this data with the US Census Bureau data;
- Analyze data within specific problem areas by looking for possible causes and calculating rates; and,
- Identify areas that may explain the possible reasons for pedestrian fatalities in single vehicle crashes.

In order to better understand the reasons for pedestrian fatalities in single vehicle crashes, FARS data can be analyzed by various cross tabulations using more than 100 data elements. These analyses among the different variables provide better understanding into the specific problem areas related to pedestrian fatalities. This analysis and report is based on FARS data elements cross-tabulated either combined or individually.

The following sections describe the data and methodology used in the analysis, highlight the findings, and summarize the implications for crash prevention and pedestrian safety programs.

3. ANALYTICAL APPROACH

The analytical approach for the report involved the following steps:

- Reviewing the data sources, from FARS and US Census Bureau, to determine the data elements of interest and how these data elements could be combined;
- Formulating hypotheses about possible factors in pedestrian fatalities in **single vehicle crashes**;
- Calculating percentages and rates to analyze within specific data elements; and,
- Summarizing data that focus on possible causes for pedestrian fatalities in single vehicle crashes.

3.1 Fatality Analysis Reporting System (FARS)

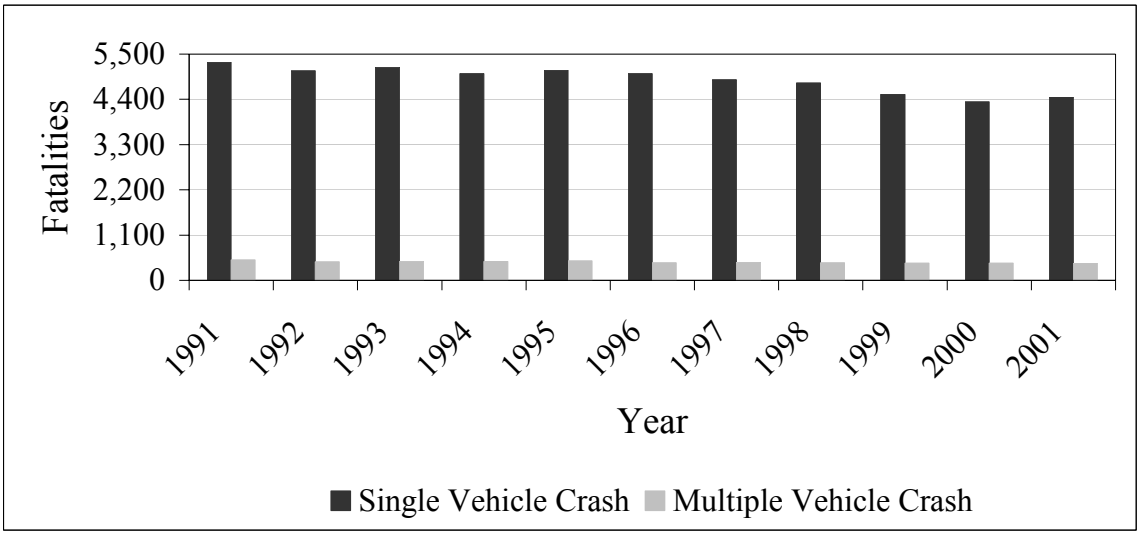
A review of FARS data shows 5,302 pedestrian fatalities from **single vehicle crashes** in 1991, which represents 91 percent of all pedestrian fatalities. In 2001, there were 4,461 pedestrian fatalities in single vehicle crashes, 91 percent of all pedestrian fatalities. Table 1 shows pedestrian fatalities from 1991 to 2001 by year and crash type. The proportion of pedestrian fatalities in single vehicle crashes has not shown any significant change between 1991 and 2001. Pedestrian fatalities have decreased each year from 1995 to 2000, reaching an all time low of 4,739 in 2000.

Table 1
Pedestrian Fatalities from All Crashes by Year and Type of Crash

Year	Type of Crash				Total
	Single Vehicle Crash		Multiple Vehicle Crash		
	Number	Percent	Number	Percent	
1991	5,302	91	499	9	5,801
1992	5,099	92	450	8	5,549
1993	5,180	92	469	8	5,649
1994	5,027	92	462	8	5,489
1995	5,110	92	474	8	5,584
1996	5,024	92	425	8	5,449
1997	4,876	92	445	8	5,321
1998	4,801	92	427	8	5,228
1999	4,516	91	423	9	4,939
2000	4,340	91	423	9	4,763
2001	4,461	91	421	9	4,882

Source: NCSA, NHTSA, FARS 1991-2001

Chart 1: Pedestrian Fatalities by Year and Type of Crash



Source: NCSA, NHTSA, FARS 1991-2001

3.2 Pedestrian Fatality Facts

The pedestrian fatality related data from all crashes from the *Traffic Safety Facts 2001* and *Traffic Safety Facts 2001: Pedestrians* provided the following information that served as a basis for formulating the hypotheses shown on page 6:

- On average, a pedestrian was killed in a traffic crash every 108 minutes;
- Nearly one-fifth (19 percent) of all traffic fatalities under age 16 were pedestrians;
- Older pedestrians (ages 70+) accounted for 18 percent of all pedestrian fatalities in 2001. In 2000, the death rate for this age group, both males and females, was 3.17 per 100,000 population – higher than for any other age group;
- Over three-fourths (79 percent) of pedestrian fatalities occur at non-intersection locations;
- Nearly one-half (48 percent) of all pedestrian fatalities occurred on Friday, Saturday, or Sunday: 17 percent, 18 percent, and 13 percent respectively;
- Alcohol involvement (BAC ≥ 0.01) – either for the driver or for the pedestrian – was reported in 47 percent of the traffic crashes that resulted in pedestrian fatalities; and,
- Of the pedestrians involved, 33 percent were intoxicated, with blood alcohol concentration (BAC) of 0.08 grams per deciliter (g/dl) or greater. The intoxication rate for the drivers involved was only 15 percent, less than one-half

the rate for pedestrians. In 6 percent of the crashes, both the driver and the pedestrian were intoxicated (BAC ≥ 0.08).

Based on the FARS data, and a review of the FARS data elements, *Traffic Safety Facts 2001,* and *Traffic Safety Facts 2001: Pedestrians*, the following hypotheses were formulated for testing in further analysis of pedestrian fatalities in **single vehicle crashes**:

- Most pedestrian fatalities occur on highways involving a single vehicle;
- Alcohol involvement among pedestrians is a major factor;
- More pedestrian fatalities occur at non-intersection locations;
- More pedestrian fatalities occur on urban roadways;
- Most pedestrian fatalities occur at night; and,
- Fatality rates among older pedestrians (ages 70+) are the highest.

3.3 Analytical Tools

Review of FARS data indicates further in-depth analysis is required either using the data elements individually or by combining the data elements to look for possible causes of pedestrian fatalities in **single vehicle crashes**. This report focuses on the following major areas:

- Alcohol involvement of driver and pedestrian;
- Alcohol involvement of drivers and pedestrians and time of day;
- Alcohol involvement and age groups of drivers and pedestrians;
- Light condition at time of crash;
- Pedestrian location;
- Time of day and day of the week;
- Pedestrian and driver action at the time of the crash;
- Rural/urban road type;
- Hit-and-Run crashes; and,
- Speeding as a factor in the crash.

4. FINDINGS

Detailed results are presented based on several of the FARS data elements used in the analysis of pedestrian fatalities in **single vehicle crashes**. Some of the findings indicate possible causes for pedestrian fatalities in single vehicle crashes. These are some of the areas that need attention and focus in developing safety programs for pedestrians and in the design of crash prevention programs. Additional data not shown in this section are given in Appendix B. Additional information relating to pedestrian fatalities can be found in the following two publications released each year by the National Center for Statistics and Analysis on the web at:

Traffic Safety Facts 2001 – Pedestrians:
http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2001/2001pedestrian.pdf

Traffic Safety Facts 2001:
http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/TSF2001.pdf

Information about the NHTSA pedestrian safety program can be found on the web at:

http://www.nhtsa.dot.gov/people/injury/pedbimot/ped/

4.1 Pedestrian Fatalities by Hit-and-Run and Year

Table 2 shows the number and percent of pedestrian fatalities by hit-and-run and year from 1998 to 2001. A hit-and-run crash is defined as a crash where a vehicle is a contact vehicle in the crash and does not stop to render aid (this includes drivers who flee the scene on foot). The numbers indicate that a majority of the pedestrian fatalities occur in crashes where no hit-and-run was involved. However, about 18 percent of the pedestrian fatalities in single vehicle crashes were as a result of a hit-and-run crash. The proportion of hit-and-run crashes where a pedestrian was killed has not shown any change between 1998 and 2001.

Table 2
Pedestrian Fatalities in SV Crashes by Hit-and-Run and Year

Hit-and-Run	Year							
	1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%
No Hit-and-Run	4,003	83	3,746	83	3,612	83	3,676	82
Hit Pedestrian	796	17	766	17	723	17	781	18
Hit Parked Vehicle or Object	2	0	4	0	5	0	4	0
Total	4,801	100	4,516	100	4,340	100	4,461	100

Source: NCSA, NHTSA, FARS 1998-2001

4.2 Pedestrian Fatalities by Day of the Week and Year

Table 3 shows the number and percent of pedestrian fatalities by day of the week from 1998 to 2001. The data show more than one-third of the pedestrian fatalities occur on Friday and Saturday with most pedestrian fatalities occurring on Saturday compared to any other day of the week.

Table 3
Pedestrian Fatalities in SV Crashes by Day of the Week and Year

Day of the Week	Year							
	1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%
Sunday	634	13	591	13	600	14	567	13
Monday	620	13	582	13	549	13	579	13
Tuesday	653	14	584	13	579	13	550	12
Wednesday	619	13	593	13	545	13	587	13
Thursday	637	13	617	14	597	14	618	14
Friday	790	16	761	17	705	16	764	17
Saturday	846	18	787	17	764	18	792	18
Unknown	2	0	1	0	1	0	4	0
Total	4,801	100	4,516	100	4,340	100	4,461	100

Source: NCSA, NHTSA, FARS 1998-2001

4.3 Pedestrian Fatalities by Light Condition and Year

Almost two-thirds of the pedestrian fatalities occurred when the light condition was either dark or dark but lighted. Comparing these numbers with data from Table 5 shows similarities between the time of day and the light condition. About one-third of the fatalities occurred during daytime. Table 4 shows the number of pedestrian fatalities from 1998 to 2001 by light condition and year.

Table 4
Pedestrian Fatalities in SV Crashes by Light Condition and Year

Light Condition	Year			
	1998	1999	2000	2001
Daylight	1,614	1,407	1,391	1,428
Dark	1,446	1,430	1,321	1,360
Dark but Lighted	1,542	1,464	1,458	1,457
Dawn	74	87	67	77
Dusk	109	113	83	92
Unknown	16	15	20	47
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.4 Pedestrian Fatalities by Time of Day and Year

Analysis of the data show that over 25 percent of the pedestrian fatalities occurred between 6 PM and 9 PM, which is the time frame with the highest number of pedestrian fatalities among any time of day groups. The next highest number of fatalities occurs between 9 PM and midnight. Table 5 below shows the number of pedestrian fatalities by time of day and year. The distribution of pedestrian fatalities by time of day has not changed significantly from 1998 to 2001.

Table 5
Pedestrian Fatalities in SV Crashes by Time of Day and Year

Time of Day	Year			
	1998	1999	2000	2001
Midnight to 3 AM	521	491	484	471
3 AM to 6 AM	293	320	288	326
6 AM to 9 AM	393	411	394	398
9 AM to Noon	320	299	253	270
Noon to 3 PM	385	295	355	347
3 PM to 6 PM	640	571	539	575
6 PM to 9 PM	1,211	1,145	1,127	1,111
9 PM to Midnight	1,007	956	869	933
Unknown	31	28	31	30
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.5 Pedestrian Fatalities by Month and Year

Review of the data from Table 6 show that pedestrian fatalities are more likely in the months of October, November and December. In 2001, these three months combined accounted for almost one-third (32 percent) of the pedestrian fatalities.

Table 6
Pedestrian Fatalities in SV Crashes by Month and Year

Month	Year			
	1998	1999	2000	2001
January	429	403	395	364
February	389	306	330	330
March	340	361	362	347
April	339	345	311	316
May	327	345	329	317
June	349	323	314	288
July	359	375	290	330
August	392	371	350	369
September	412	345	400	376
October	497	452	422	475
November	489	433	409	480
December	479	457	428	469
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.6 Pedestrian Fatalities by Roadway Function Class and Year

In 2001, urban roads accounted for almost two-thirds (64 percent) of pedestrian fatalities with one-third of those on other principal arterial roads. Urban principal arterial roads (other than interstates and expressways) accounted for over 25 percent of the pedestrians killed in single vehicle crashes. Table 7 shows the number of pedestrian fatalities by roadway function class from 1998 to 2001. *The number of unknowns in 2001 could change with release of the final FARS 2001 file*.

Table 7
Pedestrian Fatalities in SV Crashes by Roadway Function Class and Year

Roadway Function Class	Year			
	1998	1999	2000	2001
Rural Roadway Total	**1,491**	**1,407**	**1,250**	**1,272**
Principal Arterial Interstate	149	143	138	150
Principal Arterial Other	334	280	222	249
Minor Arterial	226	225	182	212
Major Collector	312	286	261	284
Minor Collector	94	92	79	73
Local Road or Street	352	345	318	262
Unknown	24	36	50	42
Urban Roadway Total	**3,279**	**3,090**	**3,005**	**2,850**
Principal Arterial Interstate	249	246	252	260
Principal Arterial Other Expressways or Freeways	157	155	158	174
Other Principal Arterial	1,268	1,143	1,146	1,032
Minor Arterial	732	671	614	572
Collector	194	170	172	152
Local Road or Street	665	682	625	608
Unknown	14	23	38	52
Unknown Roadway Type	**31**	**19**	**85**	**339**
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.7 Pedestrian Fatalities by Pedestrian Location and Year

Non-intersections accounted for over three-fourths of pedestrian fatalities in **single vehicle crashes**. Over 40 percent of all pedestrian fatalities occur at intersections with no crosswalk. Table 8 shows the number of pedestrian fatalities by pedestrian location, from 1998 to 2001. In fact, over half of all pedestrian fatalities at non-intersections were on roads without crosswalks. *The number of unknowns in 2001 could change with release of the final FARS 2001 file.*

Table 8
Pedestrian Fatalities in SV Crashes by Pedestrian Location and Year

(Non-Motorist Location) Pedestrian Location	Year			
	1998	1999	2000	2001
Total Intersection Location	**1,069**	**938**	**989**	**940**
In Crosswalk	354	365	378	380
On Roadway, Not in Crosswalk	209	165	175	179
On Roadway, Crosswalk not Available	180	146	147	122
On Roadway, Crosswalk Availability Unknown	281	230	253	223
Not on Roadway	26	21	20	18
Unknown	19	11	16	18
Total Non-Intersection Location	**3,713**	**3,556**	**3,330**	**3,474**
In Crosswalk	41	36	43	38
On Roadway, Not in Crosswalk	539	484	516	601
On Roadway, Crosswalk not Available	2,032	1,924	1,736	1,834
On Roadway, Crosswalk Availability Unknown	697	663	617	591
In Parking Lane	11	9	10	6
On Road Shoulder	202	267	195	207
Bike Path	2	1	0	0
Outside Traffic-way	42	38	42	36
Other, Not on Roadway	130	115	149	144
Unknown	17	19	22	17
Unknown Location	**19**	**22**	**21**	**47**
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.8 Age and Sex of Driver Involved when a Pedestrian was Killed in 2001

Almost two-thirds of the time, male drivers were likely to be involved when a pedestrian was killed in single motor vehicle crash. Among all age groups, 20-29-year-old age group drivers were the most involved when a pedestrian fatality occurred. Male drivers were about 2.5 times as likely to be involved when a pedestrian was killed than female drivers. Among male (48 percent) and female (47 percent) drivers, 20-39-year-old age drivers accounted for over 40 percent of the drivers involved when a pedestrian was killed. The number of drivers with unknown age is high, which may be attributable to the hit-and-run crashes in which the driver might have left the scene of the crash. Table 9 shows the age and sex of the driver involved when a pedestrian fatality occurred in 2001. Data for 1998, 1999 and 2000 are shown in Appendix B. *The number of unknowns in 2001 could change with release of the final FARS 2001 file.*

Table 9
Age and Sex of Driver Involved when a Pedestrian was Killed in SV Crashes in 2001

Age of Driver Involved	Sex of Driver Involved			Total
	Male	Female	Unknown	
< 20	271	125	0	396
20-29	693	291	1	985
30-39	655	232	0	887
40-49	526	215	1	742
50-59	306	117	0	423
> 59	303	126	0	429
Unknown	47	5	440	492
Total	2,801	1,111	442	4,354

Source: NCSA, NHTSA, FARS 2001

4.9 Driver Survival Status when a Pedestrian was Killed, by Year

Table 10 shows driver survival status when a pedestrian was killed from 1998 to 2001. As seen from the data, almost all the drivers involved with a pedestrian fatality survived in the crash. The numbers show that most serious injuries happen to the pedestrians.

Table 10
Driver Survival Status when a Pedestrian was Killed in SV Crashes, by Year

Survival Status of Driver	Year			
	1998	1999	2000	2001
Survived	4,694	4,385	4,240	4,347
Killed	8	15	8	7
Total	4,702	4,400	4,248	4,354

Source: NCSA, NHTSA, FARS 1998-2001

4.10 Pedestrian Fatalities by Age Group and by Pedestrian Blood Alcohol Concentration (BAC) in 2001

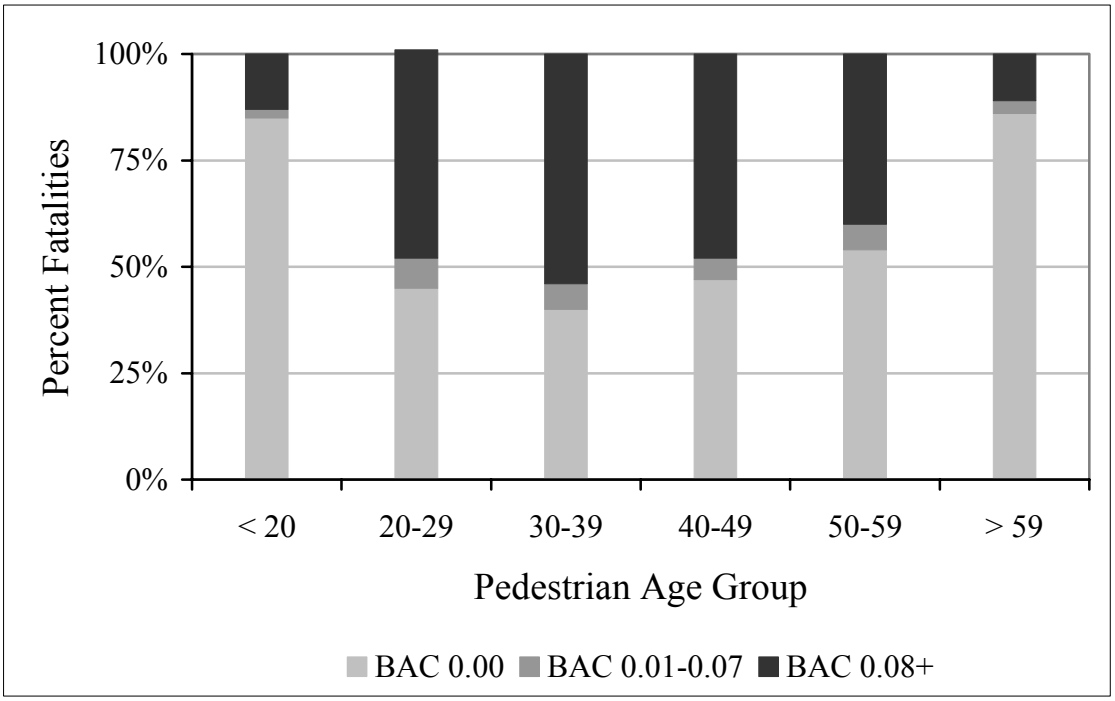
The National Highway Traffic Safety Administration defines a fatal traffic crash as being alcohol-related if either a driver or a non-occupant (e.g., a pedestrian) had a blood alcohol concentration (BAC) of 0.01 grams per deciliter (g/dl) or greater in a police reported traffic crash. Persons with a BAC of 0.08 g/dl or greater involved in fatal crashes are considered to be intoxicated as per the legal limit of intoxication in most states. BAC values have been assigned to drivers involved in fatal crashes when alcohol test results are unknown. A complete description of the statistical procedures used for assigning unknown BACs in FARS can be found in two technical reports available from the National Center for Statistics and Analysis (Reference No. 2 & 3).

The percent of fatally injured pedestrians who had been drinking in 2001 was 37 percent. However, a majority of the fatally injured pedestrians who had been drinking were intoxicated with a BAC $\geq$ 0.08. In 2001, there were 1,648 fatally injured pedestrians who had been drinking (BAC $\geq$ 0.01), of which 1,448 (88 percent) pedestrians killed were intoxicated (BAC $\geq$ 0.08). These numbers indicate an underlying problem because of the high proportion of pedestrian fatalities with BACs $\geq$ 0.08. Table 11 shows the number and percent of fatally injured pedestrians by their BAC in 2001. Data for 1998, 1999 and 2000 are shown in Appendix B.

Nearly two-thirds (60 percent) of the pedestrians killed in 30-39-year-old age group were alcohol involved (BAC $\geq$ 0.01). Among all age groups 30-39-year-old age group had the highest percentage of alcohol involvement. There were more pedestrians killed with alcohol involvement in the 20-29, 30-39 and 40-49-year-old age groups than without alcohol. The highest intoxication levels (i.e., BAC $\geq$ 0.08) of alcohol were in the 30-39-year-old age group (54 percent) followed by the 20-29 and 40-49-year-old age groups, with 49 percent and 48 percent respectively.

Table 11 Pedestrian Fatalities in SV Crashes by Age Group and Pedestrian BAC in 2001									
Age Group	**BAC 0.00**		**BAC 0.01-0.07**		**BAC ≥ 0.08**		**BAC ≥ 0.01**		**Total**
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
< 20	617	85	14	2	93	13	107	15	724
20-29	214	45	32	7	235	49	266	55	480
30-39	266	40	37	6	354	54	391	60	657
40-49	375	47	41	5	382	48	423	53	797
50-59	302	54	34	6	227	40	261	46	563
> 59	1,014	86	37	3	132	11	170	14	1,183
Unknown	27	47	5	8	26	45	30	53	57
Total	2,813	63	200	4	1,448	32	1,648	37	4,461
Source: NCSA, NHTSA, FARS 2001									

Chart 2: Pedestrian Fatalities by Age Group and Pedestrian BAC in 2001



Source: NCSA, NHTSA, FARS 2001

4.11 Pedestrian Fatalities by Sex and Pedestrian BAC in 2001

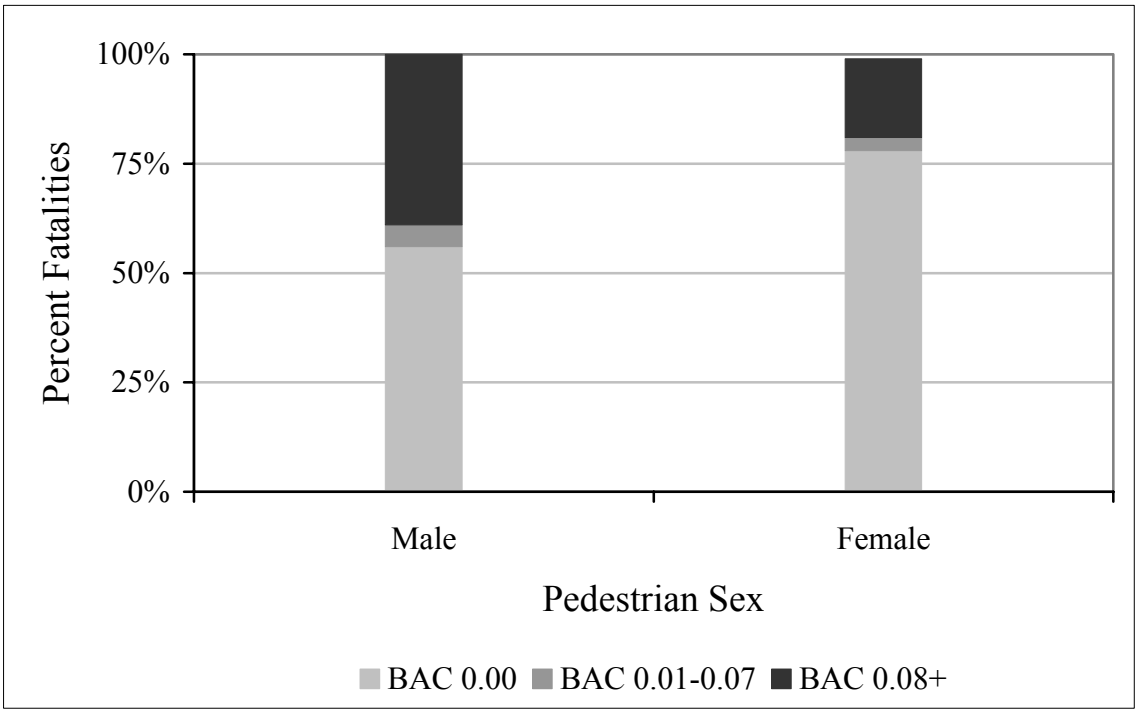
Table 12 shows the number and percentage of fatally injured pedestrians with alcohol involvement (BAC ≥ 0.01) in 2001 by sex of the pedestrian. Fatally injured male pedestrians with alcohol involvement (BAC ≥ 0.01) were twice as likely to have alcohol involvement than female pedestrians. Data for 1998, 1999 and 2000 are shown in Appendix B.

Table 12
Pedestrian Fatalities in SV Crashes by Sex and Pedestrian BAC in 2001

Sex	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Male	1,732	56	155	5	1,194	39	1,350	44	3,081
Female	1,076	78	44	3	253	18	297	22	1,373
Unknown	5	76	0	3	2	21	2	24	7
Total	2,813	63	200	4	1,448	32	1,648	37	4,461

Source: NCSA, NHTSA, FARS 2001

Chart 3: Pedestrian Fatalities by Sex and Pedestrian BAC in 2001



Source: NCSA, NHTSA, FARS 2001

4.12 Pedestrian Fatalities by Time of Day and Pedestrian BAC in 2001

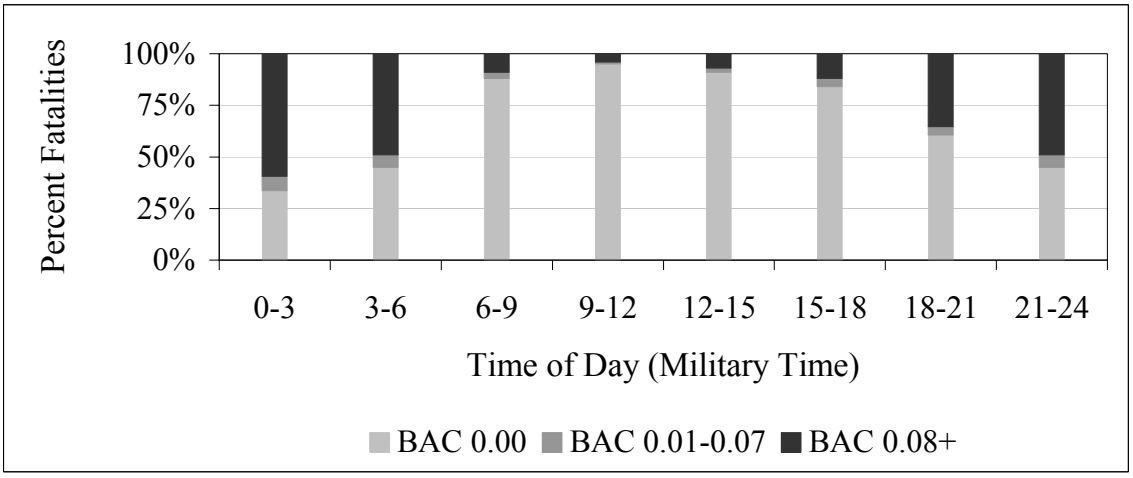
Review of the data from Table 13 show two-thirds of the pedestrian fatalities between midnight and 3 AM were alcohol involved. More than half of the pedestrian fatalities between 9 PM and midnight and from 3 AM to 6 AM were alcohol involved. In fact, 60 percent of the pedestrians killed between midnight and 3 AM were intoxicated compared to almost half of the pedestrians killed between 9 PM and midnight. Almost 25 percent of the pedestrian fatalities occurred between 6 PM and 9 PM. Data for 1998, 1999 and 2000 are shown in Appendix B.

Table 13
Pedestrian Fatalities in SV Crashes by Time of Day and Pedestrian BAC in 2001

Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	158	34	32	7	281	60	313	66	471
3 AM to 6 AM	147	45	19	6	160	49	179	55	326
6 AM to 9 AM	349	88	12	3	38	9	49	12	398
9 AM to Noon	255	95	3	1	12	4	15	5	270
Noon to 3 PM	317	91	5	2	24	7	30	9	347
3 PM to 6 PM	481	84	24	4	70	12	94	16	575
6 PM to 9 PM	669	60	50	4	392	35	442	40	1,111
9 PM to Midnight	419	45	53	6	461	49	514	55	933
Unknown	17	57	1	4	12	39	13	43	30
Total	2,813	63	200	4	1,448	32	1,648	37	4,461

Source: NCSA, NHTSA, FARS 2001

Chart 4: Pedestrian fatalities by Time of Day and Pedestrian BAC in 2001



Source: NCSA, NHTSA, FARS 2001

4.13 Age and BAC of Driver when a Pedestrian was Killed in 2001

Table 14 shows the number and percent of drivers involved by age group in 2001 when a pedestrian was killed. Overall, 18 percent of the drivers involved had some alcohol involvement when a pedestrian was killed. Fourteen percent of the drivers involved were intoxicated with a BAC≥0.08. Among all age groups, 30-39-year-old age group drivers involved had the highest level of alcohol involvement. Data for 1998, 1999 and 2000 are shown in Appendix B. *The number of unknowns in 2001 could change with release of the final FARS 2001 file.*

Table 14
Age and BAC of Driver when a Pedestrian was Killed in SV Crashes in 2001

Age Group	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
< 20	350	88	16	4	30	8	46	12	396
20-29	798	81	49	5	138	14	187	19	985
30-39	710	80	39	4	138	16	177	20	887
40-49	624	84	25	3	93	13	118	16	742
50-59	379	90	8	2	36	9	44	10	423
> 59	400	93	9	2	20	5	29	7	429
Unknown	297	60	50	10	145	30	196	40	492
Total	3,557	82	195	4	602	14	797	18	4,354

Source: NCSA, NHTSA, FARS 2001

4.14 Time of Day and BAC of Driver when a Pedestrian was Killed in 2001

Drivers involved between midnight and 3 AM when a pedestrian was killed were most likely to have alcohol involvement (BAC ≥ 0.01) compared to any other time of day. Table 15 shows the number and percent of drivers involved by time of day and driver BAC when a pedestrian was killed in 2001. Over one-third (38 percent) of the drivers involved between midnight and 3 AM were alcohol involved (BAC ≥ 0.01), followed by 3 AM to 6 AM with 31 percent of the drivers with alcohol involvement. Data for 1998, 1999 and 2000 are shown in Appendix B.

Table 15
Time of Day and BAC of Driver when a Pedestrian was Killed in SV Crashes, in 2001

Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	288	62	47	10	131	28	177	38	465
3 AM to 6 AM	222	69	21	6	78	24	99	31	321
6 AM to 9 AM	358	93	9	2	19	5	28	7	386
9 AM to Noon	245	96	3	1	7	3	10	4	255
Noon to 3 PM	309	93	5	1	18	5	22	7	331
3 PM to 6 PM	510	90	14	3	40	7	55	10	565
6 PM to 9 PM	904	83	47	4	136	13	183	17	1,087
9 PM to Midnight	703	77	47	5	163	18	211	23	914
Unknown	17	58	3	10	10	32	13	42	30
Total	3,557	82	195	4	602	14	797	18	4,354

Source: NCSA, NHTSA, FARS 2001

4.15 Sex and BAC of Driver when a Pedestrian was Killed in 2001

Table 16 shows the number and percent of drivers involved by their sex and BAC when a pedestrian was killed in 2001. Male drivers were about 1.4 times as likely than female drivers to have alcohol involvement when a pedestrian was killed. Overall, over 80 percent of the drivers did not have alcohol when involved in the crash. Data for 1998, 1999 and 2000 are shown in Appendix B. *The number of unknowns in 2001 could change with release of the final FARS 2001 file.*

Table 16
Sex and BAC of Driver when a Pedestrian was Killed in SV Crashes in 2001

Sex	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Male	2,310	82	115	4	376	13	491	18	2,801
Female	982	88	33	3	96	9	129	12	1,111
Unknown	264	60	47	11	130	30	178	40	442
Total	3,557	82	195	4	602	14	797	18	4,354

Source: NCSA, NHTSA, FARS 2001

4.16 Alcohol Involvement in Fatal Pedestrian Crashes in 2001

Alcohol involvement in **single vehicle crashes** – either for the driver or for the pedestrian – was reported in 47 percent of the traffic crashes that resulted in pedestrian fatalities. Of the pedestrians involved, 33 percent were intoxicated, with a blood alcohol concentration (BAC) of 0.08 grams per deciliter (g/dl) or greater. The intoxication rate for the drivers involved was 14 percent, less than one-half that for the pedestrians. In 6 percent of the crashes, both the driver and the pedestrian were intoxicated. These numbers indicate a problem of higher alcohol involvement among pedestrians than drivers involved in fatal motor vehicle crashes. Table 17 shows percent of alcohol involvement in fatal pedestrian crashes in 2001. Data for 1998, 1999 and 2000 are shown in Appendix B.

Table 17
Alcohol Involvement in Fatal Pedestrian SV Crashes in 2001

Pedestrian Alcohol Involvement	Driver Alcohol Involvement							
	BAC 0.00		BAC 0.01-0.07		BAC≥0.08		Total	
	No.	%	No.	%	No.	%	No.	%
BAC 0.00	2,345	53	98	2	308	7	2,751	63
BAC 0.01-0.07	154	3	10	0	34	1	197	4
BAC≥0.08	1,094	25	87	2	260	6	1,442	33
Total	3,593	82	195	4	602	14	4,390	100

Source: NCSA, NHTSA, FARS 2001

4.17 Driver Related Factors when a Pedestrian was Killed, by Year

Table 18 shows the number of drivers involved when a pedestrian was killed with the police-reported driver-related factors by year. The driver factors shown are some of the major factors that were reported by the police on their report. The data show that most of the drivers did not have any driver-related factors mentioned in the police accident report. All other driver factors are combined together consisting of about 75 other driver-related factors since the individual numbers were too small to list. Some of the factors relating to the driver like being inattentive, failure to keep in proper lane, failure to yield right of way, driving too fast for conditions and hit-and-run vehicle driver indicate the risks pedestrians encounter on roadways due to the driver actions. The sum of the numbers is greater than total drivers involved, as more than one factor may be present for the same driver.

Table 18
Driver Related Factors when a Pedestrian was Killed in SV Crashes by Year

Driver Related Factors	Year			
	1998	1999	2000	2001
None	2,494	2,237	2,217	2,260
Inattentive	309	330	304	312
Failure to Keep in Proper Lane	247	278	280	263
Operating a Vehicle in Erratic and Reckless Manner	149	137	139	148
Failure to Yield Right-of Way	334	328	337	297
Driving too Fast for Conditions	332	347	283	311
Hit and Run Vehicle Driver	734	712	652	691
Non-Traffic Violation (offense committed without malice)	190	187	136	141
Other Non-Moving Traffic Violations	231	234	210	167
All Other Factors	822	848	784	865
Total Drivers Involved	4,702	4,400	4,248	4,354

Source: NCSA, NHTSA, FARS 1998-2001

4.18 Pedestrian Fatalities by Posted Speed Limit and Year

Table 19 shows the number of pedestrian fatalities by posted speed limit and year. Most pedestrian fatalities in **single vehicle crashes** occur on roads with a posted speed limit between 30-39 miles per hour followed by a posted speed limit of 50 and over miles per hour.

Table 19
Pedestrian Fatalities in SV Crashes by Posted Speed Limit and Year

Posted Speed Limit	Year			
	1998	1999	2000	2001
Less than 30	491	476	462	458
30-39	1,507	1,397	1,377	1,337
40-49	1,190	1,108	1,008	1,078
50 and Over	1,424	1,351	1,322	1,341
Unknown	189	184	171	247
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.19 Vehicles with Speeding as a Factor when a Pedestrian was Killed, by Year

NHTSA considers a crash speeding-related if the driver was charged with a speeding-related offense or if an officer indicated that racing, driving too fast conditions, or exceeding the posted speed limit was a contributing factor in the crash. Most of the vehicles involved when a pedestrian was killed did not have speeding as a factor recorded in the crash. Less than 10 percent of the vehicles had speeding recorded as a factor in the crash. Table 20 shows the number and percent of vehicles involved by year with speeding as a factor in the crash.

Table 20
Drivers of Vehicles with Speeding as a Factor When a Pedestrian was Killed in SV Crashes, by Year

Year	Speeding Factor				Total
	Speeding		Not Speeding		
	Number	Percent	Number	Percent	
1998	336	7	4,405	93	4,741
1999	351	8	4,095	92	4,446
2000	291	7	3,992	93	4,283
2001	317	7	4,073	93	4,390

Source: NCSA, NHTSA, FARS 1998-2001

4.20 Pedestrian Fatalities by Related Factors and Year

Table 21 shows the number of pedestrian fatalities by related factor and year. About 30 percent of the pedestrian fatalities were related to improper crossing of the roadway or intersection. Over one-fourth of the fatalities were related to walking, playing, working, etc., in the roadway. About 15 percent of the pedestrian fatalities were related to failure to yield right-of-way as a factor in the crash followed by about 14 percent of the fatalities related to darting or running on the road. The sum of the numbers is greater than total pedestrians killed as more than one factor may be present for the same pedestrian.

Table 21
Pedestrian Fatalities in SV Crashes by Related Factors and Year

Related Factors	Year			
	1998	1999	2000	2001
Improper crossing of roadway or intersection	1,449	1,420	1,322	1,297
Walking, playing, working, etc., in roadway	1,401	1,259	1,074	1,114
Failure to yield right of way	667	629	624	647
Darting or running into road	613	618	571	521
Not visible	377	368	426	423
Inattentive (talking, eating, etc.)	126	102	114	139
Failure to obey traffic signal, signals, or officer	64	68	77	82
Other factors	212	231	204	215
None reported	1,172	1,110	1,186	1,283
Unknown	80	88	48	100
Total	4,801	4,516	4,340	4,461

Source: NCSA, NHTSA, FARS 1998-2001

4.21 Ranking of State Pedestrian Fatality Rates in 2001

Table 22 shows the pedestrian fatality rates per 100,000 US resident population based on 2001 data for the top ten ranked states based on fatality rates. New Mexico with a fatality rate of 3.94 ranked first followed by Arizona with a rate of 3.00. The rates show Florida, with the second highest number of pedestrian fatalities in 2001, ranked third among states based on the pedestrian fatality rates and resident population. Rates for the other states can be found in Table 113 of the Traffic Safety Facts 2001 (reference 4).

Table 22
Ranking of State Pedestrian Fatality Rates from All Crashes in 2001

Rank	State	Pedestrians Killed	Population (Thousands)	Pedestrian Fatality Rate per 100,000 Population
1	New Mexico	72	1,829	3.94
2	Arizona	159	5,307	3.00
3	Florida	489	16,397	2.98
4	South Carolina	108	4,063	2.66
5	Hawaii	30	1,224	2.45
6	Louisiana	98	4,465	2.19
7	Nevada	45	2,106	2.14
8	Delaware	17	796	2.14
9	Texas	449	21,325	2.11
10	Mississippi	59	2,858	2.06

Source: NCSA, NHTSA, Traffic Safety Facts 2001, Table 113

4.22 Pedestrian Fatality Rates by City

Table 23 shows the pedestrian fatality rates for the top ten cities based on the average of pedestrian fatalities from 1998-2000 along with the resident population of 100,000 or more for 2000. Out of the top 10 cities, 5 cities are in the state of Florida. Florida also has 3 cities with the highest pedestrian fatality rates of 7.66, 6.07 and 6.04. Almost one-third of the average total fatalities between 1998 and 2000 in the top four cities were pedestrian fatalities. Since the population for the cities was not available for 2001, rates are calculated based on 1998-2000 pedestrian fatalities. The fatality rates for the other cities are shown in Appendix B.

Table 23
Pedestrian Fatality Rates from All Crashes by City

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrian		Total from all Crashes	Pedestrian
1	Fort Lauderdale, FL	31	12	152,397	20.34	7.66
2	Miami, FL	60	22	362,470	16.65	6.07
3	Tampa, FL	58	18	303,447	19.22	6.04
4	Newark, NJ	39	14	273,546	14.26	5.24
5	Louisville, KY	53	13	256,231	20.68	5.20
6	Columbia, SC	25	6	116,278	21.79	5.16
7	Atlanta, GA	72	21	416,474	17.21	5.12
8	Detroit, MI	158	48	951,270	16.64	5.05
9	Clearwater, FL	14	5	108,787	12.56	4.90
10	Orlando, FL	33	9	185,951	17.93	4.66

Source: NCSA, NHTSA, FARS 1998-2000, US Census Bureau

Table 24 shows cities with 500,000 or more population in 2000 ranked by pedestrian fatality rates for the five cities with the highest fatality rates. Detroit is the only common city between Tables 23 and 24 based on the pedestrian fatality rate ranking.

Table 24
Pedestrian Fatality Rates from All Crashes by City – Highest Rate

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrian		Total from all Crashes	Pedestrian
1	Detroit, MI	158	48	951,270	16.64	5.05
2	Denver, CO	61	23	554,636	11.06	4.21
3	Phoenix, AZ	187	51	1,321,045	14.18	3.89
4	San Francisco, CA	52	30	776,733	6.65	3.82
5	Dallas, TX	169	42	1,188,580	14.22	3.51

Source: NCSA, NHTSA, FARS 1998-2000, US Census Bureau

Table 25 shows cities with 500,000 or more population in 2000 ranked by pedestrian fatality rates for the five cities with the lowest fatality rates.

Table 25
Pedestrian Fatality Rates from All Crashes by City – Lowest Rate

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrian		Total from all Crashes	Pedestrian
1	Seattle, WA	26	6	563,374	4.67	1.01
2	Indianapolis, IN	38	9	791,926	4.76	1.09
3	Columbus, OH	52	10	711,470	7.26	1.41
4	Milwaukee, WI	35	9	596,974	5.86	1.45
5	Oklahoma City, OK	63	9	506,132	12.51	1.78

Source: NCSA, NHTSA, FARS 1998-2000, US Census Bureau

5. CONCLUSIONS

The analysis described in this report could aid in the design of safety messages and countermeasure programs to reduce pedestrian fatalities. Most of the pedestrian fatalities in **single vehicle crashes** were associated with urban roads, nighttime crashes, male pedestrians and high alcohol use among pedestrians. There is not a single strategy that will reduce pedestrian fatalities – it is a comprehensive approach employing engineering, education and enforcement **with the focus on both driver and pedestrian**. NHTSA has been following some of these strategies in the past and will continue to disseminate program strategies, policies and messages based on these data.

This report does not analyze all variables within the FARS database and other data sources. Also, this analysis does not examine injury data from the General Estimates System (GES), which reports on persons injured resulting from motor vehicle crashes. Further analyses need to be undertaken by examining other variables within FARS and GES that may provide additional information describing other factors associated with pedestrian fatalities and injuries from motor vehicle crashes. NHTSA plans to conduct these analyses and report the findings.

5.1 Alcohol Involvement of Pedestrian and Driver

Alcohol involvement among pedestrians accounted for about 40 percent of all pedestrian fatalities. The alcohol involvement during nighttime motor vehicle crashes and among male pedestrians was even higher than 40 percent. Among all fatally injured pedestrians, most were found to be intoxicated. Alcohol involvement among drivers was 18 percent when a pedestrian fatality occurred. Both pedestrians and drivers can be made aware of the dangers of alcohol involvement for pedestrians.

5.2 Pedestrian Fatalities and Roadway Type

With almost two-thirds of all pedestrian fatalities occurring on urban roads, it is imperative that safety messages in the major urban metropolitan cities should highlight the risks involved for pedestrians from motor vehicle crashes.

5.3 Pedestrian Fatalities and Location

Since over three-fourths of the pedestrian fatalities occur at non-intersections, motor vehicle operators and pedestrians should be made aware of the necessity of sharing the public roadways in order to reduce pedestrian fatalities. This is especially necessary on roadways without crosswalks.

5.4 Pedestrian Fatalities by Light Condition and Time of Day

Dark and dark but lighted conditions accounted for almost two-thirds of the pedestrian fatalities. Nearly half of all pedestrian fatalities occurred between 6 PM and midnight. These may be related to the conspicuity of pedestrians for drivers of motor vehicles.

Messages indicating that pedestrians should wear clothing that is more visible during these light conditions and to be extremely careful while crossing or on the roadways may help alleviate this problem. Messages should also be directed to operators of motor vehicles to be cautious during these light conditions and to watch for pedestrians on roadways. Improving the lighting on the public roadways may also help alleviate the problem of conspicuity of pedestrians.

5.5 Pedestrian Fatalities by Hit-and-Run Crashes

Almost 20 percent of the pedestrian fatalities were a result of hit-and-run crashes. This information must be highlighted to the enforcement community and also to operators of motor vehicles to help reduce the number of pedestrian fatalities in hit-and-run motor vehicle crashes.

5.6 Driver Related Factors when a Pedestrian Fatality Occurred

Some of the factors relating to the driver like being inattentive (7 percent), failure to keep in proper lane (6 percent), failure to yield right of way (7 percent), driving too fast for conditions (7 percent) and hit-and-run vehicle driver (16 percent) indicate the risks pedestrians encounter on roadways due to the driver actions.

5.7 Pedestrian Fatalities by Related Factors in the Crash

Four of the major factors in the crash when a pedestrian was killed were actions relating only to the pedestrian. The factors recorded were:

- Improper Crossing of Roadway or Intersection (29 percent)
- Walking, Playing, Working, etc., in Roadway (25 percent)
- Failure to Yield Right-of-Way (14 percent)
- Darting or Running into Road (12 percent)

Work should be undertaken to better understand these factors and identify strategies, enforcement, education and engineering to reduce the problem among pedestrians.

5.8 Pedestrian Fatalities by State and City

Based on the pedestrian fatality rates per 100,000 US resident population, New Mexico had the highest fatality rate followed by Arizona among all states. In the ranking of cities based on pedestrian fatality rates, 5 of the top 10 cities were in Florida. The 3 cities with the highest fatality rates were in Florida.

6. APPENDIX A: Data Source

The following section gives information relating to the data source used in the analysis.

6.1 Fatality Analysis Reporting System (FARS)

The National Center for Statistics and Analysis (NCSA) collects and analyzes data, conducts research, and disseminates statistical information to support efforts by NHTSA and the highway safety community aimed at reducing deaths, injuries and economic losses resulting from motor vehicle crashes.

NCSA designed and developed the Fatality Analysis Reporting System (FARS) database, a national census of police-reported motor vehicle crashes resulting in fatal injuries. FARS compiles data from various sources on the location and circumstances of the crash, types of vehicles, and people involved. This system generates overall measures of highway safety, helps identify traffic safety problems, and provides a basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs.

The FARS system became operational in 1975. It contains a census of fatal motor vehicle traffic crashes within the 50 states and the District of Columbia and Puerto Rico.

A motor vehicle crash is a transport incident that involves a motor vehicle in transport, is not an aircraft incident or water craft incident, and does not include any harmful event involving a railway train in transport prior to involvement of a motor vehicle in transport.

To be included in FARS, a crash must involve a motor vehicle traveling on a traffic way customarily open to the public, and result in the death of a person (either an occupant of a vehicle or a non-motorist) within 30 days of the crash. Data elements contain specific information including the age of the person, license status of the driver, roadway type, motorcycle engine size, and land use (urban/rural). These data elements can be used in determining trends relating to fatal crashes. Thus, the FARS system provides a basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs.

NHTSA has contracted with an agency in each state to provide information on fatal crashes. Data on fatal motor vehicle traffic crashes are gathered from the state's own source documents and are coded on standard FARS forms. The analyst or analysts from the contract agency in each state obtain documents needed to complete the FARS forms, which generally include some or all of the following:

Police Accident Reports (PARS);
State vehicle registration files;
State driver-licensing files;
State Highway Department data;
Vital Statistics;
Death certificates;

Coroner/medical examiner reports;
Hospital medical records; and,
Emergency medical services reports.

The FARS file contains descriptions of each fatal crash reported. Each crash has more than 100 coded data elements that characterize the crash, the vehicles, and the people involved. The specific data elements may be modified slightly at times, in response to users' needs and highway safety emphasis areas.

All data elements are reported on one of the following forms:

The Accident Form: This form records information about the time and location of the crash, the first harmful event in the crash, whether it is a hit-and-run crash, whether a school bus was involved, and the number of vehicles and people involved. Information on the weather conditions, roadway surface conditions, geometric profiles of the highways, the geographic location of the crash including the route information as well as the presence of the traffic control devices is also recorded in this form. Roadway information such as the functional classification, route, National Highway System (NHS) relation, land use, the number of lanes, and the flow of traffic at the site of the crash is recorded on this form.

The Vehicle and Driver Form: These forms include the data for each vehicle and driver involved in the fatal crash. The data include the vehicle type, the initial and principal points of impact, the most harmful event, and the driver's license status.

The Person Form: This form contains data on each person involved in the fatal crash. The data include the age, gender, role (driver, passenger, non-motorist), the severity of the injuries sustained, and the restraint usage characteristics.

FARS data can be used to answer a myriad of questions on the safety of vehicles, drivers, pedestrians, traffic situations, roadways and environmental conditions. But the data cannot by themselves be used to calculate the rates to find trends over a period of time based on exposure data. For example, FARS data can be used in evaluating the following:

Speed limit as a factor in fatal crashes;
Fatalities by zip code, region, county, or state;
Fatal crashes by land use categories (urban or rural);
Fatalities by type of roadway;
Pedestrian fatalities by zip code, region, county or state;
Fatalities by vehicle type (passenger car or motorcycle);
Fatalities by age group; and,
Fatalities in various weather or road surface conditions.

NCSA has developed a variety of reports and fact sheets using the information from FARS. Some are produced annually. Examples of the fact sheets and reports include:

Traffic Safety Facts: An annual compilation of data on motor vehicle crashes;

Motor Vehicle Traffic Crashes as a leading cause of death in the US, 1997: A report examining the status of fatalities in motor vehicle crashes compared to the other causes of death;

Traffic Safety Facts – Pedestrians: An annual compilation of data on pedestrians in motor vehicle crashes; and,

Traffic Safety Facts – Alcohol: An annual compilation of data on the effects and involvement of alcohol in motor vehicle crashes.

Additional information on traffic safety facts, FARS and other publications can be obtained from the NHTSA's website at:

http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/

7. APPENDIX B: Additional Data

Table B-1
Age and Sex of Driver Involved when a Pedestrian was Killed in SV Crashes in 1998

Age of Driver Involved	Sex of Driver Involved			
	Male	Female	Unknown	Total
< 20	316	148	0	464
20-29	822	316	0	1,138
30-39	690	252	0	942
40-49	589	196	1	786
50-59	335	121	0	456
> 59	347	119	0	466
Unknown	48	2	400	450
Total	3,147	1,154	401	4,702

Source: NCSA, NHTSA, FARS 1998

Table B-2
Age and Sex of Driver Involved when a Pedestrian was Killed in SV Crashes in 1999

Age of Driver Involved	Sex of Driver Involved			
	Male	Female	Unknown	Total
< 20	306	119	0	425
20-29	747	278	0	1,025
30-39	636	255	0	891
40-49	481	204	0	685
50-59	365	119	0	484
> 59	329	129	0	458
Unknown	39	4	389	432
Total	2,903	1,108	389	4,400

Source: NCSA, NHTSA, FARS 1999

Table B-3
Age and Sex of Driver Involved when a Pedestrian was Killed in SV Crashes in 2000

Age of Driver Involved	Sex of Driver Involved			
	Male	Female	Unknown	Total
< 20	294	126	0	420
20-29	711	267	0	978
30-39	605	261	0	866
40-49	486	182	1	669
50-59	328	123	0	451
> 59	332	109	0	441
Unknown	40	1	382	440
Total	2,796	1,069	383	4,248

Source: NCSA, NHTSA, FARS 2000

Table B-4
Pedestrian Fatalities in SV Crashes by Age Group and Pedestrian BAC in 1998

Age Group	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
< 20	720	87	20	2	88	11	108	13	828
20-29	206	43	29	6	247	51	276	57	482
30-39	318	41	49	6	410	53	459	59	777
40-49	329	41	57	7	412	52	469	59	798
50-59	295	56	26	5	207	39	233	44	528
> 59	1,117	83	52	4	175	13	227	17	1,343
Unknown	24	52	2	4	20	43	21	48	45
Total	3,008	63	235	5	1,558	32	1,793	37	4,801

Source: NCSA, NHTSA, FARS 1998

Table B-5
Pedestrian Fatalities in SV Crashes by Age Group and Pedestrian BAC in 1999

Age Group	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
< 20	671	86	19	2	94	12	113	14	784
20-29	203	45	30	7	222	49	252	55	455
30-39	262	37	37	5	405	58	442	63	704
40-49	342	45	35	5	383	50	418	55	760
50-59	280	53	24	5	227	43	252	47	532
> 59	1,030	83	34	3	177	14	210	17	1,240
Unknown	24	59	1	2	16	39	17	41	41
Total	2,812	62	180	4	1,524	34	1,705	38	4,516

Source: NCSA, NHTSA, FARS 1999

Table B-6
Pedestrian Fatalities in SV Crashes by Age Group and Pedestrian BAC in 2000

Age Group	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
< 20	655	89	15	2	69	9	83	11	738
20-29	209	45	24	5	227	49	250	55	459
30-39	248	38	44	7	354	55	398	62	646
40-49	336	43	37	5	406	52	443	57	779
50-59	304	56	28	5	209	39	237	44	541
> 59	958	84	44	4	136	12	180	16	1,138
Unknown	17	42	3	7	20	51	23	58	39
Total	2,726	63	194	4	1,420	33	1,614	37	4,340

Source: NCSA, NHTSA, FARS 2000

Table B-7
Pedestrian Fatalities in SV Crashes by Sex and Pedestrian BAC in 1998

Sex	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Male	1,804	56	175	5	1,264	39	1,439	44	3,243
Female	1,205	77	60	4	294	19	353	23	1,558
Total	3,008	63	235	5	1,558	32	1,793	37	4,801

Source: NCSA, NHTSA, FARS 1998

Table B-8 Pedestrian Fatalities in SV Crashes by Sex and Pedestrian BAC in 1999									
Sex	**BAC 0.00**		**BAC 0.01-0.07**		**BAC ≥ 0.08**		**BAC ≥ 0.01**		**Total**
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Male	1,743	55	131	4	1,275	40	1,406	45	3,149
Female	1,068	78	49	4	249	18	298	22	1,366
Unknown	1	100	0	0	0	0	0	0	1
Total	2,812	62	180	4	1,524	34	1,705	38	4,516
Source: NCSA, NHTSA, FARS 1999									

Table B-9 Pedestrian Fatalities in SV Crashes by Sex and Pedestrian BAC in 2000									
Sex	**BAC 0.00**		**BAC 0.01-0.07**		**BAC ≥ 0.08**		**BAC ≥ 0.01**		**Total**
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Male	1,646	56	142	5	1,164	39	1,306	44	2,952
Female	1,080	78	52	4	256	18	308	22	1,388
Total	2,726	63	194	4	1,420	33	1,614	37	4,340
Source: NCSA, NHTSA, FARS 2000									

Table B-10 Pedestrian Fatalities in SV Crashes by Time of Day and Pedestrian BAC in 1998									
Time of Day	**BAC 0.00**		**BAC 0.01-0.07**		**BAC ≥ 0.08**		**BAC ≥ 0.01**		**Total**
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Midnight to 3 AM	141	27	47	9	333	64	380	73	521
3 AM to 6 AM	142	48	16	5	136	46	152	52	293
6 AM to 9 AM	349	89	10	3	34	9	44	11	393
9 AM to Noon	288	90	12	4	21	6	32	10	320
Noon to 3 PM	346	90	12	3	27	7	39	10	385
3 PM to 6 PM	534	84	23	4	83	13	106	17	640
6 PM to 9 PM	769	64	45	4	397	33	442	36	1,211
9 PM to Midnight	427	42	69	7	511	51	580	58	1,007
Unknown	12	39	2	7	17	54	19	61	31
Total	3,008	63	235	5	1,558	32	1,793	37	4,801
Source: NCSA, NHTSA, FARS 1998									

Table B-11
Pedestrian Fatalities in SV Crashes by Time of Day and Pedestrian BAC in 1999

Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	142	29	40	8	309	63	349	71	491
3 AM to 6 AM	150	47	17	5	153	48	170	53	320
6 AM to 9 AM	365	89	9	2	37	9	46	11	411
9 AM to Noon	282	94	4	1	13	4	17	6	299
Noon to 3 PM	271	92	9	3	16	5	24	8	295
3 PM to 6 PM	493	86	12	2	66	12	78	14	571
6 PM to 9 PM	706	62	40	4	399	35	439	38	1,145
9 PM to Midnight	384	40	50	5	522	55	572	60	956
Unknown	18	63	0	1	10	36	10	37	28
Total	2,812	62	180	4	1,524	34	1,705	38	4,516

Source: NCSA, NHTSA, FARS 1999

Table B-12
Pedestrian Fatalities in SV Crashes by Time of Day and Pedestrian BAC in 2000

Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	129	27	35	7	320	66	355	73	484
3 AM to 6 AM	136	47	23	8	129	45	152	53	288
6 AM to 9 AM	355	90	10	2	29	7	39	10	394
9 AM to Noon	230	91	3	1	20	8	23	9	253
Noon to 3 PM	327	92	4	1	24	7	29	8	355
3 PM to 6 PM	454	84	17	3	67	13	85	16	539
6 PM to 9 PM	721	64	55	5	351	31	406	36	1,127
9 PM to Midnight	357	41	46	5	466	54	512	59	869
Unknown	18	58	0	1	13	41	13	42	31
Total	2,726	63	194	4	1,420	33	1,614	37	4,340

Source: NCSA, NHTSA, FARS 2000

Table B-13 Age and BAC of Driver when a Pedestrian was Killed in SV Crashes in 1998									
Age Group	**BAC 0.00**		**BAC 0.01-0.07**		**BAC ≥ 0.08**		**BAC ≥ 0.01**		**Total**
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
< 20	421	91	19	4	24	5	43	9	464
20-29	932	82	60	5	146	13	206	18	1,138
30-39	756	80	41	4	146	15	186	20	942
40-49	666	85	28	4	92	12	120	15	786
50-59	408	90	11	2	36	8	48	10	456
> 59	441	95	7	2	17	4	25	5	466
Unknown	292	65	29	6	129	29	158	35	450
Total	3,917	83	195	4	590	13	785	17	4,702
Source: NCSA, NHTSA, FARS 1998									

Table B-14 Age and BAC of Driver when a Pedestrian was Killed in SV Crashes in 1999									
Age Group	**BAC 0.00**		**BAC 0.01-0.07**		**BAC ≥ 0.08**		**BAC ≥ 0.01**		**Total**
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
< 20	380	89	19	4	26	6	45	11	425
20-29	845	82	4	4	136	13	180	18	1,025
30-39	719	81	41	5	132	15	173	19	891
40-49	590	86	24	4	70	10	95	14	685
50-59	434	90	13	3	37	8	50	10	484
> 59	432	94	13	3	14	3	27	6	458
Unknown	349	81	12	3	71	16	83	19	432
Total	3,749	85	165	4	486	11	651	15	4,400
Source: NCSA, NHTSA, FARS 1999									

Table B-15 Age and BAC of Driver when a Pedestrian was Killed in SV Crashes in 2000									
Age Group	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
< 20	366	87	19	5	35	8	54	13	420
20-29	785	80	55	6	138	14	193	20	978
30-39	685	79	37	4	145	17	181	21	866
40-49	569	85	26	4	75	11	100	15	669
50-59	392	87	9	2	50	11	59	13	451
> 59	404	92	9	2	27	6	37	8	441
Unknown	325	77	15	4	83	20	98	23	423
Total	3,526	83	169	4	553	13	722	17	4,248
Source: NCSA, NHTSA, FARS 2000									

Table B-16 Time of Day and BAC of Driver when a Pedestrian was Killed in SV Crashes in 1998									
Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	321	63	45	9	147	29	192	37	512
3 AM to 6 AM	233	80	14	5	42	15	57	20	290
6 AM to 9 AM	368	96	4	1	13	3	17	4	384
9 AM to Noon	299	95	6	2	10	3	16	5	315
Noon to 3 PM	351	94	5	1	16	4	22	6	372
3 PM to 6 PM	558	91	17	3	41	7	58	9	616
6 PM to 9 PM	1,017	85	52	4	123	10	174	15	1,191
9 PM to Midnight	753	76	50	5	190	19	240	24	993
Unknown	18	62	3	9	9	29	11	38	29
Total	3,917	83	195	4	590	13	785	17	4,702
Source: NCSA, NHTSA, FARS 1998									

Table B-17
Time of Day and BAC of Driver when a Pedestrian was Killed in SV Crashes in 1999

Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	319	67	27	6	128	27	155	33	474
3 AM to 6 AM	244	79	17	6	50	16	67	21	311
6 AM to 9 AM	387	96	4	1	12	3	16	4	403
9 AM to Noon	273	97	3	1	7	2	10	3	282
Noon to 3 PM	271	94	5	2	11	4	16	6	287
3 PM to 6 PM	498	91	20	4	30	5	50	9	548
6 PM to 9 PM	976	87	42	4	107	9	148	13	1,124
9 PM to Midnight	761	81	46	5	136	14	183	19	944
Unknown	20	73	1	3	6	24	7	27	27
Total	3,749	85	165	4	486	11	651	15	4,400

Source: NCSA, NHTSA, FARS 1999

Table B-18
Time of Day and BAC of Driver when a Pedestrian was Killed in SV Crashes in 2000

Time of Day	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Midnight to 3 AM	292	61	43	9	142	30	185	39	477
3 AM to 6 AM	203	72	23	8	57	20	79	28	282
6 AM to 9 AM	368	96	4	1	11	3	15	4	383
9 AM to Noon	241	97	1	0	7	3	8	3	249
Noon to 3 PM	322	95	5	2	13	4	18	5	340
3 PM to 6 PM	469	89	13	3	42	8	55	11	524
6 PM to 9 PM	952	86	35	3	123	11	158	14	1,110
9 PM to Midnight	659	77	44	5	150	18	194	23	853
Unknown	20	67	2	5	8	27	10	33	30
Total	3,526	83	169	4	553	13	722	17	4,248

Source: NCSA, NHTSA, FARS 2000

Table B-19
Sex and BAC of Driver when a Pedestrian was Killed in SV Crashes in 1998

Sex	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Male	2,622	83	133	4	392	12	525	17	3,147
Female	1,035	90	36	3	83	7	119	10	1,154
Unknown	260	65	26	7	115	29	141	35	401
Total	3,917	83	195	4	590	13	785	17	4,702

Source: NCSA, NHTSA, FARS 1998

Table B-20
Sex and BAC of Driver when a Pedestrian was Killed in SV Crashes in 1999

Sex	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Male	2,426	84	123	4	354	12	477	16	2,903
Female	1,012	91	31	3	66	6	96	9	1,108
Unknown	311	80	11	3	67	17	78	20	389
Total	3,749	85	165	4	486	11	651	15	4,400

Source: NCSA, NHTSA, FARS 1999

Table B-21
Sex and BAC of Driver when a Pedestrian was Killed in SV Crashes in 2000

Sex	BAC 0.00		BAC 0.01-0.07		BAC ≥ 0.08		BAC ≥ 0.01		Total
	No.	%	No.	%	No.	%	No.	%	
Male	2,294	82	124	4	378	14	502	18	2,796
Female	939	88	31	3	100	9	130	12	1,069
Unknown	293	77	15	4	75	20	90	23	383
Total	3,526	83	169	4	553	13	722	17	4,248

Source: NCSA, NHTSA, FARS 2000

Table B-22
Alcohol Involvement in Fatal Pedestrian SV Crashes in 1998

Pedestrian Alcohol Involvement	Driver Alcohol Involvement							
	BAC 0.00		BAC 0.01-0.07		BAC≥0.08		Total	
	No.	%	No.	%	No.	%	No.	%
BAC 0.00	2,583	54	93	2	284	6	2,961	62
BAC 0.01-0.07	189	4	11	0	33	1	233	5
BAC≥0.08	1,184	25	90	2	272	6	1,547	33
Total	3,956	83	195	4	590	12	4,741	100

Source: NCSA, NHTSA, FARS 1998

Table B-23
Alcohol Involvement in Fatal Pedestrian SV Crashes in 1999

Pedestrian Alcohol Involvement	Driver Alcohol Involvement							
	BAC 0.00		BAC 0.01-0.07		BAC≥0.08		Total	
	No.	%	No.	%	No.	%	No.	%
BAC 0.00	2,443	55	81	2	223	5	2,747	62
BAC 0.01-0.07	141	3	11	0	26	1	178	4
BAC≥0.08	1,211	27	72	2	238	5	1,521	34
Total	3,795	85	165	4	486	11	4,446	100

Source: NCSA, NHTSA, FARS 1999

Table B-24
Alcohol Involvement in Fatal Pedestrian SV Crashes in 2000

Pedestrian Alcohol Involvement	Driver Alcohol Involvement							
	BAC 0.00		BAC 0.01-0.07		BAC≥0.08		Total	
	No.	%	No.	%	No.	%	No.	%
BAC 0.00	2,323	54	80	2	276	6	2,679	63
BAC 0.01-0.07	149	3	10	0	32	1	191	4
BAC≥0.08	1,089	25	80	2	245	6	1,414	33
Total	3,561	83	169	4	553	13	4,283	100

Source: NCSA, NHTSA, FARS 2000

Table B-25
Pedestrian Fatality Rates from All Crashes by City

TOTAL KILLED AND PEDESTRIANS KILLED IN MOTOR VEHICLE TRAFFIC CRASHES IN CITIES WITH A POPULATION OF 100,000 OR MORE

PERSONS KILLED, POPULATION, AND FATALITY RATES BY CITY RANKED BY PEDESTRIAN FATALITY RATE

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
1	Fort Lauderdale, FL	31	12	152,397	20.34	7.66
2	Miami, FL	60	22	362,470	16.65	6.07
3	Tampa, FL	58	18	303,447	19.22	6.04
4	Newark, NJ	39	14	273,546	14.26	5.24
5	Louisville, KY	53	13	256,231	20.68	5.20
6	Columbia, SC	25	6	116,278	21.79	5.16
7	Atlanta, GA	72	21	416,474	17.21	5.12
8	Detroit, MI	158	48	951,270	16.64	5.05
9	Clearwater, FL	14	5	108,787	12.56	4.90
10	Orlando, FL	33	9	185,951	17.93	4.66
11	Gary, IN	20	4	102,746	19.79	4.22
12	Denver, CO	61	23	554,636	11.06	4.21
13	Hollywood, FL	16	6	139,357	11.24	4.07
14	Pueblo, CO	12	4	102,121	12.08	3.92
15	Phoenix, AZ	187	51	1,321,045	14.18	3.89
16	Salt Lake, UT	25	7	181,743	13.94	3.85

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
17	San Francisco, CA	52	30	776,733	6.65	3.82
18	Beaumont, TX	21	4	113,866	18.44	3.81
19	St. Louis, MO	45	13	348,189	12.92	3.73
20	Waterbury, CT	17	4	107,271	16.16	3.73
21	Hialeah, FL	30	8	226,419	13.25	3.53
22	Reno, NV	14	6	180,480	7.57	3.51
23	Dallas, TX	169	42	1,188,580	14.22	3.51
24	San Bernardino, CA	23	6	185,401	12.41	3.42
25	Dayton, OH	19	6	166,179	11.63	3.41
26	Fayetteville, NC	13	4	121,015	10.47	3.31
27	Corpus Christi, TX	28	9	277,454	10.21	3.12
28	Pomona, CA	12	5	149,473	8.03	3.12
29	St. Petersburg, FL	35	8	248,232	14.23	3.09
30	Tucson, AZ	56	15	486,699	11.51	3.08
31	Jackson, MS	38	6	184,256	20.80	3.08
32	Baton Rouge, LA	33	7	227,818	14.63	3.07
33	Jacksonville, FL	105	22	735,617	14.27	2.99
34	Worcester, MA	11	5	172,648	6.56	2.90
35	San Diego, CA	103	35	1,223,400	8.45	2.89
36	Chula Vista, CA	13	5	173,556	7.30	2.88

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
37	Washington, DC	48	16	572,059	8.33	2.86
38	Albuquerque, NM	52	13	448,607	11.67	2.82
39	Memphis, TN	96	18	650,100	14.82	2.82
40	Hartford, CT	14	3	121,578	11.24	2.74
41	Houston, TX	238	53	1,953,631	12.20	2.71
42	Winston-Salem, NC	21	5	185,776	11.12	2.69
43	El Paso, TX	57	15	563,662	10.05	2.66
44	Birmingham, AL	36	6	242,820	14.96	2.61
45	Santa Clara, CA	6	3	102,361	5.54	2.61
46	Rochester, NY	13	6	219,773	5.92	2.58
47	San Antonio, TX	123	29	1,144,646	10.75	2.56
48	Chicago, IL	251	74	2,896,016	8.66	2.54
49	Los Angeles, CA	271	92	3,694,820	7.33	2.50
50	Escondido, CA	9	3	133,559	6.49	2.50
51	Durham, NC	18	5	187,035	9.80	2.50
52	Baltimore, MD	31	16	651,154	4.76	2.46
53	Rockford, IL	19	4	150,115	12.88	2.44
54	Fort Worth, TX	67	13	534,694	12.47	2.43
55	Oakland, CA	35	10	399,484	8.76	2.42
56	Kansas City, MO	67	11	441,545	15.25	2.42

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
57	Charlotte, NC	60	13	540,828	11.16	2.40
58	Portland, OR	36	13	529,121	6.87	2.39
59	Tulsa, OK	45	9	393,049	11.36	2.37
60	Inglewood, CA	8	3	112,580	7.40	2.37
61	Little Rock, AR	22	4	183,133	12.20	2.37
62	Riverside, CA	28	6	255,166	11.10	2.35
63	Rancho Cucamonga, CA	7	3	127,743	5.48	2.35
64	Fresno, CA	36	10	427,652	8.50	2.34
65	Orange, CA	11	3	128,821	8.80	2.33
66	Athens-Clarke County (balance), GA	12	2	100,266	12.30	2.33
67	Columbus, GA	18	4	186,291	9.48	2.33
68	San Buenaventura (Ventura), CA	9	2	100,916	9.25	2.31
69	Savannah, GA	13	3	131,510	9.89	2.28
70	Stamford, CT	6	3	117,083	5.12	2.28
71	Erie, PA	9	2	103,717	8.36	2.25
72	New York, NY	371	179	8,008,278	4.64	2.24
73	Tacoma, WA	23	4	193,556	11.88	2.24
74	Paterson, NJ	6	3	149,222	4.24	2.23

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
75	Nashville-Davidson, TN	91	13	569,891	15.91	2.22
76	Garden Grove, CA	8	4	165,196	4.64	2.22
77	New Orleans, LA	60	11	484,674	12.45	2.20
78	Springfield, MO	17	3	151,580	11.00	2.20
79	Philadelphia, PA	119	33	1,517,550	7.82	2.20
80	Torrance, CA	8	3	137,946	5.56	2.17
81	Downey, CA	5	2	107,323	4.97	2.17
82	Montgomery, AL	21	4	201,568	10.42	2.15
83	Chattanooga, TN	29	3	155,554	18.64	2.14
84	Austin, TX	64	14	656,562	9.75	2.13
85	Lafayette, LA	17	2	110,257	15.12	2.12
86	Amarillo, TX	17	4	173,627	9.98	2.11
87	Tempe, AZ	20	3	158,625	12.40	2.10
88	Boston, MA	26	12	589,141	4.36	2.09
89	Vancouver, WA	8	3	143,560	5.34	2.09
90	Greensboro, NC	28	5	223,891	12.36	2.08
91	Peoria, IL	9	2	112,936	8.26	2.07
92	Independence, MO	15	2	113,288	13.53	2.06
93	Santa Rosa, CA	8	3	147,595	5.65	2.03
94	Las Vegas, NV	42	10	478,434	8.78	2.02

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
95	Abilene, TX	14	2	115,930	11.79	2.01
96	Mobile, AL	19	4	198,915	9.55	2.01
97	Pasadena, CA	8	3	133,936	5.72	1.99
98	Glendale, AZ	20	4	218,812	8.99	1.98
99	Cambridge, MA	3	2	101,355	2.63	1.97
100	Honolulu CDP, HI	21	7	371,657	5.74	1.97
101	Salem, OR	7	3	136,924	5.11	1.95
102	Jersey City, NJ	13	5	240,055	5.55	1.94
103	Huntington Beach, CA	11	4	189,594	5.63	1.93
104	Raleigh, NC	34	5	276,093	12.31	1.93
105	Aurora, CO	20	5	276,393	7.24	1.93
106	Concord, CA	10	2	121,780	7.94	1.92
107	Stockton, CA	19	5	243,771	7.66	1.91
108	Irving, TX	15	4	191,615	7.65	1.91
109	Brownsville, TX	10	3	139,722	6.92	1.91
110	Hayward, CA	9	3	140,030	6.43	1.90
111	San Jose, CA	49	17	894,943	5.44	1.90
112	Ontario, CA	18	3	158,007	11.60	1.90
113	Sacramento, CA	27	8	407,018	6.72	1.88
114	Pasadena, TX	10	3	141,674	7.06	1.88

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
115	McAllen, TX	7	2	106,414	6.58	1.88
116	Santa Ana, CA	16	6	337,977	4.64	1.87
117	Moreno Valley, CA	6	3	142,381	3.98	1.87
118	Flint, MI	14	2	124,943	11.47	1.87
119	Corona, CA	11	2	124,966	8.54	1.87
120	Richmond, VA	17	4	197,790	8.43	1.85
121	Norfolk, VA	22	4	234,403	9.53	1.85
122	Kansas City, KS	21	3	146,866	14.53	1.82
123	Toledo, OH	27	6	313,619	8.61	1.81
124	Anchorage municipality, AK	21	5	260,283	8.07	1.79
125	Oklahoma City, OK	63	9	506,132	12.45	1.78
126	Waco, TX	14	2	113,726	12.31	1.76
127	Bakersfield, CA	18	4	247,057	7.42	1.75
128	Springfield, MA	11	3	152,082	7.01	1.75
129	El Monte, CA	6	2	115,965	5.17	1.72
130	Yonkers, NY	10	3	196,086	4.93	1.70
131	Huntsville, AL	22	3	158,216	13.69	1.69
132	Lancaster, CA	13	2	118,718	10.95	1.68
133	Lansing, MI	8	2	119,128	6.72	1.68
134	Bridgeport, CT	9	2	139,529	6.45	1.67

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
135	Shreveport, LA	25	3	200,145	12.49	1.67
136	Newport News, VA	12	3	180,150	6.85	1.67
137	Minneapolis, MN	19	6	382,618	5.05	1.66
138	Cape Coral, FL	9	2	102,286	9.12	1.63
139	Lakewood, CO	12	2	144,126	8.56	1.62
140	New Haven, CT	12	2	123,626	9.98	1.62
141	Cincinnati, OH	21	5	331,285	6.34	1.61
142	Daly City, CA	6	2	103,621	5.47	1.61
143	Mesquite, TX	11	2	124,523	8.83	1.61
144	Wichita Falls, TX	9	2	104,197	8.64	1.60
145	Buffalo, NY	15	5	292,648	5.13	1.59
146	Long Beach, CA	28	7	461,522	6.07	1.59
147	Modesto, CA	12	3	188,856	6.35	1.59
148	Lowell, MA	6	2	105,167	5.39	1.58
149	Allentown, PA	9	2	106,632	8.44	1.56
150	South Bend, IN	9	2	107,789	8.66	1.55
151	Lexington-Fayette, KY	27	4	260,512	10.24	1.54
152	Laredo, TX	13	3	176,576	7.17	1.51
153	Des Moines, IA	14	3	198,682	6.88	1.51
154	St. Paul, MN	17	4	287,151	5.92	1.51

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
155	Augusta-Richmond County, GA	24	3	199,775	12.18	1.50
156	Milwaukee, WI	35	9	596,974	5.86	1.45
157	Eugene, OR	8	2	137,893	5.56	1.45
158	Oceanside, CA	11	2	161,029	6.62	1.45
159	Columbus, OH	52	10	711,470	7.31	1.41
160	Pittsburgh, PA	25	5	334,563	7.37	1.39
161	Cleveland, OH	41	7	478,403	8.50	1.39
162	Glendale, CA	8	3	194,973	4.27	1.37
163	Grand Rapids, MI	9	3	197,800	4.38	1.35
164	Knoxville, TN	32	2	173,890	18.21	1.34
165	Burbank, CA	2	1	100,316	2.33	1.33
166	Anaheim, CA	19	4	328,014	5.69	1.32
167	Westminster, CO	6	1	100,940	5.61	1.32
168	Arlington, TX	25	4	332,969	7.51	1.30
169	Alexandria, VA	4	2	128,283	2.86	1.30
170	Omaha, NE	23	5	390,007	5.98	1.28
171	Sunnyvale, CA	4	2	131,760	3.04	1.26
172	Garland, TX	16	3	215,768	7.26	1.24
173	West Valley City, UT	7	1	108,896	6.43	1.22

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
174	Colorado Springs, CO	24	4	360,890	6.65	1.20
175	Springfield, IL	7	1	111,454	6.28	1.20
176	Spokane, WA	13	2	195,629	6.47	1.19
177	Oxnard, CA	10	2	170,358	5.67	1.17
178	Chesapeake, VA	17	2	199,184	8.37	1.17
179	Aurora, IL	8	2	142,990	5.59	1.17
180	Irvine, CA	10	2	143,072	6.99	1.16
181	Wichita, KS	28	4	344,284	8.13	1.16
182	North Las Vegas, NV	10	1	115,488	8.95	1.15
183	Palmdale, CA	11	1	116,670	9.14	1.14
184	Vallejo, CA	7	1	116,760	5.71	1.14
185	Henderson, NV	10	2	175,381	5.70	1.14
186	Hampton, VA	7	2	146,437	5.01	1.14
187	Fort Wayne, IN	12	2	205,727	5.83	1.13
188	Syracuse, NY	9	2	147,306	5.88	1.13
189	Cedar Rapids, IA	8	1	120,758	6.35	1.10
190	Santa Clarita, CA	7	2	151,088	4.85	1.10
191	Indianapolis, IN	38	9	791,926	4.76	1.09
192	Topeka, KS	7	1	122,377	5.72	1.09

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
193	Fullerton, CA	8	1	126,003	6.08	1.06
194	Fontana, CA	6	1	128,929	4.91	1.03
195	Seattle, WA	26	6	563,374	4.67	1.01
196	Portsmouth, VA	7	1	100,565	7.29	0.99
197	Scottsdale, AZ	21	2	202,705	10.20	0.99
198	Green Bay, WI	4	1	102,313	4.24	0.98
199	Berkeley, CA	2	1	102,743	2.27	0.97
200	Warren, MI	12	1	138,247	8.68	0.96
201	Provo, UT	5	1	105,166	5.07	0.95
202	Costa Mesa, CA	8	1	108,724	7.66	0.92
203	Salinas, CA	4	1	151,060	2.65	0.88
204	Thousand Oaks, CA	7	1	117,005	5.70	0.85
205	Coral Springs, FL	8	1	117,549	6.81	0.85
206	Madison, WI	8	2	208,054	3.85	0.80
207	Virginia Beach, VA	22	3	425,257	5.25	0.78
208	Providence, RI	10	1	173,618	5.95	0.77
209	Mesa, AZ	32	3	396,375	7.99	0.76
210	Lubbock, TX	21	1	199,564	10.69	0.67
211	Tallahassee, FL	8	1	150,624	5.31	0.66
212	Arvada, CO	5	1	102,153	4.57	0.65

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
213	Norwalk, CA	4	1	103,298	4.19	0.65
214	West Covina, CA	5	1	105,080	4.44	0.63
215	Carrollton, TX	5	1	109,576	4.56	0.61
216	Gilbert town, AZ	6	1	109,697	5.17	0.61
217	Simi Valley, CA	9	1	111,351	7.78	0.60
218	Lincoln, NE	12	1	225,581	5.47	0.59
219	Fort Collins, CO	3	1	118,652	2.81	0.56
220	Sioux Falls, SD	4	1	123,975	3.50	0.54
221	Sterling Heights, MI	6	1	124,471	4.55	0.54
222	Grand Prairie, TX	10	1	127,427	7.59	0.52
223	Fremont, CA	7	1	203,413	3.61	0.49
224	Pembroke Pines, FL	7	1	137,427	5.09	0.49
225	Chandler, AZ	6	1	176,581	3.21	0.38
226	Boise City, ID	4	1	185,787	1.97	0.36
227	Livonia, MI	3	0	100,545	2.98	0.33
228	Clarksville, TN	6	0	103,455	5.48	0.32
229	Joliet, IL	8	0	106,221	7.22	0.31
230	Peoria, AZ	4	0	108,364	3.69	0.31
231	Akron, OH	17	1	217,074	7.83	0.31
232	Plano, TX	11	1	222,030	4.80	0.30

Rank	City, State	Average Fatalities 1998-2000		2000 Population	Fatality Rate per 100,000 Population	
		Total from all Crashes	Pedestrians		Total from all Crashes	Pedestrians
233	Evansville, IN	6	0	121,582	4.93	0.27
234	Naperville, IL	2	0	128,358	1.30	0.26
235	Overland Park, KS	6	0	149,080	4.25	0.22
236	Bellevue, WA	3	0	109,569	3.04	0.00
237	Manchester, NH	5	0	107,006	4.98	0.00
238	Arlington CDP, VA	0	0	189,453	0.00	0.00
239	Paradise CDP, NV	0	0	186,070	0.00	0.00
240	Sunrise Manor CDP, NV	0	0	156,120	0.00	0.00
241	Metairie CDP, LA	0	0	146,136	0.00	0.00
242	East Los Angeles CDP, CA	0	0	124,283	0.00	0.00
243	Elizabeth, NJ	0	0	120,568	0.00	0.00
244	Spring Valley CDP, NV	0	0	117,390	0.00	0.00
245	Ann Arbor, MI	0	0	114,024	0.00	0.00
Source: NCSA, NHTSA, FARS 1998-2000, US Census Bureau						

8. REFERENCES

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